

2008

RUDOLPH® TECHNOLOGIES

ANNUAL REPORT & 2009 PROXY

RTEC

Our ongoing strategy is to fund R&D to be well-positioned when the economy improves. As a result, we are anxiously anticipating new product announcements scheduled throughout 2009. These products will have two prime points of focus: 1) Position to support emerging and expanding technologies, such as the strategic use of TSVs and 3D packaging, as well as the transition of memory to copper interconnects, and 2) Supply paradigm reductions in wafer fabs costs. Our focus on next-generation process solutions has not gone unnoticed. In December, our new all-surface Explorer Inspection Cluster shipped to a Japanese fab where it is used to correlate backside foreign material to front-side lithography defects. This was quickly followed by the installation of the industry-standard NSX System for a European customer to support one of the first applications of TSV manufacturing to be put into production for CMOS imaging sensors. Recognizing that Rudolph cannot accomplish this alone, we have actively engaged in establishing strategic cooperatives and alliances among industry partners. This involves leveraging resources among consortia, such as ISMI-Albany, fellow equipment suppliers, as well as, and most importantly, our strategic customers. Regarding our customers, we understand and intend to actively support your need to perform tool evaluations. In return for such Rudolph investments, customers typically respond by participating in Rudolph's on-going success through data-sharing and continuous improvement programs-valued endeavors as we continue to enhance our competitive advantage.

ANNUAL RUDOLPH® TECHNOLOGIES REPORT 2008

RUDOLPH
TECHNOLOGIES

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS
To be held May 19, 2009

TO THE STOCKHOLDERS:

NOTICE IS HEREBY GIVEN that the 2009 Annual Meeting of Stockholders of Rudolph Technologies, Inc. (the "Company"), a Delaware corporation, will be held on May 19, 2009 at 10:00 a.m., local time, at the Company's corporate headquarters, located at One Rudolph Road, Flanders, New Jersey, 07836, for the following purposes:

1. To elect two Class I directors to serve for three-year terms expiring upon the 2012 Annual Meeting of Stockholders or until their successors are elected;

2. To approve the Rudolph Technologies, Inc. 2009 Stock Plan;

3. To approve the Rudolph Technologies, Inc. 2009 Employee Stock Purchase Plan;

4. To ratify the appointment of Ernst & Young LLP as our independent registered public accountants for the year ending December 31, 2009; and

5. To transact such other business as may properly come before the meeting and any adjournment or postponement thereof.

The foregoing items of business are more fully described in the Proxy Statement accompanying this Notice. Included in the mailing of this Proxy Statement is a copy of our Annual Report on Form 10-K for the fiscal year ended December 31, 2008.

Only stockholders of record at the close of business on March 31, 2009 are entitled to notice of and to vote at the meeting and any adjournment thereof.

All stockholders are cordially invited to attend the meeting in person. However, to ensure your representation at the meeting, you are urged to mark, sign, date and return the enclosed proxy card as promptly as possible in the postage-prepaid envelope enclosed for that purpose. Any stockholder attending the meeting may vote in person even if such stockholder has returned a proxy.

IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE ANNUAL MEETING OF STOCKHOLDERS TO BE HELD MAY 19, 2009:

The enclosed proxy statement and 2008 Annual Report to Stockholders are available at www.proxydocs.com/rtec.

FOR THE BOARD OF DIRECTORS

STEVEN R. ROTH
Secretary

Flanders, New Jersey
April 17, 2009

RUDOLPH TECHNOLOGIES, INC.

PROXY STATEMENT

SEC Mail Processing
Section

APR 27 2009

Washington, DC
110

INFORMATION CONCERNING SOLICITATION AND VOTING

General

The enclosed Proxy is solicited on behalf of the Board of Directors of Rudolph Technologies, Inc. (the "Company") for use at the 2009 Annual Meeting of Stockholders to be held May 19, 2009 at 10:00 a.m., local time (the "Annual Meeting"), or at any adjournment thereof, for the purposes set forth herein and in the accompanying Notice of Annual Meeting of Stockholders. The Annual Meeting will be held at the Company's corporate headquarters, located at One Rudolph Road, Flanders, New Jersey, 07836. The Company's telephone number is (973) 691-1300.

These proxy solicitation materials and the Company's Annual Report to Stockholders for the year ended December 31, 2008, including financial statements, were mailed on or about April 17, 2009 to stockholders entitled to vote at the meeting.

Record Date and Voting Securities

Stockholders of record at the close of business on March 31, 2009 (the "Record Date") are entitled to notice of and to vote at the meeting. At the Record Date, 30,811,170 shares of the Company's Common Stock, $0.001 par value, were issued and outstanding.

Revocability of Proxies

Any proxy given pursuant to this solicitation may be revoked by the person giving it at any time before its use by delivering to the Secretary of the Company at the Company's principal executive offices a written notice of revocation or a duly executed proxy bearing a later date or by attending the meeting and voting in person.

Voting and Solicitation

Each stockholder of record is entitled to one vote for each share of Common Stock owned by such stockholder on all matters presented at the Annual Meeting. Stockholders do not have the right to cumulate their votes in the election of directors.

The Company will bear the cost of soliciting proxies. In addition, the Company may reimburse brokerage firms and other persons representing beneficial owners of shares for their expenses in forwarding solicitation material to such beneficial owners. Solicitation of proxies by mail may be supplemented by telephone, telegram, facsimile or personal solicitation by directors, officers or regular employees of the Company. No additional compensation will be paid to such persons for such services.

Quorum; Abstentions; Broker Non-votes

The required quorum for the transaction of business at the Annual Meeting is a majority of the votes eligible to be cast by holders of shares of Common Stock issued and outstanding on the Record Date.

If you return a signed and dated Proxy but do not indicate how the shares are to be voted, those shares will be voted as recommended by the Board. A valid Proxy also authorizes the individuals named as proxies to vote your shares in their discretion on any other matters which, although not described in the Proxy Statement, are properly presented for action at our Annual Meeting. If you indicate on your Proxy that you wish to

"abstain" from voting on an item, your shares will not be voted on that item. Abstentions and broker non-votes are not counted in determining the number of shares voted for or against any nominee for Director or any other proposal, but will be counted to determine whether there is a quorum present. There is no right to cumulative voting.

In order to have a quorum present at the Annual Meeting, a majority of our shares of common stock that are outstanding and entitled to vote at the Annual Meeting must be represented in person or by proxy. If a quorum is not present, the Annual Meeting will be rescheduled for a later date.

Vote Required

The Directors must be elected by a plurality of the votes cast. All of the other proposals require the affirmative vote of the majority of shares present in person or represented by proxy at the meeting and entitled to vote on the subject matter. Abstentions are counted for quorum purposes, but in effect count as negative votes because they are shares represented by proxy that are not voted in the affirmative. Broker non-votes are not shares represented by proxy and are not counted as part of the vote total and have no effect on the outcome.

Deadlines for Submission of Stockholder Proposals for 2010 Annual Meeting

Stockholders of the Company are entitled to present proposals for consideration at forthcoming stockholder meetings provided that they comply with the proxy rules promulgated by the Securities and Exchange Commission (the "SEC") and the Bylaws of the Company. Stockholders wishing to present a proposal at the Company's 2010 Annual Stockholder Meeting must submit such proposal in writing to the Company no later than by December 22, 2009 if they wish for it to be eligible for inclusion in the proxy statement and form of proxy relating to that meeting. In addition, under the Company's Bylaws, a stockholder wishing to make a proposal at the 2010 Annual Stockholder Meeting must submit such a proposal in writing to the Company no later than March 12, 2010. The Nominating and Governance Committee will consider qualified director nominees recommended by stockholders. Our process for receiving and evaluating Board member nominations from our stockholders is described below under the caption "Nominating and Governance Committee."

No Appraisal Rights

Stockholders have no dissenters' rights of appraisal with respect to any of the matters to be voted upon at the Annual Meeting.

CORPORATE GOVERNANCE PRINCIPLES AND PRACTICES

Rudolph Technologies is committed to sound and effective corporate governance practices. Having such principles is essential to running our business efficiently and to maintaining our integrity in the marketplace. The major components of our corporate governance practices are described below.

Codes of Ethics

We have adopted a Code of Business Conduct and Ethics and a Financial Code of Ethics that set forth principles to guide all employees, executive officers and directors and establish procedures for reporting any violations of these principles. These may be found on our website at http://www.rudolphtech.com/CodesEthics.aspx or may be requested by writing to Rudolph Technologies, Inc., Attention: Investor Relations, One Rudolph Road, P.O. Box 1000, Flanders, New Jersey 07836. The Company will disclose any amendment to its codes of ethics or waiver of a provision of its codes of ethics applicable to its officers, including the name of the officer to whom the waiver was granted, on our website at www.rudolphtech.com, on the Investor Relations page.

Board Meetings and Committees

The Board of Directors of the Company held a total of four meetings during 2008. No director attended fewer than 100% of the meetings of the Board of Directors, except Carl E. Ring, Jr. who resigned from the Board in August 2009 and Michael W. Wright who resigned from the Board in May 2009. In addition, no director attended fewer than 88.9% of the committee meetings upon which such director served, except for the directors as cited above. While the Company does not currently have a formal policy regarding the attendance of directors at the annual meeting of stockholders, directors are encouraged to attend. All then current members of the Board of Directors attended the 2008 Annual Meeting of Stockholders. The Board of Directors has an Audit Committee, a Compensation Committee and a Nominating and Governance Committee, each of which has adopted a written charter. The charters of these committees are in compliance with rules adopted by the SEC and the NASDAQ Global Select Market® on which our stock is listed ("Nasdaq").

Board Independence

The Board makes an annual determination as to the independence of each of our Board members under the current standards for "independence" established by Nasdaq and the SEC. The Board has determined that the following members of the current Board, consisting of a majority of the Board, satisfy these independence standards: Daniel H. Berry, Leo Berlinghieri, Richard F. Spanier, Thomas G. Greig, Aubrey C. Tobey and John R. Whitten. In addition, on four occasions during 2008, our Board met in executive sessions in which solely the independent Board members were present.

Audit Committee

We have an Audit Committee that assists the Board in fulfilling its responsibilities for general oversight of the integrity of our financial statements and with our compliance with legal and regulatory requirements. Specifically, the Audit Committee recommends engagement of the Company's independent registered public accountants, and is primarily responsible for approving the services performed by the Company's independent registered public accountants and for reviewing and evaluating the Company's accounting principles and its system of internal accounting controls. The report of our Audit Committee is found below under the caption "Audit Committee Report."

The Audit Committee is governed by its own charter that sets forth its specific responsibilities and the qualifications for membership to the committee. The charter of the Audit Committee is available on our website at www.rudolphtech.com, on the Investor Relations page. The Audit Committee held nine meetings in 2008. There was a change to the composition to the Audit Committee in which Richard F. Spanier and Thomas G. Greig were appointed to the Audit Committee, replacing Paul Craig and Aubrey C. Tobey in October 2008. Consistent with the foregoing, the Audit Committee is currently composed of Directors, Thomas G. Greig, Richard F. Spanier and John R. Whitten. The Board has determined that Thomas G. Greig, Richard F. Spanier and John R. Whitten meet the requirements for membership to the Audit Committee set forth by Nasdaq and the SEC, including that they be "independent."

The Board has determined that John R. Whitten meets the definition of an "Audit Committee Financial Expert" under SEC rules, and also has the level of financial sophistication required of at least one member of the Audit Committee under Nasdaq rules.

Compensation Committee

The Compensation Committee has its own charter that sets forth its specific responsibilities, including the establishment of the policies upon which compensation of and incentives for the Company's executive officers will be based, the review and approval of the compensation of the Company's executive officers, and the administration of the Company's stock and stock purchase plans. The charter of the Compensation Committee is available on our website at www.rudolphtech.com, on the Investor Relations page.

The Compensation Committee held 14 meetings during the last year including four meetings held prior to the Board of Directors meeting where all Compensation Committee members attended in person. This

Committee is currently composed of Directors Daniel H. Berry, Leo Berlinghieri and Aubrey C. Tobey. There was a change to the composition to the Compensation Committee in which Leo Berlinghieri and Aubrey C. Tobey were appointed to the Compensation Committee, replacing Carl E. Ring, Jr. and Paul Craig in October 2008. The Board has determined that Daniel H. Berry, Leo Berlinghieri and Aubrey C. Tobey meet the requirements for membership on the Compensation Committee, including the independence requirements of Nasdaq. For a complete discussion of the Compensation Committee, please refer to the Executive Compensation section of the Compensation, Discussion and Analysis ("CD&A").

Nominating and Governance Committee

Like the other committees of the Board, the Nominating and Governance Committee has its own charter that outlines its responsibilities. These responsibilities include identifying prospective director nominees and recommending to the Board director nominees for the next annual meeting of stockholders and replacements of a director in the event a director steps down. The Nominating and Governance Committee also recommends to the Board director nominees for the Audit and Compensation Committees. The charter of the Nominating and Governance Committee is available on our website at www.rudolphtech.com, on the Investor Relations page.

The Nominating and Governance Committee is currently composed of Directors Thomas G. Greig, Richard F. Spanier and Aubrey C. Tobey and held five meetings during the last year. Michael W. Wright was a member of the Nominating and Governance Committee until his resignation from the Board in May 2008. The Board has determined that all of these directors meet the requirements for membership to the Nominating and Governance Committee, including the independence requirements of Nasdaq.

The Nominating and Governance Committee determines the required selection criteria and qualifications of director nominees based upon the needs of the Company at the time nominees are considered. A candidate must possess the ability to apply good business judgment and must be in a position to properly exercise his or her duties of loyalty and care. Candidates should also exhibit proven leadership capabilities, high integrity and experience with a high level of responsibilities within their chosen fields, and have the ability to grasp complex principles of business, finance, international transactions and semiconductor inspection and metrology technologies. When current Board members are considered for nomination for reelection, the Nominating and Governance Committee also takes into consideration their prior contributions to and performance on the Board and their record of attendance.

The Nominating and Governance Committee will consider the above criteria for nominees identified by the Nominating and Governance Committee itself, by stockholders, or through some other source. The Nominating and Governance Committee uses the same process for evaluating all nominees, regardless of the original source of nomination. The Nominating and Governance Committee may use the services of a third party search firm to assist in the identification or evaluation of Board member candidates.

The Nominating and Governance Committee has a formal policy with regard to consideration of director candidates recommended by the Company's stockholders. In accordance with the policy, the Committee will consider recommendations and nominations for candidates to the Board of Directors from stockholders of the Company holding no less than 1% of the Company's securities for at least twelve months prior to the date of the submission of the recommendation or nomination. Stockholders wishing to recommend persons for consideration by the Nominating and Governance Committee as nominees for election to the Company's Board of Directors can do so by writing to the Office of the General Counsel of the Company at its principal executive offices giving each such person's name, biographical data and qualifications. Any such recommendation should be accompanied by a written statement concerning the eligibility and qualifications from the person recommended and of his or her consent to be named as a nominee and, if nominated and elected, to serve as a director. The Company's Bylaws also contain a procedure for stockholder nomination of directors.

Communications with the Board of Directors

We have a formal policy regarding communications with the Board of Directors. Stockholders may communicate with the Board of Directors by writing to them at c/o Rudolph Technologies, Inc., Office of the

General Counsel, One Rudolph Road, P.O. Box 1000, Flanders, New Jersey 07836 and such communications will be forwarded to the Board of Directors. Stockholders who would like their submission directed to a member of the Board of Directors may so specify, and the communication will be forwarded to such specific directors, as appropriate.

PROPOSAL 1

ELECTION OF DIRECTORS

Nominees

The authorized number of directors is currently established at seven. The Company's Certificate of Incorporation provides that the directors shall be divided into three classes, with the classes serving for staggered, three-year terms. Currently there are two directors in each of Class I and Class III and three directors in Class II. Each of the two Class I directors are to be elected at this Annual Meeting and will hold office until the 2012 Annual Meeting or until their successors have been duly elected and qualified. Each of the three Class II directors will hold office until the 2010 Annual Meeting or until their successors have been duly elected and qualified and each of the two Class III directors will hold office until the 2011 Annual Meeting or until their successors have been duly elected and qualified. These directors were approved by the Board for inclusion on this Proxy Statement based on the recommendation of the Nominating and Governance Committee.

Unless otherwise instructed, the proxy holders will vote the proxies received by them for the Company's two nominees named below, each of whom is currently a director of the Company. In the event that any nominee of the Company becomes unable or declines to serve as a director at the time of the Annual Meeting, the proxy holders will vote the proxies for any substitute nominee who is designated by the current Board of Directors to fill the vacancy. It is not expected that any nominee listed below will be unable or will decline to serve as a director.

The names of the two Class I nominees for director and certain information about each of them are set forth below. The names of, and certain information about, the current Class II and Class III directors with unexpired terms are also set forth below. All information is as of the Record Date.

Name	Age	Position	Director Since
Nominee Class I Directors:			
Leo Berlinghieri(1)	55	Chief Executive Officer and President, MKS Instruments, Inc.	2008
Paul F. McLaughlin	63	Chairman and Chief Executive Officer, Rudolph Technologies, Inc.	1996
Continuing Class II Directors:			
Daniel H. Berry	63	Operating Partner, Riverside Partners, LLC	1998
Thomas G. Greig	61	Managing Director, Liberty Capital Partners, Inc.	2003
Richard F. Spanier	69	Retired, Chairman Emeritus	1966
Continuing Class III Directors:			
Aubrey C. Tobey	83	President, ACT International	1998
John R. Whitten	62	Former Chief Financial Officer, Vice President and Treasurer, Applied Industrial Technologies, Inc.	2006

(1) Mr. Berlinghieri was appointed to the Board of Directors on September 18, 2008.

Except as indicated below, each nominee or incumbent director has been engaged in the principal occupation set forth above during the past five years. There are no family relationships between any directors or executive officers of the Company.

Paul F. McLaughlin has served as the Company's Chairman since January 2000 and Chief Executive Officer and as a director of the Company since June 1996. Mr. McLaughlin holds a B.S. in Metallurgical Engineering from Rensselaer Polytechnic Institute, an M.S. in Metallurgy and Materials Science from Lehigh University and an M.B.A. from Harvard University Graduate School of Business Administration.

Daniel H. Berry has served as one of the Company's directors since October 1998. Since January 2002, Mr. Berry has been an Operating Partner of Riverside Partners, LLC, a private equity investment firm. From July 2004 to August 2007, Mr. Berry also served as Executive Vice President of Applied Precision, a Riverside portfolio company. He was employed by Ultratech Stepper, Inc. (presently Ultratech, Inc.), an equipment supplier to the semiconductor industry, from 1990 to 2001 in various positions including President and Chief Operating Officer from May 1999 to November 2001. Prior to this, Mr. Berry held positions at General Signal, Perkin Elmer and Bell Laboratories. Mr. Berry holds a B.S. in Electrical Engineering from the Polytechnic Institute of Brooklyn.

Leo Berlinghieri has served as one of the Company's directors since September 2008. Since July 2005, Mr. Berlinghieri has served as Chief Executive Officer and President of MKS Instruments, Inc., an equipment supplier to the semiconductor industry. From April 2004 to July 2005, Mr. Berlinghieri served as President and Chief Operating Officer and prior to that he served as Vice President and Chief Operating Officer from July 2003 to April 2004 for MKS Instruments, Inc. Mr. Berlinghieri is currently a board member of MKS Instruments, Inc.

Thomas G. Greig has served as one of the Company's directors since January 2003. Since July 1998, Mr. Greig has been a Managing Director of Liberty Capital Partners, Inc., a private equity investment firm. From December 1985 to July 1998, Mr. Greig was a Managing Director of Donaldson, Lufkin, & Jenrette, Inc., an investment banking firm. Mr. Greig holds a B.S. in Engineering from Princeton University, an M.S.E. in Electrical Engineering from New York University and an M.B.A. from Harvard University Graduate School of Business Administration. Mr. Greig is currently the Non-Executive Chairman of the Board of Black Box Corporation.

Richard F. Spanier has served as Chairman Emeritus of the Company's Board of Directors since January 2000 and prior to that as the Company's Chairman of the Board of Directors since September 1966. From September 1966 to June 1996, Dr. Spanier served as the Company's President and Chief Executive Officer. Dr. Spanier holds a B.S. in Physics, an M.S. in Physical Chemistry and a Ph.D. in Chemical Physics from Stevens Institute of Technology.

Aubrey C. Tobey has served as one of the Company's directors since October 1998. Since May 1987, Mr. Tobey has served as President of ACT International, a company which provides marketing and management services for high technology companies. Mr. Tobey holds a B.S. in Mechanical Engineering from Tufts University and an M.S. in Mechanical Engineering from the University of Connecticut. Mr. Tobey served as a director of Chartered Semiconductor Manufacturing, Ltd. until May 2003.

John R. Whitten has served as one of the Company's directors since July 2006 upon his appointment to the Company's Board of Directors. From November 1995 to December 2003, Mr. Whitten served as Chief Financial Officer, Vice President and Treasurer of Applied Industrial Technologies, Inc., an industrial supply distributor. Mr. Whitten is a C.P.A. and holds a B.B.A. in Accounting from Cleveland State University. Mr. Whitten is currently an independent director overseeing 70 portfolios in the fund complex of American Century Companies, Inc., a registered investment company, or its wholly owned subsidiaries.

Compensation of Directors

Directors who are employees of the Company receive no compensation for their services as members of the Board of Directors. In 2008, directors were not paid to serve on the committees of the Board of Directors with the exception of those directors serving as committee chairmen. John R. Whitten received cash

compensation of $2,500 each quarter for his services as the Chairman of the Audit Committee. Daniel H. Berry and Aubrey C. Tobey each received cash compensation of $2,500 for the 2008 fourth quarter for their services as the Chairman of the Compensation Committee and as the Chairman of the Nominating and Governance Committee, respectively. From time to time directors may be compensated for work performed as members of special subcommittees of the Board of Directors. No fees were paid to directors for special subcommittee work in 2008.

Directors who are not employees of the Company received cash compensation of $5,000 for attendance at each quarterly meeting of the Board of Directors in 2008. Through July 2008, as new non-employee directors commence serving on the Board of Directors, they are first awarded an initial grant ("Initial Grant") of 10,000 stock options at an exercise price equal to the fair market value per share of the Common Stock on the date of the Board meeting at which the Initial Grant was awarded or the equivalent in restricted stock units subject to the terms of the Rudolph Technologies, Inc. 1999 Stock Plan ("1999 Plan"). Further, annually, each non-employee director who continued to serve as a non-employee director through the anniversary date of the Initial Grant was automatically granted an option to purchase 5,000 shares of Common Stock at an exercise price equal to the fair market value per share of the Common Stock on the date of the Board meeting following such anniversary or was awarded the equivalent in restricted stock units subject to the terms of the 1999 Plan. Since 2005, the above mentioned share-based compensation grants have been restricted stock units instead of stock option awards. Effective as of July 2008, the equity component of a non-employee director's compensation was revised to reflect an Annual Grant of RSU's to be awarded annually as of the third quarter Board of Directors Meeting, the date of which varies year-to-year, in an amount of shares calculated by dividing $50,000 by the Company Common Stock closing stock price on the date of such Annual Grant, rounded to the nearest 100 shares. In addition, Initial Grants issued to a new non-employee director as of the first Board of Directors Meeting after the election of such non-employee directors ("First Meeting") shall be calculated in accordance with the Annual Grant formula set forth above and prorated by the number of quarters between such First Meeting and the date on which the next Annual Grant is scheduled to be awarded. Any Initial Grants and/or Annual Grants so awarded shall be issued at the closing price of the Company Common Stock as of the date of the respective grants.

For the year ended December 31, 2008, the directors, excluding the director who is a named executive officer, of the Company (ten individuals) received the following total compensation:

Name	Fees Earned or Paid in Cash	Stock Awards(1)	Option Awards(2)	All Other Compensation	Total
Leo Berlinghieri(3)	$10,000	$12,607	$—	$ —	$ 22,607
Daniel H. Berry	$22,500	$35,552	$—	$ 4,497	$ 62,549
Paul Craig(4)	$15,000	$73,006	$—	$ —	$ 88,006
Thomas G. Greig	$20,000	$35,552	$—	$ —	$ 55,552
Jeff L. O'Dell(5)	$15,000	$73,006	$—	$ —	$ 88,006
Carl E. Ring, Jr.	$ —	$22,945	$—	$ —	$ 22,945
Richard F. Spanier(6)	$20,000	$35,552	$—	$10,000	$ 65,552
Aubrey C. Tobey	$22,500	$35,552	$—	$ 6,000	$ 64,052
John R. Whitten	$30,000	$73,021	$—	$ —	$103,021
Michael W. Wright(7)	$ —	$39,207	$—	$ —	$ 39,207

(1) The amounts in this column reflect the dollar amounts recognized for financial statement reporting purposes for the fiscal year ended December 31, 2008, in accordance with Statement of Financial Accounting Standards No. 123(R), *Share-based Payments* (SFAS No. 123R). For more information regarding the Company's assumptions made in the valuation of restricted stock units, see Note 11 to the financial statements included in the Company's Form 10-K for the year ended December 31, 2008. For stock awards granted to non-employee directors in 2008, the total grant date fair value of these awards was as follows: Mr. Berlinghieri ($50,061), Mr. Berry ($50,061), Mr. Craig ($50,061), Mr. Greig ($50,061), Mr. O'Dell

($50,061), Mr. Ring ($0), Mr. Spanier ($50,061), Mr. Tobey ($50,061), Mr. Whitten ($50,061) and Mr. Wright ($0).

(2) As of December 31, 2008 directors had the following stock options outstanding and exercisable: Mr. Berlinghieri (0 shares), Mr. Berry (16,783 shares), Mr. Craig (15,000 shares), Mr. Greig (15,000 shares), Mr. O'Dell (1,525 shares), Mr. Ring (0 shares), Mr. Spanier (15,000 shares), Mr. Tobey (15,000 shares), Mr. Whitten (0 shares) and Mr. Wright (15,353 shares). As these directors were fully vested in their options prior to 2008, no expense is shown in this column.

(3) Mr. Berlinghieri was appointed to the Board of Directors in September 2008.

(4) Mr. Craig resigned from the Board of Directors in September 2008.

(5) Mr. O'Dell resigned from the Board of Directors in October 2008.

(6) Mr. Spanier is paid $10,000 per year under a 10 year deferred compensation plan, related to his sale of the Company in 1996, that commenced in January 1999.

(7) Mr. Wright resigned from the Board of Directors in May 2008.

Vote Required

The two nominees receiving the highest number of votes of the shares entitled to be voted for them shall be elected as Class I directors. Abstention votes for any director will be counted for purposes of determining the presence or absence of a quorum for the transaction of business at the meeting, but have no other legal effect upon election of directors under Delaware law.

The Company's Board of Directors unanimously recommends voting "FOR" the nominees set forth herein.

PROPOSAL 2

APPROVAL OF RUDOLPH TECHNOLOGIES, INC. 2009 STOCK PLAN

The Board of Directors is requesting that our stockholders approve a new stock plan, the 2009 Stock Plan (the "2009 Plan"). The Board has adopted the 2009 Plan, subject to stockholder approval at the Annual Meeting. If approved by our stockholders, the 2009 Plan will become effective as of November 1, 2009 and will expire 10 years from such date, unless terminated earlier. The 2009 Plan is intended to replace the Rudolph Technologies, Inc. 1999 Stock Plan (the "1999 Plan"), which expires on or about November 6, 2009; provided, however, if the stockholders approve this Proposal Two, the 1999 Plan will expire on October 31, 2009.

The 2009 Plan is structured to allow the Board to create equity incentives in order to assist the Company in attracting, retaining and motivating the best available personnel for the successful conduct of the Company's business. The Company believes that linking compensation to corporate performance motivates employees and consultants to improve stockholder value. The Company has, therefore, consistently included equity incentives as a significant component of compensation for its employees and consultants. With the high demand for highly skilled employees and consultants, especially in the technology industries, management believes it is critical to the Company's success to maintain competitive compensation programs. The Board believes that the approval of the 2009 Plan would be in the best interests of the Company and its stockholders.

Summary of Material Changes Made in the 2009 Stock Plan from the 1999 Plan

Below is a summary of some of the material differences between the 2009 Plan and the 1999 Plan. This summary is qualified in its entirety by reference to the 2009 Plan itself set forth in Appendix A.

- The Company recognizes that "evergreen" provisions have the potential for built-in dilution to stockholder value. Therefore to address potential stockholder concerns, the "evergreen" provision which provided for an automatic annual increase in the number of shares available under the 1999 Plan is being eliminated under the 2009 Plan. Instead, the 2009 Plan limits the number of shares authorized for grant under the 2009 Plan to 5,000,000 shares, subject to adjustment in connection with certain equity

restructuring events. Upon the effective date of the 2009 Plan, no additional grants will be made under the 1999 Plan.

- The 1999 Plan allows for the grant of stock options and stock purchase rights (e.g., restricted stock and restricted stock units). The 2009 Plan permits, in addition to awards of stock options, restricted stock and restricted stock units, the award of stock appreciation rights ("SARs"), performance units and performance shares as determined by the 2009 Plan Administrator.
- In the 2009 Plan, the power of the administrator to accelerate vesting or waive forfeiture restrictions for awards has been limited to circumstances involving the death, disability or retirement of the employee, director or consultant or in the event of a Change in Control of the Company.
- The exercise price for an option or SAR granted under the 2009 Plan may not be reduced without the prior consent of the Company's stockholders.

The 1999 Plan will be terminated as of the date the effective date of the 2009 Plan, meaning that while all options and awards then outstanding under the 1999 Plan will remain in effect, no additional option grants or awards may thereafter be issued under the 1999 Plan. As of December 31, 2008, 1,561,555 shares remained available for grant under the 1999 Plan.

Required Vote

The approval of the adoption of the 2009 Plan requires the affirmative vote of a majority of the votes cast on the proposal at the Annual Meeting.

Recommendation of the Board of Directors

THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT STOCKHOLDERS VOTE "FOR" THE ADOPTION OF THE RUDOLPH TECHNOLOGIES, INC. 2009 STOCK PLAN AND THE NUMBER OF SHARES RESERVEDFOR ISSUANCE THEREUNDER.

Summary of the 2009 Stock Plan

The following is a summary of the principal features of the 2009 Plan and its operation. This summary is qualified in its entirety by reference to the 2009 Plan itself set forth in Appendix A.

General. The 2009 Plan provides for the grant of equity awards to employees, directors and consultants. Options granted under the 2009 Plan may either be "incentive stock options" as defined in Code Section 422 or nonstatutory stock options, as determined by the Board.

Purpose. The general purposes of the 2009 Plan are to attract and retain the best available personnel for positions of substantial responsibility, to provide additional incentive to the employees, directors and consultants of the Company and to promote the success of the Company's business.

Administration. The 2009 Plan will be administered by the Board or a committee ("Committee") designated by the Board (in either case, the "Administrator").

Eligibility. The 2009 Plan provides that nonstatutory stock options, SARs, restricted stock, restricted stock units, performance units and performance shares may be granted to employees, directors and consultants of the Company and any parent or subsidiary. Incentive stock options may be granted only to employees. The Administrator will determine which eligible persons will be granted awards.

Shares Available under the 2009 Plan. The maximum aggregate number of shares that may be awarded and sold under the 2009 Plan is 5,000,000 shares plus any shares subject to any outstanding options or similar awards granted under the 1999 Plan that subsequently expire or otherwise terminate without having been exercised in full and shares issued pursuant to awards granted under the 1999 Plan that are forfeited to or repurchased by the Company. The shares may be authorized, but unissued, or reacquired common stock. No awards have been granted under the 2009 Plan.

If an award expires without being exercised in full, or, with respect to restricted stock or restricted stock units, is forfeited to or repurchased by the Company due to its failure to vest, the unpurchased or unissued shares (or forfeited or repurchased shares) which were subject to such awards will become available for future grant under the 2009 Plan (unless the 2009 Plan has terminated).

Upon exercise of a SAR settled in shares, the net number of shares issued pursuant to the award will cease to be available under the 2009 Plan. Shares actually issued under the 2009 Plan will not be returned to the 2009 Plan, except that if unvested shares subject to restricted stock, restricted stock units, performance shares or performance units are repurchased by the Company or forfeited to the Company due to their failure to vest, such shares will become available for future grant under the 2009 Plan. Shares used to pay the exercise price of an award or to satisfy the tax withholding obligations related to an award will become available for future grant or sale under the 2009 Plan. To the extent that an award under the 2009 Plan is paid out in cash, rather than shares, such cash payment will not result in reduction of the shares available for issuance under the 2009 Plan.

Prohibition on Repricing of Options or SARs. The exercise price for an option or SAR granted under the 2009 Plan may not be reduced without the prior consent of the Company's stockholders.

Option Exercise Price. The exercise price of options granted under the 2009 Plan is determined by the Administrator and must not be less than 100% of the fair market value of the Company's common stock ("Common Stock") at the time of grant. Options granted under the 2009 Plan expire as determined by the Administrator, but in no event later than 10 years from date of grant. No option may be exercised by any person after its expiration. Incentive stock options granted to stockholders owning more than 10% of the voting stock of the Company must have an exercise price per share no less than 110% of the fair market value at the time of grant and the term of such option may be no more than five years from the date of grant. The fair market value of the Common Stock is generally determined with reference to the closing sale price for the Common Stock (or the closing bid if no sales were reported) on the day of determination.

Exercise of Options. Options become exercisable at such times as are determined by the Administrator and are set forth in the individual award agreements. An option is exercised by giving notice to the Company in the form determined by the Administrator, specifying the number of full shares of Common Stock to be purchased and tendering payment of the purchase price. The method of payment of the exercise price for the shares purchased upon exercise of an option will be determined by the Administrator. The 2009 Plan permits payment to be made by cash, check, other shares of Common Stock, cashless exercise, promissory note (to the extent permitted by applicable law) or any other form of consideration permitted by applicable law, or any combination thereof.

Grant of Restricted Stock. Restricted stock awards may be granted to employees, directors or consultants of the Company at any time and from time to time as will be determined by the Administrator, in its sole discretion. Subject to the terms of the Plan, the Administrator will have complete discretion to determine (i) the number of shares subject to a restricted stock award granted to any participant, and (ii) any conditions that must be satisfied. Restricted stock awards shall have a minimum vesting period of three years from the date of the grant for any time-based vesting award and a minimum of one year from the date of the grant for any performance-based award, provided that a maximum of 10% of the Plan shares shall not be subject to such minimum vesting requirements and shall be determined by the Administrator, in its sole discretion.

Restricted Stock Agreement. Each restricted stock grant will be evidenced by an award agreement that will specify the number of shares granted and such other terms and conditions as the Administrator, in its sole discretion, will determine.

Grant of Restricted Stock Units. Restricted stock units may be granted to employees, directors or consultants of the Company at any time and from time to time as determined by the Administrator. Restricted stock units result in a payment to a participant only if the vesting criteria the Administrator establishes are satisfied. The Administrator may set vesting criteria based on the achievement of Company-wide, business unit, or individual goals (including continued employment), or any other basis determined by the Administrator in its discretion. The restricted stock units will vest at a rate determined by the Administrator; provided,

however, restricted stock unit awards shall have a minimum vesting period of three years from the date of the grant for any time-based vesting award and a minimum of one year from the date of the grant for any performance-based award, provided that a maximum of 10% of the Plan shares shall not be subject to such minimum vesting requirements and shall be determined by the Administrator, in its sole discretion. Upon satisfying the applicable vesting criteria, the participant will be entitled to the payout specified in the award agreement. The Administrator, in its sole discretion, may pay earned restricted stock units in cash, shares, or a combination thereof. On the date set forth in the award agreement, all unearned restricted stock units will be forfeited to the Company.

Restricted Stock Unit Agreement. Each restricted stock unit grant will be evidenced by an award agreement that will specify such terms and conditions as the Administrator, in its sole discretion, will determine.

Grant of Stock Appreciation Rights. Subject to the terms and conditions of the Plan, a Stock Appreciation Right may be granted to employees, directors or consultants of the Company at any time and from time to time as will be determined by the Administrator, in its sole discretion.

Exercise Price and Other Terms of Stock Appreciation Rights. The Administrator, subject to the provisions of the 2009 Plan, will have complete discretion to determine the terms and conditions of SARs granted under the 2009 Plan; provided that no SAR may have a term of more than 10 years from the date of grant and that the exercise price of a SAR may not have an exercise price below 100% of the fair market value of the Common Stock on the grant date. No SAR can be exercised by any person after its expiration.

Payment of Stock Appreciation Right Amount. Upon exercise of a SAR, the holder of the SAR will be entitled to receive payment from us in an amount determined by multiplying (i) the difference between the fair market value of a share on the date of exercise over the exercise price; times (ii) the number of shares with respect to which the SAR is exercised.

Payment upon Exercise of Stock Appreciation Right. At the discretion of the Administrator and as set forth in the applicable award agreement, payment to the holder of a SAR may be in cash, shares of Common Stock or a combination thereof.

Stock Appreciation Right Agreement. Each SAR grant will be evidenced by an award agreement that will specify the exercise price, the term of the SAR, the conditions of exercise, and such other terms and conditions as the Administrator, in its sole discretion, will determine.

Grant of Performance Units/Shares. Performance units and performance shares may be granted to employees, directors or consultants of the Company at any time and from time to time, as will be determined by the Administrator, in its sole discretion. The Administrator will have complete discretion in determining the number of performance units/shares granted to each participant.

Value of Performance Units/Shares. Each performance unit will have an initial value that is established by the Administrator on or before the date of grant. Each performance share will have an initial value equal to the fair market value of a share on the date of grant.

Performance Objectives and Other Terms. The Administrator will set performance objectives or other vesting provisions (including, without limitation, continued status as a service provider to the Company) in its discretion which, depending on the extent to which they are met, will determine the number or value of performance units/shares that will be paid out. Each award of performance units/shares will be evidenced by an award agreement that will specify the time period during which the performance objectives or other vesting provisions must be met ("Performance Period"), and such other terms and conditions as the Administrator, in its sole discretion, will determine. The Administrator may set performance objectives based upon the achievement of Company-wide, divisional, or individual goals, applicable federal or state securities laws, or any other basis determined by the Administrator in its discretion.

Vesting Period. The performance units/shares will vest at a rate determined by the Administrator; provided, however, performance units/shares awards shall have a minimum vesting period of three years from the date of the grant for any time-based vesting award and a minimum of one year from the date of the grant

for any performance-based award, provided that a maximum of 10% of the Plan shares shall not be subject to such minimum vesting requirements and shall be determined by the Administrator, in its sole discretion.

Earning of Performance Units/Shares. After the applicable Performance Period has ended, the holder of performance units/shares will be entitled to receive a payout of the number of performance units/shares earned by the participant over the Performance Period, to be determined as a function of the extent to which the corresponding performance objectives or other vesting provisions have been achieved. After the grant of a performance unit/share, the Administrator, in its sole discretion, may reduce or waive any performance objectives or other vesting provisions for such performance unit/share.

Form and Timing of Payment of Performance Units/Shares. The Administrator, in its sole discretion, may pay earned performance unit/share in the form of cash, in shares (which have an aggregate fair market value equal to the value of the earned performance unit/share at the close of the applicable Performance Period) or in a combination thereof.

Cancellation of Performance Units/Shares. On the date set forth in the award agreement, all unearned or unvested performance unit/share will be forfeited to the Company, and will be available for grant under the Plan.

Formula Awards to Outside Directors. Under the Plan, outside Directors will be entitled to receive all types of awards except Incentive Stock Options. All such grants of awards to outside Directors will be automatic, nondiscretionary and in accordance with the following provisions. No person will have any discretion to select which outside Directors will be granted awards or to determine the number of shares to be covered by such awards except as otherwise provided in the Plan. If options are granted to an outside Director, they will be Nonstatutory Stock Options and will be subject to the other terms and conditions of the Plan. Options granted to outside Directors shall have a term of 10 years and the exercise price for the shares subject to the options granted will be one hundred percent (100%) of the fair market value on the grant date. Outside Director awards will vest at a rate determined by the Administrator; provided, however, restricted stock unit awards shall have a minimum vesting period of three years from the date of the grant for any time-based vesting award and a minimum of one year from the date of the grant for any performance-based award, provided that a maximum of 10% of the Plan shares shall not be subject to such minimum vesting requirements and shall be determined by the Administrator, in its sole discretion. Restricted stock awarded to outside Directors will be issued for no cash consideration and will be forfeited and automatically transferred to and reacquired by the Company at no cost to the Company upon the date the Director ceases to provide services as a member of the Board. This forfeiture provision will lapse on the earlier of the date of the next annual meeting following the date of grant of the award or the December 31st of the calendar year following the calendar year in which the award is granted, provided that the participant continues to serve as a Director through such date. The Administrator in its discretion may change and otherwise revise the terms of awards granted to outside Directors, including, without limitation, the number of shares and exercise prices thereof, for awards granted on or after the date the Administrator determines to make any such change or revision.

Termination of Employment. The 2009 Plan gives the Administrator the authority to vary the terms of the individual award agreements. However, generally, if a participant ceases to provide ongoing service as an employee, director or consultant for any reason other than death or disability, then the participant will generally have the right to exercise his or her outstanding options and SARs for three months after the date of termination, but only to the extent that the participant was entitled to exercise such option or SAR at the date of such termination. If such termination is due to death or disability, the participant (or the participant's legal representative) will have the right to exercise an existing unexercised option or SAR at any time within 12 months following the termination date, but only to the extent that the participant was entitled to exercise such option or SAR at the date of such termination. In no event will an option or SAR be exercisable beyond its term.

Compliance with Code Section 409A. Awards will be designed and operated in such a manner that they are either exempt from the application of, or comply with, the requirements of Code Section 409A such that the grant, payment, settlement or deferral will not be subject to the additional tax or interest applicable under Code Section 409A, except as otherwise determined in the sole discretion of the Administrator. The Plan and

each award Agreement under the Plan is intended to meet the requirements of Code Section 409A and will be construed and interpreted in accordance with such intent, except as otherwise determined in the sole discretion of the Administrator.

Non-Transferability of Awards. Unless determined otherwise by the Administrator, an award granted under the 2009 Plan may not be sold, pledged, assigned, hypothecated, transferred, or disposed of in any manner other than by will or by the laws of descent or distribution and may be exercised, during the lifetime of the participant, only by the participant. If the Administrator makes an award granted under the 2009 Plan transferable, such award will contain such additional terms and conditions as the Administrator deems appropriate. Notwithstanding the foregoing, under no circumstance may unvested or unexercised awards be transferred for value or consideration.

Adjustments. In the event that any dividend or other distribution (whether in the form of cash, shares, other securities, or other property), recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase, or exchange of shares or other securities of the Company, or other change in the corporate structure of the Company affecting the shares occurs, the Administrator, in order to prevent diminution or enlargement of the benefits or potential benefits intended to be made available under the Plan, will adjust the number and class of shares that may be delivered under the Plan and/or the number, class, and price of shares covered by each outstanding award, the numerical share limits set forth in the Plan, and the number of shares issuable pursuant to awards to be granted to outside Directors under the Plan.

Dissolution or Liquidation. In the event of a liquidation or dissolution, the Administrator will notify each participant as soon as practicable prior to the effective date of such proposed transaction. To the extent that an award has not been previously exercised (with respect to options and SARs) or vested (with respect to other awards), an award will terminate immediately prior to the consummation of such proposed action.

Change in Control. In the event of a merger or Change in Control, each outstanding award shall be treated as the Administrator determines without a participant's consent, including, without limitation, that awards shall be assumed, or substantially equivalent awards shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof) with appropriate adjustments as to the number and kind of shares and prices; upon written notice to a participant, the participant's awards will terminate immediately prior to the consummation of such merger or Change in Control; outstanding awards will vest and become exercisable, realizable, or payable, or restrictions applicable to an award will lapse, in whole or in part prior to or upon consummation of such merger or Change in Control, and, to the extent the Administrator determines, terminate upon the effectiveness of such merger or Change in Control; the termination of an award in exchange for an amount of cash and/or property, if any, equal to the amount that would have been attained upon the exercise of such award or realization of the participant's rights as of the date of the occurrence of the transaction; the replacement of such award with other rights or property selected by the Administrator in its sole discretion; or any combination of the foregoing.

Options and SARs. In the event that the successor corporation does not assume or substitute for options and SAR awards, the participant shall fully vest in and have the right to exercise all of his or her outstanding options and SARs, including Shares as to which it would not otherwise be vested or exercisable. In addition, if an option or SAR is not assumed or substituted in the event of a Change in Control, the Administrator shall notify the participant in writing or electronically that the option or SAR shall be exercisable for a period of time determined by the Administrator in its sole discretion, and the option or SAR shall terminate upon the expiration of such period.

Restricted Stock and Restricted Stock Units. In the event that the successor corporation does not assume or substitute for a restricted stock, restricted stock unit, performance unit or performance share award, all restrictions on restricted stock and restricted stock units will lapse, and, with respect to awards with performance-based vesting, all performance goals or other vesting criteria will be deemed achieved at one hundred percent (100%) of target levels and all other terms and conditions met.

Outside Director Awards. With respect to awards granted to an outside Director that are assumed or substituted for, if on the date of or following such assumption or substitution the participant's status as a Director or a director of the successor corporation, as applicable, is terminated other than upon a voluntary resignation by the participant (unless such resignation is at the request of the acquirer), then the participant will fully vest in and have the right to exercise options and/or SARs as to all of the shares underlying such award, including those shares which would not otherwise be vested or exercisable, all restrictions on restricted stock and restricted stock units will lapse, and, with respect to performance units and performance shares, all performance goals or other vesting criteria will be deemed achieved at 100%) of target levels and all other terms and conditions met.

Amendment or Termination of the 2009 Plan. The Board may amend, alter, suspend or terminate the 2009 Plan or any part thereof from time to time, except that stockholder approval will be required for any amendment to the 2009 Plan to the extent required by any applicable laws; to materially increase the benefits accruing to participants under the Plan; to materially increase the number of securities which may be issued under the Plan; or to materially modify the requirements for participation in the Plan. No amendment, alteration, suspension or termination of the 2009 Plan may impair the rights of any participant without their written consent. In any event, the 2009 Plan will terminate 10 years from its effective date.

Federal Income Tax Information

Nonstatutory Stock Options. No taxable income is reportable by the recipient when a nonstatutory stock option with an exercise price equal to the fair market value of the underlying stock on the date of grant is granted to a participant. Upon exercise, the participant will recognize ordinary income in an amount equal to the excess of the fair market value (on the exercise date) of the shares purchased over the exercise price of the option. Any taxable income recognized in connection with an option exercise by an employee of the Company is subject to tax withholding by the Company. Any additional gain or loss recognized upon any later disposition of the shares would be capital gain or loss.

Incentive Stock Options. No taxable income is reportable by the recipient when an incentive stock option is granted or exercised (except for purposes of the alternative minimum tax, in which case taxation is generally similar to nonstatutory stock options). If the participant exercises the option and then later sells or otherwise disposes of the shares more than two years after the grant date and more than one year after the exercise date, the difference between the sale price and the exercise price will be taxed as capital gain or loss. If the participant exercises the option and then later sells or otherwise disposes of the shares before the end of the two or one year holding periods described above, he or she generally will have ordinary income at the time of the sale equal to the fair market value of the shares on the exercise date (or the sale price, if less) minus the exercise price of the option.

Stock Appreciation Rights. No taxable income is reportable by the recipient when a stock appreciation right with an exercise price equal to the fair market value of the underlying stock on the date of grant is granted to a participant. Upon exercise, the participant will recognize ordinary income in an amount equal to the amount of cash received and the fair market value of any shares received. Any additional gain or loss recognized upon any later disposition of the shares would be capital gain or loss.

Restricted Stock and Restricted Stock Units. A participant generally will not have taxable income at the time an award of restricted stock or restricted stock units are granted. Instead, he or she will recognize ordinary income in the first taxable year in which his or her interest in the shares underlying the Award becomes either (i) freely transferable, or (ii) no longer subject to substantial risk of forfeiture. However, the recipient of a restricted stock award may elect to recognize income at the time he or she receives the award in an amount equal to the fair market value of the shares underlying the award (less any cash paid for the shares) on the date the award is granted.

Performance Units and Performance Shares. A participant generally will not have taxable income at the time an award of performance units or performance shares are granted. Instead, he or she will recognize ordinary income in the first taxable year in which his or her interest in the shares underlying the award becomes either (i) freely transferable, or (ii) no longer subject to substantial risk of forfeiture. However, the

recipient of a performance unit or performance share award may elect to recognize income at the time he or she receives the award in an amount equal to the fair market value of the shares underlying the award (less any cash paid for the shares) on the date the award is granted.

Tax Effect for the Company. The Company generally will be entitled to a tax deduction in connection with an award under the 2009 Plan in an amount equal to the ordinary income realized by a participant and at the time the participant recognizes such income (for example, the exercise of a nonstatutory stock option). Special rules limit the deductibility of compensation paid to the Company's Chief Executive Officer (i.e., its principal executive officer) and to each of its three most highly compensated executive officers for the taxable year (other than the principal executive officer or principal financial officer).

Code Section 409A. Section 409A, which was added by the American Jobs Creation Act of 2004, provides certain new requirements on non-qualified deferred compensation arrangements. These include new requirements with respect to an individual's election to defer compensation and the individual's selection of the timing and form of distribution of the deferred compensation. Section 409A also generally provides that distributions must be made on or following the occurrence of certain events (e.g., the individual's separation from service, a predetermined date, or the individual's death). Section 409A imposes restrictions on an individual's ability to change his or her distribution timing or form after the compensation has been deferred. For certain individuals who are officers, subject to certain exceptions, Section 409A requires that such individual's distribution commence no earlier than six months after such officer's separation from service.

Awards granted under the 2009 Plan with a deferral feature will be subject to the requirements of Section 409A. If an award is subject to and fails to satisfy the requirements of Section 409A, the recipient of that award may recognize ordinary income on the amounts deferred under the award, to the extent vested, which may be prior to when the compensation is actually or constructively received. Also, if an award that is subject to Section 409A fails to comply with the provisions of Section 409A, Section 409A imposes an additional 20% federal income tax on compensation recognized as ordinary income, as well as interest on such deferred compensation. In addition, certain states such as California have adopted similar provisions.

THE FOREGOING IS ONLY A SUMMARY OF THE EFFECT OF FEDERAL INCOME TAXATION UPON THE PARTICIPANT AND THE COMPANY AS OF THE DATE HEREOF WITH RESPECT TO AWARDS UNDER THE 2009 PLAN AND DOES NOT PURPORT TO BE COMPLETE, AND REFERENCE SHOULD BE MADE TO THE APPLICABLE PROVISIONS OF THE INTERNAL REVENUE CODE. IN ADDITION, THIS SUMMARY DOES NOT DISCUSS THE TAX CONSEQUENCES OF A PARTICIPANT'S DEATH OR THE PROVISIONS OF THE INCOME TAX LAWS OF ANY MUNICIPALITY, STATE OR FOREIGN COUNTRY IN WHICH THE PARTICIPANT MAY RESIDE.

PROPOSAL 3

APPROVAL OF RUDOLPH TECHNOLOGIES, INC. 2009 EMPLOYEE STOCK PURCHASE PLAN

The Board of Directors is requesting that our stockholders approve a new employee stock purchase plan, the 2009 Employee Stock Purchase Plan, as amended (the "2009 ESPP"). The Board has adopted the 2009 ESPP, subject to stockholder approval at the Annual Meeting. If approved by our stockholders, the 2009 ESPP will become effective as of November 1, 2009 and will expire 20 years from such date, unless terminated earlier. The 2009 ESPP is intended to replace the Rudolph Technologies, Inc. 1999 Employee Stock Purchase Plan, as amended (the "1999 ESPP"), which otherwise expires on or about November 6, 2009; provided, however, if the stockholders approve this Proposal Three, the 1999 ESPP will expire after the final share purchase is made on October 31, 2009. The Board has determined that it is still in the best interests of the Company and its stockholders to have an employee stock purchase plan and is asking the Company's stockholders to approve the 2009 ESPP.

Changes Being Made to the 2009 ESPP

The principal difference between the 2009 ESPP and the 1999 ESPP is the update and clarification of various provisions within the 2009 ESPP as well as the term of the 2009 ESPP shall be 20 years as compared to the 10 year term of the 1999 ESPP

Required Vote

The approval of the 2009 ESPP requires the affirmative vote of a majority of the votes cast on the proposal at the Annual Meeting.

Recommendation of the Board of Directors

THE BOARD OF DIRECTORS RECOMMENDS THAT STOCKHOLDERS VOTE "FOR" THE ADOPTION OF THE RUDOLPH TECHNOLOGIES, INC. 2009 EMPLOYEE STOCK PURCHASE PLAN AND THE NUMBER OF SHARES RESERVED FOR ISSUANCE THEREUNDER

Summary of the 2009 Employee Stock Purchase Plan

The following is a summary of the principal features of the 2009 ESPP and its operation. The summary is qualified in its entirety by reference to the 2009 ESPP as set forth in Appendix B.

General. The 2009 ESPP was adopted by the Board in January 2009, subject to stockholder approval at the Annual Meeting. The purpose of the 2009 ESPP is to provide eligible employees with an opportunity to purchase shares of the Company's common stock ("Common Stock") through payroll deductions, to enhance the employees' sense of participation in the Company and its participating subsidiaries, and to provide an incentive for continued employment.

Shares Available for Issuance. If the Company's stockholders approve this proposal, the maximum number of shares of the Company's Common Stock to be reserved for issuance under the 2009 ESPP for sale under the Plan shall be 300,000 Shares, plus an annual increase to be added on the first day of the Company's fiscal year, beginning in 2011, equal to the lesser of (i) 300,000 Shares; (ii) two percent (2%) of the outstanding shares of Common Stock on such date; or (iii) a lesser amount determined by the Board.

Administration. The 2009 ESPP will be administered by the Board or a committee of members of the Board (in either case, the "Administrator"). Subject to the provisions of the 2009 ESPP, all questions of interpretation or application of the 2009 ESPP are determined by the Administrator and its decisions are final and binding upon all participants.

Eligibility. Each of the Company's (or the Company's participating subsidiaries) employees, being one who is customarily employed for at least 20 hours per week and more than five months in a calendar year by the Company or a designated subsidiary, provided that, in certain jurisdictions outside the United States employees employed for less than 20 hours per week or less than five months in a calendar year if so required by local laws (as determined by the Company), on the first trading day of the applicable offering period is eligible to participate in the 2009 ESPP. Notwithstanding the foregoing, no employee will be granted an option under the 2009 ESPP (i) to the extent that, immediately after the grant, such employee would own 5% or more of the total combined voting power of all classes of the Company's capital stock or the capital stock of any Company parent or subsidiary, or (ii) to the extent that his or her rights to purchase stock under all of the Company's employee stock purchase plans accrues at a rate which exceeds $25,000 worth of stock (determined at the fair market value of the shares at the time such option is granted) for each calendar year.

Offering Period. Each offering period under the 2009 ESPP will have a duration of approximately six months, commencing on the first trading day on or after May 1st and November 1st of each year of the 2009 ESPP and terminating on the last trading day of the applicable period ending six months later. During each offering period, shares of Common Stock may be purchased on behalf of the participant in accordance with the terms of the 2009 ESPP.

Eligible employees may participate in the 2009 ESPP by delivering a subscription agreement as provided by the Company prior to the beginning of an offering period authorizing payroll deductions pursuant to the 2009 ESPP. Such payroll deductions may not be less than 1% or exceed 15% of a participant's compensation during the offering period. For purposes of the 2009 ESPP, "compensation" shall mean the total compensation paid to an employee, including all salary, wages, overtime pay, commissions, bonuses, and other remuneration paid directly to the employee, but exclusive of reimbursements, income derived from equity grants and other compensation. Once an employee becomes a participant in the 2009 ESPP, the employee automatically will participate in each successive offering period until the employee withdraws from the 2009 ESPP or the employee's employment with the Company or one of the Company's participating subsidiaries terminates. On the first trading day of each offering period (the "enrollment date"), each participant automatically is granted an option to purchase shares of the Common Stock. The option expires at the end of the offering period or upon termination of employment, whichever is earlier, but is exercised on the last trading day of an offering period to the extent of the payroll deductions accumulated during such offering period.

Purchase Price. The purchase price for an offering period shall be equal to 95% of the fair market value of the Common Stock on the last day of the offering period.

Payment of Purchase Price. The purchase price of the shares is accumulated by payroll deductions made during each offering period. The number of whole shares that a participant may purchase in each offering period will be determined by dividing the total amount of payroll deductions withheld from the participant's compensation during that offering period by the purchase price; provided, however, that in no event will a participant be permitted to purchase during each offering period more than 3,000 shares, subject to automatic adjustment upon certain changes in capitalization. No fractional shares will be purchased under the 2009 ESPP and any payroll deductions accumulated in a participant's account which are not sufficient to purchase a full share will be retained in a participant's account for the subsequent offering period.

Payroll Deductions. All payroll deductions made for a participant are credited to the participant's account under the 2009 ESPP, are withheld in whole percentages only and are included with the Company's general funds. Funds received by the Company pursuant to exercises under the 2009 ESPP are used for general corporate purposes. A participant may not make any additional payments into his or her account.

Withdrawal. A participant may withdraw all but not less than all of his or her payroll deductions from an offering period no less than 21 days prior to the end of such offering period by giving notice to the Company in accordance with the withdrawal procedures then in effect. A participant's withdrawal from the 2009 ESPP will not affect his or her eligibility to participate in future offering periods. Once a participant withdraws from a particular offering period, however, that participant may not participate again in the same offering period. To participate in a subsequent offering period, the participant must re-enroll in the 2009 ESPP in accordance with the 2009 ESPP's enrollment procedures.

Termination of Employment. Upon termination of a participant's employment for any reason, his or her participation in the 2009 ESPP will immediately terminate and the payroll deductions credited to the participant's account will be returned to him or her and such participant's option will automatically terminate.

Changes in Capitalization. The number and class of Common Stock deliverable under the 2009 ESPP, the purchase price per share and the number of shares covered by each option under the 2009 ESPP will be proportionately and automatically adjusted for any increase or decrease in the number of issued and outstanding shares of the Company resulting from a stock split or the payment of a stock dividend on the Common Stock, or any other similar change in the corporate structure of the Company affecting the Common Stock.

Dissolution or Liquidation. In the event of the Company's proposed dissolution or liquidation, the offering period will be shortened by setting a new exercise date and the 2009 ESPP will terminate immediately prior to such proposed dissolution or liquidation, unless otherwise provided by the Administrator. If a participant's option is terminated pursuant to the preceding, the contributions then credited to such participant's account will be paid to him or her in cash without interest.

Merger or Asset Sale. In the event of a proposed sale of all or substantially all of the assets of the Company, or the merger of the Company with or into another corporation, each outstanding option under the 2009 ESPP will be assumed or an equivalent option will be substituted by the successor corporation or a parent or subsidiary of such successor corporation. In the event the successor corporation refuses to assume or substitute for the options, any offering period then in progress will be shortened by setting a new exercise date on which such offering period will end. The new exercise date will be prior to the proposed sale or merger. The Administrator will notify each participant in writing at least 10 business days prior to the new exercise date that the purchase date for the participant's option has been changed to the new exercise date and that the participant's option will be exercised automatically on the new exercise date unless the participant withdraws from the 2009 ESPP prior to such date.

Amendment and Termination of the 2009 ESPP. The Administrator may amend, terminate or suspend the 2009 ESPP at any time and for any reason. Generally, no such termination can adversely affect options previously granted and stockholder approval will be sought for certain changes as required by applicable law.

Upon its approval by the stockholders, the 2009 ESPP will continue until the earlier to occur of (i) the termination of the 2009 ESPP by the Board, or (ii) November 1, 2029 (the date which is 20 years from the effective date of the 2009 ESPP).

Federal Income Tax Consequences Relating to the 2009 ESPP

The federal income tax consequences of an employee's purchases under the 2009 ESPP will vary. The following discussion is only a summary of the general federal income tax rules applicable to the 2009 ESPP. Employees should consult their own tax advisors since a taxpayer's particular situation may be such that some variation of the rules described below will apply.

The 2009 ESPP and the right of participants to make purchases thereunder are intended to qualify under the provisions of Section 421 and 423 of the Code. Under those provisions, no income will be taxable to a participant at the time of grant of the option or purchase of shares. However, a participant may become liable for tax upon dispositions of shares acquired under the 2009 ESPP (or if he or she dies holding such shares), and the tax consequences will depend on how long a participant has held the shares prior to disposition.

If the shares are disposed of at least one year after the shares were acquired under the 2009 ESPP and at least two years after the first day of the offering period to which the shares relate, or if the employee dies while holding the shares, the following tax consequences will apply. The lesser of (a) the excess of fair market value of the shares at the time of such disposition over the purchase price of the shares (the "option price") or (b) the excess of the fair market value of the shares at the time the option was granted over the option price will be treated as ordinary income to the participant. Any further gain upon disposition generally will be taxed at long-term capital gain rates. If the shares are sold and the sales price is less than the option price, there is no ordinary income and the participant has a long-term capital loss equal to the difference. No deduction in respect of the disposition of such shares will be allowed to the Company.

If the shares are sold or disposed of (including by way of gift) before the expiration of either the two-year or the one-year holding period described above, the following tax consequences will apply. The amount by which the fair market value of the shares on the date the option is exercised (which is the last business day of the offering period and which is hereafter referred to as the "termination date") exceeds the option price will be treated as ordinary income to the participant. This excess will constitute ordinary income in the year of sale or other disposition even if no gain is realized on the sale or a gratuitous transfer of the shares is made. The balance of any gain will be treated as capital gain and will qualify for long-term capital gain treatment if the shares have been held for more than one year following the exercise of the option. Even if the shares are sold for less than their fair market value on the termination date, the same amount of ordinary income is attributed to a participant and a capital loss is allowed equal to the difference between the sales price and the value of such shares on such termination date. The Company, in the event of an early disposition, will be allowed a deduction for federal income tax purposes equal to the ordinary income realized by the disposing employee.

THE FOREGOING IS ONLY A SUMMARY OF THE EFFECT OF FEDERAL INCOME TAXATION UPON THE PARTICIPANT AND THE COMPANY AS OF THE DATE HEREOF WITH RESPECT TO THE 2009 ESPP AND DOES NOT PURPORT TO BE COMPLETE, AND REFERENCE SHOULD BE MADE TO THE APPLICABLE PROVISIONS OF THE INTERNAL REVENUE CODE. IN ADDITION, THIS SUMMARY DOES NOT DISCUSS THE TAX CONSEQUENCES OF A PARTICIPANT'S DEATH OR THE PROVISIONS OF THE INCOME TAX LAWS OF ANY MUNICIPALITY, STATE OR FOREIGN COUNTRY IN WHICH THE PARTICIPANT MAY RESIDE.

PROPOSAL 4

RATIFICATION OF APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTANTS

Although ratification by stockholders is not required by law, the Board of Directors is submitting the selection of Ernst & Young LLP for ratification as a matter of good corporate governance. The Audit Committee of the Board of Directors has recommended, and the Board of Directors has approved, the selection of Ernst & Young LLP as independent registered public accountants, to audit the financial statements of the Company for the year ending December 31, 2009 and recommends that the stockholders vote for ratification of such appointment. In the event of a negative vote on such ratification, the Board of Directors will reconsider its selection. Even if the selection is ratified, the Audit Committee may appoint a new independent registered public accounting firm at any time during the year if they believe that such a change would be in the best interests of the Company and its stockholders.

KPMG LLP had served as the Company's independent registered public accounting firm since 2002. Effective March 18, 2008, the Company, pursuant to the approval of the Company's Audit Committee, dismissed KPMG LLP as the Company's independent registered public accounting firm and effective March 19, 2008, engaged Ernst & Young LLP as the Company's independent registered public accounting firm.

The reports of KPMG LLP on the Company's financial statements for the year ended December 31, 2007 do not contain an adverse opinion or a disclaimer of opinion and are not qualified or modified as to uncertainty, audit scope or accounting principles, except as follows: KPMG LLP's report on the consolidated financial statements of the Company as of and for the year ended December 31, 2007 contained the following separate paragraph: As discussed in Note 12 to the consolidated financial statements, the Company adopted Financial Accounting Standards Board Interpretation No. 48, "Accounting for Uncertainties in Income Taxes," effective January 1, 2007.

During the year ended December 31, 2007 and through March 18, 2008, there were no disagreements with KPMG LLP on any matters of accounting principles or practices, financial statement disclosure, or auditing scope or procedure, which disagreements, if not resolved to KPMG LLP's satisfaction, would have caused KPMG LLP to make reference to the subject matter of the disagreement in connection with its audit report on the Company's financial statements for such year, and there were no reportable events as defined in Item 304(a)(1)(v) of Regulation S-K, except as follows:

As previously reported in the Company's Annual Report on Form 10-K filed on March 3, 2008, the Company's Management's Report on the Internal Control over Financial Reporting stated, and KPMG LLP's report on internal controls stated, that the process and procedures surrounding the preparation and review of the income tax provision did not include adequate management oversight and review controls as of December 31, 2007. Specifically, the Company did not ensure that effective oversight of the work performed by their outside tax advisor, Deloitte Tax LLP was exercised. Management is re-evaluating the design of the income tax accounting process and controls, implementing new and improved processes and controls, and increasing the level of review and discussion of significant tax matters and supporting documentation with the Company's outside advisor and senior finance management to address the material weakness identified and to enhance its internal controls.

During the year ended December 31, 2007 and through March 18, 2008, the Company did not consult with Ernst & Young LLP regarding any of the matters or events set forth in Item 304(a)(2)(i) and (ii) of Regulation S-K.

The Company provided KPMG LLP with a copy of its Current Report on Form 8-K filed on March 24, 2008 and requested that KPMG LLP furnish it with a letter addressed to the Securities and Exchange Commission stating whether it agrees with the statements made by the Company herein and, if not, stating the respects in which it does not agree. The letter from KPMG LLP to the Securities and Exchange Commission dated as of March 24, 2008 was attached as Exhibit 16.1 to the Company's Current Report on Form 8-K filed on March 24, 2008.

Representatives of Ernst & Young LLP are expected to be present at the Annual Meeting and will have the opportunity to make a statement or be available to respond to any questions.

Policy on Audit Committee Pre-Approval of Audit and Permissible Non-Audit Services of Independent Registered Public Accountants

The Audit Committee pre-approves all audit and permissible non-audit services provided by the Company's independent registered public accountants. These services may include audit services, audit-related services, tax and other services. Pre-approval is generally provided for up to one year, and any pre-approval is detailed as to the particular service or category of services and is generally subject to a specific budget. The independent registered public accountants and management are required to periodically report to the Audit Committee regarding the extent of services provided by the independent registered public accountants in accordance with this pre-approval and the fees for the services performed to date. The Audit Committee may also pre-approve particular services on a case-by-case basis. During 2008 and 2007, all services provided by Ernst & Young LLP and KPMG LLP were pre-approved by the Audit Committee in accordance with this policy.

Fees billed to the Company by Ernst & Young LLP during 2008

Audit Fees:

Audit fees billed to the Company by Ernst & Young LLP during the Company's 2008 year for review of the Company's annual financial statements and those financial statements included in the Company's quarterly reports on Form 10-Q and services that are normally provided by the independent registered public accountants in connection with statutory and regulatory filings or engagements for that calendar year totaled $854,225.

Audit Related Fees:

Audit related fees billed to the Company by Ernst & Young LLP during the Company's 2008 year for assurance and related services that are reasonably related to the performance of the audit or review of the Company's annual financial statements and are not reported under "Audit Fees" included fees for an employee benefit plan audit totaling $30,000.

Tax Fees:

Tax fees include fees for tax compliance, tax planning and tax advice. No such fees were billed to the Company by Ernst & Young LLP during 2008.

All Other Fees:

All other fees consist of fees for products and services other than the services described above. No such fees were billed to the Company by Ernst & Young LLP during 2008.

All of the fees listed in the chart above were pre-approved by the Audit Committee, which concluded that the provisions of such services by Ernst & Young LLP was compatible with the maintenance of that firm's independence in the conduct of its audit functions.

Fees billed to the Company by KPMG LLP during 2007

Audit Fees:

Audit fees billed to the Company by KPMG LLP during the Company's 2007 year for review of the Company's annual financial statements and those financial statements included in the Company's quarterly reports on Form 10-Q and services that are normally provided by the independent registered public accountants in connection with statutory and regulatory filings or engagements for that calendar year totaled $785,600.

Audit Related Fees:

Audit related fees billed to the Company by KPMG LLP during the Company's 2007 year for assurance and related services that are reasonably related to the performance of the audit or review of the Company's annual financial statements and are not reported under "Audit Fees" included fees for an employee benefit plan audit, fees for accounting consultations and services related to acquisition matters and merger due diligence totaling $18,500.

Tax Fees:

Tax fees include fees for tax compliance, tax planning and tax advice. Tax fees billed to the Company by KPMG LLP during 2007 totaled $12,000.

All Other Fees:

All other fees consist of fees for products and services other than the services described above. No such fees were billed to the Company by KPMG LLP during 2007.

All of the fees listed in the chart above were pre-approved by the Audit Committee, which concluded that the provisions of such services by KPMG LLP was compatible with the maintenance of that firm's independence in the conduct of its audit functions.

Vote Required

The affirmative vote of a majority of the Votes Cast will be required to ratify Ernst & Young LLP as the Company's independent registered public accountants.

The Company's Board of Directors unanimously recommends voting "FOR" the ratification of the appointment of Ernst & Young LLP as the Company's independent registered public accountants for the year ending December 31, 2009.

AUDIT COMMITTEE REPORT

The following is the Audit Committee's report submitted to the Board of Directors for the year ended December 31, 2008.

The Audit Committee of the Board of Directors has:

- Reviewed and discussed with management and the independent registered public accounting firm, together and separately, the Company's audited consolidated financial statements contained in its Annual Report on Form 10-K for the year ended December 31, 2008;
- Discussed with Ernst & Young LLP, the Company's independent registered public accountants, the matters required to be discussed by Statement on Auditing Standards No. 61;
- Received the written disclosures and the letter from Ernst & Young LLP required by Independence Standards Board Standard No. 1 and has discussed with Ernst & Young LLP its independence; and

Based on the foregoing review and discussion, the Audit Committee recommended to the Board of Directors that the audited financial statements be included in the Company's 2008 Annual Report on Form 10-K.

THE AUDIT COMMITTEE

JOHN R. WHITTEN (CHAIRMAN)
THOMAS G. GREIG
RICHARD F. SPANIER

EXECUTIVE COMPENSATION

Compensation Discussion and Analysis

Introduction/Corporate Governance

Compensation Committee Members and Charter

The Compensation Committee of the Rudolph Technologies' Board of Directors is comprised solely of outside directors. In general, the Compensation Committee is responsible for reviewing and recommending for approval by the Board of Directors the Company's compensation practices, including executive salary levels and variable compensation programs, both cash-based and equity-based. With respect to the compensation of the Company's Chief Executive Officer, the Compensation Committee reviews and approves the various elements of the Chief Executive Officer's compensation. With respect to other executive officers, the Compensation Committee reviews the recommendations for compensation for such individuals presented to the Committee by the Chief Executive Officer and the reasons thereof and approves such recommendations or, in its discretion, modifies the compensation packages for any such individuals. Base salary levels for executive officers of the Company have been generally established at or near the start of each year, and final bonuses for executive officers have been determined subsequent to the end of the fiscal year based upon such individual's performance and the audited financial performance of the Company.

The Compensation Committee of Rudolph Technologies, Inc. is currently composed of Directors Daniel Berry who is the Chairman of the Committee, Aubrey C. Tobey and Leo Berlinghieri, each of whom meet the requirements for membership on the Compensation Committee, including the independence requirements of Nasdaq.

The Compensation Committee has its own charter that sets forth its specific responsibilities, including the establishment of the policies upon which compensation of and incentives for the Company's executive officers will be based, the review and approval of the performance and compensation of the Company's executive officers, and review and approval of compensation for the Company's Directors. In addition, the charter designates that the Compensation Committee has the authority to secure the services of both internal and external advisers and consultants, including budgetary oversight thereof, establish subcommittees and administrate any of the Company's equity compensation plans adopted by the Board. The charter of the Compensation Committee is available on the Company's website at www.rudolphtech.com, on the Investor Relations page.

Compensation Consultants

From time to time the Compensation Committee has engaged the services of outside compensation consultants to provide advice on compensation plans and issues related to the Company's executive and non-executive employees. In 2008, the Committee engaged Towers Perrin as an independent consultant to conduct a comprehensive review of the Company's executive compensation program during the fall of 2008. Towers Perrin continued to provide assistance to the Committee in early 2009. Towers Perrin has performed no other work for the Company.

Role of Executives in Establishing Compensation

The Committee makes all decisions regarding executive compensation. With regard to compensation for executives other than the Chief Executive Officer (CEO), the Committee seeks input from the CEO. Each year, the CEO is responsible for establishing personal and corporate objectives for each of the Company executives. These objectives are reviewed and agreed upon by the CEO and the executive subject to the approval of the Compensation Committee. In addition, as part of the annual performance review of the Company's executives, the CEO assesses the performance of his direct reports and determined the merit increase, if any, that would be proposed for each individual. These merit increase proposals, along with each executive's personal and corporate objectives and their bonus target levels (based on a percentage of their fiscal year compensation), are then compiled by the CEO and submitted to the Compensation Committee for their review and consideration for approval. At the Compensation Committee meeting during which the executive compensation plans (bonuses and merit increases) were to be reviewed, the CEO attends the initial session to present the proposed plans and to answer questions. Thereafter, the Compensation Committee meet without the CEO being present to review, discuss and approve all executive compensation plans subject to any modifications made by the Compensation Committee.

Other than set forth above, no other executives attended the Compensation Committee meetings in 2008. Further, no executives of the Company attended any of the Board's Executive sessions.

Compensation Committee Activity

During 2008, the Compensation Committee of the Company met 14 times. As discussed above, the Company's Chairman and CEO, Paul McLaughlin met with the Compensation Committee in early 2008 in order to present the proposed compensation plans for each of the Company's executives as well as the Employee Cash Bonus Program for the non-executive employees. At each of its meetings held during 2008, the Compensation Committee met in executive session, without the presence of Mr. McLaughlin, any other Company executives or advisors, to review the relevant compensation matters at such times.

In 2008, the Compensation Committee took a number of actions. These included:

- Reviewing and approving the annual compensation of the Company CEO;
- Reviewing and approving the annual compensation for each executive of the Company;
- Reviewing and approving the Key Executive Bonus Plan;
- Reviewing and approving the Employee Cash Bonus Program;
- Reviewing and approving the equity incentive awards issued to the Company's executives; and
- Reviewing market compensation assessment prepared by Towers Perrin regarding the executive compensation program.

In reviewing and setting the annual compensation for each executive of the Company, the Compensation Committee reviewed the amounts payable under each of the elements of their respective compensation plans including their base salary, annual bonus and perquisites, as well as the equity grants for the individuals. In doing so, the Committee took into consideration both the Company's internal pay equity as well as the competitive environment within which the Company operates. In each instance, the Committee determined that the base salary for the individual executives was at an acceptable level, the bonus objectives were measurable and their achievement would result in appropriate value to the Company and that the perquisites were suitable for the related positions. The Compensation Committee assessed the contribution to the Company of each executive and made determinations of equity incentive awards for the executives consistent with their conclusions.

In early 2009, prior to the filing hereof, the Compensation Committee met to review the annual compensation of the Company CEO, the annual compensation for each executive officer, the Key Executive Bonus Plan, and the Employee Cash Bonus Program. In addition, the Committee reviewed the equity incentive awards for the Company's executives and other personnel. Given the current economic conditions, the

Committee elected to forego base salary increases to the executive team. Cash bonus awards were earned and paid for 2008 performance under the Key Executive Bonus Plan in accordance with the terms of the plan. The Committee suspended the Key Executive Bonus Plan for 2009. Similar to 2008, the Committee granted equity awards to the executive team in the form of time-vesting restricted stock and performance-vesting restricted stock, but valued at a reduced level relative to prior year grants.

Objectives of Compensation Programs

Compensation Philosophy

The Company's Compensation Committee believes that the most effective executive compensation program is one that is designed to reward the achievement of specific annual, long-term and strategic goals by the Company, and which aligns executives' interests with those of the stockholders by compensating executives based on specified financial performance, with the objective of improving stockholder value. The Compensation Committee evaluates both performance and compensation to ensure that the Company maintains its ability to attract and retain superior employees in key positions and that compensation provided to key employees remains competitive relative to the compensation paid to similarly situated executives at competitor companies. This is accomplished by obtaining third party compensation studies from time to time and by reviewing executive compensation programs of comparable, publicly held, high technology companies at the start of each year.

The Compensation Committee believes executive compensation packages provided by the Company to its executives, including the named executive officers, should include cash, selected perquisites and stock-based compensation that reward performance as measured against established goals. In addition, the Company strives to promote an ownership mentality among its key leadership and the Board of Directors; the Company's corporate policy provides that all directors and executives are required to maintain an outright investment in the Company equal to at least 1,000 shares within one year of the assumption of his or her position with the Company.

Benchmarking

As discussed in foregoing sections, the Company has engaged compensation consultants at various times in the development and evaluation of its compensation programs. When consultants aren't engaged, the Committee obtains market compensation information from internal resources at the Company. The Committee reviews data related to compensation levels and programs of other similar companies prior to making its decisions. In the fall of 2008, Towers Perrin was engages to perform a comprehensive assessment of compensation levels provided to executives. Data representing company proxy disclosures and industry compensation surveys was used in conducting this assessment. Towers Perrin developed a peer group of industry related companies based on the following criteria:

- Semiconductor equipment industry (publicly traded companies);
- Revenues ranging from approximately half to double the recent revenues of the Company;
- Market capitalization of less than $1 billion; and
- Competitors for business and employee talent.

The peer group, approved by the Committee, consists of the following 20 companies:

Advanced Energy Industries Inc.	FEI Co.
ATMI Inc.	FormFactor Inc.
Axcelis Technologies Inc.	LTX-Credence Corp.
AXT Inc.	Mattson Technology Inc.
Brooks Automation Inc.	MKS Instruments Inc.
Cabot Microelectronics Corp.	Nanometrics Inc.
Cohu Inc.	PDF Solutions Inc.
Cymer Inc.	Semitool Inc.
Eagle Test Systems Inc.	Ultratech Inc.
EMCORE Corp.	Veeco Instruments Inc.

Peer group pay practices are analyzed for base salary and short- and long-term incentives. Periodically, peer groups are used to evaluate other programs such as executive retirement, perquisites and severance policies. The peer group data is supplemented by broader technology industry data from compensation surveys to further facilitate the evaluation of compensation levels and design. Compensation levels are developed at the low (25^{th} percentile), middle (50^{th} percentile) and high (75^{th} percentile) end of the market for each pay element and in total. A similar process has been followed by consultants engaged by the Committee in prior years.

Compensation Policies

The Company has not established formal written policies regarding its compensation programs or the elements thereof with the exception of a set of guidelines that address stock ownership by executives and directors. These guidelines, which are discussed in detail below, were adopted to further align the interest of the directors and executives with the interests of shareholders, establish a stake in the long-term financial future of the Company for these individuals and further promote the Company's commitment to sound corporate governance. The Nominating and Governance Committee of the Company proposed the establishment of these guidelines which were approved and adopted by the Board of Directors. In the absence of a formal written policy, the Committee does believe in a set of core objectives and principles that it has used to develop the executive compensation program. The specific objectives of our compensation program are to:

- Attract and retain executive talent;
- Align compensation with Company and individual performance; and
- Foster an ownership mentality and create alignment with shareholders.

The following principles support the objectives and design of the compensation program:

- The compensation program will be fair and competitive, from an internal and external perspective, taking into account the role, unique qualifications and distinct responsibilities of each executive;
- A substantial portion of an executive's compensation will be at risk and linked to the achievement of both corporate and individual goals and changes in shareholder value;
- Retirement benefits will provide financial stability following employment but will not be the focal point of why executives choose to work for the Company;
- The use of perquisites and other executive benefits will serve a business purpose; and
- All compensation program elements taken as a whole will help focus executives to achieve the Company's financial goals.

Compensation Programs Design

Based on the objectives discussed in the foregoing section, the Compensation Committee has structured the Company's annual cash and long-term equity incentive compensation to motivate executives to achieve the

business goals set by the Company and reward the executives for achieving such goals. Compensation of the Company's executive officers is comprised of four parts, each selected to address different objectives: cash base salary, annual cash performance incentive bonuses, long-term incentives in the form of both time-vesting and performance restricted stock unit ("RSU") grants and fringe benefits (including perquisites).

In establishing these components of the executive compensation package, it is the Compensation Committee's intention to set total executive cash compensation at a sufficient level to attract and retain a strong motivated leadership team, but while remaining reasonable and in line with stockholder perception of overall fairness of executive compensation. The cash incentive bonus is included in compensation to align the financial incentives of the executives with the interests of the shareholders.

The Company's annual executive cash incentive bonuses are administered through its Key Executive Cash Bonus Plan program. The program provides guidelines for the calculation of annual non-equity incentive based compensation, subject to Compensation Committee oversight and modification. At its first meeting of each year, the Compensation Committee reviews the plan established for the succeeding year and approves the group of employees eligible to participate in the plan for that year.

In addition to the foregoing, each of the Company's executive officers is eligible to receive equity compensation in the form of stock option and/or RSU grants under the Company's 1999 Stock Plan. All full-time and part-time employees are eligible for stock option or RSU grants. It is believed that through the Company's broad-based plan, the economic interests of all employees, including the executives, are more closely aligned to those of the shareholders. It is also believed that this approach will allow the Company to use equity as an incentive in a balanced manner that supports the recruitment and retention of top talent. With the implementation of stock option expensing under SFAS No. 123R in 2006, the Company shifted its equity compensation grants away from stock options and toward RSU's, in accordance with the provisions set forth later herein. In doing so, the Company has retained the employee incentive associated with such grants while lessening the dilution to the Company's stock in light of the reduced number of shares granted.

Impact of Performance on Compensation

The performance of an executive has a direct impact on the compensation which he/she receives at the Company. On an annual basis, the Company's CEO reviews the performance and compensation for the Company's executive employees to determine any potential salary adjustment for the individual. This assessment takes into consideration a number of factors, including the Company's profitability; the business unit's performance, as applicable; the executive's individual performance and measurable contribution to the Company's success; and pay levels of similar positions with comparable companies in the industry. The CEO's recommendations for salary adjustments are reviewed by the Compensation Committee and presented to and approved by the Board of Directors prior to their implementation typically in the first quarter of each year.

At this same time, the Company's and the individual's performance to the Key Executive Cash Bonus Plan targets for the preceding year are assessed by the CEO and a proposed bonus payout, if any, is prepared. The Key Executive Cash Bonus Plan includes various incentive levels based on the participant's accountability and impact on Company operations, with target award opportunities that are established as a percentage of base salary. In 2008, these targets range from 10% of base salary to 80% of base salary for the executives in the plan. Payout is based upon achievement of the corporate and personal objectives with no payout being awarded unless the Company meets 80% of Board approved revenue target established as part of the plan. Personal objectives are awarded on an "all or nothing" basis. Failure to meet the personal objectives thereby has a negative impact on the ultimate bonus payout. In addition to a review of the prior year's objectives, the CEO and the executive also confer to propose new individual performance bonus targets for the coming year which are combined with the projected corporate targets into a discretionary incentive bonus proposal. The personal targets which are established are designed to ensure the addition of incremental value to the Company if they are achieved and are of sufficient challenge that the executive must dedicate focused effort to achieve them. The corporate component to the bonus goals are set based on the Company's then current strategic and financial plans. The preparation of these goals is performed annually to meet the changing nature of the Company's business. In 2008, the corporate performance targets were established based on the Company's

2008 revenues. Upon completion of the prior year's results and the upcoming year's proposed Key Executive Cash Bonus Plan for each participating executive employee, they are then submitted to and reviewed by the Compensation Committee. Thereafter, they are presented to and approved by the Board of Directors in order to issue the payment of the bonus, if any, and implement the new plans for the coming year. If, during the year, there are changes to the Key Executive Cash Bonus Plan that may be proposed, such are presented to the Compensation Committee to render a decision as to their implementation. The Compensation Committee may exercise positive or negative discretion in relation to an individual's compensation based upon their review.

For example, in 2007 the Key Executive Cash Bonus Plan was established such that 50% of a named executive officer's plan award was based upon achievement of corporate financial objectives relating to Company revenue and EPS. The remaining 50% of a named executive's plan award was based upon individual performance. During the third quarter of 2007, the Compensation Committee modified the performance targets for all participants in the Key Executive Cash Bonus Plan, including the named executives, due to a severe downturn in the industry. The Board modified the executive's plan awards to a maximum of 25% of the original award amount provided that the Company met certain fourth quarter corporate goals related to revenue and backlog. Individual performance goals were removed as a component of the 2007 bonus calculation at this time. These changes were implemented in order to incentivize and focus all employees to achieve the Company's near term goals for 2007 in light of the challenging industry conditions that were being faced. The Company achieved 50% of the modified target and the amounts due for 2007 were paid out in 2008. Therefore, for 2007, the named executive officers realized 12.5% of their original targeted bonus payout amount per the modified plan.

Finally, an executive's individual performance is a factor in the size of any discretionary equity grant that may be awarded by the Compensation Committee and Board of Directors as further long term incentive to the individual.

Based upon the foregoing, the compensation which an executive may realize in the course of a year can be impacted by the positive or negative performance of such individual. This relationship between performance and compensation is the objective with regard to the Key Executive Cash Bonus Plan under which the individual's compensation is proportionate to their performance to established, measurable goals. However, this relationship is more subjective when applied to salary adjustments and equity grants. In these cases, the executive's performance is evaluated by taking into consideration their contribution to the Company, the significance of the individual's achievements in relation to the overall corporate goals and mission, and their effectiveness in their roles and then weighed against the performance of other executives. Thus, there is no formula per se which is applied in determining relative salary adjustments or equity grants, however, industry norms and reference to comparative company data are considered as appropriate.

Elements of Compensation Section

Elements of Executive Compensation

Compensation for the Company's executives, including its named executive officers, includes the following basic components: base salary, discretionary incentive bonus and discretionary equity awards as well as a benefit package and certain perquisites. This design was adopted for executives by the Compensation Committee taking into consideration a number of parameters including the Company's compensation consultant's advice, comparable practices within the industry and the desire to achieve the goals discussed herein underlying the compensation plan. It is believed that as a result of this program the Company can attract, retain and motivate employees and reward the achievement of strategic corporate goals, thereby enhancing shareholder value.

Annually, the Compensation Committee reviews the elements of the compensation package as well as the overall package afforded to the executives. At this time, the Compensation Committee, in its discretion, can recommend adjustments to the elements of the program to the Board of Directors for their review and approval. This review would typically be performed coincident with the evaluation of the individual executive's performance in relation to their Key Executive Cash Bonus Plan goals, salary adjustment and equity grants, if any, as discussed above.

It is believed that each of the elements as well as the entire compensation package for Company executives is appropriate for the Company given its performance, industry, current challenges and environment. A discussion of the individual components of the Company's executive compensation package follows.

Base Salary

The Compensation Committee believes that the annual cash compensation paid to executives should be commensurate with both the executive's and the Company's performance. For this reason, the Company's executive cash compensation consists of base compensation (salary) and variable incentive compensation (annual bonus and equity awards).

The Company provides executives and other employees with base salary to compensate them for services rendered during the fiscal year. Base salaries for executive officers are established considering a number of factors, including the executive's individual performance, unique qualifications, role and responsibilities, measurable contribution to the Company's profitability and success; and the base salary levels of similar positions with comparable companies in the industry. The Compensation Committee supports the Company's compensation philosophy of moderation for elements such as base salary and benefits. Base salary decisions are made as part of the Company's formal annual review process and are influence by the performance of the Company and the individual.

On an annual basis, the CEO reviews the performance and compensation for the Company's executive employees to determine any salary adjustment for the individual. This assessment takes into consideration a number of factors, including the Company's profitability; the executive's individual performance and measurable contribution to the Company's success; and pay levels of similar positions with comparable companies in the industry and within similar technology industries. The CEO's recommendations for salary adjustments are reviewed by the Compensation Committee and presented to and approved by the Board of Directors prior to their implementation typically in the first quarter of each year.

In 2009, the Committee decided to forego base salary increases for each executive officer in light of the challenging economic conditions.

Short-Term Bonus Plan

An executive's annual performance award under the Key Executive Cash Bonus Plan generally depends on the financial performance of the Company relative to profit, revenue or other financial targets and the executive's individual performance. The incentive portion is generally set at a higher percentage for more senior officers, with the result that such officers have a higher percentage of their potential total cash compensation at risk. For 2008, the cash bonus opportunity for each named executive officer at target was as follows:

Named Executive	Target Bonus Opportunity as % of Base Salary
Paul F. McLaughlin	80%
Steven R. Roth	40%
Nathan H. Little	45%
Michael Plisinski	45%
D. Mason Brooks(1)	0%

(1) D. Mayson Brooks does not participate in the Key Executive Cash Bonus Plan because he has a sales commission plan.

Most executive employees participate in the Company's Key Executive Cash Bonus Plan which is designed to generate additional incentive for maximizing the employee's performance in realizing the corporate strategic goals and mission. This plan is individualized to each participating executive employee and generally is based upon the financial performance of the Company relative to profit and revenue targets and the executive's individual performance. For 2008, the Company used a corporate revenue target to determine cash bonus awards. Goals are developed and reviewed annually to meet the changing nature of the Company's business. The Key Executive Bonus Plan of each participating executive employee is submitted to and

reviewed by the Compensation Committee and then presented to and approved by the Board of Directors prior to their implementation each year.

An executive may earn a short-term incentive award due to success as it relates to the executive's individual goals, even though the Company's performance falls below the threshold of the corporate performance goal. The Committee has the ability to use its discretion in determining the size of any bonus award and has done so in recent years. The plan is not administered to comply with IRC 162(m) at the current time, although the Committee is aware of this rule and its potential benefits.

During the course of the year, the Company accrues for the Key Employee Cash Bonus. If, during the year, there are changes to the plan that may be proposed, such are presented to the Compensation Committee and then the Board or the Compensation Committee, as appropriate, renders a decision as to their implementation. Upon completion of the year, the individual's and the Company's results with respect to the performance targets are then assessed and presented to the Compensation Committee of the Board of Directors along with the proposed Plans for the next year. The Compensation Committee reviews the submitted payouts and suggests changes if necessary. Key Executive Cash Bonus Plan awards are paid out following completion of the annual audit by the Company's independent registered public accountants. This occurs usually in the first quarter of each year and an executive must still be on the payroll to receive payment.

In 2008, the Company exceeded the threshold level performance for corporate revenue. Based on this performance, participating executives realized 9.5% of their targeted corporate performance goal payout amounts.

In 2009, the Committee suspended the Key Executive Cash Bonus Plan for the fiscal year in light of the challenging business conditions. No award under this plan is available to executives in 2009. The Committee will likely reinstate this plan for 2010. For 2009, performance-based compensation will be provided through equity compensation plan.

Equity Compensation Plan

The Compensation Committee administers the Company's 1999 Stock Plan which was adopted by the Board of Directors on August 31, 1999 and approved by shareholder vote on November 6, 1999. Pursuant to this plan, employees and members of management, including the Company's executive officers, may receive annual grants of incentive stock options, non-qualified stock options and/or RSU's (collectively, "Grants") at or about the time of their performance reviews each year from a pool of shares previously approved by Rudolph shareholders. The Company's long-term incentive compensation program seeks to align the executives' interests with the Company's shareholders by rewarding successes in shareholder returns. Additionally, the Committee desires to foster an ownership mentality among executives by providing stock-based incentives as a portion of compensation. In determining which type of stock vehicles to include in the program, the Committee considers the following attributes:

- Increases in total shareholder return;
- Stock price appreciation; and
- Continued loyalty to and employment with the Company.

Over the past several years, the Committee has awarded executives with grants of stock options or time-vesting RSU's. In 2008, the Committee granted executives performance-vesting RSU's.

The purpose of the Grant program is to provide incentive to executives and other key employees of the Company to work to maximize long-term return to the Company's stockholders. The number of Grants awarded to each executive officer is made on a discretionary rather than formula basis by the Compensation Committee. Similarly, the allocation of shares from the Grant pool to the CEO is determined by the Compensation Committee. Regarding the Grant process, the Compensation Committee does not delegate any related function, and the named executive officers are not treated differently from other executive members.

In awarding Grants to the executive officers, the CEO and the Compensation Committee consider a number of subjective factors, including the executive's position and responsibilities at the Company, such executive's individual performance, the number of Grants held (if any) and other factors that they may deem relevant. Regarding equity grants to the Company's executives, the timing of each Grant typically coincides with each

year's first scheduled meeting of the Board of Directors and its Compensation Committee or upon completion of the Compensation Committee's review and approval process. Except in highly unusual circumstances or in the case of a newly hired executive, the Company does not engage in making Grants at other dates. The Grant date is established when the Company's Compensation Committee approves the Grant and all key terms have been determined which is typically the first Board meeting date of the calendar year. The value of an RSU grant is based on the closing market price of the Company's stock on the date of such grant.

In 2009, in conjunction with the freezing of executive salaries and the suspension of the Key Executive Cash Bonus Plan, the Committee awarded executives with a grant of RSU's valued at a level below previous year's awards. The Committee deemed this discount appropriate given the significant decrease in the stock price at the time of grant. The award is allocated equally between time-vesting and performance-vesting RSU's. Each executive will receive half of their award in RSU's that time-vest equally in 20% increments beginning in February 2010. The remaining half of the RSUs will be subject to attaining performance goals in two phases based on achieving revenue goals in two six month increments as established by the Committee. Eighty percent (80%) of these shares will be awarded upon achieving 80% of the revenue goal and will increase in a linear fashion to the awarding of 100% of the performance based RSU's for achieving 100% of the goal. No additional RSU's can be earned for exceeding the goal. The performance based RSU's which are ultimately awarded, if any, will time-vest equally in 20% increments beginning in February 2010.

Personal Benefits and Perquisites

All employees of the Company, including its executives, receive a benefit package ("Benefit Package") which includes the following components: health and dental insurance, elective vision care program, life insurance and accidental death and dismemberment coverage, 401(k) savings plan, short and long term disability insurance with supplemental income continuation, health care and dependent care flexible spending account programs, employee assistance program (EAP), tuition reimbursement plan, employee stock purchase plan, employee referral bonus program, and length of service awards. These benefits are consistent with industry practice and are necessary in recruiting and retaining qualified employees. In addition to the Benefit Package, executive employees receive the following perquisites: a car allowance of $500 per month, Company paid tax preparation services and Company paid membership in one airline executive club. The foregoing perquisites were determined based on a review of comparable company offerings performed by the Company and its compensation consultant and are evaluated annually as part of the Company's compensation review. It is believed that these perquisites are reasonable and consistent with the Company's overall compensation program to better enable the Company to attract and retain superior employees for key positions.

Employee Stock Purchase Plan

The Company established an Employee Stock Purchase Plan (the "ESPP") which was adopted by the Board of Directors on August 31, 1999 and approved by shareholder vote on November 6, 1999 and was amended on May 1, 2005. Under the terms of the ESPP, eligible employees may elect to have up to 15% of eligible compensation deducted from their pay and applied to the purchase of shares of Company common stock. The price the employee must pay for each share of stock is 95% of the fair market value of the Company common stock at the end of the applicable six month purchase period. The ESPP qualifies as a non-compensatory plan under section 423 of the Internal Revenue Code. The amendments to the ESPP of May 1, 2005 removed the "look back" provision that was previously a part of the ESPP and reduced the discount for purchasing shares of the Company's stock to five percent. These modifications to the ESPP were made at the time as a result of the Company's anticipated adoption of SFAS No. 123R.

Other Material Elements

The Company does not have any deferred compensation plans and there are no other material elements related to the Company's compensation of its executives that are not otherwise specified herein.

Employment Agreements

The Company utilizes employment agreements on a limited basis. In 2000, the Company entered into management agreements with Paul F. McLaughlin and Steven R. Roth each effective as of July 24, 2000. These individuals previously had employment agreements with the Company at the time when it was a private

entity. Then, at the time the Company went public, each executive's respective agreement was redrafted to reflect terms consistent with a public company (e.g. rights in equity holdings) and were executed. Mr. McLaughlin's management agreement provides for an initial term of two years with automatic renewals for additional two-year terms while Mr. Roth's provide for a term of one year with automatic renewals for additional one-year terms unless the Company or the executive delivers a notice of non-renewal to the other party. Mr. McLaughlin's agreement prohibits him from competing with the Company in any way or soliciting its employees during the term of his employment and for two years after termination of his employment. Mr. Roth's agreement prohibits him from competing with the Company in any way or soliciting its employees during their terms of employment and for one year after termination of their employment.

The management agreements provide that if the Company terminates an executive's employment without cause or if the executive terminates with good cause, the Company will be required to pay Mr. McLaughlin his base salary for two years, and in the case of Mr. Roth, one year, as well as a bonus amount equal to the amount earned in the year prior to the date of termination. Good cause is defined in the agreements as: (a) a material reduction in the duties and responsibilities of the executive; (b) the relocation of the executive outside of the Flanders, New Jersey area; (c) requiring the executive to make a material misstatement or omission in any financial report or governmental filing; or (d) a material breach of the agreement that is not corrected within 15 days of notice to the Board.

The agreements also provide that in the event of the termination of an executive's employment upon a change in control, which results in the executive not being offered a management agreement on comparable terms, Mr. McLaughlin will be entitled to receive his base salary for two years, or one year in the case of Mr. Roth. In this context, a change of control would occur if, among other events, the Company was sold to an independent third party and that independent third party acquired enough of the Company's stock to elect a majority of the Company's Board of Directors, or that independent third party acquired all, or substantially all, of the Company's assets. The management agreements with these executives provide that in the event the individual is terminated without cause or for good cause by the executive, the executive is entitled to continue group health or other group benefits as allowed by the Consolidated Omnibus Budget Reconciliation Act (COBRA) after the individual's termination. The Committee believes that providing severance in a change-in-control situation is beneficial to shareholders so that executives may remain indifferent when evaluating a transaction that may be beneficial to shareholders yet could negatively impact the continued employment of the executive.

Upon the merger with August Technology Corporation, the Company assumed certain executive employment agreements into which August Technology had entered. These included the agreements with following executives currently employed by the Company: D. Mayson Brooks effective March 1, 2002, Ardelle Johnson effective August 18, 2003, Jeffrey Nelson effective January 17, 2005 and Michael Plisinski effective April 22, 2005. Pursuant to these agreements, each executive has a set annual base salary that may be adjusted upward or downward by the Chief Executive Officer or Board of Directors. Further, the agreements set forth that the employment of each of these executives may be terminated by mutual written agreement, by either party with thirty days written notice, or by the Company for cause as defined therein. In the event the Company terminates the executive's employment without cause, or by mutual agreement, the individual is entitled to severance equal to a standard severance period, except where change in control provisions are met whereby the severance is equal to a change in control severance period. All of the agreements are identical in nature except for the specific terms set forth in the exhibit to the respective employment agreements defining employee title, manager, base salary, severance period, change in control severance and other special provisions. The severance period for Messrs. Brooks and Johnson is twelve months of base salary and the change in control severance is eighteen months of base salary. For Mr. Plisinski, the severance period is six months of base salary and the change in control severance is six months of base salary, while for Mr. Nelson they are three months and three months, respectively. The employment agreements with each of these executives provide that in the event the individual is terminated with or without cause upon 30 days notice or upon a change in control, the executive may elect to continue group health or other group benefits as allowed by COBRA, and the Company shall make the COBRA payments for the duration of the individual's severance period.

In addition to the foregoing, upon the hiring of Nathan Little, the Company agreed to include a severance stipulation as part of his respective employment package. Mr. Little has not entered into an employment

agreement with the Company. However, upon hiring Mr. Little it was agreed that in the event of his termination without cause or a change in control of the Company after which he did not receive an offer of equivalent job, title, responsibility, salary, benefits including no change in residency, he would receive severance in the amount of six months of his base salary. This stipulation was agreed to as an additional incentive negotiated by Mr. Little and the Company prior to commencing his employment.

Elements of Post-Termination Compensation

The Company does not have a practice of providing retirement benefits, including any supplemental executive retirement plans (SERPs), to its executives. Further, the Company does not have any policy which obligates it to provide severance benefits to its executives or directors. As discussed above, however, for the executives who have entered into employment agreements with the Company, these agreements each contain a severance and change-in-control provision. In addition, the Company retains the discretion to utilize the offer of severance and/or change-in-control protection as an incentive in its hiring of executives.

The Company maintains a policy of entering into an agreement with each of its new employees, including executives which contain both non-solicitation and non-competition provisions. The non-solicitation provisions apply for one year after termination of the individual's employment while the non-competition provisions are in effect during the individual's employment and for one year thereafter. Each of the Company's executives has entered into these covenants on the stated terms with the Company except Mr. McLaughlin whose non-solicitation and non-competition provisions are in place during and extend for two years after the end of his employment with the Company. In each case, these covenants have been implemented to protect the confidential information, goodwill and other assets of the Company that are transferred to the individual during his/her employment and to preclude possible unfair competition against the Company through the use of such information. For those individuals with employment agreements, should a breach of the non-solicitation or non-competition terms of their agreements occur, this could give rise to the Company declaring a breach under the agreement and terminating all severance payments thereunder.

Upon termination of an executive's employment with the Company, the individual is entitled to receive his or her base salary earned through the termination date, prorated on a daily basis, along with a payout for all accrued but unused vacation time earned though such date. Thereafter, further cash compensation to the executives is discontinued, except to the extent that severance or change-in-control payments must be made per the discussions above. This includes the removal of any obligation by the Company to pay any unpaid bonuses, except in the cases of Messrs. McLaughlin and Roth per their management agreements. In addition to the foregoing, upon termination, all perquisites and benefits cease. As discussed above, certain executives with the Company who have entered into employment agreements are entitled to elect to continue group health or other group benefits as allowed by COBRA. The Company retains the right to offer severance and/or payment of COBRA benefits to any individual who is terminated from the Company at its discretion.

In the event an individual who has received RSU grants from the Company ceases in their employment or engagement to provide services to the Company, under the Company's Restricted Stock Purchase Agreement and in accordance with the Company's 1999 Stock Plan, any RSU grants which are not vested as of the individual's termination date are forfeited immediately, without any further action by the Company. As Administrator of the Company's 1999 Stock Plan, the Compensation Committee retains the right to waive or amend such forfeiture of any unvested RSU grants at its discretion.

Stock Ownership/Retention Guidelines

The Company has established guidelines related to stock ownership and retention for its executives and its outside directors. The guidelines require that each executive, including the named executive officers, own at least 1,000 shares of Company common stock within one year of their date of hire and thereafter maintain such ownership status during the course of their employment with the Company. Similarly, each outside director of the Company is required to own at least 1,000 shares of Company common stock within one year of the date of their election to the Board of Directors and thereafter maintain such ownership status during their service as a Director of the Company. For those executives employed by the Company and outside directors serving on the Board at the time of the enactment of these policies, the one year timeframe extended from the date of the Board approval of the subject resolution. The Company has no other stock retention

policies applicable to its employees, including the named executive officers and other executives, or directors. The Company adopted these policies in order to further align the interest of the executives and outside directors with the interests of shareholders, have a stake in the long-term financial future of the Company and to further promote the Company's commitment to sound corporate governance while allowing them to prudently manage their personal financial affairs.

In assessing compliance with the foregoing guidelines, the Company takes into consideration only the ownership of common stock in the Company. To that end, restricted stock units and vested stock options do not qualify as shares in meeting the Company's stock ownership and retention guidelines.

The Company's stock ownership and retention guidelines are reviewed annually by the Nominating and Governance Committee of the Company. At their last review on May 19, 2008, the Nominating and Governance Committee reviewed the compliance of the Company's executives and directors with the terms of the policies. It was determined that all executives and directors who were with the Company and acting in their executive/ director capacities for over one year were in compliance with the ownership requirement of 1,000 shares of Company common stock then in effect. In the event that an individual were to not meet or drop below the requisite number of shares, the Company would inform the individual of the discrepancy and thereafter he/she would be required to acquire sufficient shares to reach the threshold amount. Should such individual continue to not own the required number of shares, additional action, including possible removal from the executive/director role would be considered by the Board. At this meeting, the Nominating and Governance Committee recommended to the Board and the Board approved adjusting the ownership and retention requirements as follows:

- Each outside Director of the Company is to own at least 2,500 shares of common stock in the Company within one year of their election to the Board and thereafter maintain such ownership status during their service as a Director of the Company;
- Each executive of the Company who is a direct report to the Chief Executive Officer is to own at least 2,500 shares of common stock in the Company within one year of their date of hire and thereafter maintain such ownership status during the course of their employment with the Company; and
- Each executive of the Company who is at the Vice President level but not a direct report of the Chief Executive Officer is to own at least 1,250 shares of common stock in the Company within one year of their date of hire and thereafter maintain such ownership status during the course of their employment with the Company.

The Nominating and Governance Committee has scheduled review of the Company's stock ownership and retention guidelines for its May 2009 meeting and at this annual review will evaluate the appropriateness of the foregoing stock ownership levels on the trailing three year weighed average of the Company's stock price.

The Company has no other policies regarding stock ownership or retention and does not have a policy which addresses hedging of company stock ownership by executives except for the Company's policy relating to insider trading.

Adjustments or Recovery of Prior Compensation

The Company does not presently have any policies or practices that provide for the recovery or adjustment of amounts previously awarded or paid to a named executive officer in the event that financial results or other performance measures on which an award or payment were based were to be restated or adjusted. However, the Sarbanes-Oxley Act of 2002 requires the Chief Executive Officer and Chief Financial Officer to disgorge any awards received that would not have been received but for any error that resulted in a restatement of financial results.

Impact of Regulatory Requirements

The Company's equity grant policies have been impacted by the implementation of SFAS No. 123R, which was adopted on January 1, 2006. Under this accounting pronouncement, the Company is generally required to value equity granted after adoption of SFAS No. 123R under the fair value method and expense those amounts in the income statement over the awards vesting period. Because of the financial impact of SFAS No. 123R, the current intent of the Company is to limit the number of shares granted. It is believed that

this strategy is best aligned with the Company's stakeholder philosophy because it is intended to limit future earnings dilution from options while at the same time retains the broad-based stock option plan, which the Company believes is important to employee commitment.

The Company's equity compensation program is shareholder approved and is structured to comply with Internal Revenue Code Sections 162(m). Under Section 162(m) of the Internal Revenue Code, a limitation was placed on tax deductions of any publicly-held corporation for individual compensation to certain executives of such corporation exceeding $1,000,000 in any taxable year, unless the compensation is performance-based. The Company has no individuals with non-performance based compensation paid in excess of the Internal Revenue Code Section 162(m) tax deduction limit.

Conclusion

In reviewing its compensation programs, the Company has concluded that each element of compensation as well as the total compensation delivered to its named executive officers as well as its other executives are reasonable, appropriate and in the best interests of the Company and its shareholders. This is due to the fact that the programs meet the Company's goals of establishing a compensation package that attracts and retains a strong motivated leadership team, aligns the financial incentives of the executives with the interests of the shareholders, and rewards the achievement of specific annual, long-term and strategic goals by the Company. At the same time, the compensation package remains consistent with those offered by competitive companies within the industry. It is believed that the compensation programs established by the Company have enabled it to recruit and secure a talented and motivated leadership team by which the Company drives toward the ultimate objective of improving stockholder value.

COMPENSATION COMMITTEE REPORT ON EXECUTIVE COMPENSATION

We, the Compensation Committee of the Board of Directors, have reviewed and discussed the Compensation Discussion and Analysis ("CD&A") within the Executive Compensation section of this Proxy Statement with the management of the Company. Based on such review and discussion, we are of the opinion that the executive compensation policies and plans provide appropriate compensation to properly align Rudolph Technologies, Inc.'s performance and the interests of its stockholders through the use of competitive and equitable executive compensation in a balanced and reasonable manner, for both the short and long-term. Accordingly, we have recommended to the Board of Directors that the CD&A be included as part of this proxy filing.

THE COMPENSATION COMMITTEE

DANIEL H. BERRY (CHAIRMAN)
LEO BERLINGHIERI
AUBREY C. TOBEY

Summary Compensation Table

The table below sets forth information for the most recently completed year concerning the compensation of the Chief Executive Officer, the Chief Financial Officer, the other most highly compensated executive officers and the most highly compensated non-executive officer of the Company who were serving as such at the end of the fiscal year ended December 31, 2008 (together, the "Named Executive Officers"):

Name and Principal Position	Year	Salary	Stock Awards (1)	Option Awards (1)	Non-Equity Incentive Plan Compensation(2)	All Other Compensation(3)	Total
Paul F. McLaughlin	2008	$565,456	$594,877	—	$125,556	$22,064	$1,307,953
Chairman and Chief Executive Officer	2007	$532,980	$540,803	—	$ 40,541	$18,889	$1,133,213
Steven R. Roth	2008	$272,370	$143,011	—	$ 47,984	$18,014	$ 481,379
Senior Vice President, Finance and Administration and Chief Financial Officer	2007	$257,465	$132,672	—	$ 13,013	$17,714	$ 420,864
Nathan H. Little	2008	$259,719	$179,258	—	$ 44,737	$18,564	$ 502,278
Executive Vice President and General Manager of Inspection Business Unit	2007	$245,023	$169,272	—	$ 14,068	$18,708	$ 447,071
Michael P. Plisinski	2008	$247,188	$ 98,680	$27,073	$ 21,544	$ 6,832	$ 401,317
Vice President and General Manager of Data, Analysis & Review Business Unit	2007	$233,192	$ 84,171	$79,675	$ 13,303	$ 6,710	$ 417,051
D. Mayson Brooks	2008	$338,234	$ 55,178	$30,713	—	$ 5,581	$ 429,706
Vice President, Global Sales	2007	$307,149	$ 45,610	$34,125	—	$ 5,595	$ 392,479

(1) For more information regarding the Company's assumptions made in the valuation of restricted stock units and stock options, see Note 11 to the financial statements included in the Company's Form 10-K for the year ended December 31, 2008.

(2) Represents performance bonus awards under the key executive cash bonus plan. With respect to the 2007 amounts, the performance bonus awards were earned in 2007, but paid in 2008. With respect to the 2008 amounts, the performance bonus awards were earned in 2008, but paid in 2009.

(3) The table below details the 2008 components of this column.

Name	Matching Contribution to 401(k)	Insurance(a)	Perquisites	Total "All Other Compensation"
Paul F. McLaughlin	$6,900	$864	$14,300(b)	$22,064
Steven R. Roth	$6,900	$864	$10,250(c)	$18,014
Nathan H. Little	$6,900	$864	$10,800(d)	$18,564
Michael P. Plisinski	$5,968	$864	$ —*	$ 6,832
D. Mayson Brooks	$4,717	$864	$ —*	$ 5,581

* Less than $10,000 of perquisites in the aggregate, and therefore, zero perquisites disclosed.

(a) Insurance is defined as the premium associated with coverage under the group term life insurance and accidental death and dismemberment insurance plans provided by the Company to its employees. Coverage is equal to the lesser of two times salary or $450,000.

(b) Perquisites include automobile allowance ($6,000), tax return preparation ($8,000), and reimbursement of executive airline club membership.

(c) Perquisites include automobile allowance ($6,000), tax return preparation ($3,900) and reimbursement of executive airline club membership.

(d) Perquisites include automobile allowance ($6,000), tax return preparation ($4,000) and the amount paid by the Company for opting out of health insurance coverage.

Grants of Plan-Based Awards

The following table sets forth information with respect to plan-based restricted stock awards granted in 2008 to the Named Executive Officers. The dollar amounts indicated under the "Grant Date Fair Value" is the full fair value of each grant, in accordance with the applicable accounting literature, which is greater than the amortization costs the Company recognized on its fiscal year 2008 financial statements with respect to such grant.

		Estimated Future Payouts Under Non-Equity Incentive Plan Awards			All Other Stock Awards	
Name	Grant Date	Threshold	Target	Maximum	Number of Units(1)	Grant Date Fair Value
Paul F. McLaughlin						
Performance-based	May 27, 2008	—	$333,518	$444,691	3,800	$ 38,000
Time-based	May 27, 2008	—	—	—	40,000	$400,000
Steven R. Roth						
Performance-based	May 27, 2008	—	$107,226	$107,226	832	$ 8,320
Time-based	May 27, 2008	—	—	—	8,750	$ 87,500
Nathan H. Little						
Performance-based	May 27, 2008	—	$112,545	$112,545	950	$ 9,500
Time-based	May 27, 2008	—	—	—	10,000	$100,000
Michael P. Plisinski						
Performance-based	May 27, 2008	—	$109,086	$109,086	713	$ 7,130
Time-based	May 27, 2008	—	—	—	7,500	$ 75,000
D. Mayson Brooks						
Performance-based	May 27, 2008	—	—	—	475	$ 4,750
Time-based	May 27, 2008	—	—	—	5,000	$ 50,000

(1) These restricted stock units will vest 20% on January 31, 2009 and each of the subsequent four anniversaries of that vest date. For additional information, see "Compensation Discussion and Analysis."

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth information with respect to outstanding equity awards held by the Named Executive Officers as of December 31, 2008. The aggregate dollar values indicated in the table below for equity incentive plan awards are the market or payout values and not the SFAS No. 123R values or the compensation expense recognized by the Company on its financial statements for fiscal year 2008 with respect to its long-term equity incentive plan awards. Such compensation expenses amounts, or the amortization pursuant to the applicable accounting literature is provided in the "Summary Compensation Table" and the table under "Grants of Plan Based Awards" above.

		Option Awards(2)				Stock Awards	
Name	Grant Date(1)	Number of Securities Underlying Unexercised Options Excercisable	Number of Securities Underlying Unexercised Options Unexercisable	Option Exercise Price	Option Expiration Date	Number of Units of Stock That Have Not Vested(3)	Market Value of Units of Stock That Have Not Vested(4)
Paul F. McLaughlin ...	11/11/1999	125,000	—	$16.00	11/10/2009		
	1/26/2001	125,000	—	$40.13	1/25/2011		
	10/19/2001	30,000	—	$23.40	10/18/2011		
	10/18/2002	35,000	—	$14.62	10/17/2012		
	1/29/2003	150,000	—	$16.41	1/28/2013		
	1/29/2004	75,000	—	$26.20	1/28/2014		
	1/27/2005					20,000	$ 70,600
	2/16/2006					21,000	$ 74,130
	2/1/2007					64,000	$225,920
	5/27/2008					40,000	$141,200

Name	Grant Date(1)	Option Awards(2)				Stock Awards	
		Number of Securities Underlying Unexercised Options Excercisable	Number of Securities Underlying Unexercised Options Unexercisable	Option Exercise Price	Option Expiration Date	Number of Units of Stock That Have Not Vested(3)	Market Value of Units of Stock That Have Not Vested(4)
	5/27/2008					38,000	$134,140
Steven R. Roth.	11/11/1999	68,269	—	$16.00	11/10/2009		
	1/26/2001	50,000	—	$40.13	1/25/2011		
	10/19/2001	15,000	—	$23.40	10/18/2011		
	10/18/2002	10,000	—	$14.62	10/17/2012		
	1/29/2003	45,000	—	$16.41	1/28/2013		
	1/29/2004	25,000	—	$26.20	1/28/2014		
	1/27/2005					5,800	$ 20,474
	2/16/2006					4,800	$ 16,944
	2/1/2007					14,000	$ 49,420
	5/27/2008					8,750	$ 30,888
	5/27/2008					832	$ 2,937
Nathan H. Little.	5/22/2001	25,000	—	$50.30	5/21/2011		
	10/19/2001	15,000	—	$23.40	10/18/2011		
	1/29/2003	75,000	—	$16.41	1/28/2013		
	1/29/2004	35,000	—	$26.20	1/28/2014		
	1/27/2005					8,200	$ 28,946
	2/16/2006					6,000	$ 21,180
	2/1/2007					16,000	$ 56,480
	5/27/2008					10,000	$ 35,300
	5/27/2008					950	$ 3,354
Michael P Plisinski(5). .	7/3/2003	30,500	—	$ 9.32	8/1/2010		
	2/6/2004	1,324	—	$24.20	2/6/2014		
	10/22/2004	921	—	$10.00	10/22/2014		
	12/30/2004	7,624	—	$13.62	12/30/2014		
	3/7/2005	2,329	—	$15.87	3/7/2015		
	4/29/2005	26,687	—	$15.48	4/29/2015		
	7/21/2005	735	—	$16.71	7/21/2015		
	1/25/2006	7,150	4,764	$14.81	1/25/2016		
	5/23/2006					6,000	$ 21,180
	2/1/2007					14,000	$ 49,420
	5/27/2008					7,500	$ 26,475
	5/27/2008					713	$ 2,517
D. Mayson Brooks(6) . .	4/5/2002	5,718	—	$18.68	4/5/2009		
	2/6/2004	4,766	—	$24.20	2/6/2014		
	4/30/2004	1,467	—	$17.19	4/30/2014		
	3/7/2005	1,926	—	$15.87	3/7/2015		
	7/21/2005	377	—	$16.71	7/21/2015		
	1/25/2006	2,704	5,404	$14.81	1/25/2016		
	5/23/2006					3,000	$ 10,590
	2/1/2007					8,000	$ 28,240
	5/27/2008					5,000	$ 17,650
	5/27/2008					475	$ 1,677

(1) For better understanding of this table, we have included an additional column showing the grant date of stock options and restricted stock units.

(2) Stock options became exercisable in accordance with the vesting schedule below:

Grant Date	Vesting
11/11/1999	1/5 per year on the anniversary of the grant date
1/26/2001	1/5 per year on the anniversary of the grant date
5/22/2001	1/5 per year on the anniversary of the grant date
10/19/2001	1/5 per year on the anniversary of the grant date
4/5/2002	Full vesting at grant date
10/18/2002	1/5 per year on the anniversary of the grant date
1/29/2003	1/5 per year on the anniversary of the grant date
7/3/2003	1/5 per year on the anniversary of the grant date and vesting accelerated on 2/15/06
1/29/2004	1/5 per year on the anniversary of the grant date
2/6/2004	Full vesting at grant date
4/30/2004	Full vesting at grant date
10/22/2004	Full vesting at 120 days
12/30/2004	1/3 at grant date and in years 2 and 3
3/7/2005	Full vesting at grant date
4/29/2005	1/3 at grant date and in years 2 and 3
7/21/2005	Full vesting at grant date
1/25/2006	1/5 at grant date and in years 2, 3, 4 and 5

(3) Restricted stock units vest in accordance with the schedule below:

Grant Date	Vesting
1/27/2005	1/5 per year on the anniversary of the grant date
2/16/2006	1/5 per year on the anniversary of the grant date
2/1/2007	1/5 per year on the anniversary of the grant date
5/27/2008	1/5 on January 31, 2009 and 1/5 per year on the anniversary of that vest date

(4) Based on the Company's common stock closing price of $3.53 on December 31, 2008.

(5) Mr. Plisinski's outstanding stock options were assumed through the merger of the Company with August Technology on February 15, 2006.

(6) Mr. Brooks' outstanding stock options were assumed through the merger of the Company with August Technology on February 15, 2006.

Option Exercises and Stock Vested

The Company has not granted stock option awards to the Named Executive Officers with respect to a fiscal year after 2004, excluding the stock options assumed in the August Technology merger on February 15, 2006. No other options were granted in 2005 or any subsequent year. The following table sets forth information with respect to the exercise of stock options and vesting of restricted stock by the Named Executive Officers during 2008:

	Option Awards		Stock Awards	
Name	Number of Shares Acquired on Exercise	Value Realized on Exercise	Number of Shares Acquired on Vesting	Value Realized on Vesting
Paul F. McLaughlin	—	$—	33,000	$322,450
Steven R. Roth	—	$—	8,000	$ 78,133
Nathan H. Little	—	$—	10,100	$ 98,557
Michael P. Plisinski	—	$—	5,500	$ 55,160
D. Mayson Brooks	—	$—	3,000	$ 30,080

The Company does not have a pension program nor does it offer non-qualified deferred compensation.

Executive Officers

Set forth below is certain information regarding the executive officers of the Company and their ages as of March 31, 2008. Information relating to Paul F. McLaughlin is set forth above under the caption "PROPOSAL 1 — ELECTION OF DIRECTORS — Nominees."

Nathan H. Little, age 57, has served as the Company's Executive Vice President and General Manager, Inspection Business Unit since February 2006. From July 2004 to February 2006, Mr. Little served as Executive Vice President responsible for global sales, marketing and new business development. From January 2003 to July 2004, Mr. Little served as the Company's Senior Vice President of Operations responsible for engineering and manufacturing. Mr. Little has been a Vice President since he joined the Company in May 2001. From 1986 through 2001, Mr. Little held various positions with Philips Electronics where he last served as Vice President, NPR Purchasing for Philips Electronics North America. Mr. Little received a B.S. in Mechanical Engineering from Northwestern University, an M.S. in Mechanical Engineering from the University of Minnesota and an M.B.A. from Harvard University Graduate School of Business.

Steven R. Roth, age 48, has served as the Company's Senior Vice President, Finance and Administration and Chief Financial Officer since February 2002. From September 1996 to February 2002, Mr. Roth served as the Company's Vice President, Finance and Administration and Chief Financial Officer. From August 1991 to August 1996, Mr. Roth served as a Director of Corporate Finance for Bell Communications Research, now called Telcordia, a research and development company serving the telecommunications industry. Mr. Roth is a C.P.A. and holds a B.S. in Accounting from Villanova University.

D. Mayson Brooks, age 50, has served as the Company's Vice President of Global Sales since December 2006 and prior to that as the Company's Vice President of Global Sales, Inspection from February 2006 when the Company merged with August Technology Corporation to December 2006. From July 1999 to February 2006, Mr. Brooks served in various Vice President positions in the areas ofsales, marketing and field operations for August Technology. Mr. Brooks holds a B.S. in Engineering from the United States Naval Academy and an M.B.A. from the University of North Carolina.

Scott Danciak, age 39, has served as the Company's Vice President of Engineering for the Inspection Business Unit since June 2006. From March 2005 to June 2006, Mr. Danciak served as the Company's Director of Thin Film Development and from September 2004 to March 2005 he served as the Senior Manager for Thin Film Development. From September 2003 to September 2004, Mr. Danciak served as the Company's Manager of Hardware Engineering. Prior to that, he served the Company in various engineering management and staff positions since 1997. Mr. Danciak holds a B.S. in Electrical Engineering from Johns Hopkins University.

Robert DiCrosta, age 61, has served as the Company's Vice President of Global Customer Support since February 2002. From July 2000 to February 2002, Mr. DiCrosta served as the Director of Global Customer Support. Prior to that, he served in various positions in Customer Support and Finance with other high tech equipment manufacturers. Mr. DiCrosta received a B.S. in Marketing from the University of Bridgeport and an M.B.A. in Finance and International Finance from New York University.

Ajay Khanna, age 49, has served as the Company's Vice President of International Accounts since December 2006 and prior to that as the Company's Vice President of International Sales, Metrology from February 2006 to December 2006. Mr. Khanna also served as Vice President of International Sales from February 2002 to February 2006. Prior to that, he served in various international sales positions and has been with the Company since 1986. Mr. Khanna received a B.S. in Electrical Engineering from Clarkson University and an M.B.A. from the University of Michigan Business School.

Robert A. Koch, age 47, has served as the Company's Vice President and General Counsel since May 2003. From April 1986 to May 2003, Mr. Koch was employed by Howmedica Osteonics Corp., the orthopaedic implant subsidiary of Stryker Corporation, where he was their in-house counsel for 12 years and last served as their Director of Legal Affairs. Mr. Koch holds a B.S. in Chemical Engineering and an M.S. in

Biomedical Engineering, both from Rutgers University. Mr. Koch earned his J.D. from Rutgers School of Law — Newark in 1991 and is admitted to practice in New Jersey and New York.

John R. Kurdock, age 64, has served as the Company's Vice President and General Manager, Metrology Business Unit since July 2007. From November 2006 to July 2007, Mr. Kurdock served as the Company's Assistant General Manager and Vice President, Metrology Business Unit and prior to that as the Company's Vice President of Manufacturing, Metrology from February 2006 to November 2006. Mr. Kurdock joined the Company as Vice President of Manufacturing in January 2005. From June 2003 to January 2005, Mr. Kurdock was an independent consultant specializing in the semiconductor capital equipment industry. From January 1997 to June 2003, Mr. Kurdock was the Vice President of Operations for Electro Scientific Industries, a semiconductor capital equipment manufacturer. Mr. Kurdock holds a B.S. in Mechanical Engineering from Carnegie Mellon University.

Ardelle R. Johnson, age 54, has served as the Company's Vice President of Corporate Marketing since February 2006 when the Company merged with August Technology Corporation. From August 2003 to February 2006, Mr. Johnson served as Vice President of Marketing for August Technology. From June 1980 to April 2003, Mr. Johnson was employed by FSI International Inc., a semiconductor capital equipment company, serving most recently as Vice President of Sales and Marketing. He holds a B.S. in Chemistry from the University of Minnesota and an M.S. from the University of Wisconsin.

Christopher J. Morath, age 40, has served as the Company's Vice President of Operations, Metrology Business Unit, since August 2007. From November 2006 to August 2007, Mr. Morath served as the Company's Director of Manufacturing Operations, Metrology Business Unit. From January 2004 to November 2006, Mr. Morath served as the Company's Director of Marketing and prior to that served for three years as Director of Product Development in Engineering. Mr. Morath received a B.A. in Physics from Boston University, an M.S. and Ph.D. in Condensed Matter Physics from Brown University, and an M.B.A. from the Wharton School of the University of Pennsylvania.

Jeffrey T. Nelson, age 53, has served as the Company's Vice President of Manufacturing, Inspection since February 2006 when the Company merged with August Technology Corporation. From August 2004 to February 2006, Mr. Nelson served as August Technology's Vice President of Manufacturing. From September 1998 to March 2004, he served as Director of Manufacturing at Elkay Corp, a supplier of sinks, plumbing and cabinetry to retailers. Mr. Nelson received a B.S. in Business Administration from the University of Minnesota.

Michael P. Plisinski, age 39, has served as the Company's Vice President and General Manager, Data Analysis and Review Business Unit since February 2006 when the Company merged with August Technology Corporation. From February 2004 to February 2006, he was August Technology's Vice President of Engineering and its Director of Strategic Marketing for review and analysis products from July 2003 to February 2004. Mr. Plisinski joined August Technology as part of the acquisition of Counterpoint Solutions, a semiconductor review and analysis company, where he was both President and sole founder from June 1999 to July 2003. Mr. Plisinski has a B.S. in Computer Science from the University of Massachusetts.

Rajiv Roy, age 50, has served as the Vice President of Business Development and Director of Back-End Product Management since June 2008. From February 2006 to June 2008, Mr. Roy served as the Company's Director of Marketing. Prior to the Company's merger with August Technology in February 2006, Mr. Roy served as the Director of Strategic Marketing for August Technology from April 2003 to February 2006. Mr. Roy joined August Technology as part of the acquisition of Semiconductor Technologies and Instruments, Inc., a supplier to the semiconductor industry, where he was President from August 2000 to March 2003. Mr. Roy has a Bachelor of Technology in Electrical Engineering from Indian Institute of Technology, Kanpur, and from the University of Texas at Dallas, an M.S. in Math Sciences and a M.A. in Marketing.

Compensation Committee Interlocks and Insider Participation

The Compensation Committee consists of Directors Daniel H. Berry, Leo Berlinghieri and Aubrey C. Tobey, none of whom has interlocking relationships as defined by the SEC.

SECURITY OWNERSHIP

The following table sets forth certain information with respect to beneficial ownership of the Company's Common Stock as of March 31, 2009 (except as otherwise indicated), by: (i) each person who is known by the Company to own beneficially more than five percent of the Common Stock, (ii) each of the Named Executive Officers, (iii) each of the Company's directors, and (iv) all directors and executive officers as a group. Except as indicated in the footnotes to this table, the persons named in the table have sole voting and investment power with respect to all shares of Common Stock shown as beneficially owned by them, subject to community property laws where applicable.

Beneficial Owner	Number of Shares(1)	Percentage(2)
FMR LLC(3) 82 Devonshire Street Boston, MA 02109	3,211,088	10.42%
Artisan Investment Corporation(4) 875 East Wisconsin Avenue, Suite 800 Milwaukee, WI 53202	3,115,400	10.11%
Wellington Management Company, LLP(5) 75 State Street Boston, MA 02109	2,806,219	9.11%
Dimensional Fund Advisors LP(6) 1299 Ocean Avenue Santa Monica, CA 90401	2,479,899	8.05%
Barclays Global Investors, NA and affiliates(7) 400 Howard Street San Francisco, CA 94105	2,181,287	7.08%
Paul F. McLaughlin	793,341	2.53%
Steven R. Roth	249,905	*
Nathan H. Little	184,704	*
Michael P. Plisinski	167,480	*
D. Mayson Brooks	24,753	*
Daniel H. Berry(8) Direct Beneficial Ownership Indirect Beneficial Ownership c/o Riverside Partners LLC One Exeter Plaza Boston, MA 02116	 29,783 552,667	 * 1.79%
Thomas G. Greig(9) Direct Beneficial Ownership Indirect Beneficial Ownership c/o Liberty Capital Partners, Inc. 1370 Avenue of the Americas New York, NY 10019	 23,000 1,219,040	 * 3.96%
Richard F. Spanier(10)	80,750	*
Aubrey C. Tobey	20,700	*
John R. Whitten	12,500	*
All directors and executive officers as a group (twenty persons)(11)	3,768,756	11.69%

* Less than 1%.

(1) Includes the number of shares subject to options which are exercisable and restricted stock units vesting within 60 days of March 31, 2009 by the following persons: Mr. McLaughlin, (540,000 shares), Mr. Roth (213,269 shares), Mr. Little (150,000 shares), Mr. Plisinski (81,652 shares), Mr. Brooks (20,660),

Mr. Berry (16,783 shares), Mr. Greig (15,000 shares), Mr. Spanier (15,000 shares), Mr. Tobey (15,000 shares) and all directors and executive officers as a group (1,420,477 shares).

(2) Applicable percentage ownership is based on 30,811,170 shares of Common Stock outstanding as of March 31, 2009. Beneficial ownership of shares is determined in accordance with the rules of the SEC and generally includes shares as to which a person holds sole or shared voting or investment power. Shares of Common Stock subject to options that are presently exercisable or exercisable within 60 days of March 31, 2009 are deemed to be beneficially owned by the person holding such options for the purpose of computing the percentage ownership of such person, but are not treated as outstanding for the purpose of computing the percentage ownership of any other person. Unless otherwise noted the address for the stockholders named in this table is c/o Rudolph Technologies, Inc., One Rudolph Road, P.O. Box 1000, Flanders, NJ 07836.

(3) Information provided herein is based on the Schedule 13G/A that was filed on February 17, 2009 by FMR LLC.

(4) Information provided herein is based on the Schedule 13G/A that was filed on February 13, 2009 by Artisan Partners Limited Partnership, Artisan Investment Corporation, ZFIC, Inc., Andrew A. Ziegler, Carlene M. Ziegler and Artisan Funds, Inc.

(5) Information provided herein is based on the Schedule 13G/A that was filed on February 17, 2009 by Wellington Management Company, LLP.

(6) Information provided herein is based on the Schedule 13G/A that was filed on February 9, 2009 by Dimensional Fund Advisors LP.

(7) Information provided herein is based on the Schedule 13G that was filed on February 5, 2009 by Barclays Global Investors, NA (which reported ownership of 798,901 shares), Barclays Global Fund Advisors (which reported ownership of 1,362,961 shares), and Barclays Global Investors, Ltd (which reported ownership of 19,425 shares) located at Murray House, 1 Royal Mint Court, London, England EC3N 4HH.

(8) The number of shares of Common Stock beneficially owned by Mr. Berry includes indirect beneficial ownership in 552,667 shares of Rudolph Technologies Common Stock held by the Riverside Fund II, LP, an affiliate of Riverside Partners, LLC. Mr. Berry is an Operating Partner of Riverside Partners, LLC and disclaims beneficial ownership except to the extent of his pecuniary interest therein.

(9) The number of shares of Common Stock beneficially owned by Mr. Greig includes indirect beneficial ownership in 1,219,040 shares of Rudolph Technologies Common Stock held by Liberty Partners Holdings 11, L.L.C. Liberty Partners, L.P. is the managing member of Liberty Partners Holdings 11, L.L.C. and PEB Associates, Inc. d/b/a Liberty Capital Partners, Inc. is the general partner of Liberty Partners, L.P. Mr. Greig is an officer, director and shareholder of Liberty Capital Partners, Inc. Mr. Greig disclaims beneficial ownership of all shares to the extent it exceeds his pecuniary interest in the securities.

(10) Includes 7,671 shares held by Dr. Spanier's wife.

(11) The number of shares of Common Stock beneficially owned by our directors and executive officers as a group includes 1,219,040 shares of our Common Stock held by Liberty Partners Holdings 11, L.L.C. and 552,667 shares of our Common Stock held by the Riverside Fund II, LP, an affiliate of Riverside Partners, LLC.

EQUITY COMPENSATION PLAN INFORMATION

The following table sets forth information with respect to the Company's equity compensation plans as of December 31, 2008.

Plan Category	(a) Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights(1)	(b) Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights	(c) Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a))
Equity compensation plans approved by security holders	2,306,729	$21.16	1,561,555
Equity compensation plans not approved by security holders	N/A	N/A	N/A
Total	2,306,729	$21,16	1,561,555

(1) Includes only options outstanding under the 1996 Stock Plan, 1997 Stock Plan and the 1999 Stock Plan. Excludes 729,428 shares issuable upon vesting of outstanding Restricted Stock Units.

SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Section 16(a) of the Securities Exchange Act of 1934 requires the Company's executive officers and directors and persons who own more than 10% of a registered class of the Company's equity securities to file an initial report of ownership on Form 3 and changes in ownership on Form 4 or Form 5 with the SEC. Such persons are also required by SEC rules to furnish the Company with copies of all Section 16(a) forms they file. Based solely on its review of the copies of such forms received by it, or written representations from certain reporting persons, the Company believes that, during the year ended December 31, 2008, all officers, directors and greater than 10% beneficial owners complied with all Section 16(a) filing requirements, except Thomas G. Greig filed a late Form 4 on October 28, 2008 with respect to one transaction on October 23, 2008.

OTHER MATTERS

The Company knows of no other matters to be submitted to the Annual Meeting. If any other matters properly come before the Annual Meeting, it is the intention of the persons named in the enclosed Proxy to vote the shares they represent as the Board of Directors may recommend.

BY ORDER OF THE BOARD OF DIRECTORS

STEVEN R. ROTH
Secretary

Dated: April 17, 2009

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RUDOLPH TECHNOLOGIES, INC.

2009 STOCK PLAN

1. *Purposes of the Plan.* The purposes of this 2009 Stock Plan are:

- to attract and retain the best available personnel for positions of substantial responsibility,
- to provide additional incentive to Employees, Directors and Consultants, and
- to promote the success of the Company's business.

The Plan permits the grant of Incentive Stock Options, Nonstatutory Stock Options, Stock Appreciation Rights, Restricted Stock, Restricted Stock Units, Performance Units and Performance Shares.

2. *Definitions.* As used herein, the following definitions shall apply:

(a) *"Administrator"* means the Board or any of its Committees as shall be administering the Plan, in accordance with Section 4 of the Plan.

(b) *"Affiliate"* means any corporation or any other entity (including, but not limited to, partnerships and joint ventures) controlling, controlled by, or under common control with the Company.

(c) *"Applicable Laws"* means the requirements relating to the administration of equity-based awards under U.S. state corporate laws, U.S. federal and state securities laws, the Code, any stock exchange or quotation system on which the Common Stock is listed or quoted and the applicable laws of any foreign country or jurisdiction where Options or Stock Purchase Rights are, or will be, granted under the Plan.

(d) *"Award"* means, individually or collectively, a grant under the Plan of Options, Stock Appreciation Rights, Restricted Stock, Restricted Stock Units, Performance Units or Performance Shares.

(e) *"Award Agreement"* means the written or electronic agreement setting forth the terms and provisions applicable to each Award granted under the Plan. The Award Agreement is subject to the terms and conditions of the Plan.

(f) *"Board"* means the Board of Directors of the Company.

(g) *"Cause"* means, in the absence of any employment agreement between a Participant and the Company (or the Affiliate employing Participant) otherwise defining Cause:

(i) acts of personal dishonesty, gross negligence or willful misconduct on the part of a Participant in the course of his or her employment or services,

(ii) a Participant's engagement in conduct that results, or could reasonably be expected to result, in material injury to the reputation or business of the Company or its Affiliates,

(iii) misappropriation by a Participant of the assets or business opportunities of the Company or its Affiliates;

(iv) embezzlement or fraud committed by a Participant, at his or her direction, or with his or her personal knowledge;

(v) a Participant's conviction by a court of competent jurisdiction of, or pleading "guilty" or "no contest" to:

(A) a felony; or

(B) any other criminal charge (other than minor traffic violations) that has, or could be reasonably expected to have, an adverse impact on the performance of the Participant's duties to the Company or its Affiliates; or

(vi) failure by a Participant to follow the lawful directions of a superior officer or the Board.

In the event there is an employment agreement between a Participant and the Company or Affiliate employing Participant defining Cause, "Cause" will have the meaning provided in such agreement.

(h) *"Change in Control"* means the occurrence of any of the following events:

(i) A change in the ownership of the Company which occurs on the date that any one person, or more than one person acting as a group ("Person"), acquires ownership of the stock of the Company that, together with the stock held by such Person, constitutes more than fifty percent (50%) of the total voting power of the stock of the Company; provided, however, that for purposes of this subsection 2(h)(i), the acquisition of additional stock by any one Person, who is considered to own more than fifty percent (50%) of the total voting power of the stock of the Company will not be considered a Change in Control; or

(ii) A change in the effective control of the Company which occurs on the date that a majority of members of the Board is replaced during any twelve (12) month period by Directors whose appointment or election is not endorsed by a majority of the members of the Board prior to the date of the appointment or election. For purposes of this subsection 2(h)(ii), if any Person is considered to be in effective control of the Company, the acquisition of additional control of the Company by the same Person will not be considered a Change in Control; or

(iii) A change in the ownership of a substantial portion of the Company's assets which occurs on the date that any Person acquires (or has acquired during the twelve (12) month period ending on the date of the most recent acquisition by such person or persons) assets from the Company that have a total gross fair market value equal to or more than fifty percent (50%) of the total gross fair market value of all of the assets of the Company immediately prior to such acquisition or acquisitions; provided, however, that for purposes of this subsection 2(h)(iii), the following will not constitute a change in the ownership of a substantial portion of the Company's assets:

(A) a transfer to an entity that is controlled by the Company's stockholders immediately after the transfer; or

(B) a transfer of assets by the Company to:

(1) a stockholder of the Company (immediately before the asset transfer) in exchange for or with respect to the Company's stock;

(2) an entity, fifty percent (50%) or more of the total value or voting power of which is owned, directly or indirectly, by the Company;

(3) a Person, that owns, directly or indirectly, fifty percent (50%) or more of the total value or voting power of all the outstanding stock of the Company; or

(4) an entity, at least fifty percent (50%) of the total value or voting power of which is owned, directly or indirectly, by a Person described in subsection 2(h)(iii)(B)(3).

For purposes of this subsection 2(h)(iii), gross fair market value means the value of the assets of the Company, or the value of the assets being disposed of, determined without regard to any liabilities associated with such assets.

For purposes of this definition, persons will be considered to be acting as a group if they are owners of a corporation that enters into a merger, consolidation, purchase or acquisition of stock, or similar business transaction with the Company.

In the event that this Section 2(h) is inconsistent with the definition of Change in Control under Section 409A of the Code and the Regulations thereunder, the definition under the aforesaid mentioned Code and Regulations shall supersede.

(i) *"Code"* means the Internal Revenue Code of 1986, as amended. Any reference to a section of the Code herein will be a reference to any successor or amended section of the Code.

(j) *"Committee"* means a committee of Directors or of other individuals satisfying Applicable Laws appointed by the Board in accordance with Section 4 hereof.

(k) *"Common Stock"* means the common stock of the Company.

(l) *"Company"* means Rudolph Technologies, Inc., a Delaware corporation, or any successor thereto.

(m) *"Consultant"* means any person, including an advisor, engaged by the Company or its Affiliates to render services to such entity.

(n) *"Director"* means a member of the Board.

(o) *"Disability"* means that the Participant or Service Provider is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than twelve (12) months.

(p) *"Employee"* means any person, including Officers and Directors, employed by the Company or its Affiliates. Neither service as a Director nor payment of a director's fee by the Company shall be sufficient to constitute "employment" by the Company.

(q) *"Exchange Act"* means the Securities Exchange Act of 1934, as amended.

(r) *"Exchange Program"* means a program under which:

(i) outstanding Awards are surrendered or cancelled in exchange for Awards of the same type (which may have higher or lower exercise prices and different terms), Awards of a different type, and/or cash;

(ii) Participants would have the opportunity to transfer for estate planning purposes only any outstanding Awards to a financial institution or other person or entity; and/or

(iii) the exercise price of an outstanding Award is reduced.

(s) *"Fair Market Value"* means, as of any date, the value of Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or a national market system, including without limitation the Nasdaq Global Market or Nasdaq Global Select Market, its Fair Market Value shall be the closing sales price for such stock (or the closing bid, if no sales were reported) as quoted on such exchange or system on the day of determination, as reported in *The Wall Street Journal* or such other source as the Administrator deems reliable;

(ii) If the Common Stock is regularly quoted by a recognized securities dealer but selling prices are not reported, the Fair Market Value of a Share of Common Stock shall be the mean between the high bid and low asked prices for the Common Stock on the day of determination, as reported in *The Wall Street Journal* or such other source as the Administrator deems reliable; or

(iii) In the absence of an established market for the Common Stock, the Fair Market Value shall be determined in good faith by the Administrator.

(t) *"Family Member"* means any child, stepchild, grandchild, parent, stepparent, grandparent, spouse, former spouse, sibling, niece, nephew, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law (including adoptive relationships) of the Employee, any person sharing the Employee's household (other than a tenant or employee), a trust in which these persons (or the Employee) have more than fifty percent (50%) of the beneficial interest, a foundation in which these persons (or the Employee) control the management of assets, and any other entity in which these persons (or the Employee) own more than fifty percent (50%) of the voting interests.

(u) *"Fiscal Year"* means the fiscal year of the Company.

(v) *"Incentive Stock Option"* means an Option intended to qualify as an incentive stock option within the meaning of Section 422 of the Code and the regulations promulgated thereunder.

(w) *"Inside Director"* means a Director who is an Employee.

(x) *"Nonstatutory Stock Option"* means an Option not intended to qualify or is not intended to qualify as an Incentive Stock Option.

(y) *"Officer"* means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder.

(z) *"Option"* means a stock option granted pursuant to the Plan.

(aa) *"Outside Director"* means a Director who is not an Employee.

(bb) *"Parent"* means a "parent corporation," whether now or hereafter existing, as defined in Section 424(e) of the Code.

(cc) *"Participant"* means the holder of an outstanding Award.

(dd) *"Performance Share"* means an Award denominated in Shares which may be earned in whole or in part upon attainment of performance goals or other vesting criteria as the Administrator may determine pursuant to Section 10.

(ee) *"Performance Unit"* means an Award which may be earned in whole or in part upon attainment of performance goals or other vesting criteria as the Administrator may determine and which may be settled for cash, Shares or other securities or a combination of the foregoing pursuant to Section 10.

(ff) *"Period of Restriction"* means the period during which the transfer of Shares of Restricted Stock are subject to restrictions and therefore, the Shares are subject to a substantial risk of forfeiture. Such restrictions may be based on the passage of time, the achievement of target levels of performance, or the occurrence of other events as determined by the Administrator.

(gg) *"Plan"* means this 2009 Stock Plan.

(hh) *"Restricted Stock"* means shares of Common Stock issued pursuant to a Restricted Stock award under Section 7 of the Plan, or issued pursuant to the early exercise of an Option.

(ii) *"Restricted Stock Unit"* means a bookkeeping entry representing an amount equal to the Fair Market Value of one Share, granted pursuant to Section 8. Each Restricted Stock Unit represents an unfunded and unsecured obligation of the Company.

(jj) *"Rule 16b-3"* means Rule 16b-3 of the Exchange Act or any successor to Rule 16b-3, as in effect when discretion is being exercised with respect to the Plan.

(kk) *"Section 16(b)"* means Section 16(b) of the Exchange Act.

(ll) *"Service Provider"* means an Employee, Director or Consultant.

(mm) *"Share"* means a share of the Common Stock, as adjusted in accordance with Section 15 of the Plan.

(nn) *"Specified Employee"* is a Participant or Service Provider who, as of the Participant's or Service Provider's date of termination, is a key employee of the Company within the meaning of Section 416(i)(1)(A)(i), (ii), or (iii) of the Code (applied in accordance with the regulations thereunder and disregarding Section 416(i)(5)) at any time during the twelve (12) month period ending on a Specified Employee Identification Date. If a Participant or Service Provider is a key employee as of a Specified Employee Identification Date, the Participant or Service Provider is treated as a key employee for purposes of the Plan for the entire twelve (12) month period beginning on the Specified Employee Effective Date.

(oo) *"Specified Employee Effective Date"* is the date as set forth in Treasury Regulation Section 1.409A-1(i)(4).

(pp) *"Specified Employee Identification Date"* shall mean December 31 of each year.

(qq) *"Stock Appreciation Right"* means an Award, granted alone or in connection with an Option, that pursuant to Section 9 is designated as a Stock Appreciation Right.

(rr) *"Subsidiary"* means a "subsidiary corporation", whether now or hereafter existing, as defined in Section 424(f) of the Code.

3. *Stock Subject to the Plan.*

(a) Subject to the provisions of Section 15 of the Plan, the maximum aggregate number of Shares that may be issued under the Plan is 5,000,000 Shares, plus

(i) any Shares that have been reserved but not issued pursuant to any awards granted under the Company 1999 Stock Plan (the "Existing Plan") and are not subject to any awards granted thereunder, and

(ii) any Shares subject to stock options or similar awards granted under the Existing Plan that expire or otherwise terminate without having been exercised in full and Shares issued pursuant to awards granted under the Existing Plan that are forfeited to or repurchased by the Company.

The Shares may be authorized, but unissued, or reacquired Common Stock.

(b) If an Award expires or becomes unexercisable without having been exercised in full, is surrendered pursuant to an Exchange Program, or, with respect to Restricted Stock, Restricted Stock Units, Performance Units or Performance Shares, is forfeited to or repurchased by the Company due to failure to vest, the unpurchased Shares (or for Awards other than Options or Stock Appreciation Rights the forfeited or repurchased Shares) which were subject thereto shall become available for future grant or sale under the Plan (unless the Plan has terminated). With respect to Stock Appreciation Rights, only Shares actually issued (i.e., the net Shares issued) pursuant to a Stock Appreciation Right will cease to be available under the Plan; all remaining Shares under Stock Appreciation Rights will remain available for future grant or sale under the Plan (unless the Plan has terminated). Shares that have actually been issued under the Plan under any Award shall not be returned to the Plan and shall not become available for future distribution under the Plan; provided, however, that if Shares issued pursuant to Awards of Restricted Stock, Restricted Stock Units, Performance Shares or Performance Units are repurchased by the Company or are forfeited to the Company, such Shares shall become available for future grant under the Plan. Shares used to pay the exercise price of an Award or to satisfy the tax withholding obligations related to an Award will become available for future grant or sale under the Plan. To the extent an Award under the Plan is paid out in cash rather than Shares, such cash payment will not result in reducing the number of Shares available for issuance under the Plan. Notwithstanding the foregoing and, subject to adjustment as provided in Section 15, the maximum number of Shares that may be issued upon the exercise of Incentive Stock Options will equal the aggregate Share number stated in subsection 3(a) above, plus, to the extent allowable under Section 422 of the Code and the Treasury Regulations promulgated thereunder, any Shares that become available for issuance under the Plan pursuant to subsections 3(b) and 3(c) hereof.

(c) *Share Reserve.* The Company, during the term of this Plan, will at all times reserve and keep available such number of Shares as will be sufficient to satisfy the requirements of the Plan.

4. *Administration of the Plan.*

(a) *Procedure.*

(i) *Multiple Administrative Bodies.* The Plan may be administered by different Committees with respect to different groups of Service Providers.

(ii) *Section 162(m).* To the extent that the Administrator determines it to be desirable to qualify Awards granted hereunder as "performance-based compensation" within the meaning of Section 162(m)

of the Code, the Plan shall be administered by a Committee of two (2) or more "outside directors" within the meaning of Section 162(m) of the Code.

(iii) *Rule 16b-3.* To the extent desirable to qualify transactions hereunder as exempt under Rule 16b-3, the transactions contemplated hereunder shall be structured to satisfy the requirements for exemption under Rule 16b-3.

(iv) *Other Administration.* Other than as provided above, the Plan shall be administered by:

(A) the Board; or

(B) a Committee, which committee shall be constituted to satisfy Applicable Laws.

(b) *Powers of the Administrator.* Subject to the provisions of the Plan, and in the case of a Committee, subject to the specific duties delegated by the Board to such Committee, the Administrator shall have the authority, in its discretion:

(i) to determine the Fair Market Value;

(ii) to select the Service Providers to whom Awards may be granted hereunder;

(iii) to determine the number of Shares to be covered by each Award granted hereunder;

(iv) to approve forms of Award Agreements for use under the Plan;

(v) to determine the terms and conditions, not inconsistent with the terms of the Plan, of any Award granted hereunder. Such terms and conditions include, but are not limited to, the exercise price, the time or times when Awards may be exercised (which may be based on performance criteria), any vesting acceleration or waiver of forfeiture restrictions based solely on the Service Provider death, disability or retirement or a Change in Control, and any restriction or limitation regarding any Award or the Shares relating thereto, based on such factors as the Administrator, in its sole discretion, shall determine;

(vi) to determine the terms and conditions of any, and to institute any Exchange Program;

(vii) to construe and interpret the terms of the Plan and Awards granted pursuant to the Plan;

(viii) to prescribe, amend and rescind rules and regulations relating to the Plan, including rules and regulations relating to sub-plans established for the purpose of satisfying applicable foreign laws;

(ix) to modify or amend each Award (subject to subsection 20(c) of the Plan), including, but not limited to, the discretionary authority to extend the post-termination exercisability period of Awards and to extend the maximum term of an Option (subject to subsection 6(b) regarding Incentive Stock Options), in each case to a maximum of twenty (20) years;

(x) to allow Participants to satisfy withholding tax obligations in such a manner as prescribed in Section 16;

(xi) to authorize any person to execute on behalf of the Company any instrument required to effect the grant of an Award previously granted by the Administrator;

(xii) to allow a Participant to defer the receipt of the payment of cash or the delivery of Shares that would otherwise be due to such Participant under an Award; and

(xiii) to make all other determinations deemed necessary or advisable for administering the Plan.

(c) Notwithstanding the foregoing, the exercise price of Options and/or SARs under the Plan may not be repriced by the Administrator without the prior approval of the Company's stockholders.

(d) *Effect of Administrator's Decision.* The Administrator's decisions, determinations and interpretations shall be final and binding on all Participants and any other holders of Awards.

(e) *No Liability.* Under no circumstances shall the Company, its Affiliates, the Administrator, or the Board incur liability for any indirect, incidental, consequential or special damages (including lost profits) of

any form incurred by any person, whether or not foreseeable and regardless of the form of the act in which such a claim may be brought, with respect to the Plan or the Company's, its Affiliates', the Administrator's or the Board's roles in connection with the Plan.

5. *Eligibility.* Nonstatutory Stock Options, Restricted Stock, Restricted Stock Units, Performance Units, and Performance Shares may be granted to Service Providers. Incentive Stock Options may be granted only to employees of the Company or any Parent or Subsidiary of the Company.

6. *Stock Options.*

(a) *Limitations.* Each Option shall be designated in the Award Agreement as either an Incentive Stock Option or a Nonstatutory Stock Option. However, notwithstanding such designation, to the extent that the aggregate Fair Market Value of the Shares with respect to which Incentive Stock Options are exercisable for the first time by the Participant during any calendar year (under all plans of the Company and any Parent or Subsidiary) exceeds one hundred thousand dollars ($100,000), such Options shall be treated as Nonstatutory Stock Options. For purposes of this subsection 6(a), Incentive Stock Options shall be taken into account in the order in which they were granted. The Fair Market Value of the Shares shall be determined as of the time the Option with respect to such Shares is granted but in no case will it be no less than one hundred percent (100%) of the Fair Market Value per Share on the date of the grant.

(b) *Term of Option.* The term of each Option shall be stated in the Award Agreement. In the case of an Incentive Stock Option, the term shall be ten (10) years from the date of grant or such shorter term as may be provided in the Award Agreement. Moreover, in the case of an Incentive Stock Option granted to a Participant who, at the time the Incentive Stock Option is granted, owns stock representing more than ten percent (10%) of the total combined voting power of all classes of stock of the Company or any Parent or Subsidiary, the term of the Incentive Stock Option shall be five (5) years from the date of grant or such shorter term as may be provided in the Award Agreement. In the case of a Nonqualified Stock Option, the term shall be ten (10) years from the date of grant or such shorter term as may be provided in the Award Agreement.

(c) *Option Exercise Price and Consideration.*

(i) *Exercise Price.* The per share exercise price for the Shares to be issued pursuant to exercise of an Option shall be determined by the Administrator, but will be no less than one hundred percent (100%) of the Fair Market Value per Share on the date of the grant. In addition, in the case of an Incentive Stock Option: granted to an employee of the Company or any Parent or Subsidiary of the Company who, at the time the Incentive Stock Option is granted, owns stock representing more than ten percent (10%) of the voting power of all classes of stock of the Company or any Parent or Subsidiary, the per Share exercise price shall be no less than one hundred ten percent (110%) of the Fair Market Value per Share on the date of grant.

Notwithstanding the foregoing provisions of this subsection 6(c)(i), Options may be granted with a per Share exercise price of less than one hundred percent (100%) of the Fair Market Value per Share on the date of grant pursuant to a transaction described in, and in a manner consistent with, Code Section 424(a).

(ii) *Waiting Period and Exercise Dates.* At the time an Option is granted, the Administrator shall fix the period within which the Option may be exercised and shall determine any conditions that must be satisfied before the Option may be exercised.

(iii) *Form of Consideration.* The Administrator shall determine the acceptable form of consideration for exercising an Option, including the method of payment. In the case of an Incentive Stock Option, the Administrator shall determine the acceptable form of consideration at the time of grant. Such consideration may consist entirely of:

(A) cash;

(B) check;

(C) promissory note, to the extent permitted by Applicable Law;

(D) other Shares provided that such Shares have a Fair Market Value on the date of surrender equal to the aggregate exercise price of the Shares as to which said Option shall be exercised and provided further that accepting such Shares will not result in any adverse accounting consequences to the Company, as the Administrator determines in its sole discretion;

(E) consideration received by the Company under a cashless exercise program (whether through a broker or otherwise) implemented by the Company in connection with the Plan;

(F) by net exercise;

(G) such other consideration and method of payment for the issuance of Shares to the extent permitted by Applicable Laws; or

(H) .any combination of the foregoing methods of payment.

(d) *Exercise of Option.*

(i) *Procedure for Exercise; Rights as a Stockholder.* Any Option granted hereunder shall be exercisable according to the terms of the Plan and at such times and under such conditions as determined by the Administrator and set forth in the Award Agreement. An Option may not be exercised for a fraction of a Share.

An Option shall be deemed exercised when the Company receives:

(A) notice of exercise (in such form as the Administrator may specify from time to time) from the person entitled to exercise the Option, and

(B) full payment for the Shares with respect to which the Option is exercised (together with applicable withholding taxes).

Full payment may consist of any consideration and method of payment authorized by the Administrator and permitted by the Award Agreement and the Plan. Shares issued upon exercise of an Option shall be issued in the name of the Participant or, if requested by the Participant, in the name of the Participant and his or her spouse. Until the Shares are issued (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company), no right to vote or receive dividends or any other rights as a stockholder shall exist with respect to the Shares subject to an Option, notwithstanding the exercise of the Option. The Company shall issue (or cause to be issued) such Shares promptly after the Option is exercised. No adjustment will be made for a dividend or other right for which the record date is prior to the date the Shares are issued, except as provided in Section 15 of the Plan.

Exercising an Option in any manner shall decrease the number of Shares thereafter available, both for purposes of the Plan and for sale under the Option, by the number of Shares as to which the Option is exercised.

(ii) *Termination of Relationship as a Service Provider.* If a Participant ceases to be a Service Provider, other than upon the Participant's death or Disability, the Participant may exercise his or her Option within such period of time as is specified in the Award Agreement to the extent that the Option is vested on the date of termination (but in no event later than the expiration of the term of such Option as set forth in the Award Agreement). In the absence of a specified time in the Award Agreement, the Option shall remain exercisable for three (3) months following the Participant's termination. Unless otherwise provided by the Administrator, if on the date of termination the Participant is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option shall revert to the Plan. If after termination the Participant does not exercise his or her Option within the time specified by the Administrator, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan.

(iii) *Disability of Participant.* If a Participant ceases to be a Service Provider as a result of the Participant's Disability, the Participant may exercise his or her Option within such period of time as is specified in the Award Agreement to the extent the Option is vested on the date of termination (but in no event later than the expiration of the term of such Option as set forth in the Award Agreement). In the

absence of a specified time in the Award Agreement, the Option shall remain exercisable for twelve (12) months following the Participant's termination. Unless otherwise provided by the Administrator, if on the date of termination the Participant is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option shall revert to the Plan. If after termination the Participant does not exercise his or her Option within the time specified herein, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan.

(iv) *Death of Participant.* If a Participant dies while a Service Provider, the Option may be exercised following the Participant's death within such period of time as is specified in the Award Agreement to the extent that the Option is vested on the date of death (but in no event later than the expiration of the term of such Option as set forth in the Award Agreement). In the absence of a specified time in the Award Agreement, the Option shall remain exercisable for twelve (12) months following the Participant's death. The Option may be exercised by the Participant's designated beneficiary, provided such beneficiary has been designated prior to Participant's death in a form acceptable by the Administrator. If no such beneficiary has been designated by the Participant, then such Option may be exercised by the personal representative of the Participant's estate or by the person or persons to whom the Option is transferred pursuant to the Participant's will or in accordance with the laws of descent and distribution. Unless otherwise provided by the Administrator, if at the time of death the Participant is not vested as to his or her entire Option, the Shares covered by the unvested portion of the Option shall immediately revert to the Plan. If the Option is not so exercised within the time specified herein, the Option shall terminate, and the Shares covered by such Option shall revert to the Plan.

(v) *Termination for Cause.* If a Participant's status as a Service Provider is terminated for Cause, then the Option will immediately terminate, and the Shares covered by such Option will revert to and again become available for issuance under the Plan.

7. *Restricted Stock.*

(a) *Grant of Restricted Stock.* Subject to the terms and provisions of the Plan, the Administrator, at any time and from time to time, may grant Shares of Restricted Stock to Service Providers in such amounts as the Administrator, in its sole discretion, will determine.

(b) *Vesting Period.* Restricted Stock granted hereunder shall be subject to the following minimum vesting requirements:

(i) For time-based vesting Awards, not less than three (3) years from the date of the grant;

(ii) For performance-based Awards, not less than one (1) year from the date of the grant;

(iii) Notwithstanding the foregoing, a maximum of ten percent (10%) of the Plan Shares shall not be subject to the minimum vesting requirements set forth above and shall be determined by the Administrator, in its sole discretion.

(c) *Restricted Stock Agreement.* Each Award of Restricted Stock will be evidenced by an Award Agreement that will specify the Period of Restriction, the number of Shares granted, and such other terms and conditions as the Administrator, in its sole discretion, will determine. Unless the Administrator determines otherwise, the Company as escrow agent will hold Shares of Restricted Stock until the restrictions on such Shares have lapsed.

(d) *Transferability.* Except as provided in this Section 7, Shares of Restricted Stock may not be sold, transferred, pledged, assigned, or otherwise alienated or hypothecated until the end of the applicable Period of Restriction.

(e) *Other Restrictions.* The Administrator, in its sole discretion, may impose such other restrictions on Shares of Restricted Stock as it may deem advisable or appropriate.

(f) *Removal of Restrictions.* Except as otherwise provided in this Section 7, Shares of Restricted Stock covered by each Restricted Stock grant made under the Plan will be released from escrow as soon as practicable after the last day of the Period of Restriction or at such other time as the Administrator may

determine. In the event of the death, disability or retirement of a Service Provider or a Change in Control, the Administrator, in its discretion, may accelerate the time at which any restrictions will lapse or be removed.

(g) *Voting Rights.* During the Period of Restriction, Service Providers holding Shares of Restricted Stock granted hereunder may exercise full voting rights with respect to those Shares, unless the Administrator determines otherwise.

(h) *Dividends and Other Distributions.* During the Period of Restriction, Service Providers holding Shares of Restricted Stock will be entitled to receive all dividends and other distributions paid with respect to such Shares, unless the Administrator provides otherwise. If any such dividends or distributions are paid in Shares, the Shares will be subject to the same restrictions on transferability and forfeitability as the Shares of Restricted Stock with respect to which they were paid.

(i) *Return of Restricted Stock to Company.* On the date set forth in the Award Agreement, the Restricted Stock for which restrictions have not lapsed will revert to the Company and again will become available for grant under the Plan.

8. *Restricted Stock Units.*

(a) *Grant.* Restricted Stock Units may be granted at any time and from time to time as determined by the Administrator. After the Administrator determines that it will grant Restricted Stock Units under the Plan, it will advise the Participant in an Award Agreement of the terms, conditions, and restrictions related to the grant, including the number of Restricted Stock Units.

(b) *Vesting Criteria and Other Terms.* The Administrator will set vesting criteria in its discretion, which, depending on the extent to which the criteria are met, will determine the number of Restricted Stock Units that will be paid out to the Participant. The Administrator may set vesting criteria based upon the achievement of Company-wide, business unit, or individual goals (including, but not limited to, continued employment), or any other basis determined by the Administrator in its discretion. Restricted Stock Units granted hereunder shall be subject to the following minimum vesting requirements:

(i) For time-based vesting Awards, not less than three (3) years from the date of the grant;

(ii) For performance-based Awards, not less than one (1) year from the date of the grant;

(iii) Notwithstanding the foregoing, a maximum of ten percent (10%) of the Plan Shares shall not be subject to the minimum vesting requirements set forth above and shall be determined by the Administrator, in its sole discretion.

(c) *Earning Restricted Stock Units.* Upon meeting the applicable vesting criteria, the Participant will be entitled to receive a payout as determined by the Administrator. Notwithstanding the foregoing, In the event of the death, disability or retirement of a Service Provider or a Change in Control at any time after the grant of Restricted Stock Units, the Administrator, in its sole discretion, may reduce or waive any vesting criteria that must be met to receive a payout.

(d) *Form and Timing of Payment.* Payment of earned Restricted Stock Units will be made as soon as practicable after the date(s) determined by the Administrator and set forth in the Award Agreement. The Administrator, in its sole discretion, may only settle earned Restricted Stock Units in cash, Shares, or a combination of both.

(e) *Cancellation.* On the date set forth in the Award Agreement, all unearned Restricted Stock Units will be forfeited to the Company.

9. *Stock Appreciation Rights.*

(a) *Grant of Stock Appreciation Rights.* Subject to the terms and conditions of the Plan, a Stock Appreciation Right may be granted to Service Providers at any time and from time to time as will be determined by the Administrator, in its sole discretion.

(b) *Number of Shares.* The Administrator will have complete discretion to determine the number of Stock Appreciation Rights granted to any Service Provider.

(c) *Exercise Price and Other Terms.* The per share exercise price for the Shares to be issued pursuant to exercise of a Stock Appreciation Right will be determined by the Administrator and will be no less than one hundred percent (100%) of the Fair Market Value per Share on the date of grant. Otherwise, the Administrator, subject to the provisions of the Plan, will have complete discretion to determine the terms and conditions of Stock Appreciation Rights granted under the Plan.

(d) *Stock Appreciation Right Agreement.* Each Stock Appreciation Right grant will be evidenced by an Award Agreement that will specify the exercise price, the term of the Stock Appreciation Right, the conditions of exercise, and such other terms and conditions as the Administrator, in its sole discretion, will determine.

(e) *Expiration of Stock Appreciation Rights.* A Stock Appreciation Right granted under the Plan will expire upon the date determined by the Administrator, in its sole discretion, and set forth in the Award Agreement. Notwithstanding the foregoing, Stock Appreciation Rights shall be subject to a maximum term of ten (10) years and to the provisions of subsection 6(d) relating to exercise.

(f) *Payment of Stock Appreciation Right Amount.* Upon exercise of a Stock Appreciation Right, a Participant will be entitled to receive payment from the Company in an amount determined by multiplying:

(i) The difference between the Fair Market Value of a Share on the date of exercise over the exercise price; times; and

(ii) The number of Shares with respect to which the Stock Appreciation Right is exercised.

At the discretion of the Administrator, the payment upon Stock Appreciation Right exercise may be in cash, in Shares of equivalent value, or in some combination thereof.

10. *Performance Units and Performance Shares.*

(a) *Grant of Performance Units/Shares.* Performance Units and Performance Shares may be granted to Service Providers at any time and from time to time, as will be determined by the Administrator, in its sole discretion. The Administrator will have complete discretion in determining the number of Performance Units and Performance Shares granted to each Participant.

(b) *Value of Performance Units/Shares.* Each Performance Unit will have an initial value that is established by the Administrator on or before the date of grant. Each Performance Share will have an initial value equal to the Fair Market Value of a Share on the date of grant.

(c) *Performance Objectives and Other Terms.* The Administrator will set performance objectives or other vesting provisions (including, without limitation, continued status as a Service Provider) in its discretion which, depending on the extent to which they are met, will determine the number or value of Performance Units/Shares that will be paid out to the Service Providers. The time period during which the performance objectives or other vesting provisions must be met will be called the "Performance Period." Each Award of Performance Units/Shares will be evidenced by an Award Agreement that will specify the Performance Period, and such other terms and conditions as the Administrator, in its sole discretion, will determine. The Administrator may set performance objectives based upon the achievement of Company-wide, divisional, or individual goals, applicable federal or state securities laws, or any other basis determined by the Administrator in its discretion.

(d) *Vesting Period.* Performance Units and Performance Shares granted hereunder shall be subject to the following minimum vesting requirements:

(i) For time-based vesting Awards, not less than three (3) years from the date of the grant;

(ii) For performance-based Awards, not less than one (1) year from the date of the grant;

(iii) Notwithstanding the foregoing, a maximum of ten percent (10%) of the Plan Shares shall not be subject to the minimum vesting requirements set forth above and shall be determined by the Administrator, in its sole discretion.

(e) *Earning of Performance Units/Shares.* After the applicable Performance Period has ended, the holder of Performance Units/Shares will be entitled to receive a payout of the number of Performance Units/Shares earned by the Participant over the Performance Period, to be determined as a function of the extent to which the corresponding performance objectives or other vesting provisions have been achieved. After the grant of a Performance Unit/Share, the Administrator, in its sole discretion, may reduce or waive any performance objectives or other vesting provisions for such Performance Unit/Share.

(f) *Form and Timing of Payment of Performance Units/Shares.* Payment of earned Performance Units/Shares will be made as soon as practicable after the expiration of the applicable Performance Period. The Administrator, in its sole discretion, may pay earned Performance Units/Shares in the form of cash, in Shares (which have an aggregate Fair Market Value equal to the value of the earned Performance Units/Shares at the close of the applicable Performance Period) or in a combination thereof.

(g) *Cancellation of Performance Units/Shares.* On the date set forth in the Award Agreement, all unearned or unvested Performance Units/Shares will be forfeited to the Company, and again will be available for grant under the Plan.

11. *Formula Awards to Outside Directors.*

(a) *General.* Outside Directors will be entitled to receive all types of Awards (except Incentive Stock Options) under this Plan, including discretionary Awards not covered under this Section 11. All grants of Awards to Outside Directors pursuant to this section will be automatic and nondiscretionary, except as otherwise provided herein, and will be made in accordance with the following provisions.

(b) *Type of Option.* If Options are granted pursuant to this section they will be Nonstatutory Stock Options and, except as otherwise provided herein, will be subject to the other terms and conditions of the Plan.

(c) *No Discretion.* No person will have any discretion to select which Outside Directors will be granted Awards under this section or to determine the number of Shares to be covered by such Awards (except as provided in Sections 11 and 14).

(d) *Terms.* The terms of each Award granted pursuant to this section will be as follows:

(i) The term of an Option granted under this Section 11 will be ten (10) years.

(ii) The exercise price for Shares subject to Options granted under this Section 11 will be one hundred percent (100%) of the Fair Market Value on the grant date.

(iii) *Awards* granted in accordance with this Section 11 shall be subject to the following minimum vesting requirements:

(A) For time-based vesting Awards, not less than three (3) years from the date of the grant;

(B) For performance-based Awards, not less than one (1) year from the date of the grant;

(C) Notwithstanding the foregoing, a maximum of ten percent (10%) of the Plan Shares shall not be subject to the minimum vesting requirements set forth above and shall be determined by the Administrator, in its sole discretion.

(iv) Restricted Stock awarded under this Section 11 will be issued for no cash consideration and will be forfeited and automatically transferred to and reacquired by the Company at no cost to the Company upon the date the Director ceases to provide services as a member of the Board (the "Forfeiture Provision"). The Forfeiture Provision will lapse on the earlier of:

(A) the date of the next annual meeting following the date of grant of the Award; or

(B) the December 31st of the calendar year following the calendar year in which the Award is granted, provided that the Participant continues to serve as a Director through such date.

(e) *Adjustments.* The Administrator in its discretion may change and otherwise revise the terms of Awards granted under this Section 11, including, without limitation, the number of Shares and exercise prices thereof, for Awards granted on or after the date the Administrator determines to make any such change or revision.

12. *Compliance With Code Section 409A.*

(a) Awards will be designed and operated in such a manner that they are either exempt from the application of, or comply with, the requirements of Code Section 409A such that the grant, payment, settlement or deferral will not be subject to the additional tax or interest applicable under Code Section 409A, except as otherwise determined in the sole discretion of the Administrator. The Plan and each Award Agreement under the Plan is intended to meet the requirements of Code Section 409A and will be construed and interpreted in accordance with such intent, except as otherwise determined in the sole discretion of the Administrator. To the extent that an Award or payment, or the settlement or deferral thereof, is subject to Code Section 409A the Award will be granted, paid, settled or deferred in a manner that will meet the requirements of Code Section 409A, such that the grant, payment, settlement or deferral will not be subject to the additional tax or interest applicable under Code Section 409A.

(b) Anything in this Plan to the contrary notwithstanding, if at the time of the Participant's or Service Provider's date of termination, the Participant or Service Provider is considered a "specified employee" within the meaning of Section 409A(a)(2)(B)(i) of the Code, and if any payment that the Participant or Service Provider becomes entitled to under this Plan is considered deferred compensation subject to interest and additional tax imposed pursuant to Section 409A(a) of the Code as a result of the application of Section 409A(a)(2)(B)(i) of the Code, then no such payment shall be payable prior to the date that is the earlier of (i) six months after the Participant's or Service Provider's separation from service, or (ii) the Participant's or Service Provider's death. The parties agree that this Plan may be amended, as reasonably requested by either party, and as may be necessary to fully comply with Section 409A of the Code and all related rules and regulations in order to preserve the payments and benefits provided hereunder without additional cost to either party.

13. *Leaves of Absence/Transfer Between Locations.* Vesting of Awards granted hereunder will continue in accordance with the terms of the Plan with the exception of any sabbatical, furlough or any unpaid leave of absence requested by the Employee, unless the Administrator provides otherwise. A Participant will not cease to be an Employee in the case of:

(a) any leave of absence approved by the Company; or

(b) transfers between locations of the Company or between the Company, its Parent, or any Subsidiary.

For purposes of Incentive Stock Options, no such leave may exceed three (3) months, unless reemployment upon expiration of such leave is guaranteed by statute or contract. If reemployment upon expiration of a leave of absence approved by the Company is not so guaranteed, then six (6) months following the first day of such leave, any Incentive Stock Option held by the Participant will cease to be treated as an Incentive Stock Option and will be treated for tax purposes as a Nonstatutory Stock Option.

14. *Transferability of Awards.* Unless determined otherwise by the Administrator, an Award may not be sold, pledged, assigned, hypothecated, transferred, or disposed of in any manner other than by will or by the laws of descent or distribution and may be exercised, during the lifetime of the Participant, only by the Participant. If the Administrator makes an Award transferable, including, without limitation, by instrument to an inter vivos or testamentary trust in which the Awards are to be passed to beneficiaries upon the death of the trustor (settlor) or by gift to Family Members, such Award shall contain such additional terms and conditions as the Administrator deems appropriate. Notwithstanding the foregoing, under no circumstance may unvested or unexercised Awards be transferred for value or consideration.

15. *Adjustments; Dissolution or Liquidation; Merger or Change in Control.*

(a) *Adjustments.* In the event that any dividend or other distribution (whether in the form of cash, Shares, other securities, or other property), recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase, or exchange of Shares or other securities of the Company, or other change in the corporate structure of the Company affecting the Shares occurs, the Administrator, in order to prevent diminution or enlargement of the benefits or potential benefits intended to be made available under the Plan, will adjust the number and class of Shares that may be delivered under the Plan and/or the number, class, and price of Shares covered by each outstanding Award, the numerical Share limits in Section 3 of the Plan, and the number of Shares issuable pursuant to Awards to be granted under Section 11 of the Plan.

(b) *Dissolution or Liquidation.* In the event of the proposed dissolution or liquidation of the Company, the Administrator shall notify each Participant as soon as practicable prior to the effective date of such proposed transaction. To the extent it has not been previously exercised, an Award will terminate immediately prior to the consummation of such proposed action.

(c) *Change in Control.* In the event of a merger or Change in Control, each outstanding Award shall be treated as the Administrator determines without a Participant's consent, including, without limitation, that:

(i) Awards shall be assumed, or substantially equivalent Awards shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof) with appropriate adjustments as to the number and kind of shares and prices;

(ii) upon written notice to a Participant, that the Participant's Awards will terminate immediately prior to the consummation of such merger or Change in Control;

(iii) outstanding Awards will vest and become exercisable, realizable, or payable, or restrictions applicable to an Award will lapse, in whole or in part prior to or upon consummation of such merger or Change in Control, and, to the extent the Administrator determines, terminate upon the effectiveness of such merger or Change in Control;

(iv) (A) the termination of an Award in exchange for an amount of cash and/or property, if any, equal to the amount that would have been attained upon the exercise of such Award or realization of the Participant's rights as of the date of the occurrence of the transaction (and, for the avoidance of doubt, if as of the date of the occurrence of the transaction the Administrator determines in good faith that no amount would have been attained upon the exercise of such Award or realization of the Participant's rights, then such Award may be terminated by the Company without payment), or

(B) the replacement of such Award with other rights or property selected by the Administrator in its sole discretion; or

(v) any combination of the foregoing.

In taking any of the actions permitted under this subsection 15(c), the Administrator will not be obligated to treat all Awards, all Awards held by a Participant, or all Awards of the same type, similarly.

In the event that the successor corporation does not assume or substitute for the Award, the Participant shall fully vest in and have the right to exercise all of his or her outstanding Options and Stock Appreciation Rights, including Shares as to which it would not otherwise be vested or exercisable, all restrictions on Restricted Stock and Restricted Stock Units will lapse, and, with respect to Awards with performance-based vesting, all performance goals or other vesting criteria will be deemed achieved at one hundred percent (100%) of target levels and all other terms and conditions met. In addition, if an Option or Stock Appreciation Right is not assumed or substituted in the event of a Change in Control, the Administrator shall notify the Participant in writing or electronically that the Option or Stock Appreciation Right shall be exercisable for a period of time determined by the Administrator in its sole discretion, and the Option or Stock Appreciation Right shall terminate upon the expiration of such period.

For the purposes of this subsection 15(c), the Award shall be considered assumed if, following the Change in Control, the Award confers the right to purchase or receive, for each Share subject to the Award immediately prior to the Change in Control, the consideration (whether stock, cash, or other securities or property) received in the Change in Control by holders of Common Stock for each Share held on the effective date of the transaction (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding Shares); provided, however, that if such consideration received in the Change in Control is not solely common stock of the successor corporation or its Parent, the Administrator may, with the consent of the successor corporation, provide for the consideration to be received upon the exercise of an Option or Stock Appreciation Right or upon the payout of a Restricted Stock Unit, Performance Unit or Performance Share, for each Share subject to the Award, to be solely common stock of the successor corporation or its Parent equal in fair market value to the per share consideration received by holders of Common Stock in the Change in Control.

Notwithstanding anything in this subsection 15(c) to the contrary, an Award that vests, is earned or paid-out upon the satisfaction of one or more performance goals will not be considered assumed if the Company or its successor modifies any of such performance goals without the Participant's consent; provided, however, a modification to such performance goals only to reflect the successor corporation's post-Change in Control corporate structure will not be deemed to invalidate an otherwise valid Award assumption.

(d) *Outside Director Awards.* With respect to Awards granted to an Outside Director that are assumed or substituted for, if on the date of or following such assumption or substitution the Participant's status as a Director or a director of the successor corporation, as applicable, is terminated other than upon a voluntary resignation by the Participant (unless such resignation is at the request of the acquirer), then the Participant will fully vest in and have the right to exercise Options and/or Stock Appreciation Rights as to all of the Shares underlying such Award, including those Shares which would not otherwise be vested or exercisable, all restrictions on Restricted Stock and Restricted Stock Units will lapse, and, with respect to Performance Units and Performance Shares, all performance goals or other vesting criteria will be deemed achieved at one hundred percent (100%) of target levels and all other terms and conditions met.

16. *Tax Withholding.*

(a) *Withholding Requirements.* Prior to the delivery of any Shares or cash pursuant to an Award (or exercise thereof), the Company will have the power and the right to deduct or withhold, or require a Participant to remit to the Company, an amount sufficient to satisfy federal, state, local, foreign or other taxes (including the Participant's FICA obligation) required to be withheld with respect to such Award (or exercise thereof).

(b) *Withholding Arrangements.* The Administrator, in its sole discretion and pursuant to such procedures as it may specify from time to time, may permit a Participant to satisfy such tax withholding obligation, in whole or in part by (without limitation):

(i) paying cash;

(ii) electing to have the Company withhold otherwise deliverable cash or Shares having a Fair Market Value equal to the minimum statutory amount required to be withheld; or

(iii) delivering to the Company already-owned Shares having a Fair Market Value equal to the minimum statutory amount required to be withheld.

The Fair Market Value of the Shares to be withheld or delivered will be determined as of the date that the taxes are required to be withheld.

17. *No Effect on Employment or Service.* Neither the Plan nor any Award shall confer upon a Participant any right with respect to continuing the Participant's relationship as a Service Provider with the Company, nor shall they interfere in any way with the Participant's right or the Company's right to terminate such relationship at any time, with or without cause, to the extent permitted by Applicable Laws.

18. *Date of Grant.* The date of grant of an Award shall be, for all purposes, the date on which the Administrator makes the determination granting such Award, or such other later date as is determined by the Administrator. Notice of the determination shall be provided to each Participant within a reasonable time after the date of such grant.

19. *Term of Plan.* Subject to Section 23 of the Plan, the Plan will become effective upon its adoption by the Board. It will continue in effect for a term of ten (10) years from the date adopted by the Board, unless terminated earlier under Section 20 of the Plan.

20. *Amendment and Termination of the Plan.*

(a) *Amendment and Termination.* The Board may at any time amend, alter, suspend or terminate the Plan.

(b) *Stockholder Approval.* The Company shall obtain stockholder approval of any Plan amendment:

(i) to the extent necessary and desirable to comply with Applicable Laws;

(ii) to materially increase the benefits accruing to Participants under the Plan;

(iii) to materially increase the number of securities which may be issued under the Plan; or

(iv) to materially modify the requirements for participation in the Plan.

(c) *Effect of Amendment or Termination.* No amendment, alteration, suspension or termination of the Plan shall impair the rights of any Participant, unless mutually agreed otherwise between the Participant and the Administrator, which agreement must be in writing and signed by the Participant and the Company. Termination of the Plan shall not affect the Administrator's ability to exercise the powers granted to it hereunder with respect to Awards granted under the Plan prior to the date of such termination.

21. *Conditions Upon Issuance of Shares.*

(a) *Legal Compliance.* Shares shall not be issued pursuant to the exercise of an Award unless the exercise of such Award and the issuance and delivery of such Shares shall comply with Applicable Laws and shall be further subject to the approval of counsel for the Company with respect to such compliance.

(b) *Investment Representations.* As a condition to the exercise of an Award, the Company may require the person exercising such Award to represent and warrant at the time of any such exercise that the Shares are being purchased only for investment and without any present intention to sell or distribute such Shares if, in the opinion of counsel for the Company, such a representation is required.

22. *Inability to Obtain Authority.* The inability of the Company to obtain authority from any regulatory body having jurisdiction, which authority is deemed by the Company's counsel to be necessary to the lawful issuance and sale of any Shares hereunder, shall relieve the Company of any liability in respect of the failure to issue or sell such Shares as to which such requisite authority shall not have been obtained.

Stockholder Approval. The Plan shall be subject to approval by the stockholders of the Company within twelve (12) months after the date the Plan is adopted by the Board. Such stockholder approval shall be obtained in the manner and to the degree required under Applicable Laws.

RUDOLPH TECHNOLOGIES, INC.

2009 EMPLOYEE STOCK PURCHASE PLAN

The following constitute the provisions of the 2009 Employee Stock Purchase Plan of Rudolph Technologies, Inc.

1. *Purpose.* The purpose of the Plan is to provide employees of the Company and its Designated Subsidiaries with an opportunity to purchase Common Stock of the Company. It is the intention of the Company to have the Plan qualify as an "Employee Stock Purchase Plan" under Section 423 of the Internal Revenue Code of 1986, as amended. The provisions of the Plan shall, accordingly, be construed so as to extend and limit participation in a manner consistent with the requirements of that section of the Code.

2. *Definitions.*

(a) *"Board"* shall mean the Board of Directors of the Company.

(b) *"Code"* shall mean the Internal Revenue Code of 1986, as amended.

(c) *"Common Stock"* shall mean the common stock of the Company.

(d) *"Company"* shall mean Rudolph Technologies, Inc., a Delaware corporation.

(e) *"Compensation"* shall mean the total compensation paid to an Employee, including all salary, wages (including amounts elected to be deferred by the Employee, that would otherwise have been paid, under any cash or deferred arrangement or other deferred compensation program established by the Company or the Employer), overtime pay, commissions, bonuses, and other remuneration paid directly to the Employee, but excluding referral and hiring bonuses, profit sharing, the cost of employee benefits paid for by the Company or the Employer, education, tuition or other similar reimbursements, imputed income arising under any Company group insurance or benefit program, traveling expenses, business and moving expense reimbursements, income received in connection with stock options, restricted stock grants, or other equity based awards, contributions made by the Company or the Employer under any employee benefit plan, and similar items of compensation.

(f) *"Continuous Status as an Employee"* shall mean the absence of any interruption or termination of service as an Employee. Continuous Status as an Employee shall not be considered interrupted in the case of sick leave or other leave of absence agreed to in writing by the Company or the Employer, provided that such leave is for a period of not more than ninety (90) days or reemployment upon the expiration of such leave is guaranteed by contract, statute or as a matter of local law.

(g) *"Contributions"* shall mean all amounts credited to the account of a participant pursuant to the Plan.

(h) *"Designated Subsidiary"* shall mean any Subsidiary that has been designated by the Board, or a committee named by the Board, from time to time in its sole discretion as eligible to participate in the Plan.

(i) *"Employee"* shall mean any person, including an Officer, who is customarily employed for at least twenty (20) hours per week and more than five (5) months in a calendar year by the Company or a Designated Subsidiary, provided that, in certain jurisdictions outside the United States, the term "Employee" may, if so provided by the Company in writing, also include a person employed for less than twenty (20) hours per week or less than five (5) months in a calendar year if such person must be permitted to participate in the Plan pursuant to local laws (as determined by the Company).

(j) *"Employer"* shall mean the Designated Subsidiary that employs a participant, if the employer is not the Company.

(k) *"Enrollment Date"* shall mean the first Trading Day of each Offering Period.

(l) *"Exchange Act"* shall mean the U.S. Securities Exchange Act of 1934, as amended.

(m) *"Exercise Date"* shall mean the last Trading Day of each Offering Period.

(n) *"Fair Market Value"* shall mean, as of any date, the value of Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or a national market system, including without limitation the Nasdaq Global Market or The Nasdaq Global Select Market, its Fair Market Value shall be the closing sales price for such stock (or the closing bid, if no sales were reported) as quoted on such exchange or system on the date of determination, as reported in *The Wall Street Journal* or such other source as the Board deems reliable;

(ii) If the Common Stock is regularly quoted by a recognized securities dealer but selling prices are not reported, its Fair Market Value shall be the mean of the closing bid and asked prices for the Common Stock on the date of determination, as reported in *The Wall Street Journal* or such other source as the Board deems reliable; or

(iii) In the absence of an established market for the Common Stock, the Fair Market Value thereof shall be determined in good faith by the Board.

(o) *"Offering Periods"* shall mean the periods of approximately six (6) months during which an option granted pursuant to the Plan may be exercised, commencing on the first Trading Day on or after May 1st and November 1st of each year and terminating on the last Trading Day in the periods ending six (6) months later. The duration and timing of Offering Periods may be changed pursuant to Section 4 of this Plan.

(p) *"Officer"* shall mean a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder.

(q) *"Parent"* shall mean a "parent corporation", domestic or foreign, whether now or hereafter existing, as defined in Section 424(e) of the Code.

(r) *"Plan"* shall mean this 2009 Employee Stock Purchase Plan.

(s) *"Purchase Price"* shall mean an amount equal to 95% of the Fair Market Value of a Share of Common Stock on the Exercise Date; provided however that Purchase Price may be adjusted by the Board pursuant to Section 19.

(t) *"Reserves"* shall mean the number of Shares covered by each option under the Plan which have not yet been exercised and the number of Shares which have been authorized for issuance under the Plan but not yet placed under option.

(u) *"Share"* shall mean a share of Common Stock, as adjusted in accordance with Section 19 of the Plan.

(v) *"Subsidiary"* shall mean a "subsidiary corporation", domestic or foreign, whether now or hereafter existing, as defined in Section 424(f) of the Code.

(w) *"Trading Day"* shall mean a day on which national stock exchanges and the Nasdaq System are open for trading.

3. *Eligibility.*

(a) Any person who is an Employee as of the beginning of any given Offering Period shall be eligible to participate in such Offering Period under the Plan, subject to the requirements of Section 5(a) and the limitations imposed by Section 423(b) of the Code.

(b) Any provisions of the Plan to the contrary notwithstanding, no Employee shall be granted an option under the Plan:

(i) if, immediately after the grant, such Employee (or any other person whose stock would be attributed to such Employee pursuant to Section 424(d) of the Code) would own stock and/or hold outstanding options to purchase stock possessing five percent (5%) or more of the total combined voting power or value of all classes of stock of the Company, any Subsidiary or any Parent; or

(ii) if such option would permit his or her rights to purchase stock under all employee stock purchase plans (described in Section 423 of the Code) of the Company, any Subsidiary or any Parent to accrue at a rate which exceeds Twenty-Five Thousand Dollars ($25,000) of Fair Market Value of such stock (determined at the time such option is granted) for each calendar year in which such option is outstanding at any time.

4. *Offering Periods.* The Plan shall be implemented by consecutive Offering Periods with a new Offering Period commencing on the first Trading Day on or after May 1st and November 1st each year, or on such other date as the Board shall determine, and continuing thereafter. The Plan shall continue until terminated in accordance with Section 19 hereof. The Board shall have the power to change the duration and/or the frequency of Offering Periods (including the commencement dates thereof) with respect to future offerings without shareholder approval if such change is announced prior to the scheduled beginning of the first Offering Period to be affected.

5. *Participation.*

(a) An eligible Employee may become a participant in the Plan by completing a subscription agreement on the form provided by the Company and filing it with the Company's payroll office prior to the applicable Enrollment Date, unless a later time for filing the subscription agreement is set by the Board for all eligible Employees with respect to a given offering. The subscription agreement shall set forth the percentage of the participant's Compensation (subject to Section 6(a) below) to be paid as Contributions pursuant to the Plan.

(b) An eligible Employee may contribute to the Plan by means of payroll deductions, unless payroll deductions are not permitted under local law, as determined by the Company, in which case eligible Employees may be permitted to contribute to the Plan by an alternative method, as determined by the Company. Payroll deductions, or, if payroll deductions are not permitted under local law, payments made under an alternative method, shall commence as of the first payday following the Enrollment Date and shall end on the last payday paid on or prior to the Exercise Date of the Offering Period to which the subscription agreement is applicable, unless the Employee's participation is sooner terminated as provided in Section 10.

6. *Method of Payment of Contributions.*

(a) Where permitted under local law, the participant shall elect to have payroll deductions made on each payday during the Offering Period in an amount not less than one percent (1)% and not more than fifteen percent (15)% of such participant's Compensation on each such payday (or such other maximum percentage as the Board may establish from time to time before an Enrollment Date). Where payroll deductions are not permitted under local law, the participant may be permitted to contribute to the Plan by an alternative method, as determined by the Company. All payroll deductions or other payments made by a participant shall be credited to his or her account under the Plan. A participant may not make any additional payments into such account.

(b) A participant may discontinue his or her participation in the Plan as provided in Section 10, or, during an Offering Period, may decrease the rate of his or her Contributions during the applicable Period by completing and filing with the Company a new subscription agreement. The Board may, in its discretion, limit the number of participation rate changes during any Offering Period. The change in rate shall be effective as soon as administratively practicable following the date of filing of the new subscription agreement; provided that any change elected on a new subscription agreement filed within twenty-one (21) days of the end of any Offering Period shall not take effect earlier than the beginning of the first new Offering Period to commence after the date of that filing. A participant may change the rate of his or her Contributions effective as of the beginning of any Offering Period by filing a new subscription agreement prior to the beginning of such Offering Period; provided that any change elected within twenty-one (21) days prior to the beginning of that Offering Period shall be given effect as soon as administratively practicable on or after the first day of that Offering Period. A participant's subscription agreement shall remain in effect for successive Offering Periods unless terminated as provided in Section 10 hereof.

(c) Notwithstanding the foregoing, to the extent necessary to comply with Section 423(b)(8) of the Code and Section 3(b) herein, a participant's payroll deductions or other payments may be decreased to zero percent

(0)% at any time during an Offering Period, as applicable. Payroll deductions or other payments shall re-commence at the rate provided in such participant's subscription agreement at the beginning of the first Offering Period, as applicable, which is scheduled to end in the following calendar year, unless the participant's participation is terminated as provided in Section 10. In addition, a participant's payroll deductions or other payments may be decreased by the Company to zero percent (0)% at any time during an Offering Period in order to avoid unnecessary contributions as a result of application of the maximum Share limit set forth in Section 7(a), or as a result of the limitations set forth in Section 3(b), in which case payroll deductions or payments shall re-commence at the rate provided in such participant's subscription agreement at the beginning of the next Offering Period, unless terminated by the participant as provided in Section 10.

(d) As may be further specified in the subscription agreement, at the time the option is exercised, in whole or in part, or at the time some or all of the Company's Common Stock issued under the Plan is disposed of, the participant must make adequate provision for the Company's and/or the Employer's federal, state, or other tax and social insurance withholding obligations, if any, which arise upon the exercise of the option or the disposition of the Common Stock. At any time, the Company and the Employer may, but shall not be obligated to, withhold from the participant's compensation the amount necessary for the Company and/or the Employer to meet applicable withholding obligations, including any withholding required to make available to the Company or the Employer any tax deductions or benefits attributable to sale or early disposition of Common Stock by the participant.

7. *Grant of Option.* On the Enrollment Date of each Offering Period, each eligible Employee participating in such Offering Period shall be granted an option to purchase on each Exercise Date occurring within the Offering Period a number of Shares determined by dividing such Employee's Contributions accumulated prior to such Exercise Date and retained in the participant's account as of the Exercise Date by the applicable Purchase Price; provided however, that the maximum number of Shares an Employee may purchase during any one Offering Period shall be 3,000 Shares, subject to adjustment as provided in Section 18, and provided further that such purchase shall be subject to the limitations set forth in Sections 3(b) and 12. The Board may, for future Offering Periods, increase or decrease, in its absolute discretion, the maximum number of shares of the Company's Common Stock an Employee may purchase during such Offering Period. The option shall expire on the last day of the Offering Period.

8. *Exercise of Option.*

(a) Unless a participant's participation is terminated as provided in Section 10, his or her option for the purchase of Shares will be exercised automatically on the Exercise Date of an Offering Period, and the maximum number of full Shares subject to the option will be purchased at the applicable Purchase Price with the accumulated Contributions in his or her account (subject to such limitations as are specified in the Plan). The Shares purchased upon exercise of an option hereunder shall be deemed to be transferred to the participant on the Exercise Date. During his or her lifetime, a participant's option to purchase Shares hereunder is exercisable only by him or her.

(b) No fractional Shares shall be purchased. Any payroll deductions or other payments accumulated in a participant's account which are not sufficient to purchase a full Share shall be retained in the participant's account for the subsequent Offering Period, subject to earlier withdrawal by the participant or termination of such participant's participation as provided in Section 10 below. Any other amounts left over in a participant's account after an Exercise Date shall be returned to the participant.

9. *Delivery.* As promptly as practicable after each Exercise Date of each Offering Period, the Company shall arrange the delivery to each participant (by electronic or other means), as appropriate, of a certificate representing the Shares purchased upon exercise of his or her option. Notwithstanding the foregoing, the Board may require that all Shares purchased under the Plan be held in an account (the participant's "ESPP Stock Account") established in the name of the participant (or in the name of the participant and his or her spouse, as designated by the participant on his or her subscription agreement), subject to such rules as determined by the Board and uniformly applied to all participants, including designation of a brokerage or other financial services firm (an "ESPP Broker") to hold such Shares for the participant's ESPP Stock Account with registration of such Shares in the name of such ESPP Broker for the benefit of the participant (or for the

benefit of the participant and his or her spouse, as designated by the participant on his or her subscription agreement).

10. *Voluntary Withdrawal: Termination of Employment.*

(a) A participant may withdraw all but not less than all the Contributions credited to his or her account under the Plan, by giving notice of withdrawal from the Plan in accordance with the withdrawal procedures then in effect, not less than twenty-one (21) days prior to the last day of the Offering Period for which such election is to be given effect. All of the participant's Contributions credited to his or her account will be paid to him or her promptly after receipt of his or her notice of withdrawal and his or her option for that Offering Period will be automatically terminated, and no further Contributions for the purchase of Shares may be made by the participant for that Offering Period.

(b) Upon termination of the participant's Continuous Status as an Employee prior to the last day of an Offering Period for any reason, including retirement or death, the Contributions credited to his or her account will be promptly returned to him or her or, in the case of his or her death, to the person or persons entitled thereto under Section 14, if any, his or her option for that Offering Period will be automatically terminated, and no further Contributions for the purchase of Shares may be made by the participant for that Offering Period. If a Subsidiary ceases to be a Subsidiary, each person employed by that Subsidiary will be deemed to have terminated employment for purposes of the Plan, unless the person continues as an employee of the Company or another Subsidiary.

(c) In the event an Employee fails to remain in Continuous Status as an Employee for at least twenty (20) hours per week during an Offering Period in which the Employee is a participant, unless such Employee is on an approved leave of absence or a temporary reduction of hours, or unless otherwise required by local law, he or she will be deemed to have elected to withdraw from the Plan, the Contributions credited to his or her account will be returned to him or her, his or her option for that Offering Period will be automatically terminated, and no further Contributions for the purchase of Shares may be made by the participant for that Offering Period.

(d) A participant's withdrawal from an Offering Period will not have any effect upon his or her eligibility to participate in a succeeding Offering Period or in any similar plan which may hereafter be adopted by the Company.

11. *Interest.* No interest shall accrue on the Contributions of a participant in the Plan, unless required by local law.

12. *Stock.*

(a) Subject to adjustment as provided in Section 18, the maximum number of Shares of the Company's Common Stock which shall be made available for sale under the Plan shall be 300,000 Shares, plus an annual increase to be added on the first day of the Company's fiscal year, beginning in 2011, equal to the lesser of:

(i) 300,000 Shares;

(ii) two percent (2%) of the outstanding shares of Common Stock on such date; or

(iii) a lesser amount determined by the Board.

(b) If the Board determines that, on a given Exercise Date, the number of Shares with respect to which options are to be exercised may exceed:

(i) the number of Shares that were available for sale under the Plan on the Enrollment Date of the applicable Offering Period; or

(ii) the number of Shares available for sale under the Plan on such Exercise Date,

the Board may in its sole discretion provide (x) that the Company shall make a pro rata allocation of the Shares of Common Stock available for purchase on such Enrollment Date or Exercise Date, as applicable, in as uniform a manner as shall be practicable and as it shall determine in its sole discretion to be equitable

among all participants exercising options to purchase Common Stock on such Exercise Date, and continue the Offering Period then in effect, or (y) that the Company shall make a pro rata allocation of the Shares available for purchase on such Enrollment Date or Exercise Date, as applicable, in as uniform a manner as shall be practicable and as it shall determine in its sole discretion to be equitable among all participants exercising options to purchase Common Stock on such Exercise Date, and terminate the Offering Period then in effect pursuant to Section 19 below. The Company may make pro rata allocation of the Shares available on the Enrollment Date of any applicable Offering Period pursuant to the preceding sentence, notwithstanding any authorization of additional Shares for issuance under the Plan by the Company's stockholders subsequent to such Enrollment Date.

(c) The participant will have no interest or voting right in Shares covered by his or her option until such option has been exercised and such Shares have actually been delivered to and held of record by the participant. No adjustment will be made for dividends or other rights as a stockholder for which a record date is prior to such date of delivery.

(d) Shares to be delivered (by electronic or other means) to a participant under the Plan will be registered in the name of the participant or in the name of the participant and his or her spouse, as designated by the participant in his or her subscription agreement; provided that if the Board has determined that Shares shall be held in an ESPP Stock Account held by an ESPP Broker in accordance with Section 9, Shares shall be registered in the name of such ESPP Broker for the benefit of the participant or the participant and his or her spouse, as designated by the participant in his or her subscription agreement.

13. *Administration.*

(a) The Board, or a committee named by the Board, shall supervise and administer the Plan and shall have full power to adopt, amend and rescind any rules deemed desirable and appropriate for the administration of the Plan and not inconsistent with the Plan, to construe and interpret the Plan, and to make all other determinations necessary or advisable for the administration of the Plan. Any action taken by, or inaction of, the Company, any Subsidiary, the Board or a Board committee relating or pursuant to the Plan and within its authority hereunder or under applicable law shall be within the absolute discretion of that entity or body and shall be conclusive and binding upon all persons.

(b) The Board or Board committee has discretion to adopt any rules regarding administration of the Plan to conform to local laws. Without limiting the generality of the foregoing, the Board or a Board committee is specifically authorized to adopt rules and procedures regarding handling of payroll deductions, payment of interest and handling of stock certificates which vary according to local requirements. The Board or a Board committee has the authority to suspend or limit participation in the Plan by employees of any particular Subsidiary for any reason, including administrative or economic reasons. The Board or a Board committee may also adopt rules, procedures or sub-plans applicable to particular Subsidiaries or locations, which sub-plans may be designed to be outside the scope of Section 423 of the Code.

(c) In making any determination or in taking or not taking any action under the Plan, the Board or a Board committee may obtain and may rely upon the advice of experts, including professional advisors to the Company. No director, officer or agent of the Company or any Subsidiary shall be liable for any such action or determination taken or made or omitted in good faith. The Board or a Board committee may delegate ministerial, non-discretionary functions relating to the Plan to individuals who are officers or employees of the Company or a Subsidiary.

(d) Neither the Board nor any Board committee, nor any member thereof or person acting at the direction thereof, shall be liable for any act, omission, interpretation, construction or determination made in good faith in connection with the Plan, and all such persons shall be entitled to indemnification and reimbursement by the Company in respect of any claim, loss, damage or expense (including, without limitation, attorneys' fees) arising or resulting therefrom to the fullest extent permitted by law and/or under any directors and officers liability insurance coverage that may be in effect from time to time.

14. *Designation of Beneficiary.*

(a) Unless otherwise determined by the Company, a participant may file a written designation of a beneficiary who is to receive any Shares and cash, if any, from the participant's account under the Plan in the event of such participant's death subsequent to the end of an Offering Period, as applicable, but prior to delivery to him or her of such Shares and/or cash. In addition, unless otherwise determined by the Company, a participant may file a written designation of a beneficiary who is to receive any cash from the participant's account under the Plan in the event of such participant's death prior to the Exercise Date of an Offering Period. If a participant is married and the designated beneficiary is not the spouse, spousal consent shall be required for such designation to be effective.

(b) Unless otherwise determined by the Company, such designation of beneficiary may be changed by the participant (and his or her spouse, if any) at any time by written notice to the Company in a manner acceptable to the Company. In the event of the death of a participant and in the absence of a beneficiary validly designated under the Plan who is living at the time of such participant's death, the Company shall deliver such Shares and/or cash to the executor or administrator of the estate of the participant, or if no such executor or administrator has been appointed (to the knowledge of the Company), the Company, in its discretion, may deliver such Shares and/or cash to the spouse or to any one or more dependents or relatives of the participant, or if no spouse, dependent or relative is known to the Company, then to such other person as the Company may designate or determine to be the appropriate recipient of the Shares and/or cash under applicable local law.

15. *Transferability.* Neither Contributions credited to a participant's account nor any rights with regard to the exercise of an option or to receive Shares under the Plan may be assigned, transferred, pledged or otherwise disposed of in any way (other than by will, the laws of descent and distribution, or as provided in Section 14) by the participant. Any such attempt at assignment, transfer, pledge or other disposition shall be without effect, except that the Company may treat such act as an election to withdraw funds in accordance with Section 10.

16. *Use of Funds.* All Contributions received or held by the Company under the Plan may be used by the Company for any corporate purpose, and the Company shall not be obligated to segregate such Contributions, unless required by local law.

17. *Reports.* Individual accounts will be maintained for each participant in the Plan. Statements of account will be given to participating Employees as promptly as practically feasible following the Exercise Date, which statements will set forth the amounts of Contributions, the per Share Purchase Price, the number of Shares purchased and the remaining cash balance, if any.

18. *Adjustments Upon Changes in Capitalization: Corporate Transactions.*

(a) *Adjustment.* Subject to any required action by the stockholders of the Company, the Reserves, the maximum number of Shares an Employee may purchase during each Offering Period as well as the price per Share and the number of Shares covered by each option under the Plan which has not yet been exercised shall be proportionately adjusted for any increase or decrease in the number of issued Shares resulting from a stock split, reverse stock split, stock dividend, combination or reclassification of the Common Stock, or any other increase or decrease in the number of Shares effected without receipt of consideration by the Company; provided, however, that conversion of any convertible securities of the Company shall not be deemed to have been "effected without receipt of consideration." Such adjustment shall be made by the Board, whose determination in that respect shall be final, binding and conclusive. Except as expressly provided herein, no issue by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall affect, and no adjustment by reason thereof shall be made with respect to, the number or price of Shares subject to an option.

(b) *Corporate Transactions.* In the event of the proposed dissolution or liquidation of the Company, the Plan, any Offering Period then in progress, and any outstanding option granted with respect to such Offering Period will terminate immediately prior to the consummation of such proposed action, unless otherwise provided by the Board. If a participant's option is terminated pursuant to the preceding sentence, the

Contributions then credited to such participant's account will be paid to him or her in cash without interest. In the event of a proposed sale of all or substantially all of the assets of the Company, or the merger of the Company with or into another corporation, unless otherwise determined by the Board, each option under the Plan shall be assumed or an equivalent option shall be substituted by such successor corporation or a parent or subsidiary of such successor corporation, or, if not so assumed or substituted, the Offering Period then in progress shall be shortened and the Board shall set a new Exercise Date (the "New Exercise Date"). The New Exercise Date shall be on or before the date of consummation of the transaction and the Board shall notify each participant in writing, at least ten (10) days prior to the New Exercise Date, that the Exercise Date for his or her option (including for purposes of determining the Purchase Price of such option) has been changed to the New Exercise Date and that his or her option will be exercised automatically on the New Exercise Date, unless prior to such date he or she has withdrawn from the Offering Period as provided in Section 10. For purposes of this paragraph, an option granted under the Plan shall be deemed to be assumed if, following the sale of assets or merger, the option confers the right to purchase, for each Share subject to the option immediately prior to the sale of assets or merger, the consideration (whether stock, cash or other securities or property) received in the sale of assets or merger by holders of Common Stock for each Share held on the effective date of the transaction (and if such holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding Shares of Common Stock); provided, however, that if such consideration received in the sale of assets or merger was not solely common stock of the successor corporation or its parent (as defined in Section 424(e) of the Code), the Board may, with the consent of the successor corporation and the participant, provide for the consideration to be received upon exercise of the option to be solely common stock of the successor corporation or its parent equal in Fair Market Value to the per Share consideration received by holders of Common Stock and the sale of assets or merger.

(c) The Board may, if it so determines in the exercise of its sole discretion, also make provision for adjusting the Reserves, as well as the price per Share covered by each outstanding option, in the event that the Company effects one or more reorganizations, recapitalizations, rights offerings or other increases or reductions of shares of its outstanding Common Stock, and in the event of the Company being consolidated with or merged into any other corporation.

19. *Amendment or Termination.*

(a) The Board may at any time and for any reason terminate or amend the Plan. Except as provided in Section 13(b) and 18, no such termination of the Plan may affect options previously granted, provided that the Plan or an Offering Period may be terminated by the Board on any Exercise Date or by the Board's setting a new Exercise Date with respect to an Offering Period then in progress if the Board determines that termination of the Plan and/or the Offering Period is in the best interests of the Company and the stockholders or if continuation of the Plan and/or the Offering Period would cause the Company to incur adverse accounting charges as a result of a change after the effective date of the Plan in the generally accepted accounting rules applicable to the Plan. Except as provided in Section 18 and in this Section 19, no amendment to the Plan shall make any change in any option previously granted which adversely affects the rights of any participant without such participant's written consent. In addition, to the extent necessary to comply with the requirements of Rule 16b-3 under the Exchange Act, Section 423 of the Code (or any successor rule or provision or any applicable law or regulation) or any stock exchange on which the Shares are then listed, the Company shall obtain stockholder approval in such a manner and to such a degree as so required.

(b) Without stockholder consent and without regard to whether any participant rights may be considered to have been adversely affected, the Board shall be entitled to change the Offering Periods, limit the frequency and/or number of changes in the amount withheld during an Offering Period, establish the exchange ratio applicable to amounts withheld in a currency other than U.S. dollars, permit payroll withholding in excess of the amount designated by a participant in order to adjust for delays or mistakes in the Company's processing of properly completed withholding elections, establish reasonable waiting and adjustment periods and/or accounting and crediting procedures to ensure that amounts applied toward the purchase of Shares for each participant properly correspond with amounts withheld from the participant's Compensation, and establish such

other limitations or procedures as the Board determines in its sole discretion advisable which are consistent with the Plan.

20. *Notices.* All notices or other communications by a participant to the Company under or in connection with the Plan shall be deemed to have been duly given when received in the form specified by the Company at the location, or by the person, designated by the Company for the receipt thereof.

21. *Conditions Upon Issuance of Shares.* The Company shall have no obligation to issue Shares with respect to an option unless the exercise of such option and the issuance and delivery of such Shares pursuant thereto shall comply with all applicable provisions of law, domestic or foreign, including, without limitation, the U.S. Securities Act of 1933, as amended, the Exchange Act, the rules and regulations promulgated thereunder, and the requirements of any stock exchange upon which the Shares may then be listed, and shall be further subject to the approval of counsel for the Company with respect to such compliance.

As a condition to the exercise of an option, the Company may require the person exercising such option to represent and warrant at the time of any such exercise that the Shares are being purchased only for investment and without any present intention to sell or distribute such Shares if, in the opinion of counsel for the Company, such a representation is required by any of the aforementioned applicable provisions of law.

22. *Term of Plan; Effective Date.* The Plan shall become effective upon the earlier to occur of its adoption by the Board or its approval by the stockholders of the Company. The Plan shall continue in effect for a term of twenty (20) years unless sooner terminated under Section 19.

23. *Additional Restrictions of Rule 16b-3.* The terms and conditions of options granted hereunder to, and the purchase of Shares by, persons subject to Section 16 of the Exchange Act shall comply with the applicable provisions of Rule 16b-3. This Plan shall be deemed to contain, and such options shall contain, and the Shares issued upon exercise thereof shall be subject to, such additional conditions and restrictions as may be required by Rule 16b-3 to qualify for the maximum exemption from Section 16 of the Exchange Act with respect to Plan transactions.

24. *No Employment Rights.* Nothing in the Plan (or in any subscription agreement or other document related to this Plan) will confer upon any Employee or participant any right to continue in the employ or other service of the Company or any Subsidiary, constitute any contract or agreement of employment or other service or effect an employee's status as an employee at will, nor shall interfere in any way with the right of the Company or any Subsidiary to change such person's compensation or other benefits or to terminate his or her employment or other service, with or without cause. Nothing contained in this Section 24, however, is intended to adversely affect any express independent right of any such person under a separate employment or service contract other than a subscription agreement.

25. *No Right to Assets of the Company.* No participant or other person will have any right, title or interest in any fund or in any specific asset (including Shares) of the Company or any Subsidiary by reason of any option hereunder. Neither the provisions of the Plan (or of any subscription agreement or other document related to the Plan), nor the creation or adoption of the Plan, nor any action taken pursuant to the provisions of the Plan will create, or be construed to create, a trust of any kind or a fiduciary relationship between the Company or any Subsidiary and any participant, beneficiary or other person. To the extent that a participant, beneficiary or other person acquires a right to receive payment pursuant to the Plan, such right will be no greater than the right of any unsecured general creditor of the Company.

26. *Miscellaneous.*

(a) The Plan, the options, subscription agreements and other documents related to the Plan shall be governed by, and construed in accordance with, the laws of the State of Delaware. If any provision of the Plan shall be held by a court of competent jurisdiction to be invalid and unenforceable, the remaining provisions of the Plan shall continue in effect.

(b) Captions and headings are given to the sections of the Plan solely as a convenience to facilitate reference. Such captions and headings shall not be deemed in any way material or relevant to the construction of interpretation of the Plan or any provision hereof.

(c) The adoption of the Plan shall not affect any other Company or Subsidiary compensation or incentive plans in effect. Nothing in the Plan will limit or be deemed to limit the authority of the Board or a Board committee:

(i) to establish any other forms of incentives or compensation for employees of the Company or any Subsidiary (with or without reference to the Common Stock), or

(ii) to grant or assume options (outside the scope of and in addition to those contemplated by the Plan) in connection with any proper corporate purpose, to the extent consistent with any other plan or authority.

Benefits received by a participant under an option granted pursuant to the Plan shall not be deemed a part of the participant's compensation for purposes of the determination of benefits under any other employee welfare or benefit plans or arrangements, if any, provided by the Company or any Subsidiary, except where the Board or Board committee (or the Board of Directors of the Subsidiary that sponsors such plan or arrangement, as applicable) expressly otherwise provides or authorizes in writing.

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

(MARK ONE)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the Fiscal Year Ended December 31, 2008

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission File No. 000-27965

RUDOLPH TECHNOLOGIES, INC.

(Exact name of registrant as specified in its charter)

Delaware	**22-3531208**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**

One Rudolph Road, P.O. Box 1000, Flanders, NJ 07836
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (973) 691-1300

SECURITES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

Title of Each Class	**Name of Exchange on Which Registered**
Common Stock, $0.001 par value per share	**The NASDAQ Stock Market LLC (NASDAQ Global Seclect Market)**

SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT:
None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☐ Accelerated filer ☒ Non-accelerated filer ☐ Smaller reporting company ☐
(Do not check if a smaller reporting company)

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the voting stock held by non-affiliates of the registrant based on the closing price of the registrant's stock price on June 30, 2008 of $7.70 was approximately $201,354,469.

The registrant had 30,737,857 shares of Common Stock outstanding as of February 6, 2009.

DOCUMENTS INCORPORATED BY REFERENCE

The following document is incorporated by reference in Part III of this Annual Report on Form 10-K: Items 10, 11, 12, 13 and 14 of Part III incorporate by reference information from the definitive proxy statement for the registrant's annual meeting of stockholders to be held on May 19, 2009.

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FORWARD LOOKING STATEMENTS

Certain statements in this Annual Report on Form 10-K are forward-looking statements, including those concerning our expectations of future revenues, gross profits, research and development and engineering expenses, selling, general and administrative expenses, product introductions, technology development, manufacturing practices, cash requirements and anticipated trends and developments in and management plans for, our business and the markets in which we operate. The statements contained in this Annual Report on Form 10-K that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 and within the meaning of the Private Securities Litigation Reform Act of 1995. In addition, we may, from time to time make oral forward-looking statements. Forward-looking statements may be identified by the words such as, but not limited to, "anticipate", "believe", "expect", "intend", "plan", "should", "may", "could", "will" and words or phrases of similar meaning, as they relate to our management or us.

The forward-looking statements contained herein reflect our current expectations with respect to future events and are subject to certain risks, uncertainties and assumptions. The forward-looking statements reflect our position as of the date of this report and we undertake no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise. Actual results may differ materially from those projected in such forward-looking statements for a number of reasons including, but not limited to, the following: variations in the level of orders which can be affected by general economic conditions and growth rates in the semiconductor manufacturing industry and in the markets served by our customers, the international economic and political climates, difficulties or delays in product functionality or performance, the delivery performance of sole source vendors, the timing of future product releases, failure to respond adequately to either changes in technology or customer preferences, changes in pricing by us or our competitors, ability to manage growth, risk of nonpayment of accounts receivable, changes in budgeted costs and the "Risk Factors" set forth in Item 1A. Our stockholders should carefully review the cautionary statements contained in this Form 10-K below. You should also review any additional disclosures and cautionary statements we make from time to time in our Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and other filings.

PART I

Item 1. Business.

General

Rudolph Technologies, Inc. is a worldwide leader in the design, development, and manufacture of high-performance process control metrology, defect inspection, and data analysis systems used by semiconductor device manufacturers. We provide yield management solutions used in both wafer processing and final manufacturing through a family of standalone systems and integrated modules for both transparent and opaque thin film measurements and macro-defect inspection. All of these systems feature sophisticated software and production-worthy automation. Rudolph systems are backed by worldwide customer service and applications support.

The purchase of intellectual property and selected assets from RVSI Inspection LLC was announced on January 22, 2008. As a result, the Wafer Scanner™ (WS) 3800 inspection system was added to the Rudolph product portfolio. The WS Series is used by many back-end manufacturers, with the highest volume found in bump applications. The new WS3840™ was launched in May and delivered to a major Asian semiconductor foundry.

Metrology Systems. The industry's first production-oriented microprocessor-controlled ellipsometer for thin transparent film measurements was introduced by Rudolph in 1977. Since that time, we have consistently provided innovative product developments designed to meet manufacturers' most advanced measurement requirements. Our patented transparent film technology uses up to four lasers operating simultaneously at multiple angles and multiple wavelengths, providing powerful analysis and measurement capabilities to handle the most challenging requirements of today's advanced processes and tomorrow's new materials. Unlike the white-light sources used in spectroscopic ellipsometers, laser light sources make our metrology tools inherently stable, increase measurement speed and accuracy, and reduce maintenance costs by minimizing the time required to re-qualify a light source when

it is replaced. Our systems also employ a proprietary reflectometer technology that allows the characterization of films and film stacks that cannot be performed using conventional reflectometry or ellipsometry alone.

For opaque film characterization, we brought patented optical acoustic metal film metrology technology to the semiconductor manufacturing floor that allows customers to simultaneously measure the thickness and other properties of up to six metal or other opaque film layers in a non-contact manner on product wafers. PULSE™ Technology uses an ultra-fast laser to generate sound waves that pass down through a stack of opaque films such as those used in copper or aluminum interconnect processes, sending back to the surface an echo that indicates film thickness, density, and other process critical parameters. We believe we are a leader in providing systems that can non-destructively measure opaque thin-film stacks with the speed and accuracy semiconductor device manufacturers demand in order to achieve high yields with the latest fabrication processes. The technology is ideal for characterizing copper interconnect structures and the majority of all systems sold have been for copper applications.

Inspection Systems. Chip manufacturers deploy advanced macro-defect inspection (defects greater in size than 0.5 micron) throughout the fab to monitor key process steps, gather process-enhancing information and ultimately, lower manufacturing costs. Field-established tools such as the AXi™ and NSX® are found in wafer processing (front-end) and final manufacturing (back-end) facilities around the world. These high-speed tools incorporate features such as waferless recipe creation, tool-to-tool correlation, multiple inspection resolutions and proprietary review and classification software that are required in today's high-volume integrated circuit (IC) manufacturing environments. In addition to wafer frontside inspection, Rudolph's innovative Explorer® Cluster incorporates wafer edge and backside inspection in one integrated platform to enhance productivity and continuously improve fab yield.

Data Analysis & Review Systems. Rudolph has a comprehensive offering of software solutions for process management and data review. Using wafer maps, charts and graphs, the vast amount of data gathered through automated inspection can be analyzed to determine trends that ultimately affect yield. Our goal is to provide our customers with timely and accurate information so that corrective actions can be taken. Software solutions available to our customers include products that identify, classify and analyze defect data as well as fabwide systems that are designed to determine the root cause of yield excursions as early as possible in the production flow.

Technology

We believe that our expertise in engineering and our continued investment in research and development enable us to rapidly develop new technologies and products in response to emerging industry trends. The breadth of our technology enables us to offer our customers a diverse combination of measurement technologies that provide process control for the majority of thin films used in semiconductor manufacturing. Additionally, our defect detection and classification technologies allow us to provide yield enhancement for critical front-end processes such as photolithography, diffusion, etch, CMP, and outgoing quality control. Information learned through post-fab inspection is critical. Advanced macro-defect inspection within the final manufacturing (back-end) process provides our customers with critical quality assurance and process information. Defects may be created during probing, bumping, dicing or general handling, and can have a major impact on device and process quality.

Optical Acoustics. Optical acoustic metrology involves the use of ultra-fast laser induced sonar for metal and opaque thin film measurement. This technology sends ultrasonic waves into multi-layer opaque films and then analyzes the resulting echoes to simultaneously determine the thickness of each individual layer in complex multi-layer metal film stacks. The echo's amplitude and phase can be used to detect film properties, missing layers, and interlayer problems. Since different phenomena affect amplitude and phase uniquely, a variety of process critical interlayer problems can be detected in a single measurement.

The use of optical acoustics to measure multi-layer metal and opaque films was pioneered by scientists at Brown University in collaboration with engineers at Rudolph. The proprietary optical acoustic technology in our PULSE™ Technology systems measures the thickness of single or multi-layer opaque films ranging from less than 40 Angstroms to greater than five microns. It provides these measurements at a rate of up to 70 wafers per hour within one to two percent accuracy and typically less than one percent repeatability. This range of thicknesses covers the majority of thick and thin metal films projected by the International Roadmap for Semiconductors to be

used through the end of this decade. Our non-contact, non-destructive optical acoustic technology and small spot size enable our PULSE Technology systems to measure film properties directly on product wafers.

Ellipsometry. Ellipsometry is a non-contact, non-destructive optical technique for transparent thin film measurement. We have been an industry leader in ellipsometry technology for the last three decades. We hold patents on several ellipsometry technologies, including our proprietary technique that uses four lasers for multiple-angle of incidence, multiple wavelength ellipsometry. Laser ellipsometry technology enables our transparent film systems to continue to provide the increasingly higher level of accuracy needed as thinner films and newer materials are introduced for future generations of semiconductor devices. We extended this same optical technology to characterize the scatterometry signal from patterned surfaces, allowing measurement of critical dimensions.

Reflectometry. For applications requiring broader spectral coverage, some of our ellipsometry tools are also equipped with a reflectometer. Reflectometry uses a white or ultraviolet light source to determine the properties of transparent thin films by analyzing the wavelength and intensity of light reflected from the surface of a wafer. This optical information is processed with software algorithms to determine film thickness and other material properties. By combining data from both the laser ellipsometer and broad spectrum reflectometer, it is possible to characterize films and film stacks that cannot be adequately analyzed by either method individually.

Automated Defect Detection and Classification. Automating the defect detection and classification process is best done by a system that can mimic, or even extend, the response of the human eye, but at a much higher speed, with high resolution and more consistently. To do this, our systems capture full-color whole wafer images using simultaneous dark and bright field illumination. The resulting bright and dark field images are compared to those from an "ideal" wafer having no defects. When a difference is detected, its image is broken down into mathematical vectors that allow rapid and accurate comparison with a library of known classified defects stored in the tool's database. Patented and proprietary enhancements of this approach enable very fast and highly repeatable image classification. The system is pre-programmed with an extensive library of default local, global, and color defects and can also absorb a virtually unlimited amount of new defect classes. This allows customers to define defects based on their existing defect classification system, provides more reliable automated rework decisions, and enables more accurate statistical process control data.

All-surface Inspection. All-surface refers to inspection of the wafer frontside, edge, and backside as well as post-fab die. The edge inspection process focuses on the area near the wafer edge, an area that poses difficulty for traditional wafer frontside inspection technology due to its varied topography and process variation. Edge bevel inspection looks for defects on the side edge of a wafer. The edge bead removal and edge exclusion metrology involve a topside surface measurement required exclusively in the photolithography process, primarily to determine if wafers have been properly aligned for the edge exclusion region. The primary reason for wafer backside inspection is to determine if contamination has been created that may spread throughout the fab. For instance, it is critical that the wafer backside be free of defects prior to the photolithography process to prevent focus and exposure problems on the wafer front-side.

In addition to the wafer processing floor, Rudolph automated inspection systems are used in several post-fab processes such as bump inspection, wafer probe, wafer saw and quality control.

Probe Card Test and Analysis. The combination of Fast 3D-OCM® (optical comparative metrology) Technology with improved testing accuracy and repeatability is designed to reduce total test time for even the most advanced large area probe cards. 3-D capabilities enable users to analyze probe marks and probe tips in a rapid and information-rich format.

Classification. Classifying defects off-line enables automated inspection systems to maintain their high throughput. Using defect image files captured by automated inspection systems, operators are able to view high-resolution defect images to determine killer defects. Classifying defects enables faster analysis by grouping defects found together as one larger defect, a scratch for example, and defects of similar types across a wafer lot to be grouped based on size, repeating defects and other user-defined specifications. Automatically classifying defects provides far greater yield learning than human classification.

Yield Analysis. Using wafer maps, charts and graphs, the vast amounts of data gathered through automated inspection can be analyzed to determine trends across bumps, die, wafers and lots. This analysis may determine

where in the process an inconsistency is being introduced, allowing for enhancements to be made and yields improved. Defect data analysis is performed to identify, analyze and locate the source of defects and other manufacturing process excursions. Using either a single wafer map or a composite map created from multiple wafer maps, this analysis enables identification of defect patterns and distribution. When combined with inspection data from strategically-placed inspection points, this analysis may pinpoint the source of the defects so corrective action can be taken.

Products

We market and sell products to all major logic, memory, data storage and application-specific integrated circuit (ASIC) device manufacturers. Our customers rely on Rudolph for versatile full-fab metrology and inspection systems as well as yield management software solutions. These systems are designed for high-volume production facilities and offer automated wafer handling for 200 and 300 mm configurations. Our systems operate at high throughput with ultraclean operation and high reliability.

			Type of Fab	
Product	**Introduced**	**Functionality**	**Wafer Processing**	**Final Manufacturing**
Metrology Systems				
*Meta*PULSE®	1997	- Non-contact system for thin opaque films		
*Meta*PULSE-II	2001	- Patented Picosecond Ultrasonic Laser Sonar Technology (PULSE™)	X	
*Meta*PULSE-III	2005	- Designed for advanced copper and non-copper applications		
*Meta*PULSE-IIIa	2007	- Improved throughput and repeatability		
S3000A™	2007	- Superior accuracy for transparent film measurements	X	
S3000™/S2000™	2006	- Incorporates ellipsometry technology for transparent film application - Optimized price/performance for fabwide applications - Available with pattern recognition software - Enhanced data review mode	X	

Product	Introduced	Functionality	Type of Fab	
			Wafer Processing	Final Manufacturing
Inspection & Probe Card Test Systems				
AXi™ Series	2003	- Advanced detection of defects >0.5 micron - Inspection of patterned and unpatterned wafers - In line, high-speed, 100% inspection - Full color review	X	
E30™ System	2003	- 2D defect detection of the wafer's edge - Metrology of edge feature - Incorporated into the Explorer Cluster	X	X
B30™ System	2003	- 2D defect detection of the wafer's backside - Darkfield, brightfield and color imaging - Incorporated into the Explorer Cluster	X	X
NSX® Series	1997	- Fully automated defect detection >0.5 micron - 2D wafer, die & bump inspection - In line, high-speed, 100% inspection		X
Wafer Scanner™ Series	1999	- 2D/3D bump dimensional inspection - 2D bump/surface defect inspection - In line, high-speed, 100% inspection		X
Precision WoRx®	2008	- Probe card test & analysis - Configurable channels - High load forces		X
ProbeWoRx®	2003	- Probe card production metrology - 3D Optical Comparative Metrology - High-speed test times - Automated, one-touch measurements		X
WaferWoRx®	2006	- Probing process analysis - 3D probe tip analysis - Proprietary, advanced software		X
PrecisionPoint®	2002	- Probe card analyzer - Tests devices simultaneously - Upgradable		X

			Type of Fab	
Product	**Introduced**	**Functionality**	**Wafer Processing**	**Final Manufacturing**
Software Solutions				
Discover®	2007	- Fabwide software for archival and retrieval of process related data - Facilitates root cause analysis, yield enhancement and yield learning	X	
Discover® Enterprise	2005	- In line, all surface defect analysis and data management - Trend analysis and visualization tools - Wafer maps visualize all-surface defects - Identifies root cause of defects and process excursions	X	X
HarmonyASR™	2005	- Off line defect review and classification - Defects displayed in real time - Rapid classification of unknown defects; review of previously-classified defects	X	X
TrueADC™	2005	- Automatic defect classification - High accuracy, consistency and scalability - Patented feature-based defect matching technology - Utilizes dynamic defect library method	X	X
Process Sentinel™	2006	- Fabwide spatial process control system - Traces patterns back to yield-killing process issues - Combined defect and sort solution - Quickly isolates systemic faults - Advanced segmentation and wafer stacking capability	X	
TrueADC™ Enterprise	2007	- Serving the entire fab - Defect classification with a high level of accuracy - Ensures database lookup, classification and timely response to the tool - Minimum impact to throughput	X	X
Yield™ Optimizer	2006	- Builds predictive models - Optimizes yield and reduces excursions - Identifies the most critical metrology measurements for controlling yield	X	X

Customers

Over 90 semiconductor device manufacturers have purchased Rudolph tools and software for installation at multiple sites. We support a diverse customer base in terms of both geographic location and type of semiconductor device manufactured. Our customers are located in 20 countries.

We depend on a relatively small number of customers and end users for a large percentage of our revenues. In the years 2006, 2007 and 2008, sales to end user customers that individually represented at least five percent of our revenues accounted for 40.9%, 37.1% and 36.3% of our revenues, respectively. In 2006, 2007 and 2008, sales to Intel Corporation accounted for 14.0%, 11.5% and 10.9% of our revenues, respectively. No other individual end user customer accounted for more than 10% of our revenues in 2006, 2007 and 2008. We do not have purchase contracts with any of our customers that obligate them to continue to purchase our products.

Research and Development

The thin film transparent, opaque process control and macro-defect inspection metrology market is characterized by continuous technological development and product innovations. We believe that the rapid and ongoing development of new products and enhancements to existing products is critical to our success. Accordingly, we devote a significant portion of our technical, management and financial resources to research and development programs.

The core competencies of our research and development team include metrology systems for high volume manufacturing, ellipsometry, ultra-fast optics, picosecond acoustic and optical design, advanced metrology application development and algorithm development. To leverage our internal research and development capabilities, we maintain close relationships with leading research institutions in the metrology field, including Brown University. Our relationship with Brown University has resulted in the development of the optical acoustic technology underlying our *Meta*PULSE product line. We have been granted exclusive licenses from Brown University Research Foundation, subject to rights retained by Brown and the United States government for their own non-commercial uses for several patents relating to this technology.

Our research and development expenditures in 2006, 2007 and 2008 were $29.9 million, $30.0 million and $31.6 million, respectively. We plan to continue our strong commitment to new product development in the future, and we expect that our level of research and development expenses will increase in absolute dollar terms in future periods.

Sales, Customer Service and Application Support

We maintain an extensive network of direct sales, customer service and application support offices in several locations throughout the world. We maintain sales, service or applications offices in locations including but not limited to, New Jersey, Minnesota, Massachusetts, Texas, Washington, New York, Germany, Scotland, Ireland, Israel, Korea, Singapore, Taiwan, China and Japan.

We provide our customers with comprehensive support before, during and after the delivery of our products. For example, in order to facilitate the smooth integration of our tools into our customers' operations, we often assign dedicated, site-specific field service and applications engineers to provide long-term support at selected customer sites. We also provide comprehensive service and applications training for customers at our training facility in Budd Lake, New Jersey and at customer locations. In addition, we maintain a group of highly skilled applications scientists at strategically located facilities throughout the world and at selected customer locations.

Manufacturing

Our principal manufacturing activities include assembly, final test and calibration. These activities are conducted in our manufacturing facilities in New Jersey, Minnesota, and Washington. Our core manufacturing competencies include electrical, optical and mechanical assembly and testing as well as the management of new product transitions. While we use standard components and subassemblies wherever possible, most mechanical parts, metal fabrications and critical components used in our products are engineered and manufactured to our

specifications. We expect to rely increasingly on subcontractors and turnkey suppliers to fabricate components, build assemblies and perform other non-core activities in a cost-effective manner.

We rely on a number of limited source suppliers for certain parts and subassemblies. This reliance creates a potential inability to obtain an adequate supply of required components, and reduced control over pricing and time of delivery of components. An inability to obtain adequate supplies would require us to seek alternative sources of supply or might require us to redesign our systems to accommodate different components or subassemblies. To date, we have not experienced any significant delivery delays. However, if we were forced to seek alternative sources of supply, manufacture such components or subassemblies internally, or redesign our products, this could prevent us from shipping our products to our customers on a timely basis, which could have a material adverse effect on our operations.

Intellectual Property

We have a policy of seeking patents on inventions governing new products or technologies as part of our ongoing research, development, and manufacturing activities. As of December 31, 2008, we have been granted, or hold exclusive licenses to, 150 U.S. and foreign patents. The patents we own, jointly own or exclusively license have expiration dates ranging from 2009 to 2025. We also have 98 pending regular and provisional applications in the U.S. and other countries. Our patents and applications principally cover various aspects of transparent thin film measurement, altered material characterization and macro-defect detection and classification.

We have been granted exclusive licenses from Brown University Research Foundation, subject to rights retained by Brown and the United States government for their own non-commercial uses, for several patents relating to the optical acoustic technology underlying our *Meta*PULSE product family. The terms of these exclusive licenses are equal to the lives of the patents. We pay royalties to Brown based upon a percentage of our revenues from the sale of systems that incorporate technology covered by the Brown patents. We also have the right to support patent activity with respect to new ultra-fast acoustic technology developed by Brown scientists, and to acquire exclusive licenses to this technology. Brown may terminate the licenses if we fail to pay royalties to Brown or if we materially breach our license agreement with Brown.

Our pending patents may never be issued, and even if they are, these patents, our existing patents and the patents we license may not provide sufficiently broad protection to protect our proprietary rights, or they may prove to be unenforceable. To protect our proprietary rights, we also rely on a combination of copyrights, trademarks, trade secret laws, contractual provisions and licenses. There can be no assurance that any patents issued to or licensed by us will not be challenged, invalidated or circumvented or that the rights granted thereunder will provide us with a competitive advantage.

The laws of some foreign countries do not protect our proprietary rights to as great an extent as do the laws of the United States, and many U.S. companies have encountered substantial infringement problems in protecting their proprietary rights against infringement in such countries, some of which are countries in which we have sold and continue to sell products. There is a risk that our means of protecting our proprietary rights may not be adequate. For example, our competitors may independently develop similar technology or duplicate our products. If we fail to adequately protect our intellectual property, it would be easier for our competitors to sell competing products.

Competition

The market for semiconductor capital equipment is highly competitive. We face substantial competition from established companies in each of the markets that we serve. We principally compete with KLA-Tencor and Camtek. We compete to a lesser extent with companies such as Nanometrics, Vistec, and Nikon. Each of our products also competes with products that use different metrology techniques. Some of our competitors have greater financial, engineering, manufacturing and marketing resources, broader product offerings and service capabilities and larger installed customer bases than we do.

Significant competitive factors in the market for metrology systems include system performance, ease of use, reliability, cost of ownership, technical support and customer relationships. We believe that, while price and delivery are important competitive factors, the customers' overriding requirement is for a product that meets their

technical capabilities. To remain competitive, we believe we will need to maintain a high level of investment in research and development and process applications. No assurances can be given that we will continue to be competitive in the future.

Backlog

We schedule production of our systems based upon order backlog and informal customer forecasts. We include in backlog only those orders to which the customer has assigned a purchase order number and for which delivery has been specified within 12 months. Because shipment dates may be changed and customers may cancel or delay orders with little or no penalty, our backlog as of any particular date may not be a reliable indicator of actual sales for any succeeding period. At December 31, 2008, we had a backlog of approximately $20.4 million compared with a backlog of approximately $26.7 million at December 31, 2007.

Employees

As of December 31, 2008, we had 536 employees. Our employees are not represented by any collective bargaining agreements, and we have never experienced a work stoppage. We believe our employee relations are good.

Available Information

We were incorporated in New Jersey in 1958 and reincorporated in Delaware in 1999. The Internet website address of Rudolph Technologies, Inc. is http://www.rudolphtech.com. The information on our website is not incorporated into this Annual Report. The Company's Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K (and any amendments to those reports) are made available free of charge, on or through our Internet website, as soon as reasonably practicable after such material is electronically filed with or furnished to the Securities and Exchange Commission, or SEC. All reports we file with the SEC are also available free of charge via EDGAR through the SEC's website at http://www.sec.gov.

We also make available, free of charge, through the investors page on our corporate website Rudolph Technologies' corporate summary, Code of Business Conduct and Ethics and Financial Code of Ethics, charters of the committees of our board of directors, as well as other information and materials, including information about how to contact our board of directors, its committees and their members. To find this information and obtain copies, visit our website at http://www.rudolphtech.com.

Item 1A. Risk Factors.

Risks Related to Rudolph

Our operating results have varied and will likely continue to vary significantly from quarter to quarter in the future, causing volatility in our stock price

Our quarterly operating results have varied in the past and will likely continue to vary significantly from quarter to quarter in the future, causing volatility in our stock price. Some of the factors that may influence our operating results and subject our stock to extreme price and volume fluctuations include:

- changes in customer demand for our systems, which is influenced by economic conditions in the semiconductor device industry, demand for products that use semiconductors, market acceptance of our systems and products of our customers and changes in our product offerings;
- seasonal variations in customer demand, including the tendency of European sales to slow significantly in the third quarter of each year;
- the timing, cancellation or delay of customer orders, shipments and acceptance;
- product development costs, including increased research, development, engineering and marketing expenses associated with our introduction of new products and product enhancements; and
- the levels of our fixed expenses, including research and development costs associated with product development, relative to our revenue levels.

In light of these factors and the cyclical nature of the semiconductor industry, we expect to continue to experience significant fluctuations in quarterly and annual operating results. Moreover, many of our expenses are fixed in the short-term which, together with the need for continued investment in research and development, marketing and customer support, limits our ability to reduce expenses quickly. As a result, declines in net sales could harm our business and the price of our common stock could substantially decline.

Our largest customers account for a significant portion of our revenues, and our revenues and cash flows would significantly decline if one or more of these customers were to purchase significantly fewer of our systems or they delayed or cancelled a large order

Sales to end user customers that individually represent at least five percent of our revenues typically account for, in the aggregate, a considerable amount of our revenues. We operate in the highly concentrated, capital-intensive semiconductor device manufacturing industry. Historically, a significant portion of our revenues in each quarter and year has been derived from sales to relatively few customers, and this trend is expected to continue. If any of our key customers were to purchase significantly fewer of our systems in the future, or if a large order were delayed or cancelled, our revenues and cash flows would significantly decline. We expect that we will continue to depend on a small number of large customers for a significant portion of our revenues for at least the next several years. In addition, as large semiconductor device manufacturers seek to establish closer relationships with their suppliers, we expect that our customer base will become even more concentrated.

Our customers may be unable to pay us for our products and services

Our customers include some companies that may from time to time encounter financial difficulties, especially in light of the current economic environment and the turmoil in the credit markets. If a customer's financial difficulties become severe, the customer may be unwilling or unable to pay our invoices in the ordinary course of business, which could adversely affect collections of both our accounts receivable and unbilled services. The bankruptcy of a customer with a substantial account receivable could have a material adverse effect on our financial condition and results of operations. In addition, if a customer declares bankruptcy after paying us certain invoices, a court may determine that we are not properly entitled to that payment and may require repayment of some or all of the amount we received, which could adversely affect our financial condition and results of operations.

Our revenue may vary significantly each quarter due to relatively small fluctuations in our unit sales

During any quarter, a significant portion of our revenue may be derived from the sale of a relatively small number of systems. Our transparent film measurement systems range in selling price from approximately $250,000 to $1.0 million per system, our opaque film measurement systems range in selling price from approximately $900,000 to $2.0 million per system and our macro-defect inspection and probe card and test analysis systems range in selling price from approximately $250,000 to $1.4 million per system. Accordingly, a small change in the number of systems we sell may also cause significant changes in our operating results. This, in turn, could cause fluctuations in the market price of our common stock.

Variations in the amount of time it takes for us to sell our systems may cause fluctuations in our operating results, which could cause our stock price to decline

Variations in the length of our sales cycles could cause our revenues and cash flows, and consequently, our business, financial condition, operating results and cash flows, to fluctuate widely from period to period. This variation could cause our stock price to decline. Our customers generally take a long time to evaluate our inspection and/or film metrology systems and many people are involved in the evaluation process. We expend significant resources educating and providing information to our prospective customers regarding the uses and benefits of our systems in the semiconductor fabrication process. The length of time it takes for us to make a sale depends upon many factors including, but not limited to:

- the efforts of our sales force;
- the complexity of the customer's fabrication processes;
- the internal technical capabilities and sophistication of the customer;

- the customer's budgetary constraints; and
- the quality and sophistication of the customer's current metrology and/or inspection equipment.

Because of the number of factors influencing the sales process, the period between our initial contact with a customer and the time when we recognize revenue from that customer, if ever, and receive payment varies widely in length. Our sales cycles, including the time it takes for us to build a product to customer specifications after receiving an order to the time we recognize revenue, typically range from six to 15 months. Sometimes our sales cycles can be much longer, particularly with customers in Japan. During these cycles, we commit substantial resources to our sales efforts in advance of receiving any revenue, and we may never receive any revenue from a customer despite our sales efforts. If we do make a sale, our customers often purchase only one of our systems, and then evaluate its performance for a lengthy period before purchasing any more of our systems. The number of additional products a customer purchases, if any, depends on many factors, including a customer's capacity requirements. The period between a customer's initial purchase and any subsequent purchases can vary from six months to a year or longer, and variations in the length of this period could cause further fluctuations in our operating results and possibly in our stock price.

Most of our revenues have been derived from customers outside of the United States subjecting us to operational, financial and political risks, such as unexpected changes in regulatory requirements, tariffs, political and economic instability, outbreaks of hostilities, and difficulties in managing foreign sales representatives and foreign branch operations

Due to the significant level of our international sales, we are subject to a number of material risks, including:

Unexpected changes in regulatory requirements including tariffs and other market barriers. The semiconductor device industry is a high-visibility industry in many of the European and Asian countries in which we sell our products. Because the governments of these countries have provided extensive financial support to our semiconductor device manufacturing customers in these countries, we believe that our customers could be disproportionately affected by any trade embargoes, excise taxes or other restrictions imposed by their governments on trade with United States companies such as ourselves. Any restrictions of these types could result in a reduction in our sales to customers in these countries.

Political and economic instability. We are subject to various global risks related to political and economic instabilities in countries in which we derive sales. If terrorist activities, armed conflict, civil or military unrest or political instability occurs outside of the U.S., these events may result in reduced demand for our products. There is considerable political instability in Taiwan related to its disputes with China and in South Korea related to its disputes with North Korea. In addition, several Asian countries, particularly Japan, have experienced significant economic instability. An outbreak of hostilities or other political upheaval in China, Taiwan or South Korea, or an economic downturn in Japan or other countries, would likely harm the operations of our customers in these countries. The effect of these types of events on our revenues and cash flows could be material because we derive substantial revenues from sales to semiconductor device foundries in Taiwan such as Taiwan Semiconductor Manufacturing Company Ltd. and United Microelectronics Corporation, from memory chip manufacturers in South Korea such as Hynix and Samsung, and from semiconductor device manufacturers in Japan such as NEC and Toshiba.

Difficulties in staffing and managing foreign branch operations. During periods of tension between the governments of the United States and certain other countries, it is often difficult for United States companies such as ourselves to staff and manage operations in such countries.

Currency fluctuations as compared to the U.S. Dollar. A substantial portion of our international sales are denominated in U.S. dollars. As a result, if the dollar rises in value in relation to foreign currencies, our systems will become more expensive to customers outside the United States and less competitive with systems produced by competitors outside the United States. These conditions could negatively impact our international sales. Foreign sales also expose us to collection risk in the event it becomes more expensive for our foreign customers to convert their local currencies into U.S. dollars.

If we deliver systems with defects, our credibility will be harmed and the sales and market acceptance of our systems will decrease

Our systems are complex and have occasionally contained errors, defects and bugs when introduced. When this occurs, our credibility and the market acceptance and sales of our systems could be harmed. Further, if our systems contain errors, defects or bugs, we may be required to expend significant capital and resources to alleviate these problems. Defects could also lead to product liability as a result of product liability lawsuits against us or against our customers. We have agreed to indemnify our customers under certain circumstances against liability arising from defects in our systems. Our product liability policy currently provides $2.0 million of coverage per claim, with an overall umbrella limit of $14.0 million. In the event of a successful product liability claim, we could be obligated to pay damages significantly in excess of our product liability insurance limits.

If we are not successful in developing new and enhanced products for the semiconductor device manufacturing industry we will lose market share to our competitors

We operate in an industry that is highly competitive and subject to evolving industry standards, rapid technological changes, rapid changes in consumer demands and the rapid introduction of new, higher performance systems with shorter product life cycles. To be competitive in our demanding market, we must continually design, develop and introduce in a timely manner new inspection and film metrology systems that meet the performance and price demands of semiconductor device manufacturers. We must also continue to refine our current systems so that they remain competitive. We expect to continue to make significant investments in our research and development activities. We may experience difficulties or delays in our development efforts with respect to new systems, and we may not ultimately be successful in our product enhancement efforts to improve and advance products or in responding effectively to technological change, as not all research and development activities result in viable commercial products. In addition, we cannot provide assurance that we will be able to develop new products for the most opportunistic new markets and applications. Any significant delay in releasing new systems could cause our products to become obsolete, adversely affect our reputation, give a competitor a first-to-market advantage or cause a competitor to achieve greater market share. In addition, new product offerings that are highly complex in terms of software or hardware may require application or service work such as bug fixing prior to acceptance, thereby delaying revenue recognition.

If new products developed by us do not gain general market acceptance, we will be unable to generate revenues and recover our research and development costs

Metrology and inspection product development is inherently risky because it is difficult to foresee developments in semiconductor device manufacturing technology, coordinate technical personnel, and identify and eliminate system design flaws. Further, our products are complex and often the applications to our customers' businesses are unique. Any new systems we introduce may not achieve or sustain a significant degree of market acceptance and sales.

We expect to spend a significant amount of time and resources developing new systems and refining our existing systems. In light of the long product development cycles inherent in our industry, these expenditures will be made well in advance of the prospect of deriving revenue from the sale of those systems. Our ability to commercially introduce and successfully market new systems are subject to a wide variety of challenges during the development cycle, including start-up bugs, design defects, and other matters that could delay introduction of these systems. In addition, since our customers are not obligated by long-term contracts to purchase our systems, our anticipated product orders may not materialize, or orders that are placed may be cancelled. As a result, if we do not achieve market acceptance of new products, we may be unable to generate sufficient revenues and cash flows to recover our research and development costs and our market share, revenue, operating results or stock price would be negatively impacted.

Even if we are able to develop new products that gain market acceptance, sales of these new products could impair our ability to sell existing products

Competition from our new systems could have a negative effect on sales of our existing systems and the prices that we could charge for these systems. We may also divert sales and marketing resources from our current systems in order to successfully launch and promote our new or next generation systems. This diversion of resources could have a further negative effect on sales of our current systems and the value of inventory.

If our relationships with our large customers deteriorate, our product development activities could be adversely affected

The success of our product development efforts depends on our ability to anticipate market trends and the price, performance and functionality requirements of semiconductor device manufacturers. In order to anticipate these trends and ensure that critical development projects proceed in a coordinated manner, we must continue to collaborate closely with our largest customers. Our relationships with these and other customers provide us with access to valuable information regarding trends in the semiconductor device industry, which enables us to better plan our product development activities. If our current relationships with our large customers are impaired, or if we are unable to develop similar collaborative relationships with important customers in the future, our product development activities could be adversely affected.

Our ability to reduce costs is limited by our ongoing need to invest in research and development and to provide customer support activities

Our industry is characterized by the need for continual investment in research and development as well as customer service and support. As a result, our operating results could be materially affected if operating costs associated with our research and development as well as customer support activities increase in the future or we are unable to reduce those activities.

We may fail to adequately protect our intellectual property and, therefore, lose our competitive advantage

Our future success and competitive position depend in part upon our ability to obtain and maintain proprietary technology for our principal product families, and we rely, in part, on patent and trade secret law and confidentiality agreements to protect that technology. If we fail to adequately protect our intellectual property, it will give our competitors a significant advantage. We own or have licensed a number of patents relating to our transparent and opaque thin film metrology and macro-defect inspection systems, and have filed applications for additional patents. Any of our pending patent applications may be rejected, and we may be unable to develop additional proprietary technology that is patentable in the future.

In addition, the patents that we do own or that have been issued or licensed to us may not provide us with competitive advantages and may be challenged by third parties. Further, third parties may also design around these patents. In addition to patent protection, we rely upon trade secret protection for our confidential and proprietary information and technology. We routinely enter into confidentiality agreements with our employees and other third parties. However, in the event that a confidentiality agreement is breached, we may not have adequate remedies. Our confidential and proprietary information and technology might also be independently developed by, or become otherwise known to, third parties.

Protection of our intellectual property rights, or the efforts of third parties to enforce their own intellectual property rights against us, may result in costly and time-consuming litigation, substantial damages, lost product sales and/or the loss of important intellectual property rights

We may be required to initiate litigation in order to enforce any patents issued to or licensed by us, or to determine the scope or validity of a third party's patent or other proprietary rights. Any litigation, regardless of outcome, could be expensive and time consuming, and could subject us to significant liabilities or require us to re-engineer our products or obtain expensive licenses from third parties.

In addition, our commercial success depends in part on our ability to avoid infringing or misappropriating patents or other proprietary rights owned by third parties. From time to time we may receive communications from third parties asserting that our products or systems infringe, or may infringe, the proprietary rights of these third parties. These claims of infringement may lead to protracted and costly litigation, which could require us to pay substantial damages or have the sale of our products or systems stopped by an injunction. Infringement claims could also cause product or system delays or require us to redesign our products or systems, and these delays could result in the loss of substantial revenues. We may also be required to obtain a license from the third party or cease activities utilizing the third party's proprietary rights. We may not be able to enter into such a license or such a license may not be available on commercially reasonable terms. Accordingly, the loss of important intellectual property rights could hinder our ability to sell our systems, or make the sale of these systems more expensive.

Our efforts to protect our intellectual property may be less effective in certain foreign countries, where intellectual property rights are not as well protected as in the United States

The laws of some foreign countries do not protect our proprietary rights to as great an extent as do the laws of the United States, and many U.S. companies have encountered substantial problems in protecting their proprietary rights against infringement abroad. For example, Taiwan is not a signatory of the Patent Cooperation Treaty, which is designed to specify rules and methods for defending intellectual property internationally. The publication of a patent in Taiwan prior to the filing of a patent in Taiwan would invalidate the ability of a company to obtain a patent in Taiwan. Similarly, in contrast to the United States where the contents of patents remain confidential during the patent application process, in Taiwan the contents of a patent are published upon filing which provides competitors an advance view of the contents of a patent application prior to the establishment of patent rights. Consequently, there is a risk that we may be unable to adequately protect its proprietary rights in certain foreign countries. If this occurs, it would be easier for our competitors to develop and sell competing products in these countries.

Some of our current and potential competitors have significantly greater resources than we do, and increased competition could impair sales of our products or cause us to reduce our prices

The market for semiconductor capital equipment is highly competitive. We face substantial competition from established companies in each of the markets we serve. We principally compete with KLA-Tencor and Camtek. We compete to a lesser extent with companies such as Nanometrics, Vistec and Nikon. Each of our products also competes with products that use different metrology or inspection techniques. Some of our competitors have greater financial, engineering, manufacturing and marketing resources, broader product offerings and service capabilities and larger installed customer bases than we do. As a result, these competitors may be able to respond more quickly to new or emerging technologies or market developments by devoting greater resources to the development, promotion and sale of products, which, in turn, could impair sales of our products. Further, there may be significant merger and acquisition activity among our competitors and potential competitors, which, in turn, may provide them with a competitive advantage over us by enabling them to rapidly expand their product offerings and service capabilities to meet a broader range of customer needs.

Many of our customers and potential customers in the semiconductor device manufacturing industry are large companies that require global support and service for their semiconductor capital equipment. We believe that our global support and service infrastructure is sufficient to meet the needs of our customers and potential customers. However, some of our competitors have more extensive infrastructures than we do, which could place us at a disadvantage when competing for the business of global semiconductor device manufacturers. Many of our competitors are investing heavily in the development of new systems that will compete directly with our systems. We have from time to time selectively reduced prices on our systems in order to protect our market share, and competitive pressures may necessitate further price reductions. We expect our competitors in each product area to continue to improve the design and performance of their products and to introduce new products with competitive prices and performance characteristics. These product introductions would likely require us to decrease the prices of our systems and increase the level of discounts that we grant our customers. Price reductions or lost sales as a result of these competitive pressures would reduce our total revenues and could adversely impact our financial results.

Because of the high cost of switching equipment vendors in our markets, it is sometimes difficult for us to win customers from our competitors even if our systems are superior to theirs

We believe that once a semiconductor device manufacturer has selected one vendor's capital equipment for a production-line application, the manufacturer generally relies upon that capital equipment and, to the extent possible, subsequent generations of the same vendor's equipment, for the life of the application. Once a vendor's equipment has been installed in a production line application, a semiconductor device manufacturer must often make substantial technical modifications and may experience production-line downtime in order to switch to another vendor's equipment. Accordingly, unless our systems offer performance or cost advantages that outweigh a customer's expense of switching to our systems, it will be difficult for us to achieve significant sales to that customer once it has selected another vendor's capital equipment for an application.

We must attract and retain key personnel with knowledge of semiconductor device manufacturing and inspection and/or metrology equipment to help support our future growth, and competition for such personnel in our industry is high

Our success depends to a significant degree upon the continued contributions of our key management, engineering, sales and marketing, customer support, finance and manufacturing personnel. The loss of any of these key personnel, each of whom would be extremely difficult to replace, could harm our business and operating results. Although we have employment and noncompetition agreements with key members of our senior management team, including Messrs. McLaughlin and Roth, these individuals or other key employees may still leave us. We do not have key person life insurance on any of our executives. In addition, to support our future growth, we will need to attract and retain additional qualified employees. Competition for such personnel in our industry is intense, and we may not be successful in attracting and retaining qualified employees.

We obtain some of the components and subassemblies included in our systems from a limited group of suppliers, and the partial or complete loss of one of these suppliers could cause production delays and a substantial loss of revenues

We obtain some of the components and subassemblies included in our systems from a limited group of suppliers and do not have long-term contracts with many of our suppliers. Our dependence on limited source suppliers of components and our lack of long-term contracts with many of our suppliers exposes us to several risks, including a potential inability to obtain an adequate supply of components, price increases, late deliveries and poor component quality. Disruption or termination of the supply of these components could delay shipments of our systems, damage our customer relationships and reduce our sales. From time to time in the past, we have experienced temporary difficulties in receiving shipments from our suppliers. The lead-time required for shipments of some of our components can be as long as four months. In addition, the lead time required to qualify new suppliers for lasers could be as long as a year, and the lead time required to qualify new suppliers of other components could be as long as nine months. If we are unable to accurately predict our component needs, or if our component supply is disrupted, we may miss market opportunities by not being able to meet the demand for our systems. Further, a significant increase in the price of one or more of these components or subassemblies could seriously harm our results of operations and cash flows.

Any prolonged disruption in the operations of our manufacturing facilities could have a material adverse effect on our revenues

Our manufacturing processes are highly complex and require sophisticated and costly equipment and a specially designed facility. As a result, any prolonged disruption in the operations of our manufacturing facilities, whether due to technical or labor difficulties, or destruction of or damage as a result of a fire or any other reason, could seriously harm our ability to satisfy our customer order deadlines. If we cannot timely deliver our systems, our results from operations and cash flows could be materially and adversely affected.

Failure to adjust our orders for parts and subcomponents in an accurate and timely manner in response to changing market conditions or customer acceptance of our products could adversely affect our financial position and results of operations

Our earnings could be negatively affected and our inventory levels could materially increase if we are unable to predict our inventory needs in an accurate and timely manner and adjust our orders for parts and subcomponents should our needs increase or decrease materially due to unexpected increases or decreases in demand for our products. Any material increase in our inventories could result in an adverse effect on our financial position, while any material decrease in our ability to procure needed inventories could result in an inability to supply customer demand for our products thus adversely affecting our revenues.

We may choose to acquire new and complementary businesses, products or technologies instead of developing them ourselves, and may be unable to complete these acquisitions or may not be able to successfully integrate an acquired business in a cost-effective and non-disruptive manner

Our success depends on our ability to continually enhance and broaden our product offerings in response to changing technologies, customer demands and competitive pressures. To this end, we have, from time to time, engaged in the process of identifying, analyzing and negotiating possible acquisition transactions and we expect to continue to do so in the future. We may choose to acquire new and complementary businesses, products, technologies and/or services instead of developing them ourselves. We may, however, face competition for acquisition targets from larger and more established companies with greater financial resources, making it more difficult for us to complete acquisitions. We cannot provide any assurance that we will be successful in consummating future acquisitions on favorable terms or that we will realize the benefits that we anticipate from one or more acquisitions that we consummate. Integrating any business, product technology or service we acquire could be expensive and time-consuming and/or disrupt our ongoing business. Further, there are numerous risks associated therewith, including but not limited to:

- diversion of management's attention from day-to-day operational matters and current products and customers;
- lack of synergy, or the inability to realize expected synergies;
- failure to commercialize the new technology or business;
- failure to meet the expected performance of the new technology or business;
- failure to retain key employees and customer or supplier relationships;
- lower-than-expected market opportunities or market acceptance of any new products; and
- unexpected reduction of sales of existing products by new products.

Our inability to consummate one or more acquisitions on such favorable terms or our failure to realize the intended benefits from one or more acquisitions, could have a material adverse effect on our business, liquidity, financial position and/or results of operations, including as a result of our incurrence of indebtedness and related interest expense and our assumption of unforeseen contingent liabilities. In order to finance any acquisitions, we might need to raise additional funds through public or private equity or debt financings. In that event, we could be forced to obtain financing on terms that are not favorable to us and, in the case of equity financing, that result in dilution to our stockholders. In addition, any impairment of goodwill or other intangible assets, amortization of intangible assets, write-down of other assets or charges resulting from the costs of acquisitions and purchase accounting could harm our business and operating results.

If we cannot effectively manage our growth, our business may suffer

Over the long-term we intend to continue to grow by increasing our sales efforts and completing strategic acquisitions. To effectively manage our growth, we must, among other things:

- engage, train and manage a larger sales force and additional service personnel;
- expand the geographic coverage of our sales force;

- expand our information systems;
- identify and successfully integrate acquired businesses into our operations; and
- administer appropriate financial and administrative control procedures.

Our anticipated growth will likely place a significant strain on our management, financial, operational, technical, sales and administrative resources. Any failure to effectively manage our growth may cause our business to suffer and our stock price to decline.

Changes in tax rates or tax liabilities could affect results

As a global company, we are subject to taxation in the United States and various other countries. Significant judgment is required to determine and estimate worldwide tax liabilities. Our future annual and quarterly tax rates could be affected by numerous factors, including changes in the (1) applicable tax laws; (2) composition of earnings in countries with differing tax rates; or (3) valuation of our deferred tax assets and liabilities. In addition, we are subject to regular examination of our income tax returns by the Internal Revenue Service and other tax authorities. We regularly assess the likelihood of favorable or unfavorable outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. Although we believe our tax estimates are reasonable, there can be no assurance that any final determination will not be materially different from the treatment reflected in our historical income tax provisions and accruals, which could materially and adversely affect our results of operations.

Recent turmoil in the credit markets and the financial services industry may negatively impact our business, results of operations, financial condition or liquidity

Recently, the credit markets and the financial services industry have been experiencing a period of unprecedented turmoil and upheaval characterized by the bankruptcy, failure, collapse or sale of various financial institutions and an unprecedented level of intervention from the United States federal government. While the ultimate outcome of these events cannot be predicted, they may have a material adverse effect on our liquidity and financial condition if our ability to obtain credit from trade creditors were to be impaired. In addition, the recent economic crisis could also adversely impact our customers' ability to finance the purchase of systems from us or our suppliers' ability to provide us with product, either of which may negatively impact our business and results of operations.

Risks Related to the Semiconductor Device Industry

Cyclicality in the semiconductor device industry has led to substantial decreases in demand for our systems and may from time to time continue to do so

Our operating results are subject to significant variation due to the cyclical nature of the semiconductor device industry. Our business depends upon the capital expenditures of semiconductor device manufacturers, which, in turn, depend upon the current and anticipated market demand for semiconductors and products using semiconductors. The timing, length and severity of the up-and-down cycles in the semiconductor equipment industry are difficult to predict. This cyclical nature of the industry in which we operate affects our ability to accurately predict future revenue and, thus, future expense levels. When cyclical fluctuations result in lower than expected revenue levels, operating results may be adversely affected and cost reduction measures may be necessary in order for us to remain competitive and financially sound. During a down cycle, we must be in a position to adjust our cost and expense structure to prevailing market conditions and to continue to motivate and retain our key employees. In addition, during periods of rapid growth, we must be able to increase manufacturing capacity and personnel to meet customer demand. We can provide no assurance that these objectives can be met in a timely manner in response to industry cycles. If we fail to respond to industry cycles, our business could be seriously harmed.

Our future rate of growth is highly dependent on the development and growth of the market for microelectronic device inspection and metrology equipment

We target our products to address the needs of microelectronic device manufacturers for defect inspection and metrology. If for any reason the market for microelectronic device inspection or metrology equipment fails to grow in the long term, we may be unable to maintain current revenue levels in the short term and maintain our historical growth in the long term. Growth in the inspection market is dependent to a large extent upon microelectronic manufacturers replacing manual inspection with automated inspection technology. Growth in the metrology market is dependent to a large extent upon new chip designs and capacity expansion of microelectronic manufacturers. There is no assurance that manufacturers will undertake these actions at the rate we expect.

Risks Related to our Stock

Provisions of our charter documents and Delaware law, as well as our stockholder rights plan, could discourage potential acquisition proposals and/or delay, deter or prevent a change in control of our company

Provisions of our certificate of incorporation and bylaws, as well as our stockholder rights plan, may inhibit changes in control of our company not approved by our board of directors. These provisions also limit the circumstances in which a premium can be paid for the common stock, and in which a proxy contest for control of our board may be initiated. These provisions provide for:

- a prohibition on stockholder actions through written consent;
- a requirement that special meetings of stockholders be called only by our chief executive officer or board of directors;
- advance notice requirements for stockholder proposals and director nominations by stockholders;
- limitations on the ability of stockholders to amend, alter or repeal our by-laws;
- the authority of our board to issue, without stockholder approval, preferred stock with such terms as the board may determine; and
- the authority of our board, without stockholder approval, to adopt a Stockholder Rights Plan. Such a Shareholder Rights Plan was adopted by the board of directors on June 27, 2005.

We are also entitled to avail ourselves of the protections of Section 203 of the Delaware General Corporation Law, which could inhibit changes in control of us.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Our executive office building is located at One Rudolph Road in Flanders, New Jersey. We own and lease facilities for engineering, sales and service related purposes in the United States and six other countries — China, Japan, Korea, Singapore, Taiwan and Scotland. The following table indicates the general location, the general purpose and the square footage of our principal facilities. The expiration years of the leases covering the leased facilities are also indicated.

Location	Facility Purpose	Approximate Square Footage	Lease Expiration Year, Unless Owned
Flanders, New Jersey	Executive Office	20,000	Owned
Budd Lake, New Jersey	Engineering, Manufacturing and Service	83,500	2016
Bloomington, Minnesota	Engineering, Manufacturing and Service	78,500	2012
Lowell, Massachusetts	Engineering, Manufacturing and Service	9,500	2010
Richardson, Texas	Yield Metrology Group	21,000	Owned
Bohemia, New York	Engineering	6,000	2011
Snoqualmie, Washington	Engineering, Manufacturing and Service	27,000	2018
Hsin-Chu, Taiwan	Sales and Service	10,500	2010
Takatsu, Japan	Sales and Service	5,000	2010
Sungnam-si, Korea	Sales and Service	9,500	2009
Shanghai, China	Sales and Service	3,500	2009
Singapore	Sales and Service	2,000	2009
Scotland, United Kingdom	Sales and Service	1,000	2009

We also lease office space for other smaller sales and service offices in several locations throughout the world.

We believe that our existing facilities and capital equipment are adequate to meet our current requirements, and that suitable additional or substitute space is available on commercially reasonable terms if needed.

Item 3. Legal Proceedings.

From time to time we are subject to legal proceedings and claims in the ordinary course of business. We are not aware of any legal proceedings or claims that management currently believes would have a material adverse effect on our consolidated financial statements taken as a whole if determined adversely to the Company.

On March 5, 2009, the Company announced a favorable verdict in its patent infringement suit against Camtek, Ltd., of Migdal Hamek, Israel, concerning Rudolph's proprietary continuous scan wafer inspection technology. The jury determined in its verdict that all models of Camtek's Falcon inspection systems infringe Rudolph's US patent no. 6,826,298. In awarding approximately $6.8 million to Rudolph, the jury also rejected entirely Camtek's arguments that Rudolph's patent is invalid. This lawsuit was initially brought in 2005 by August Technology prior to its merger with Rudolph.

Item 4. Submission of Matters to a Vote of Security Holders.

No matters were submitted to a vote of security holders during the fourth quarter of the fiscal year covered by this report.

PART II

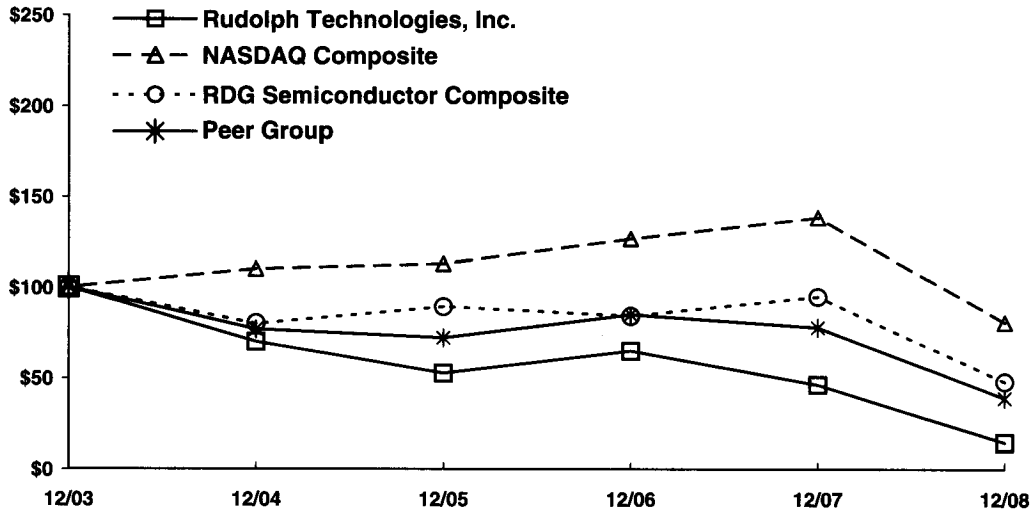
Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Our common stock is traded on the Nasdaq National Market under the symbol "RTEC." Set forth below is a line graph comparing the annual percentage change in the cumulative return to the stockholders of the Company's Common Stock with the cumulative return of the Nasdaq Composite Index, the Research Data Group (RDG) Semiconductor Composite Index, and a custom peer group for the period commencing on December 31, 2003, and ending on December 31, 2008. The peer group is comprised of capital equipment manufacturers for the semiconductor industry with relatively comparable revenues and market capitalizations to that of the Company. The peer group was recommended by a global management consulting firm. The companies included in the peer group are MKS Instruments, Inc., FEI Co., Brooks Automation, Inc., Cymer, Inc. , Veeco Instruments, Inc., Cabot Microelectronics Corp., ATMI, Inc., FormFactor, Inc., Axcelis Technologies, Inc., Advanced Energy Industries, Inc., Cohu, Inc., EMCORE Corp., Semitool, Inc., Mattson Technology, Inc., LTX-Credence, Corp, Nanometrics, Inc., Ultratech, Inc., PDF Solutions, Inc., and AXT, Inc.

The information contained in the performance graph shall not be deemed to be "soliciting material" or to be "filed" with the SEC, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent that the Company specifically incorporates it by reference into such filing.

The graph assumes that $100 was invested on December 31, 2003 in the Company's Common Stock and in each index, and that all dividends were reinvested. No cash dividends have been declared or paid on the Company's Common Stock. Stockholder returns over the indicated period should not be considered indicative of future stockholder returns. The Company operates on a 52-week calendar year.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*
Among Rudolph Technologies, Inc., The NASDAQ Composite Index.
The RDG Semiconductor Composite Index And A Peer Group



* $100 invested on 12/31/03 in stock or index-including reinvestment of dividends.
Fiscal year ending December 31.

	12/03	12/04	12/05	12/06	12/07	12/08
Rudolph Technologies, Inc.	100.0	69.97	52.49	64.87	46.13	14.38
NASDAQ Composite	100.0	110.06	112.92	126.61	138.33	80.65
RDG Semiconductor Composite	100.0	79.86	89.16	84.15	94.72	47.83
Peer Group	100.0	76.87	72.15	84.87	77.88	38.78

The following table sets forth, for the periods indicated, the high and low sale prices per share of our common stock as reported on the NASDAQ National Market.

	Price Range of Common Stock	
	High	Low
Year Ended December 31, 2007		
First Quarter	$18.10	$14.83
Second Quarter	$18.21	$14.95
Third Quarter	$18.29	$11.50
Fourth Quarter	$15.09	$10.03
Year Ended December 31, 2008		
First Quarter	$11.45	$ 8.11
Second Quarter	$10.99	$ 7.70
Third Quarter	$11.02	$ 7.22
Fourth Quarter	$ 8.44	$ 2.03

As of February 19, 2009, there were 93 stockholders of record of our common stock and approximately 4,913 beneficial stockholders. The closing market value of our common stock on February 19, 2009 was $3.15.

We have never declared or paid a cash dividend on our common stock and do not anticipate paying any cash dividends in the foreseeable future. We currently intend to retain our earnings, if any, for the development of our business. The declaration of any future dividends by us is within the discretion of our Board of Directors and will be dependent on our earnings, financial condition and capital requirements as well as any other factors deemed relevant by our Board of Directors.

Certain Equity Compensation Plan Information included in Item 12 of Part III, hereof, is hereby incorporated into this Item 5 of Part II and will be included in our Proxy Statement for the 2009 Annual Meeting of Stockholders.

Item 6. Selected Financial Data.

The following selected financial data should be read in conjunction with our Consolidated Financial Statements and the related Notes thereto appearing elsewhere in this Form 10-K, and "Management's Discussion and Analysis of Financial Condition and Results of Operations." The balance sheet data as of December 31, 2007 and 2008 and the statement of operations data for the years ended December 31, 2006, 2007 and 2008 set forth below were derived from our audited consolidated financial statements included elsewhere in this Form 10-K. The balance sheet data as of December 31, 2004, 2005 and 2006, and the statement of operations data for the years ended December 31, 2004 and 2005 were derived from our audited consolidated financial statements not included herein.

	Year Ended December 31,				
	2004	2005	2006(1)	2007(2)	2008(3)
	(In thousands, except per share data)				
Statement of Operations Data:					
Revenues	$84,248	$82,918	$201,168	$160,129	$ 131,040
Cost of revenues	44,595	44,390	103,726	78,889	87,388
Gross profit	39,653	38,528	97,442	81,240	43,652
Operating expenses:					
Research and development	15,847	11,901	29,856	29,993	31,644
In-process research and development	—	—	9,900	1,000	—
Selling, general and administrative	15,222	20,373	32,393	33,204	33,965
Impairment charge for goodwill and identifiable intangible assets	—	—	—	—	227,105
Amortization	876	876	4,048	4,487	5,890
Total operating expenses	31,945	33,150	76,197	68,684	298,604
Operating income (loss)	7,708	5,378	21,245	12,556	(254,952)
Interest income and other, net	1,899	1,388	3,191	4,149	1,151
Income (loss) before provision for income taxes	9,607	6,766	24,436	16,705	(253,801)
Provision (benefit) for income taxes	2,855	1,789	11,730	4,846	(4,115)
Net income (loss)	$ 6,752	$ 4,977	$ 12,706	$ 11,859	$(249,686)
Earnings (loss) per share:					
Basic	$ 0.40	$ 0.29	$ 0.47	$ 0.41	$ (8.16)
Diluted	$ 0.40	$ 0.29	$ 0.46	$ 0.40	$ (8.16)
Weighted average shares outstanding:					
Basic	16,746	16,899	27,276	29,168	30,614
Diluted	16,914	16,942	27,574	29,312	30,614

	December 31,				
	2004	2005	2006	2007	2008
Balance Sheet Data:					
Cash and cash equivalents	$ 12,627	$ 37,986	$ 72,479	$ 57,420	$ 67,735
Marketable securities	64,120	42,821	33,714	16,505	10,549
Working capital	120,403	125,678	200,942	176,298	147,688
Total assets	171,280	180,001	440,486	460,216	197,432
Retained earnings (accumulated deficit)	15,214	20,191	32,897	44,776	(204,910)
Total stockholders' equity	156,775	164,534	392,876	424,478	176,088

(1) Effective January 1, 2006, we adopted the provisions prescribed by the Financial Accounting Standards Board in Statement of Financial Accounting Standards No. 123 (revised 2004), "Share-Based Payment." Consequently, we began recognizing compensation cost measured at fair value over the service period for stock awards expected to vest. In addition, Statement of Operations data reflects the results of operations of August Technology since February 15, 2006.

(2) Statement of Operations data reflects the results of operations of PCTA since December 18, 2007.

(3) Statement of Operations data reflects the results of operations of WSPG since January 22, 2008.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

Overview

We are a worldwide leader in the design, development, manufacture and support of high-performance process control metrology, defect inspection, and data analysis systems used by semiconductor device manufacturers. We provide yield management solutions used in both wafer processing and final manufacturing through a family of standalone systems and integrated modules for both transparent and opaque thin film measurements and macro-defect inspection. All of these systems feature production-worthy automation and are backed by worldwide customer support.

On February 15, 2006, the merger with August Technology was completed. Under the terms of the agreement, we paid an aggregate of $37.2 million in cash and issued an aggregate of 11.3 million shares of our common stock to former August Technology shareholders for a total purchase price of $246.7 million. The results of operations of August Technology have been included in our consolidated financial statements since the date of the merger. Due to the size of August Technology and the effects of purchase accounting, our financial position, results of operations and cash flows may not be comparable to prior periods. With the exception of future tax adjustments related to the merger, the effects of purchase accounting were completed in 2006.

On December 18, 2007, Rudolph and a wholly-owned subsidiary entered into and consummated the transactions contemplated by, an agreement with Applied Precision Holdings, LLC and Applied Precision, LLC (collectively, "Applied"), pursuant to which we purchased substantially all of the assets and assumed certain liabilities of the semiconductor division of Applied to be known as the Probe Card Test and Analysis division ("PCTA"). We paid $59.1 million in cash and acquisition costs and issued 1.3 million shares of common stock for a total purchase price of $73.2 million. PCTA is engaged in the business of designing, developing, manufacturing, marketing, selling and supporting advanced probe card metrology and wafer probe process monitoring equipment and is complementary to our existing business.

On January 22, 2008, we announced that we had acquired all intellectual property and selected assets from privately-held RVSI Inspection, LLC, headquartered in Hauppauge, New York. The acquired business is currently known as the Rudolph Technologies Wafer Scanner Product Group ("WSPG"). The transaction was accounted for using the purchase method of accounting for business combinations. The impact of the acquisition was not material to our consolidated financial position or results of operations.

Rudolph's business is affected by the annual spending patterns of our customers on semiconductor capital equipment. The amount that our customers devote to capital equipment spending depends on a number of factors, including general worldwide economic conditions as well as other economic drivers such as personal computer, cell phone and personal electronic device sales. Current forecasts by industry analysts for the semiconductor device manufacturing industry project a year-over-year decrease in capital spending of 40-50% for 2009. We monitor capital equipment spending through announced capital spending plans by our customers and monthly-published industry data such as the book-to-bill ratio. The book-to-bill ratio is a 3-month running statistic that compares bookings or orders placed with capital equipment suppliers to billings or shipments. A book-to-bill above one shows that semiconductor device equipment manufacturers are ordering equipment at a pace that exceeds the equipment suppliers' shipments for the period. The three month rolling average North American semiconductor equipment book-to-bill ratio was 0.9 for the month of December 2008, increasing from the September 2008 book-to-bill ratio of 0.7.

Historically, a significant portion of our revenues in each quarter and year has been derived from sales to relatively few customers, and we expect this trend to continue. For the years ended December 31, 2006, 2007 and 2008, sales to customers that individually represented at least five percent of our revenues accounted for 40.9%, 37.1%, and 36.3% of our revenues, respectively. For the years ended December 31, 2006, 2007 and 2008, sales to Intel accounted for 14.0%, 11.5% and 10.9% of our revenues, respectively.

We do not have purchase contracts with any of our customers that obligate them to continue to purchase our products, and they could cease purchasing products from us at any time. A delay in purchase or cancellation by any of our large customers could cause quarterly revenues to vary significantly. In addition, during a given quarter, a significant portion of our revenues may be derived from the sale of a relatively small number of systems. Our transparent film measurement systems range in average selling price from approximately $250,000 to $1.0 million per system, our opaque film measurement systems range in average selling price from approximately $900,000 to $2.0 million per system and our macro-defect inspection and probe card and test analysis systems range in average selling price from approximately $250,000 to $1.4 million per system. Accordingly, a small change in the number of systems we sell may also cause significant changes in our operating results. Because fluctuations in the timing of orders from our major customers or in the number of our individual systems we sell could cause our revenues to fluctuate significantly in any given quarter or year, we do not believe that period-to-period comparisons of our financial results are necessarily meaningful, and they should not be relied upon exclusively as an indication of our future performance.

A significant portion of our revenues has been derived from customers outside of the United States. In 2006, approximately 70.6% of our revenues were derived from customers outside of the United States, of which 59.9% were derived from customers in Asia and 10.7% were derived from customers in Europe. In 2007, approximately 77.1% of our revenues were derived from customers outside of the United States, of which 58.5% were derived from customers in Asia and 18.6% were derived from customers in Europe. In 2008, approximately 76.5% of our revenues were derived from customers outside of the United States, of which 57.0% were derived from customers in Asia and 19.5% were derived from customers in Europe. We expect that revenues generated from customers outside of the United States will continue to account for a significant percentage of our revenues.

The sales cycle for our systems typically ranges from six to 15 months, and can be longer when our customers are evaluating new technology. Due to the length of these cycles, we invest significantly in research and development and sales and marketing in advance of generating revenues related to these investments. Additionally, the rate and timing of customer orders may vary significantly from month to month. Accordingly, if sales of our products do not occur when we expect, our expenses and inventory levels may increase relative to revenues and total assets.

Results of Operations

The following table sets forth, for the periods indicated, our statements of operations data as percentages of our revenues. Our results of operations are reported as one business segment.

	Year Ended December 31,		
	2006	2007	2008
Revenues	100.0%	100.0%	100.0%
Cost of revenues	51.6	49.3	66.7
Gross profit	48.4	50.7	33.3
Operating expenses:			
Research and development	14.9	18.7	24.2
In-process research and development	4.9	0.6	—
Selling, general and administrative	16.1	20.8	25.9
Impairment charge for goodwill and identifiable intangible assets	—	—	173.3
Amortization	2.0	2.8	4.5
Total operating expenses	37.9	42.9	227.9
Operating income (loss)	10.5	7.8	(194.6)
Interest income and other, net	1.6	2.6	0.9
Income before provision (benefit) income taxes	12.1	10.4	(193.7)
Provision (benefit) for income taxes	5.8	3.0	(3.1)
Net income (loss)	6.3%	7.4%	(190.6)%

Results of Operations 2006, 2007 and 2008

Revenues. Our revenues are derived from the sale of our systems, services, spare parts and software licensing. Our revenues were $201.2 million, $160.1 million and $131.0 million in the years 2006, 2007 and 2008. These changes represent a decrease of 20.4% from 2006 to 2007 and a decrease of 18.2% from 2007 to 2008. The decreases in revenue from 2006 through 2008 are primarily due to the continued weakness in the overall semiconductor equipment manufacturing sector.

The following table lists, for the periods indicated, the different sources of our revenues in dollars and as percentages of our total revenues:

	Year Ended December 31,					
	2006		2007		2008	
Systems:						
Metrology	$ 68,035	34%	$ 34,738	22%	$ 21,118	16%
Inspection	100,666	50	85,012	53	71,348	55
Parts	14,217	7	13,678	9	19,262	15
Services	11,457	6	14,121	8	14,901	11
Software licensing	6,793	3	12,580	8	4,411	3
Total revenue	$201,168	100%	$160,129	100%	$131,040	100%

Systems revenue decreased from 2006 through 2008 due to continued weakness in the overall semiconductor equipment manufacturing sector and reflects a decrease in metrology systems revenue of $33.3 million and a decrease in inspection systems revenue of $15.7 million from 2006 to 2007, a decrease in metrology systems revenue of $13.6 and a decrease in inspection systems revenues of $13.7 million for 2007 to 2008. Systems revenue generated by our latest product releases and major enhancements in each of our product families amounted to 31% of total revenue for 2006 compared to 29% of total revenue for 2007 and 40% of total revenue for 2008. The year-

over-year increase in parts and service revenues in absolute dollars from 2006 to 2007 is primarily due to customers continuing to spend more on repair and maintenance of their existing equipment. Parts and services revenues are generated from part sales, maintenance service contracts, system upgrades, as well as time and material billable service calls. The year-over-year increase in parts and service revenues in absolute dollars from 2007 to 2008 reflects additional parts and service revenues from the PCTA and WSPG acquisitions. The year-over-year increase in software licensing revenues of $5.8 million from 2006 to 2007 reflects the sale of certain technology rights to Tokyo Electron. The year-over-year decrease in software licensing revenues of $8.2 million from 2007 to 2008 reflects the sale of certain technology rights to Tokyo Electron in 2007 not occurring in 2008 and weakness in the semiconductor market.

Deferred revenues of $4.4 million are recorded in other current liabilities at December 31, 2008 and primarily consist of $4.0 million for deferred maintenance agreements and $0.4 million for systems awaiting acceptance and outstanding deliverables.

Gross Profit. Our gross profit has been and will continue to be affected by a variety of factors, including inventory step-up from purchase accounting, manufacturing efficiencies, excess and obsolete inventory write-offs, pricing by competitors or suppliers, new product introductions, product sales mix, production volume, customization and reconfiguration of systems, international and domestic sales mix, and parts and service margins. Our gross profit was $97.4 million, $81.2 million and $43.7 million in 2006, 2007 and 2008, respectively. The increase in gross profit as a percentage of revenue from 2006 to 2007 is primarily due to the sales and transfer of certain technology rights to Tokyo Electron and higher charges to cost of goods sold in 2006. The decrease in gross profit as a percentage of revenue from 2007 to 2008 is primarily due to the inventory write-offs of $11.3 million and acquired inventory sold in the 2008 that was written up to fair value in purchase accounting.

Research and Development. The thin film transparent, opaque process control and macro-defect inspection and probe card test analysis market is characterized by continuous technological development and product innovations. We believe that the rapid and ongoing development of new products and enhancements to existing products, including the transition to copper and low-k dielectrics, the progression to 300 mm wafers, the continuous shrinkage in critical dimensions, and the evolution of ultra-thin gate process control, is critical to our success. Accordingly, we devote a significant portion of our technical, management and financial resources to research and development programs. Research and development expenditures consist primarily of salaries and related expenses of employees engaged in research, design and development activities. They also include consulting fees and the cost of related supplies. Our research and development expense was $29.9 million, $30.0 million and $31.6 million in 2006, 2007 and 2008, respectively. The year-over-year dollar increase from 2006 to 2007 is primarily due to the engineering team from the August Technology merger being included for the full year ended December 31, 2007, and the write-off of $0.5 million for certain software project costs, partially offset by cost containment initiatives. The year-over-year dollar increase from 2007 to 2008 primarily due to the engineering teams from the PCTA and WSPG acquistions being included for 2008, partially offset by headcount reductions and lower project costs as part of our cost reduction efforts. We continue to maintain our commitment to investing in new product development and enhancement to existing products in order to position ourselves for future growth.

In-Process Research and Development. In 2006, the merger with August Technology resulted in our recording of $9.9 million for the write-off of IPRD. At the time of the merger, we determined that the IPRD had not reached technological feasibility and that it did not have an alternative future use. The purchased in-process technology projects, which were comprised of macro-defect inspection and software projects, had a value assigned to them of $6.9 million and $3.0 million, respectively. The defect inspection projects, related to the next generation of our AXi defect detection systems with enhanced defect capture capabilities, and were approximately 90% complete as of the date of merger. The estimated costs to complete these projects consisted primarily of internal engineering labor costs and were completed by the third quarter of 2006. The software projects, related to new enhancement features to our next generation inspection products, and were approximately 50% complete as of the date of merger, with the remaining cost to complete consisting primarily of internal software development labor cost. The software projects were completed in 2007. We generated revenue from the inspection project in the third quarter of 2006 and the software project in 2007.

In 2007, the acquisition of the PCTA resulted in our recording of $1.0 million for the write-off of IPRD. At the time of the acquisition, we determined that the IPRD had not reached technological feasibility and that it did not have an alternative future use. The purchased in-process technology project was a probe card test project related to the next generation of our ProbeWoRx systems with enhanced capabilities, and was approximately 20% complete as of the date of acquisition. The estimated costs to complete this project of $2.1 million consist primarily of internal engineering labor costs which will be completed in the first half of 2009. If we are not successful in completing the inspection project on a timely basis, the future sales of our inspection products may be adversely affected resulting in erosion of our market share.

Selling, General and Administrative. Selling, general and administrative expense is primarily comprised of salaries and related costs for sales, marketing, and general administrative personnel, as well as commissions and other non-personnel related expenses. Our selling, general and administrative expense was $32.4 million, $33.2 million and $34.0 million in 2006, 2007 and 2008, respectively. The year-over-year dollar increase from 2006 to 2007 in selling, general and administrative expense was primarily due to administrative costs associated with the merged activities of August Technology being included for the full year of 2007 and increased compensation costs. The year-over-year dollar increase from 2007 to 2008 in selling, general and administrative expense was primarily due to administrative costs associated with the merged activities of the PCTA and WSPG being included for 2008, partially offset by foreign exchange gains from our international operations.

Impairment Charge for Goodwill and Identifiable Intangible Assets. Impairment charge for goodwill and identifiable intangible assets was $0 for both 2006 and 2007 and $227.1 million in 2008. We performed our annual goodwill impairment test on October 31st. During October 2008, we experienced a significant decline in our stock price. As a result of the decline in stock price, our market capitalization plus an implied control premium fell significantly below the recorded value of our consolidated net assets as of the testing date. In performing the goodwill impairment test, we used current market capitalization, control premiums, discounted cash flows and other factors as the best evidence of fair value. The impairment test resulted in no value attributable to our goodwill and accordingly, we wrote off all of our $192.9 million of goodwill as of October 31, 2008.

In connection with the goodwill impairment test, we determined that our identifiable acquired intangible assets were impaired. The determination was based on the carrying values exceeding the future undiscounted cash flows and fair value attributable to such intangible assets. As a result, we recorded an impairment charge of $34.2 million as of October 31, 2008, which represents the difference between the estimated fair values of these long-lived assets as compared to their carrying values. Fair values were determined based upon market conditions, the relief from royalty approach which utilized cash flow projections, and other factors.

Interest Income and Other, Net. Interest income and other, net was $3.2 million, $4.1 million and $1.2 million in 2006, 2007 and 2008, respectively. Interest income and other, net consisted primarily of interest income and realized gains and losses on sales of marketable securities. The year-over year increase in interest income and other, net of $1.0 million from 2006 to 2007 is primarily due to higher invested cash balances and higher average interest rates. The year-over-year decrease in interest income and other, net of $2.9 million from 2007 to 2008 is primarily due to lower average invested cash balances and lower average interest rates.

Income Taxes. Income tax expense was $11.7 million, $4.8 million, respectively, in 2006 and 2007. In 2008 there was an income tax benefit of $4.1 million. Income tax expense for the years ended December 31, 2006 and 2007 was 48.0% and 29.0% of income before provision for income taxes, respectively. This differs from the federal statutory income tax rate of 35%, primarily as a result of state income taxes offset by benefits from research and development tax credits, the domestic manufacturing production deduction and tax exempt interest. In addition, our effective tax rate was impacted by the non-deductibility of the IPRD charges for tax purposes of $9.9 million and $1.0 million, respectively.

The income tax benefit for the year ended December 31, 2008 was $4.1 million or 1.6% of loss before benefit for income taxes. The income tax benefit differs from the amount that would result from applying the federal statutory income tax rate of 35% to our loss before benefit for income taxes, primarily due to our inability to record a full income tax benefit for the impairments of the goodwill and long-lived assets and valuation allowances in taxable jurisdictions.

We evaluate the recoverability of deferred tax assets from future taxable income and establish valuation allowances if recovery is deemed not likely. The valuation allowance increased $0.3 million and $35.2 million in 2007 and 2008, respectively.

Liquidity and Capital Resources

At December 31, 2006, our cash, cash equivalents and marketable securities totaled $106.2 million, while working capital amounted to $200.9 million. At December 31, 2007, we had $73.9 million of cash, cash equivalents and marketable securities and $176.3 million in working capital. At December 31, 2008, we had $78.3 million of cash, cash equivalents and marketable securities and $147.7 million in working capital.

Typically during periods of revenue growth, changes in accounts receivable and inventories represent a use of cash as we incur costs and expend cash in advance of receiving cash from our customers. Similarly, during periods of declining revenue, changes in accounts receivable and inventories represent a source of cash as inventory purchases decline and revenue from prior periods is collected. However, in 2007 and 2008, as our revenues declined our change in inventories represented a use of cash. This was primarily due to increasing inventory related to new products and the acceleration of the slowdown in the semiconductor industry. Because of the lack of visibility in projected sales for 2009, we are uncertain as to the level of expected cash to be used in operating activities in 2009.

Net cash provided by operating activities in 2006, 2007 and 2008 totaled $20.6 million, $23.6 million and $15.4 million, respectively. During 2006, cash provided by operating activities was primarily due to net income, adjusted to exclude the effect of non-cash charges, of $42.6 million, an increase in deferred revenue of $7.9 million, an increase in other current liabilities of $1.0 million, an increase in accrued liabilities of $0.8 million and an increase in income taxes payable of $0.6 million, partially offset by an increase in accounts receivable of $25.1 million and an increase in inventories of $7.1 million. During 2007, cash provided by operating activities was primarily due to net income, adjusted to exclude the effect of non-cash charges, of $23.4 million and a decrease in accounts receivable of $21.4 million, partially offset by a decrease in deferred revenue of $6.1 million, an increase in inventories of $5.4 million, a decrease in accrued liabilities of $4.0 million, a decrease in accounts payable of $3.3 million and an increase in prepaid expenses and other assets of $2.3 million. During 2008, cash provided by operating activities was primarily due to a decrease in accounts receivable of $31.3 million, net loss, adjusted to exclude the effect of non-cash charges, of $2.2 million, partially offset by a decrease in accounts payable of $5.6 million, an increase in income taxes receivable of $4.2 million, an increase in inventories of $4.3 million, a decrease in accrued liabilities of $2.5 million and a decrease in deferred revenue of $1.6 million.

Net cash provided by investing activities in 2006 totaled $3.6 million. Net cash used in investing activities in 2007 and 2008 totaled $40.5 million and $5.7 million, respectively. In 2006, net cash provided by investing activities included proceeds from sales of marketable securities of $93.4 million, partially offset by purchases of marketable securities of $70.8 million, capital expenditures of $4.7 million, costs incurred for capitalized software of $2.2 million and acquisition costs for the August Technology merger of $12.1 million net of cash acquired of $29.9 million. In 2007, net cash used by investing activities included purchases of marketable securities of $77.7 million, acquisition costs for business combinations of $56.2 million, capital expenditures of $1.0 million, costs incurred for capitalized software of $0.7 million, partially offset by proceeds from sales of marketable securities of $95.1 million. In 2008, net cash used by investing activities included purchases of marketable securities of $15.5 million, acquisition costs for business combinations of $8.5 million, capital expenditures of $3.0 million, partially offset by proceeds from sales of marketable securities of $21.3 million. Capital expenditures over the next six months are expected to be approximately $1.3 million.

Net cash provided by financing activities was $10.1 million, $1.5 million and $0.2 million in 2006, 2007 and 2008, respectively. In 2006, net cash provided by financing activities was a result of proceeds received from sales of shares through share-based compensation plans of $9.0 million and tax benefit from share-based compensation plans of $1.2 million. In 2007, net cash provided by financing activities was a result of proceeds received from sales of shares through share-based compensation plans of $1.3 million and tax benefit from share-based compensation plans of $0.1 million. In 2008, net cash provided by financing activities was a result of proceeds received from sales of shares through share-based compensation plans of $0.2 million.

From time to time we evaluate whether to acquire new or complementary businesses, products and/or technologies. We may fund all or a portion of the purchase price of these acquisitions in cash. On December 18, 2007, we announced that our acquisition of the semiconductor division of Applied Precision Holdings, LLC had been completed. Under the terms of the agreement, we paid an aggregate of $59.1 million in cash and issued an aggregate of 1.3 million shares of our common stock to Applied Precision Holdings, LLC. On January 22, 2008, we announced that we had acquired all intellectual property and selected assets from privately-held RVSI Inspection, LLC, headquartered in Hauppauge, New York.

In July 2008, our Board of Directors approved a stock repurchase program of up to 3 million shares. We did not purchase any shares to date under this program.

Our future capital requirements will depend on many factors, including the timing and amount of our revenues and our investment decisions, which will affect our ability to generate additional cash. We believe that our existing cash, cash equivalents and marketable securities will be sufficient to meet our anticipated cash requirements for working capital and capital expenditures for the foreseeable future. Thereafter, if cash generated from operations and financing activities is insufficient to satisfy our working capital requirements, we may seek additional funding through bank borrowings, sales of securities or other means. There can be no assurance that we will be able to raise any such capital on terms acceptable to us or at all.

Contractual Obligations

The following table summarizes our significant contractual obligations at December 31, 2008, and the effect such obligations are expected to have on our liquidity and cash flows in future periods. This table excludes the liability for unrecognized tax benefits that totaled approximately $6.0 million at December 31, 2008. We are currently unable to provide a reasonably reliable estimate of the amount or periods when cash settlement of this liability may occur.

	Payments due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Operating lease obligations	$15,246	$ 2,691	$4,459	$3,082	$5,014
Open and committed purchase orders	10,471	10,471	—	—	—
Total	$25,717	$13,162	$4,459	$3,082	$5,014

Off-Balance Sheet Arrangements

The Company does not have any off-balance sheet arrangements that have or are reasonably likely to have a material effect on our financial condition, results of operations or liquidity and capital resources.

Critical Accounting Policies

Management's discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. We review the accounting policies we use in reporting our financial results on a regular basis. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities. On an ongoing basis, we evaluate our estimates, including those related to revenue recognition, accounts receivable, inventories, business acquisitions, intangible assets, share-based payments, income taxes and warranty obligations. We base our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Results may differ from these estimates due to actual outcomes being different from those on which we based our assumptions. These estimates and judgments are reviewed by management on an ongoing basis, and by the Audit Committee at the end of each quarter prior to the public release of our financial results. We believe the following critical accounting

policies affect our more significant judgments and estimates used in the preparation of our consolidated financial statements.

Revenue Recognition. Revenue is recognized when there is persuasive evidence of an arrangement, delivery has occurred, the sales price is fixed or determinable, and collection of the related receivable is reasonably assured. Certain sales of our products are sold and accounted for as multiple element arrangements, consisting primarily of the sale of the product, software, installation and training services. We generally recognize product revenue upon shipment. In the limited circumstances where customer acceptance is subjective and not obtained prior to shipment, we defer product revenue until such time as positive affirmation of acceptance has been obtained from the customer. Customer acceptance is generally based on our products meeting published performance specifications. The amount of revenue allocated to the shipment of products is done on a residual method basis. Under this method, the total arrangement value is allocated first to undelivered contract elements, based on their fair values, with the remainder being allocated to product revenue. The fair value of installation and training services is based upon billable hourly rates and the estimated time to complete the service. Revenue related to undelivered installation services is deferred until such time as installation is completed at the customer's site. Revenue related to training services is recognized ratably over the training period. Revenue from software license fees is recognized upon shipment if collection of the resulting receivable is probable, the fee is fixed or determinable, and vendor-specific objective evidence exists to allocate a portion of the total fee to any undelivered elements of the arrangement. Such undelivered elements in these arrangements typically consist of follow-on support. If vendor-specific objective evidence does not exist for the undelivered elements of the arrangement, all revenue is deferred and recognized ratably over the support period.

Allowance for Doubtful Accounts. We maintain allowances for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. We specifically analyze accounts receivable and analyze historical bad debts, customer concentrations, customer credit-worthiness, current economic trends and changes in our customer payment terms when evaluating the adequacy of the allowance for doubtful accounts. If the financial condition of our customers were to deteriorate, resulting in an impairment of their ability to make payments or our assumptions are otherwise incorrect, additional allowances may be required.

Excess and Obsolete Inventory. We write down our excess and obsolete inventory equal to the difference between the cost of inventory and the estimated market value based upon assumptions about future product life-cycles, product demand and market conditions. If actual product life-cycles, product demand and market conditions are less favorable than those projected by management, additional inventory write-downs may be required.

Business Acquisitions. We account for acquired or merged businesses using the purchase method of accounting which requires that the assets acquired and liabilities assumed be recorded at the date of acquisition or merger at their respective fair values. The judgments made in determining the estimated fair value assigned to each class of assets acquired and liabilities assumed, as well as asset lives, can materially impact our consolidated financial position and results of operations. Accordingly, for significant items, we typically obtain assistance from independent valuation specialists.

There are several methods that can be used to determine the fair value of assets acquired and liabilities assumed. For intangible assets, we normally utilize the "income method." This method starts with a forecast of all of the expected future net cash flows. These cash flows are then adjusted to present value by applying an appropriate discount rate that reflects the risk factors associated with the cash flow streams. Some of the more significant estimates and assumptions inherent in the income method or other methods include the projected future cash flows (including timing) and the discount rate reflecting the risks inherent in the future cash flows. Determining the useful life of an intangible asset also requires judgment. For example, different types of intangible assets will have different useful lives and certain assets may even be considered to have indefinite useful lives. All of these judgments and estimates can significantly impact our consolidated financial position and results of operations.

The purchase price is preliminarily allocated based on estimates of the fair values of assets acquired and liabilities assumed. The final valuation of net assets is expected to be completed within one year from the acquisition or merger date. At the acquisition or merger date, we begin to formulate a plan to exit or restructure certain activities, if applicable. As we finalize our plans to exit or restructure activities, we may record additional

liabilities for, among other things, severance and severance related costs, which would also increase the goodwill recorded.

Goodwill. Our formal annual impairment testing date for goodwill is October 31st or prior to the next annual testing date if an event occurs or circumstances change that would make it more likely than not that the fair value of a reporting unit is below its carrying amount. The goodwill impairment test is a two-step process which requires us to make judgmental assumptions regarding fair value. The initial first step consists of estimating the fair value of our aggregated reporting unit using the market value of our common stock at October 31, multiplied by the number of outstanding common shares (market capitalization) and an implied control premium as if it were to be acquired by a single stockholder. We obtain information on completed sales of similar companies in a comparable industry to estimate an implied control premium for us. We compare the estimated fair value of the reporting unit to its carrying value which includes goodwill. If the results of the initial market capitalization test produce results which are below the reporting unit carrying value, we will also consider if, the market capitalization is temporarily low and, if so, we may also perform a discounted cash flow test. If the estimated fair value is less than the carrying value, the second step is completed to compute the impairment amount by determining the "implied fair value" of goodwill. This determination requires the allocation of the estimated fair value of the reporting unit to the assets and liabilities of the reporting unit. Any remaining unallocated fair value represents the "implied fair value" of goodwill which is compared to the corresponding carrying value to compute the goodwill impairment amount.

We performed our annual goodwill impairment test on October 31st. During the fourth quarter of 2008, the Company experienced a significant decline in its stock price. As a result of the decline in stock price, the Company's market capitalization plus an implied control premium fell significantly below the recorded value of its consolidated net assets as of the testing date. In performing the goodwill impairment test, the Company used current market capitalization, control premiums, discounted cash flows and other factors as the best evidence of fair value. The impairment test resulted in no value attributable to the Company's goodwill and accordingly, the Company wrote off all of its $192.9 million of goodwill as of October 31, 2008.

Long-Lived Assets and Acquired Intangible Assets. We periodically review long-lived assets, other than goodwill, for impairment whenever changes in events or circumstances indicate that the carrying amount of an asset may not be recoverable. Assumptions and estimates used in the determination of impairment losses, such as future cash flows and disposition costs, may affect the carrying value of long-lived assets and the impairment of such long-lived assets, if any, could have a material effect on our consolidated financial statements.

In connection with the goodwill impairment test as of October 31, 2008, the Company determined that its identifiable acquired intangible assets were impaired. The determination was based on the carrying values exceeding the future undiscounted cash flows and fair value attributable to such intangible assets. As a result, the Company recorded an impairment charge of $34.2 million, which represents the difference between the estimated fair values of these long-lived assets as compared to their carrying values. Fair values were determined based upon market conditions, the relief from royalty approach which utilized cash flow projections, and other factors.

As of December 31, 2008, we again tested for impairment of our long-lived assets and acquired intangible assets and determined no further impairment existed.

Share-Based Compensation. Effective January 1, 2006, we adopted the provisions of Statement of Financial Accounting Standards ("SFAS") No. 123 (revised 2004) "Share-Based Payment" ("SFAS 123R") using the modified-prospective-transition method. SFAS 123R requires companies to recognize the fair-value of share-based compensation transactions in the statement of operations. The fair value of our stock options is estimated at the date of grant using the Black-Scholes option pricing model. The Black-Scholes valuation calculation requires us to estimate key assumptions such as future stock price volatility, expected terms, risk-free rates and dividend yield. Expected stock price volatility is based on historical volatility of our stock. We use historical data to estimate option exercises and employee terminations within the valuation model. The expected term of options granted is derived from an analysis of historical exercises and remaining contractual life of stock options, and represents the period of time that options granted are expected to be outstanding. The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant. We have never paid cash dividends, and do not currently intend to pay cash dividends, and thus have assumed a 0% dividend yield. If our actual experience differs significantly from the assumptions used

to compute our share-based compensation cost, or if different assumptions had been used, we may have recorded too much or too little share-based compensation cost. In addition, we are required to estimate the expected forfeiture rate of our share grants and only recognize the expense for those shares expected to vest. If the actual forfeiture rate is materially different from our estimate, our share-based compensation expense could be materially different.

Warranties. We provide for the estimated cost of product warranties at the time revenue is recognized. While we engage in product quality programs and processes, our warranty obligation is affected by product failure rates, material usage and service delivery costs incurred in correcting a product failure. Should actual product failure rates, material usage or service delivery costs differ from our estimates, revisions to the estimated warranty liability would be required.

Accounting for Income Taxes. As part of the process of preparing our consolidated financial statements, we are required to estimate our actual current tax exposure together with our temporary differences resulting from differing treatment of items for tax and accounting purposes. These temporary differences result in deferred tax assets and liabilities, which are included within our consolidated balance sheet. We must then assess the likelihood that our deferred tax assets will be recovered from future taxable income and to the extent we believe that recovery is not likely, we must establish a valuation allowance. Significant management judgment is required in determining our provision for income taxes and any valuation allowance recorded against our deferred tax assets. The need for a valuation allowance is based on our estimates of taxable income by jurisdiction in which we operate and the period over which our deferred taxes will be recoverable. In the event that actual results differ from these estimates or we adjust these estimates in future periods, we may need to adjust the valuation allowance, which could materially impact our financial position and results of operations. At December 31, 2008, we had a valuation allowance of $36.5 million on most of our deferred tax assets to reflect the deferred tax asset at the net amount that is more likely than not to be realized.

We adopted FASB Financial Interpretation No. ("FIN") 48, "Accounting for Uncertainty in Income Taxes," at the beginning of fiscal 2007. As a result of the adoption of FIN 48, we recognize liabilities for uncertain tax positions based on the two-step process prescribed by the interpretation. The first step requires us to determine if the weight of available evidence indicates that the tax position has met the threshold for recognition; therefore, we must evaluate whether it is more likely than not that the position will be sustained on audit, including resolution of any related appeals or litigation processes. The second step requires us to measure the tax benefit of the tax position taken, or expected to be taken, in an income tax return as the largest amount that is more than 50% likely of being realized when effectively settled. This measurement step is inherently difficult and requires subjective estimations of such amounts to determine the probability of various possible outcomes. We reevaluate the uncertain tax positions each quarter based on factors including, but not limited to, changes in facts or circumstances, changes in tax law, effectively settled issues, and new audit activity. Such a change in recognition or measurement could result in the recognition of a tax benefit or an additional charge to the tax provision in the period.

Although we believe the measurement of our liabilities for uncertain tax positions is reasonable, no assurance can be given that the final outcome of these matters will not be different than what is reflected in the historical income tax provisions and accruals. If additional taxes are assessed as a result of an audit or litigation, it could have a material effect on our income tax provision and net income in the period or periods for which that determination is made.

Impact of Recent Accounting Pronouncements

In March 2008, the Financial Accounting Standards Board ("FASB") issued SFAS No. 161, "Disclosure about Derivatives Instruments and Hedging Activities-an amendment of FASB Statement No. 133" ("SFAS 161"), which requires enhanced disclosures about an entity's derivative and hedging activities and thereby improves the transparency of financial reporting. SFAS 161 is effective for financial statements issued for fiscal years and interim periods beginning after November 15, 2008 with early application encouraged. We are currently evaluating the potential impact of adopting SFAS 161.

In February 2008, the FASB adopted FASB Staff Position SFAS No. 157-2 - "Effective Date of FASB Statement No. 157" delaying the effective date of SFAS No. 157 for one year for all non financial assets and non financial liabilities, except those that are recognized or disclosed at fair value in the financial statements on a recurring basis (at least annually). We are currently evaluating the impact of the implementation of SFAS No. 157 for non-financial assets and liabilities on our consolidated financial position, results of operations and cash flows.

In December 2007, the FASB issued SFAS No. 141R, "Business Combinations" ("SFAS 141R"), which establishes principles and requirements for how an acquirer recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, any noncontrolling interest in an acquiree, and the recognition and measurement of goodwill acquired in a business combination or a gain from a bargain purchase. SFAS 141R applies prospectively to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after December 15, 2008.

In November 2007, the Emerging Issues Task Force ("EITF") issued EITF Issue No. 07-1 ("EITF 07-1"), "Accounting for Collaborative Arrangements," which defines collaborative arrangements and establishes reporting and disclosure requirements for such arrangements. EITF 07-1 is effective for fiscal years beginning after December 15, 2008. We are continuing to evaluate the impact of adopting the provisions EITF 07-1; however, we do not anticipate that adoption will have a material effect on our financial position or results of operations.

In February 2007, the FASB issued SFAS No. 159 ("SFAS 159"), "The Fair Value Option for Financial Assets and Financial Liabilities- Including an amendment of FASB Statement No. 115." SFAS 159 permits entities to choose to measure many financial instruments and certain other items at fair value. The objective is to improve financial reporting by providing entities with the opportunity to mitigate volatility in reporting earnings caused by measuring related assets and liabilities differently without having to apply complex hedge accounting provisions. SFAS 159 is effective for fiscal years that begin after November 15, 2007. We adopted SFAS 159 on January 1, 2008 and did not elect the fair value option for our financial instruments.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Interest Rate and Credit Market Risk

We are exposed to changes in interest rates and market liquidity primarily from our investments in certain available-for-sale securities. Our available-for-sale securities consist of fixed and variable rate income investments (U.S. Treasury and Agency securities, asset-backed securities, mortgage-backed securities, auction rate securities and corporate bonds). We continually monitor our exposure to changes in interest rates, market liquidity and credit ratings of issuers from our available-for-sale securities. It is possible that we are at risk if interest rates, market liquidity or credit ratings of issuers change in an unfavorable direction. The magnitude of any gain or loss will be a function of the difference between the fixed rate of the financial instrument and the market rate and our financial condition and results of operations could be materially affected. Based on sensitivity analysis performed on our financial investments held as of December 31, 2008, an immediate adverse change of 10% in interest rates (e.g. 3.00% to 3.30%) would result in an immaterial decrease in the fair value of our available-for-sale securities.

Foreign Currency Risk

We have branch operations in Taiwan, Singapore, China and Korea and wholly-owned subsidiaries in Europe and Japan. Our international subsidiaries and branches operate primarily using local functional currencies. These foreign branches and subsidiaries are limited in their operations and level of investment so that the risk of currency fluctuations is not material. A substantial portion of our international systems sales are denominated in U.S. dollars with the exception of Japan and, as a result, we have relatively little exposure to foreign currency exchange risk with respect to these sales. Substantially all our sales in Japan are denominated in Japanese yen. From time to time, we may enter into forward exchange contracts to economically hedge a portion of, but not all, existing and anticipated foreign currency denominated transactions expected to occur within 12 months. The change in fair value of the forward contracts is recognized in the Consolidated Statements of Operations each reporting period. As of December 31, 2007 and 2008, we had seventeen and sixteen forward contracts outstanding, respectively. The total notional contract value of these outstanding forward contracts at December 31, 2007 and 2008 was $5.7 million and $2.3 million, respectively. We do not use derivative financial instruments for trading or speculative purposes.

Item 8. Financial Statements and Supplementary Data.

The consolidated financial statements required by this item are set forth on the pages indicated at Item 15(a) of this Annual Report on Form 10-K.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

A change in accountants was previously reported on a Current Report on Form 8-K filed on March 24, 2008.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time period specified in SEC rules and forms. These controls and procedures are also designed to ensure that such information is accumulated and communicated to our management, including our principal executive and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating disclosure controls and procedures, we have recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. Management is required to apply judgment in evaluating its controls and procedures.

We performed an evaluation under the supervision and with the participation of our management, including our principal executive and principal financial officers, to assess the effectiveness of the design and operation of our disclosure controls and procedures under the Exchange Act as of December 31, 2008. Based on that evaluation, our management, including our principal executive and principal financial officers, concluded that our disclosure controls and procedures were effective as of December 31, 2008.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on our evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2008.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our consolidated financial statements as of and for the year ended December 31, 2008 have been audited by Ernst & Young LLP, our independent registered public accounting firm, in accordance with the standards of the Public Company Accounting Oversight Board (United States). Ernst & Young LLP has also audited our internal control over financial reporting as of December 31, 2008, as stated in its attestation report included elsewhere in this Annual Report on Form 10-K.

There have been no changes during the Company's quarter ended December 31, 2008 in its internal control over financial reporting (as defined in Rules 13a-15(f) under the Exchange Act) that have materially affected, or are reasonably likely to materially affect, its internal control over financial reporting.

Item 9B. Other Information.

None.

PART III

Certain information required by Part III is omitted from this Annual Report on Form 10-K because we will file a definitive proxy statement within one hundred twenty (120) days after the end of the fiscal year pursuant to Regulation 14A (the "Proxy Statement") for our Annual Meeting of Stockholders currently scheduled for May 19, 2009, and the information included in the Proxy Statement is incorporated herein by reference.

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this Item with respect to directors and executive officers is incorporated by reference to the Proxy Statement. Information regarding compliance with Section 16 of the Securities Exchange Act of 1934, as amended, is incorporated by reference to the information under the heading "Section 16(a) Beneficial Ownership Reporting Compliance" in the Proxy Statement.

Code of Ethics. We have adopted a code of ethics that applies to our principal executive officer, principal financial officer and controller. This code of ethics is posted on our internet website address at http://www.rudolphtech.com.

Item 11. Executive Compensation.

The information required by this Item is incorporated by reference to the Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this Item is incorporated by reference to the Proxy Statement.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this Item is incorporated by reference to the Proxy Statement.

Item 14. Principal Accounting Fees and Services.

The information required by this Item is incorporated by reference to the Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedule.

(a) The following documents are filed as part of this Annual Report on Form 10-K:

1. Financial Statements

The consolidated financial statements and consolidated financial statement information required by this Item are included on pages F-1 through F-8 of this report. The Reports of Independent Registered Public Accounting Firms appear on pages F-2 through F-4 of this report.

2. Financial Statement Schedule

See Index to financial statements on page F-1 of this report.

3. Exhibits

The following is a list of exhibits. Where so indicated, exhibits, which were previously filed, are incorporated by reference.

Exhibit No.	Description
2.1	Agreement and Plan of Merger, dated as of June 27, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation (incorporated by reference to Exhibit 99.2 to the Company's Schedule 13D filed with the SEC on July 7, 2005).
2.2	Amendment No. 1, dated as of December 8, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation, to the Agreement and Plan of Merger, dated as of June 27, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 9, 2005).
2.3	Asset Purchase Agreement dated as of December 18, 2007, by and among the Registrant, Mariner Acquisition Company LLC, Applied Precision Holding, LLC and Applied Precision, LLC (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 21, 2007).
3.1	Restated Certificate of Incorporation of Registrant (incorporated herein by reference to Exhibit (3.1(b)) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871 filed on September 9, 1999).
3.2	Amended and Restated Bylaws of Registrant (incorporated herein by reference to Exhibit (3.2(b)) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
3.3	Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on February 15, 2006, No. 000-27965).
3.4	Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on August 1, 2007, No. 000-27965).
3.5	Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on February 2, 2009, No. 000-27965).
4.1	Rights Agreement (incorporated by reference to Exhibit 4.1 of the Registrant's Registration Statement on Form 8-A, filed with the Commission on June 28, 2005, No 000-27965).
4.2	August Technology Corporation 1997 Stock Incentive Plan (incorporated by reference to the Appendix to August Technology Corporation's Proxy Statement for its 2004 Annual Shareholders Meeting, filed with the Commission on March 11, 2004, No. 000-30637).
10.1+	License Agreement, dated June 28, 1995, between the Registrant and Brown University Research Foundation (incorporated herein by reference to Exhibit (10.1) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).

Exhibit No.	Description
10.2	Form of Indemnification Agreement (incorporated herein by reference to Exhibit (10.3) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.3	Amended 1996 Non-Qualified Stock Option Plan (incorporated herein by reference to Exhibit 10.15 to Registrant's quarterly report on Form 10-Q, filed on November 14, 2001).
10.4	Form of 1999 Stock Plan (incorporated herein by reference to Exhibit (10.4) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.5	Form of 1999 Employee Stock Purchase Plan (incorporated herein by reference to Exhibit (10.5) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.6	Management Agreement, dated as of July 24, 2000, by and between Rudolph Technologies, Inc. and Paul F. McLaughlin (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000).
10.7	Management Agreement, dated as of July 24, 2000 by and between Rudolph Technologies, Inc. and Steven R. Roth (incorporated herein by reference to Exhibit 10.14 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000).
10.8	Registration Agreement, dated June 14, 1996 by and among the Registrant, 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul F. McLaughlin (incorporated herein by reference to Exhibit (10.9) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.9	Stockholders Agreement, dated June 14, 1996 by and among the Registrant, Administration of Florida, Liberty Partners Holdings 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul McLaughlin, Dale Moorman, Thomas Cooper and (incorporated herein by reference to Exhibit (10.10) to the Registrant's Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.10	Form of option agreement under 1999 Stock Plan (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 5, 2004).
10.11	Form of Restricted Stock Award pursuant to the Rudolph Technologies, Inc. 1999 Stock Plan (filed with Rudolph Technologies, Inc.'s Current Report on Form 8-K filed on June 21, 2005 and incorporated herein by reference).
10.12	Form of Company Shareholder Voting Agreement (incorporated by reference to Exhibit 99.2 to the Company's Schedule 13D filed with the SEC on July 7, 2005).
14.1	Rudolph Technologies Code of Business Conduct and Ethics (incorporated herein by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006).
14.2	Rudolph Technologies Financial Code of Ethics (incorporated herein by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006).
21.1	Subsidiaries.
23.1	Consent of KPMG LLP, Independent Registered Public Accounting Firm.
23.2	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm.
31.1	Certification of Paul F. McLaughlin, Chief Executive Officer, pursuant to Securities Exchange Act Rule 13a-14(a).
31.2	Certification of Steven R. Roth, Chief Financial Officer, pursuant to Securities Exchange Act Rule 13a-14(a).
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Paul F. McLaughlin, Chief Executive Officer of Rudolph Technologies, Inc.
32.2	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Steven R. Roth, Chief Financial Officer of Rudolph Technologies, Inc.

+ Confidential treatment has been granted with respect to portions of this exhibit.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS AND FINANCIAL STATEMENT SCHEDULE

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Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors of Rudolph Technologies, Inc.:

We have audited the accompanying consolidated balance sheet of Rudolph Technologies, Inc. and subsidiaries as of December 31, 2007 and the related consolidated statements of operations, stockholders' equity and comprehensive income (loss), and cash flows for each of the years in the two-year period ended December 31, 2007. In connection with our audits of the consolidated financial statements, we also have audited the consolidated financial statement schedule for each of the years in the two-year period ended December 31, 2007. These consolidated financial statements and the financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements and the financial statement schedule based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Rudolph Technologies, Inc. and subsidiaries as of December 31, 2007, and the results of their operations and their cash flows for each of the years in the two-year period ended December 31, 2007, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the related financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

As discussed in Note 13 to the consolidated financial statements, the Company adopted Financial Accounting Standards Board Interpretation No. 48, "Accounting for Uncertainties in Income Taxes", effective January 1, 2007.

As discussed in Note 2 to the consolidated financial statements, the Company adopted Statement of Financial Accounting Standards No. 123(R), "Share-Based Payment", effective January 1, 2006.

/s/ KPMG LLP

Short Hills, New Jersey
March 3, 2008

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
Rudolph Technologies, Inc.

We have audited the accompanying consolidated balance sheet of Rudolph Technologies, Inc. as of December 31, 2008, and the related consolidated statements of operations, stockholder's equity and comprehensive income (loss), and cash flows for the year ended December 31, 2008. Our audit also included the financial statement schedule listed in the index at Item 15(a). These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and schedule based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Rudolph Technologies, Inc. at December 31, 2008, and the consolidated results of its operations and its cash flows for the year ended December 31, 2008, in conformity with U.S. generally accepted accounting principles. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

As discussed in Note 4 to the consolidated financial statements, the Company adopted Statement of Financial Accounting Standards No. 159, "The Fair Value Option for Financial Assets and Financial Liabilities including an amendment of FASB Statement No. 115", effective January 1, 2008.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company's internal control over financial reporting as of December 31, 2008, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 5, 2009, expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Metropark, New Jersey
March 5, 2009

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
Rudolph Technologies, Inc.

We have audited Rudolph Technologies, Inc.'s internal control over financial reporting as of December 31, 2008, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (the COSO criteria). Rudolph Technologies, Inc.'s management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Rudolph Technologies, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2008, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheet of Rudolph Technologies, Inc. as of December 31, 2008, and the related consolidated statements of income, stockholders' equity and comprehensive income (loss) and cash flows for the year ended December 31, 2008 of Rudolph Technologies, Inc. and our report dated March 5, 2009 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Metropark, NJ
March 5, 2009

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS
(In thousands, except per share data)

	December 31, 2007	December 31, 2008
ASSETS		
Current Assets:		
Cash and cash equivalents	$ 57,420	$ 67,735
Marketable securities	16,505	10,549
Accounts receivable, less allowance of $214 in 2007 and $659 in 2008	50,015	21,764
Inventories	70,987	57,076
Income taxes receivable	404	4,698
Deferred income taxes	4,665	—
Prepaid expenses and other current assets	3,631	1,626
Total current assets	203,627	163,448
Property, plant and equipment, net	16,062	19,053
Goodwill	188,832	—
Identifiable intangible assets, net	48,125	9,654
Capitalized software	3,097	1,774
Deferred income taxes	—	2,903
Other assets	473	600
Total assets	$460,216	$ 197,432
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 7,975	$ 2,354
Accrued liabilities:		
Payroll and related expenses	3,910	2,805
Royalties	780	197
Warranty	2,365	1,813
Deferred revenue	5,956	4,422
Other current liabilities	6,343	4,169
Total current liabilities	27,329	15,760
Deferred income taxes	3,556	—
Other non-current liabilities	4,853	5,584
Total liabilities	35,738	21,344
Commitments and contingencies (Note 9)		
Stockholders' equity:		
Preferred stock, $0.001 par value, 5,000 shares authorized, no shares issued and outstanding at December 31, 2007 and 2008	—	—
Common stock, $0.001 par value, 50,000 shares authorized, 30,480 and 30,703 issued and outstanding at December 31, 2007 and 2008, respectively	30	31
Additional paid-in capital	379,886	383,510
Accumulated other comprehensive loss	(214)	(2,543)
Retained earnings (accumulated deficit)	44,776	(204,910)
Total stockholders' equity	424,478	176,088
Total liabilities and stockholders' equity	$460,216	$ 197,432

The accompanying notes are an integral part of these consolidated financial statements.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share data)

	Year Ended December 31,		
	2006	2007	2008
Revenues	$201,168	$160,129	$ 131,040
Cost of revenues	103,726	78,889	87,388
Gross profit	97,442	81,240	43,652
Operating expenses:			
Research and development	29,856	29,993	31,644
In-process research and development	9,900	1,000	—
Selling, general and administrative	32,393	33,204	33,965
Impairment charge for goodwill and identifiable intangible assets	—	—	227,105
Amortization	4,048	4,487	5,890
Total operating expenses	76,197	68,684	298,604
Operating income (loss)	21,245	12,556	(254,952)
Interest income and other, net	3,191	4,149	1,151
Income (loss) before provision (benefit) for income taxes	24,436	16,705	(253,801)
Provision (benefit) for income taxes	11,730	4,846	(4,115)
Net income (loss)	$ 12,706	$ 11,859	$(249,686)
Earnings (loss) per share:			
Basic	$ 0.47	$ 0.41	$ (8.16)
Diluted	$ 0.46	$ 0.40	$ (8.16)
Weighted average number of shares outstanding:			
Basic	27,276	29,168	30,614
Diluted	27,574	29,312	30,614

The accompanying notes are an integral part of these consolidated financial statements.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY AND COMPREHENSIVE INCOME (LOSS)

For the years ended December 31, 2006, 2007 and 2008

(In thousands)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Unearned Compensation	Retained Earnings (Accumulated Deficit)	Total	Comprehensive Income (Loss)
	Shares	Amount						
Balance at December 31, 2005	16,941	17	$147,278	$ (928)	$(2,024)	$ 20,191	$ 164,534	
Proceeds from sales of shares through share-based compensation plans	738	1	8,957	—	—	—	8,958	
Net income	—	—	—	—	—	12,706	12,706	$ 12,706
Share-based compensation	—	—	1,936	—	—	—	1,936	
Adoption of SFAS 123R	—	—	(2,024)	—	2,024	—	—	
Excess tax benefit for sale of shares through share-based compensation plans	—	—	1,167	—	—	—	1,167	
Common stock issued in merger	11,298	11	197,822	—	—	—	197,833	
Assumed August Technology options	—	—	6,040	—	—	—	6,040	
Tax benefit on tax deductible transaction costs	—	—	(48)	—	—	—	(48)	
Currency translation	—	—	—	(401)	—	—	(401)	(401)
Unrealized gain on investments	—	—	—	151	—	—	151	151
Comprehensive income								$ 12,456
Balance at December 31, 2006	28,977	29	361,128	(1,178)	—	32,897	392,876	
Proceeds from sales of shares through share-based compensation plans	196	—	1,344	—	—	—	1,344	
Net income	—	—	—	—	—	11,859	11,859	$ 11,859
Adoption of FIN 48	—	—	—	—	—	20	20	
Share-based compensation	—	—	3,119	—	—	—	3,119	
Excess tax benefit for sale of shares through share-based compensation plans	—	—	148	—	—	—	148	
Common stock issued in acquisition	1,307	1	14,147	—	—	—	14,148	
Currency translation	—	—	—	812	—	—	812	812
Unrealized gain on investments	—	—	—	152	—	—	152	152
Comprehensive income								$ 12,823
Balance at December 31, 2007	30,480	30	379,886	(214)	—	44,776	424,478	
Proceeds from sales of shares through share-based compensation plans	223	1	219	—	—	—	220	
Net loss	—	—	—	—	—	(249,686)	(249,686)	$(249,686)
Share-based compensation	—	—	3,405	—	—	—	3,405	—
Currency translation	—	—	—	(2,198)	—	—	(2,198)	(2,198)
Unrealized loss on investments	—	—	—	(131)	—	—	(131)	(131)
Comprehensive loss								$(252,015)
Balance at December 31, 2008	30,703	$31	$383,510	$(2,543)	$ —	$(204,910)	$ 176,088	

The accompanying notes are an integral part of these consolidated financial statements.

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,		
	2006	2007	2008
Cash flows from operating activities:			
Net income (loss)	$ 12,706	$ 11,859	$(249,686)
Adjustments to reconcile net income (loss) to net cash and cash equivalents provided by operating activities:			
Impairment of goodwill and identifiable intangible assets	—	—	227,105
Amortization	4,372	5,700	7,243
Depreciation	4,300	4,500	4,500
In-process research and development	9,900	1,000	—
Foreign currency exchange (gain) loss	55	45	(2,547)
Net loss on sale of marketable securities	162	—	79
Share-based compensation	1,936	3,119	3,405
Provision for doubtful accounts and inventory valuation	3,497	496	14,569
Deferred income taxes	5,718	(3,314)	(2,449)
Change in operating assets and liabilities excluding effects of business combinations:			
Accounts receivable	(25,096)	21,401	31,290
Income taxes receivable	—	(1,089)	(4,164)
Inventories	(7,079)	(5,395)	(4,287)
Prepaid expenses and other assets	323	(2,339)	815
Accounts payable	(438)	(3,326)	(5,571)
Accrued liabilities	790	(3,958)	(2,471)
Income taxes payable	610	(537)	—
Deferred revenue	7,873	(6,131)	(1,581)
Other current liabilities	1,017	(617)	(1,501)
Non-current liabilities	(1)	2,168	640
Net cash and cash equivalents provided by operating activities	20,645	23,582	15,389
Cash flows from investing activities:			
Purchases of marketable securities	(70,803)	(77,748)	(15,541)
Proceeds from sales of marketable securities	93,410	95,147	21,302
Purchases of property, plant and equipment	(4,664)	(1,007)	(2,966)
Capitalized software	(2,230)	(712)	(30)
Purchase of business, net of cash acquired	(12,109)	(56,166)	(8,474)
Net cash and cash equivalents provided by (used in) investing activities	3,604	(40,486)	(5,709)
Cash flows from financing activities:			
Proceeds from sales of shares through share-based compensation plans	8,957	1,344	220
Tax benefit for sale of shares through share-based compensation plans	1,167	148	—
Net cash and cash equivalents provided by financing activities	10,124	1,492	220
Effect of exchange rate changes on cash and cash equivalents	120	353	415
Net increase (decrease) in cash and cash equivalents	34,493	(15,059)	10,315
Cash and cash equivalents at beginning of year	37,986	72,479	57,420
Cash and cash equivalents at end of year	$ 72,479	$ 57,420	$ 67,735
Supplemental disclosure of cash flow information:			
Net cash paid during the period for:			
Income taxes	$ 4,097	$ 8,170	$ 1,945
Non-cash investing activities:			
Acquisition costs for business combinations	$ 6,039	$ 1,315	$ —
Stock issued for business combinations	$197,833	$ 14,022	$ —

The accompanying notes are an integral part of these consolidated financial statements.

1. Organization and Nature of Operations:

Rudolph Technologies, Inc. (the "Company") designs, develops, manufactures and supports high-performance process control equipment used in semiconductor device manufacturing. The Company has branch sales and service offices in China, Korea, Taiwan and Singapore and wholly-owned sales and service subsidiaries in Europe, Japan and Minnesota. The Company operates in a single segment and supports a wide variety of applications in the areas of diffusion, etch, lithography, CVD, PVD, CMP and macro-defect detection and classification.

On February 15, 2006, the Company completed its merger with August Technology Corporation. August Technology was a world-class provider of automated defect detection and product characterization systems for microelectronic device manufacturers. Their systems provided manufacturers with information that enables process-enhancing decisions, ultimately lowering manufacturing costs and decreasing time-to-market. They had traditionally provided systems to address the automated inspection needs of the early stages of the final manufacturing or back-end of the microelectronic device manufacturing process. In addition, they had introduced new products for edge and backside inspection systems for advanced macro-defect detection primarily in the front-end of the wafer manufacturing process. When used in conjunction with one another these systems allow a manufacturer to inspect the top, edge and back of a wafer's surface.

On December 18, 2007, the Company and a wholly-owned subsidiary of the Company entered into and consummated the transactions contemplated by, an agreement with Applied Precision Holdings, LLC and Applied Precision, LLC (collectively, "Applied"), pursuant to which it purchased substantially all of the assets and assumed certain liabilities of the semiconductor division of Applied to be known as the Rudolph Technologies Probe Card Test and Analysis division ("PCTA"). The PCTA is engaged in the business of designing, developing, manufacturing, marketing, selling and supporting advanced probe card metrology and wafer probe process monitoring equipment and is complementary to the Company's existing business.

2. Summary of Significant Accounting Policies:

A. Consolidation:

The consolidated financial statements reflect the accounts of the Company and its wholly-owned subsidiaries. All intercompany accounts and transactions have been eliminated.

B. Revenue Recognition:

Revenue is recognized upon shipment provided that there is persuasive evidence of an arrangement, delivery has occurred, the sales price is fixed or determinable, and collection of the related receivable is reasonably assured. Certain sales of the Company's products are sold and accounted for as multiple element arrangements, consisting primarily of the sale of the product, software, installation and training services. The Company generally recognizes product revenue upon shipment. In the limited circumstances where customer acceptance is subjective and not obtained prior to shipment, the Company defers product revenue until such time as positive affirmation of acceptance has been obtained from the customer. Customer acceptance is generally based on the Company's products meeting published performance specifications. The amount of revenue allocated to the shipment of products is done on a residual method basis. Under this method, the total arrangement value is allocated first to undelivered contract elements, based on their fair values, with the remainder being allocated to product revenue. The fair value of installation, training and other services is based upon billable hourly rates and the estimated time to complete the service. Revenue related to undelivered installation services is deferred until such time as installation is completed at the customer's site. Revenue related to training services is recognized ratably over the training period. Revenue from software license fees is recognized upon shipment if collection of the resulting receivable is probable, the fee is fixed or determinable, and vendor-specific objective evidence exists to allocate a portion of the total fee to any undelivered elements of the arrangement. If vendor specific objective evidence does not exist for the

undelivered elements of an arrangement that includes software, all revenue is deferred and recognized ratably over the period required to deliver the remaining elements.

Revenues from parts sales are recognized at the time of shipment. Revenue from service contracts is recognized ratably over the period of the contract. A provision for the estimated cost of fulfilling warranty obligations is recorded at the time the related revenue is recognized.

License support and maintenance revenue is recognized ratably over the contract period.

C. Estimates:

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Significant estimates made by management include allowance for doubtful accounts, inventory obsolescence, purchase accounting allocations, recoverability and useful lives of property, plant and equipment and identifiable intangible assets, recoverability of goodwill, recoverability of deferred tax assets, liabilities for product warranty, accruals for contingencies and share-based payments, including forfeitures and liabilities for tax uncertainties. Actual results could differ from those estimates.

D. Cash and Cash Equivalents:

Cash and cash equivalents include cash and highly liquid debt instruments with original maturities of three months or less when purchased.

E. Marketable Securities:

The Company determined that all of its investment securities are to be classified as available-for-sale. Available-for-sale securities are carried at fair value, with the unrealized gains and losses reported in stockholders' equity under the caption "Accumulated other comprehensive loss." Realized gains and losses, interest and dividends on available-for-sale securities are included in interest income and other, net. Available-for-sale securities are classified as current assets regardless of their maturity date if they are available for use in current operations. The Company reviews its investment portfolio to identify and evaluate investments that have indications of possible impairment. Factors considered in determining whether a loss is other-than-temporary include the length of time and extent to which fair value has been less than the cost basis, credit quality and the Company's ability and intent to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value. When a decline in fair value is determined to be other-than-temporary, unrealized losses on available-for-sale securities are charged against earnings. The specific identification method is used to determine the gains and losses on marketable securities.

For additional information on the Company's marketable securities, see Note 5 of Notes to the Consolidated Financial Statements.

F. Allowance for Doubtful Accounts:

The Company evaluates the collectability of accounts receivable based on a combination of factors. In the cases where the Company is aware of circumstances that may impair a specific customer's ability to meet its financial obligation, the Company records a specific allowance against amounts due, and thereby reduces the net recognized receivable to the amount management reasonably believes will be collected. For all other customers, the Company recognizes allowances for doubtful accounts based on the length of time the receivables are outstanding, industry and geographic concentrations, the current business environment and historical experience.

G. Inventories:

Inventories are stated at the lower of cost (first-in, first-out) or market. Cost includes material, labor and overhead costs. Demonstration units, which are available for sale, are stated at their manufacturing costs and reserves are recorded to adjust the demonstration units to their net realizable value, if lower than cost.

H. Property, Plant and Equipment:

Property, plant and equipment are stated at cost. Depreciation of property, plant and equipment is computed using the straight-line method over the estimated useful lives of the assets which are thirty years for buildings, four to seven years for machinery and equipment, seven years for furniture and fixtures, and three years for computer equipment. Leasehold improvements are amortized using the straight-line method over the lesser of the lease term or the estimated useful life of the related asset. Repairs and maintenance costs are expensed as incurred and major renewals and betterments are capitalized.

I. Impairment of Long-Lived Assets:

Long-lived assets, such as property, plant, and equipment, and identifiable acquired intangible assets with definite useful lives, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized by the amount by which the carrying amount of the asset exceeds the fair value of the asset, which is generally based on discounted cash flows.

J. Goodwill and Other Intangible Assets:

Intangible assets with definitive useful lives are amortized using the straight-line method over their estimated useful lives. Goodwill and intangible assets with indefinite useful lives are not amortized but are tested for impairment at least annually and when there are indications of impairment in accordance with the provisions of Statement of Financial Accounting Standards ("SFAS") No. 142, "Goodwill and Other Intangible Assets." Under SFAS No. 142, goodwill impairment is deemed to exist if the net book value of a reporting unit exceeds its estimated fair value. The Company estimates the fair value of its aggregated reporting unit using the market value of its common stock at October 31 multiplied by the number of outstanding common shares (market capitalization) and an implied control premium as if it were to be acquired by a single stockholder. The Company obtains information on completed sales of similar companies in our industry to estimate the implied control premium for the Company. If the results of the initial market capitalization test produce results which are below the reporting unit carrying value, the Company may also perform a discounted cash flow test. The Company tested for goodwill impairment on October 31, 2008.

For additional information on the Company's goodwill and other intangible assets, see Note 8 of Notes to the Consolidated Financial Statements.

K. Concentration of Credit Risk:

Financial instruments, which potentially subject the Company to concentrations of credit risk, consist primarily of accounts receivable, cash and cash equivalents and marketable securities. The Company performs ongoing credit evaluations of its customers and generally does not require collateral for sales on credit. The Company maintains allowances for potential credit losses. The Company maintains cash and cash equivalents and marketable securities with higher credit quality issuers and monitors the amount of credit exposure to any one issuer.

L. Warranties:

The Company generally provides a warranty on its products for a period of twelve to fifteen months against defects in material and workmanship. The Company provides for the estimated cost of product warranties at the time revenue is recognized.

M. Income Taxes:

The Company accounts for income taxes using the asset and liability approach for deferred taxes which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in the Company's consolidated financial statements or tax returns. A valuation allowance is recorded to reduce a deferred tax asset to that portion which more likely than not will be realized. Additionally, taxes are separated into current and non-current amounts based on the classification of the related amounts for financial reporting purposes. The Company does not provide for federal income taxes on the undistributed earnings of its foreign operations as it is the Company's intention to permanently re-invest undistributed earnings.

On July 13, 2006, the Financial Accounting Standards Board ("FASB") issued Interpretation No. 48, "Accounting for Uncertainty in Income Taxes — An Interpretation of FASB Statement No. 109" ("FIN 48"). Under FIN 48, the impact of an uncertain income tax position is recognized at the largest amount that is more-likely-than-not to be sustained upon audit by the relevant taxing authority and includes consideration of interest and penalties. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained. Under FIN 48, the liability for unrecognized tax benefits is classified as non-current unless the liability is expected to be settled in cash within 12 months of the reporting date.

For additional information on the Company's income taxes, see Note 13 of Notes to the Consolidated Financial Statements.

N. Translation of Foreign Currencies:

The Company's international subsidiaries and branch offices operate primarily using local functional currencies. Assets and liabilities are translated at exchange rates in effect at the balance sheet date, and income and expense accounts and cash flow items are translated at average monthly exchange rates during the period.

Net exchange gains or losses resulting from the translation of foreign financial statements and the effect of exchange rates on intercompany transactions of a long-term investment nature are recorded directly as a separate component of stockholders' equity under the caption, "Accumulated other comprehensive loss". Any foreign currency gains or losses related to transactions are included in operating results. The Company had accumulated exchange losses resulting from the translation of foreign operation financial statements of $198 and $2,396 as of December 31, 2007 and 2008, respectively.

O. Share-based Compensation:

On January 1, 2006, the Company adopted SFAS No. 123 (revised 2004), "Share-Based Payment" ("SFAS 123R") using the modified prospective method, which requires measurement of compensation cost for all stock awards at fair value on date of grant and recognition of compensation cost over the service period for awards expected to vest. The fair value of stock options is determined using the Black-Scholes valuation model, which is consistent with the Company's valuation model previously utilized for options in footnote disclosures required under SFAS 123, as amended by SFAS 148. The Black-Scholes valuation calculation requires the Company to estimate key assumptions such as future stock price volatility, expected terms, risk-free interest rates and dividend yield. Expected stock price volatility is based on historical volatility of the Company's stock. The Company uses historical data to estimate option exercises and employee terminations within the valuation model. The expected term of options granted is derived from an analysis of historical exercises and remaining contractual

life of stock options, and represents the period of time that options granted are expected to be outstanding. The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant. The Company has never paid cash dividends, and does not currently intend to pay cash dividends, and thus has assumed a 0% dividend yield. Such value is recognized as expense over the service period, net of estimated forfeitures. The estimation of stock awards that will ultimately vest requires significant judgment. The Company considers many factors when estimating expected forfeitures, including types of awards, employee class, and historical experience. Actual results, and future changes in estimates, may differ substantially from the Company's current estimates. Prior to the adoption of SFAS 123R, the Company recorded forfeitures as incurred. Upon adoption of SFAS 123R, compensation expense for all share-based payments includes an estimate for forfeitures and is recognized over the expected term of the share-based awards using the straight-line method. The impact of this change on prior period compensation cost was immaterial. Additionally, the unearned compensation of $2,024 at the SFAS 123R adoption date relating to previous restricted stock unit grants was offset against additional paid-in capital.

For additional information on the Company's share-based compensation plans, see Note 11 of Notes to the Consolidated Financial Statements.

P. Research and Development and Software Development Costs:

Expenditures for research and development are expensed as incurred. The Company accounts for software development costs in accordance with SFAS No. 86, "Accounting for Costs of Computer Software to Be Sold, Leased or Marketed." SFAS No. 86 requires that certain software product development costs incurred after technological feasibility has been established, be capitalized and amortized, commencing upon the general release of the software product to the Company's customers, over the economic life of the software product. Annual amortization of capitalized costs is computed using the greater of: (i) the ratio of current gross revenues for the software product over the total of current and anticipated future gross revenues for the software product or (ii) the straight-line basis, typically over seven years. Software product development costs incurred prior to the product reaching technological feasibility are expensed as incurred and included in research and development costs. At December 31, 2007 and 2008, capitalized software development costs were $3,097 and $1,774, respectively. During the years ended December 31, 2006, 2007 and 2008, software development cost amortization totaled $345, $704 and $689, respectively. During 2007 and 2008, the Company recorded write-downs of capitalized software of $507 and $664, respectively, in research and development in the Consolidated Statement of Operations.

Q. Fair Value of Financial Instruments:

The carrying amounts of the Company's financial instruments, including cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities, approximate fair value due to their short maturities.

R. Derivative Instruments and Hedging Activities:

The Company reports derivatives and hedging activities in accordance with SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities." This statement requires that all derivative instruments be recorded on the balance sheet at fair value. Changes in the fair value of derivatives are recorded each period in current earnings or accumulated other comprehensive loss, depending on whether the derivative is designated as part of a hedge transaction, and if it is, depending on the type of hedge transaction.

The Company, when it considers it to be appropriate, enters into forward contracts to hedge the economic exposures arising from foreign currency denominated transactions. At December 31, 2007 and 2008, these contracts included the sale of Japanese Yen to purchase U.S. dollars. The foreign currency forward contracts were entered into by our Japanese subsidiary to hedge a portion of certain intercompany obligations. The forward contracts are not designated as hedges for accounting purposes and therefore, the change in fair value is recorded in selling, general and administrative expenses in the Consolidated Statements of Operations.

The dollar equivalent of the US dollar forward contracts and related fair values as of December 31, 2007 and 2008 were as follows:

	December 31,	
	2007	2008
Notional amount	$5,706	$2,322
Fair value of liability	$ 127	$ 226

The Company recognized a gain of $106 and $278 with respect to forward contracts which matured during 2006 and 2007, respectively. The Company recognized a loss of $720 with respect to forward contracts which matured during 2008. The aggregate notional amount of these contracts was $6,277, $8,802 and $6,964, for 2006, 2007 and 2008, respectively.

S. Recent Accounting Pronouncements:

In March 2008, the Financial Accounting Standards Board ("FASB") issued SFAS No. 161, "Disclosure about Derivatives Instruments and Hedging Activities-an amendment of FASB Statement No. 133" ("SFAS 161"), which requires enhanced disclosures about an entity's derivative and hedging activities and thereby improves the transparency of financial reporting. SFAS 161 is effective for financial statements issued for fiscal years and interim periods beginning after November 15, 2008 with early application encouraged. The Company is currently evaluating the potential impact of adopting SFAS 161.

In February 2008, the FASB adopted FASB Staff Position SFAS No. 157-2 - "Effective Date of FASB Statement No. 157" delaying the effective date of SFAS No. 157 for one year for all non financial assets and non financial liabilities, except those that are recognized or disclosed at fair value in the financial statements on a recurring basis (at least annually). The Company is currently evaluating the impact of the implementation of SFAS No. 157 for non-financial assets and liabilities on its consolidated financial position, results of operations and cash flows.

In December 2007, the FASB issued SFAS No. 141R, "Business Combinations" ("SFAS 141R"), which establishes principles and requirements for how an acquirer recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, any noncontrolling interest in an acquiree, and the recognition and measurement of goodwill acquired in a business combination or a gain from a bargain purchase. SFAS 141R applies prospectively to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after December 15, 2008.

In November 2007, the EITF issued EITF Issue No. 07-1 ("EITF 07-1"), "Accounting for Collaborative Arrangements," which defines collaborative arrangements and establishes reporting and disclosure requirements for such arrangements. EITF 07-1 is effective for fiscal years beginning after December 15, 2008. The Company is continuing to evaluate the impact of adopting the provisions EITF 07-1; however, it does not anticipate that adoption will have a material effect on its financial position or results of operations.

In February 2007, the FASB issued SFAS No. 159 ("SFAS 159"), "The Fair Value Option for Financial Assets and Financial Liabilities- Including an amendment of FASB Statement No. 115." SFAS 159 permits entities to choose to measure many financial instruments and certain other items at fair value. The objective is to improve financial reporting by providing entities with the opportunity to mitigate volatility in reporting earnings caused by measuring related assets and liabilities differently without having to apply complex hedge accounting provisions. SFAS 159 is effective for fiscal years that begin after November 15, 2007. The Company adopted SFAS 159 on January 1, 2008 and did not elect the fair value option for its financial instruments.

3. Business Combinations:

August Technology

On February 15, 2006, the merger with August Technology was approved by its shareholders, and the issuance of shares of Rudolph common stock was approved by Rudolph's stockholders, at their respective special meetings. The combined company is known as Rudolph Technologies, Inc. The aggregate purchase price was $246,739, consisted of $37,200 in cash, 11,298 shares of common stock valued at $197,833, the fair value of assumed August Technology options of $6,040 and transaction costs of $5,666.

The transaction was accounted for using the purchase method of accounting for business combinations and, accordingly, the results of operations of August Technology have been included in the Company's consolidated financial statements since the date of merger. With the exception of future tax adjustments related to the merger, the effects of purchase accounting were completed during 2006. The fair value of inventories included a step-up of $3,842, of which $3,699 and $143 were recognized in cost of revenues for the years ended December 31, 2006 and 2007, respectively. At the merger date, the Company formulated a plan to exit or restructure certain activities. The Company recorded $173 for these activities, which have occurred during the year ended December 31, 2006.

Approximately $9.9 million of the acquired identifiable intangible assets represented the estimated fair value of in-process research and development ("IPRD") projects that had not yet reached technological feasibility and had no alternative future use. Accordingly, this amount was immediately expensed in the Consolidated Statement of Operations at the merger date.

PCTA

On December 18, 2007, Rudolph and a wholly-owned subsidiary of the Company entered into, and consummated the transactions contemplated by, an Asset Purchase Agreement with Applied Precision Holdings, LLC and Applied Precision, LLC (collectively, "Applied"), pursuant to which the Company purchased substantially all of the assets and assumed certain liabilities of the semiconductor division of Applied to be known as the Rudolph Technologies Probe Card Test and Analysis division ("PCTA"). The PCTA is engaged in the business of designing, developing, manufacturing, marketing, selling and supporting advanced probe card metrology and wafer probe process monitoring equipment and is complementary to the Company's existing business.

The closing under the Asset Purchase Agreement occurred on December 18, 2007 and the Company paid $59,134 in cash and acquisition costs, of which $57,897 was paid during 2007, and issued 1,307 shares of common stock for a total purchase price of $73,168. The measurement date was determined to be the date the acquisition was consummated since the number of shares to be distributed was not determinable until that date. The market price used to value the Rudolph shares issued as consideration for PCTA was $10.73, which represents the average closing market price of Rudolph's common stock for the three day period ended December 18, 2007.

The Company agreed to assume the following liabilities of the PCTA: accounts payable, assigned contracts, licenses and leases, warranty claims and employee liabilities, all as more fully described in the Asset Purchase Agreement. In addition, the Company agreed to assume the defense of and all obligations relating to certain litigation pending against Applied at the acquisition date.

The transaction was accounted for using the purchase method of accounting for business combinations and, accordingly, the results of operations of the PCTA have been included in the Company's consolidated financial

statements since the date of acquisition. The following table summarizes the fair value of the assets acquired and liabilities assumed at the date of acquisition:

Accounts receivable	$ 5,659
Inventories	9,631
Prepaid expenses and other current assets	61
Property, plant and equipment	1,122
Goodwill	46,175
Identifiable assets	16,200
Accounts payable and accrued liabilities	(5,521)
Deferred revenue	(159)
	$73,168

The fair value of inventories included a step-up of $2,252, of which $1,236 was recognized in cost of revenues for the year ended December 31, 2008. At the acquisition date, the Company formulated a plan to exit or restructure certain activities. The Company recorded $254 for these activities during the year ended December 31, 2007.

Factors that contributed to a purchase price that resulted in recognition of goodwill include:

- the combination of PCTA and Rudolph products should allow the combined company to offer its customers a more comprehensive suite of tools and a better integrated set of tools, thus enhancing the Company's ability to compete more effectively;
- the ability of the assembled workforce to continue to deliver value-added solutions and develop new products and industry leading production technologies that solve customer problems;
- consolidation of territorial sales activities and common marketing programs;
- redeployment or elimination of duplicative functional and facilities costs;
- reduction of customer service costs as a result of the consolidation of the companies' global customer service and regional support networks; and
- the combined experience, financial resources, development expertise, size and breadth of product offerings of the combined company may allow it to respond more quickly and effectively to technological change, increased consolidation and industry demands

Of the $16,200 of acquired identifiable assets, the following table reflects the allocation of the acquired identifiable assets and related preliminary estimates of useful lives:

Developed technology	$11,600	8 years estimated useful life
Customer and distributor relationships	2,900	7.2 years weighted average estimated useful life
Trade names	700	3 years estimated useful life
In-process research and development	1,000	
	$16,200	

Approximately $1.0 million of the acquired identifiable intangible assets represents the estimated fair value of in-process research and development ("IPRD") projects that had not yet reached technological feasibility and had no alternative future use. Accordingly, this amount was immediately expensed in the Consolidated Statement of Operations at the merger date. The purchased in-process technology project was a probe card test project, related to the next generation of the company's ProbeWoRx systems with enhanced capabilities, and was approximately 20%

complete as of the date of acquisition. The costs to complete this project consist primarily of internal engineering labor costs and will be completed in the first half of 2009. If we are not successful in completing the inspection project on a timely basis, the future sales of the Company's inspection products may be adversely affected resulting in erosion of the Company's market share.

Pro Forma Combined Results of Operations

The following unaudited pro forma consolidated financial information presents the combined results of operations of the Company and PCTA as if the respective merger and acquisition occurred at the beginning of the period presented, after giving effect to certain adjustments, including interest income and amortization expense. Due to the non-recurring nature of the IPRD and inventory step-up charges, these amounts have not been included in the unaudited pro forma consolidated financial information. The unaudited pro forma consolidated financial information does not necessarily reflect the results of operations that would have occurred had the merger and acquisition been completed as of the date indicated or of the results that may be obtained in the future.

	Year Ended December 31,	
	2006	2007
	(Unaudited)	
Revenues	$249,731	$194,262
Net income	$ 25,526	$ 13,213
Earnings per share:		
Basic	$ 0.85	$ 0.43
Diluted	$ 0.84	$ 0.43

RVSI Inspection

On January 22, 2008, the Company announced that it had acquired all intellectual property and selected assets from privately-held RVSI Inspection, LLC, headquartered in Hauppauge, New York. The acquired business is currently known as the Rudolph Technologies Wafer Scanner Product Group. The transaction was accounted for using the purchase method of accounting for business combinations. The impact of the acquisition was not material to the Company's consolidated financial position or results of operations.

4. Fair Value Measurements:

In September 2006, the FASB issued SFAS No. 157, which is effective for fiscal years beginning after November 15, 2007 and for interim periods within those years. This statement defines fair value, establishes a framework for measuring fair value and expands the related disclosure requirements. This statement applies under other accounting pronouncements that require or permit fair value measurements. The statement indicates, among other things, that a fair value measurement assumes that the transaction to sell an asset or transfer a liability occurs in the principal market for the asset or liability or, in the absence of a principal market, the most advantageous market for the asset or liability. SFAS No. 157 defines fair value based upon an exit price model.

The Company adopted SFAS No. 157 on January 1, 2008, with the exception of the application of the statement to non-recurring measurements of nonfinancial assets and nonfinancial liabilities. Non-recurring non-financial assets and nonfinancial liabilities for which the Company has not applied the provisions of SFAS No. 157 to include those measured at fair value in goodwill impairment testing and those initially measured at fair value in a business combination.

SFAS No. 157 establishes a valuation hierarchy for disclosure of the inputs to valuation used to measure fair value. This hierarchy prioritizes the inputs into three broad levels as follows. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities. Level 2 inputs are quoted prices for similar assets

and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument. Level 3 inputs are unobservable inputs based on the management's assumptions used to measure assets and liabilities at fair value. A financial asset or liability's classification within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement.

The following table provides the assets carried at fair value measured on a recurring basis as of December 31, 2008:

		Fair Value Measurements at December 31, 2008		
	Total Carrying Value at December 31, 2008	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
U.S. Treasury notes	$ 219	$ 219	$ —	$ —
Auction rate securities	361	—	—	361
All other marketable securities	9,969	—	9,969	—
Foreign currency forward contracts	(226)	(226)	—	—
Total	$10,323	$ (7)	$9,969	$361

The Company's investments classified as Level 1 are based on quoted prices that are available in active markets. The forward foreign currency exchange contracts are primarily measured based on the foreign currency spot and forward rates quoted by the banks or foreign currency dealers. The U.S. Treasury Notes are measured based on quoted market prices.

Level 2 investments are valued using observable inputs to quoted market prices, benchmark yields, reported trades, broker/dealer quotes or alternative pricing sources with reasonable levels of price transparency. These investments, which are held by a custodian, include: corporate debt securities, government-sponsored enterprise and asset-backed securities. Investment prices are obtained from third party pricing providers, which models prices utilizing the above observable inputs, for each asset class.

Level 3 investments consist of auction rate securities for which the Company uses a discounted cashflow model to value these investments.

The carrying value of other financial instruments, including cash and cash equivalents, accounts receivable, accounts payable, and accrued liabilities approximate fair value due to their short maturities.

The Company has adopted SFAS No. 159 effective January 1, 2008 and did not elect the fair value option for its financial instruments.

5. Marketable Securities:

At December 31, 2007, marketable securities are categorized as follows:

	Amortized Cost	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Fair Value
Treasury notes and obligations of agencies	$ 2,938	$ 25	$ (5)	$ 2,958
Tax-free auction rate securities	9,227	—	—	9,227
Asset-backed securities	1,132	—	(7)	1,125
Corporate bonds	2,605	2	(125)	2,482
Mortgage-backed securities	726	2	(15)	713
Total marketable securities	$16,628	$ 29	$(152)	$16,505

At December 31, 2008, marketable securities are categorized as follows:

	Amortized Cost	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Fair Value
Treasury notes and obligations of agencies	$ 9,941	$15	$ (27)	$ 9,929
Tax-free auction rate securities	500	—	(139)	361
Asset-backed securities	257	2	—	259
Total marketable securities	$10,698	$17	$(166)	$10,549

The amortized cost and estimated fair value of marketable securities classified by the maturity date listed on the security, regardless of the Consolidated Balance Sheet classification, is as follows at December 31, 2007 and 2008:

	December 31, 2007		December 31, 2008	
	Amortized Cost	Fair Value	Amortized Cost	Fair Value
Due within one year	$ 9,857	$ 9,848	$ 9,901	$ 9,740
Due after one through five years	4,240	4,142	797	809
Due after five through ten years	222	219	—	—
Due after ten years	2,309	2,296	—	—
Total marketable securities	$16,628	$16,505	$10,698	$10,549

Net realized losses of $162, $0 and $79 were included in the Consolidated Statement of Operations for 2006, 2007 and 2008, respectively.

The following table summarizes the estimated fair value and gross unrealized holding losses of marketable securities, aggregated by investment instrument and period of time in an unrealized loss position at December 31, 2007:

	In Unrealized Loss Position for less than 12 Months		In Unrealized Loss Position for 12 Months or Greater		Total in Unrealized Loss Position	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Treasury notes and obligations of agencies	$—	$—	$ 996	$ (5)	$ 996	$ (5)
Asset-backed securities	16	—	1,006	(7)	1,022	(7)
Corporate bonds	45	(1)	2,203	(124)	2,248	(125)
Mortgage-backed securities	—	—	505	(15)	505	(15)
Total marketable securities	$61	$(1)	$4,710	$(151)	$4,771	$(152)

The following table summarizes the estimated fair value and gross unrealized holding losses of marketable securities, aggregated by investment instrument and period of time in an unrealized loss position at December 31, 2008. No amounts have been in an unrealized loss position for 12 months or greater.

	In Unrealized Loss Position for less than 12 Months	
	Fair Value	Gross Unrealized Losses
Treasury notes and obligations of agencies	$6,301	$ (27)
Tax-free auction rate securities	361	(139)
Total marketable securities	$6,662	$(166)

The Company has determined that the gross unrealized losses on its marketable securities at December 31, 2007 and 2008 are temporary in nature. The Company reviews its investment portfolio to identify and evaluate investments that have indications of possible impairment. Factors considered in determining whether a loss is other-than-temporary include the length of time and extent to which fair value has been less than the cost basis, credit quality and the Company's ability and intent to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value.

6. Inventories:

Inventories are comprised of the following:

	December 31,	
	2007	2008
Materials	$34,556	$23,821
Work-in-process	20,820	15,202
Finished goods	15,611	18,053
Total inventories	$70,987	$57,076

The Company has established reserves of $3,394 and $11,631 at December 31, 2007 and 2008, respectively, for slow moving and obsolete inventory. During 2007, the Company recorded a charge of $661 for the write-down of inventory for excess parts, for older product lines and for parts that design and engineering advancements rendered obsolete. In 2007, the Company disposed of $72 of inventory. During 2008, the Company recorded a charge of

$14,124 for the write-down of inventory for excess parts, for older product lines and for parts that design and engineering advancements rendered obsolete. In 2008, the Company disposed of $5,887 of inventory.

7. Property, Plant and Equipment:

Property, plant and equipment, net is comprised of the following:

	December 31, 2007	December 31, 2008
Land and building	$ 5,185	$ 4,927
Machinery and equipment	11,829	16,647
Furniture and fixtures	2,668	2,710
Computer equipment	6,407	6,262
Leasehold improvements	5,791	6,986
	31,880	37,532
Accumulated depreciation	(15,818)	(18,479)
Property, plant and equipment, net	$ 16,062	$ 19,053

Depreciation expense amounted to $4,300, $4,500 and $4,500 for the years ended December 31, 2006, 2007, and 2008, respectively.

8. Identifiable Intangible Assets and Goodwill:

Identifiable Intangible Assets

Identifiable intangible assets as of December 31, 2007 are as follows:

	Gross Carrying Amount	Accumulated Amortization	Net
Developed technology	$49,591	$11,324	$38,267
Customer and distributor relationships	7,300	917	6,383
Trade names	4,100	625	3,475
Total identifiable intangible assets	$60,991	$12,866	$48,125

Identifiable intangible assets as of December 31, 2008 are as follows:

	Gross Carrying Amount	Accumulated Amortization	Impairment	Net
Developed technology	$51,243	$15,858	$28,259	$7,126
Customer and distributor relationships	7,300	1,766	4,810	724
Trade names	4,100	1,132	1,164	1,804
Total identifiable intangible assets	$62,643	$18,756	$34,233	$9,654

Intangible asset amortization expense amounted to $4,027, $4,476 and $5,890 for the years ended December 31, 2006, 2007 and 2008, respectively. Assuming no change in the gross carrying value of identifiable intangible assets and estimated lives, estimated amortization expense amounts to $1,147 for 2009, $1,146 for 2010, $1,043 for 2011, $1,043 for 2012, and $1,043 for 2013.

Identifiable Intangible Assets Impairment

In connection with the goodwill impairment test, the Company determined that its identifiable acquired intangible assets were impaired. The determination was based on the carrying values exceeding the future undiscounted cash flows and fair value attributable to such intangible assets. As a result, the Company recorded an impairment charge of $34.2 million as of October 31, 2008, which represents the difference between the estimated fair values of these long-lived assets as compared to their carrying values. Fair values were determined based upon market conditions, the relief from royalty approach which utilized cash flow projections, and other factors.

Goodwill

The changes in the carrying amount of goodwill are as follows:

Balance as of December 31, 2006	$ 145,176
PCTA acquisition	43,194
Tax adjustments related to prior acquisition	462
Balance as of December 31, 2007	188,832
PCTA acquisition	2,981
Tax adjustments related to prior acquisition	1,059
Goodwill impairment	(192,872)
Balance as of December 31, 2008	$ —

Goodwill Impairment

In accordance with SFAS No. 142, the Company tests goodwill for impairment annually and when an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying value.

The Company performed its annual goodwill impairment test on October 31st. During October 2008, the Company experienced a significant decline in its stock price. As a result of the decline in stock price, the Company's market capitalization plus an implied control premium fell significantly below the recorded value of its consolidated net assets as of the testing date. In performing the goodwill impairment test, the Company used current market capitalization, control premiums, discounted cash flows and other factors as the best evidence of fair value. The impairment test resulted in no value attributable to the Company's goodwill and accordingly, the Company wrote off all of its $192.9 million of goodwill as of October 31, 2008.

9. Commitments and Contingencies:

Intellectual Property Indemnification Obligations

The Company has entered into agreements with customers that include limited intellectual property indemnification obligations that are customary in the industry. These guarantees generally require the Company to compensate the other party for certain damages and costs incurred as a result of third party intellectual property claims arising from these transactions. The nature of the intellectual property indemnification obligations prevents the Company from making a reasonable estimate of the maximum potential amount it could be required to pay to its customers. Historically, the Company has not made any indemnification payments under such agreements and no amount has been accrued in the accompanying consolidated financial statements with respect to these indemnification guarantees.

Warranty Reserves

The Company generally provides a warranty on its products for a period of twelve to fifteen months against defects in material and workmanship. The Company estimates the costs that may be incurred during the warranty period and records a liability in the amount of such costs at the time revenue is recognized. The Company's estimate is based primarily on historical experience. The Company periodically assesses the adequacy of its recorded warranty liabilities and adjusts the amounts as necessary. Settlements of warranty reserves are generally associated with sales that occurred during the 12 to 15 months prior to the year-end and warranty accruals are related to sales during the year.

Changes in the Company's warranty reserves are as follows:

	Year Ended December 31,		
	2006	2007	2008
Balance, beginning of the year	$ 1,234	$ 2,171	$ 2,365
Accruals	2,298	2,669	1,868
Warranty liability assumed in merger	1,244	532	215
Settlements	(2,605)	(3,007)	(2,635)
Balance, end of the year	$ 2,171	$ 2,365	$ 1,813

Legal Matters

From time to time the Company is subject to legal proceedings and claims in the ordinary course of business. The Company is not aware of any legal proceedings or claims that management believes would have a material adverse effect on the Company's consolidated financial statements taken as a whole.

Lease Agreements

The Company rents space for its manufacturing and service operations and sales offices, which expire through 2018. Total rent expense for these facilities amounted to $2,162, $2,264 and $2,821 for the years ended December 31, 2006, 2007 and 2008, respectively.

The Company also leases certain equipment pursuant to operating leases, which expire through 2013. Rent expense related to these leases amounted to $165, $171 and $148 for the years ended December 31, 2006, 2007 and 2008, respectively.

Total future minimum lease payments under noncancelable operating leases as of December 31, 2008 amounted to $2,691 for 2009, $2,401 for 2010, $2,058 for 2011, $1,628 for 2012, $1,453 for 2013 and $5,014 for all periods thereafter.

Royalty Agreements

Under various licensing agreements, the Company is obligated to pay royalties based on net sales of products sold. There are no minimum annual royalty payments. Royalty expense amounted to $2,990, $1,389 and $838 for the years ended December 31, 2006, 2007 and 2008, respectively.

Open and Committed Purchase Orders

The Company has open and committed purchase orders of $10,471 as of December 31, 2008.

10. Preferred Share Purchase Rights:

On June 27, 2005, the Board of Directors of the Company adopted a Stockholder Rights Plan (the "Rights Plan") and declared a dividend distribution of one Preferred Share Purchase Right (a "Right") on each outstanding share of Company common stock. Each right entitles stockholders to buy one one-thousandth of a share of newly

created Series A Junior Participating Preferred Stock of Rudolph at an exercise price of $120. The Company's Board is entitled to redeem the Rights at $0.001 per Right at any time before a person has acquired 15% or more of the outstanding Rudolph common stock.

Subject to limited exceptions, the Rights will be exercisable if a person or group acquires 15% or more of Rudolph common stock or announces a tender offer for 15% or more of the common stock. Each Right other than Rights held by the Acquiring Person which will become void entitles its holder to purchase a number of common shares of Rudolph having a market value at that time of twice the Right's exercise price.

The Rights Plan will expire in 2015. The adoption of the Rights Plan had no impact on the financial position or results of operations of the Company.

11. Share-Based Compensation and Employee Benefit Plans:

Share-Based Compensation Plans

The Company's share-based compensation plans are intended to attract and retain employees and to provide an incentive for them to assist the Company to achieve long-range performance goals and to enable them to participate in long-term growth of the Company. The Company settles stock option exercises and restricted stock awards with newly issued common shares.

In 1996, the Company adopted the 1996 Stock Option Plan (the "Option Plan"). Under the Option Plan, the Company was authorized to grant options to purchase up to 1,070 shares of common stock. All of the outstanding options became 100% vested upon the initial public offering of the Company on November 12, 1999. As of December 31, 2007 and 2008, there were no shares of common stock reserved for future grants under the Option Plan.

The Company established the 1999 Stock Plan (the "1999 Plan") effective August 31, 1999. The 1999 Plan provides for the grant of 2,000 stock options and stock purchase rights, subject to annual increases, to employees, directors and consultants at an exercise price equal to or greater than the fair market value of the common stock on the date of grant. Options granted under the 1999 Plan typically grade vest over a five-year period and expire ten years from the date of grant. Restricted stock units granted under the 1999 Plan typically vest over a five-year period for employees and one year for directors. Restricted stock units granted to employees have time based vesting or performance and time based vesting. As of December 31, 2007 and 2008, there were 1,029 and 1,562 shares of common stock reserved for future grants under the 1999 Plan, respectively.

The Company assumed the August Technology Corporation 1997 Stock Plan (the "1997 Plan") at the merger date. Stock options granted under the 1997 Plan vest over periods that range from immediate to five-years and expire in either seven or ten years from the date of grant. In the third quarter of 2007, the 1997 Plan expired and as of December 31, 2007, there were no shares of common stock reserved for future grants under the 1997 Plan.

The following table reflects share-based compensation expense by type of award in accordance with SFAS 123R:

	Year Ended December 31,		
	2006	2007	2008
Share-based compensation expense:			
Stock options	$ 750	$ 721	$ 508
Restricted stock units	1,186	2,398	2,897
Total share-based compensation	1,936	3,119	3,405
Tax effect on share-based compensation	757	1,279	1,396
Net effect on net income	$1,179	$1,840	$2,009
Tax effect on:			
Cash flows from financing activities	$1,167	$ 148	$ —
Effect on earnings per share—basic	$(0.04)	$(0.06)	$(0.07)
Effect on earnings per share—diluted	$(0.04)	$(0.06)	$(0.07)

Valuation Assumptions for Stock Options

For the year ended December 31, 2006, there were 5 stock options granted and 369 unvested options and 1,049 vested options assumed from the August Technology merger. The fair value of the vested options assumed from the August Technology merger was $6,040, the fair value at the merger date. For the years ended, December 31, 2007 and 2008, there were no stock options granted. The fair value of each option was estimated on the date of grant for the granted options and the merger date for the unvested options assumed from the August Technology merger, using the Black-Scholes option-pricing model with the following assumptions:

	Year Ended December 31, 2006
Expected life (years)	3.4
Expected volatility	55.1%
Expected dividend yield	0.0%
Risk-free interest rate	4.6%
Weighted average fair value per option	$8.99

Stock Option Activity

The following table summarizes stock option activity:

	Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
Outstanding at December 31, 2005	2,514	$22.67		
Granted	5	16.72		
Assumed from August Technology	1,418	14.02		
Exercised	(674)	12.84		
Expired	(113)	22.27		
Forfeited	(42)	13.56		
Outstanding at December 31, 2006	3,108	20.98		
Granted	—	—		
Exercised	(96)	11.54		
Expired	(241)	14.39		
Forfeited	(16)	21.93		
Outstanding at December 31, 2007	2,755	21.27		
Granted	—	—		
Exercised	(11)	1.95		
Expired	(425)	22.52		
Forfeited	(12)	15.96		
Outstanding at December 31, 2008	2,307	$21.16	3.2	$26
Vested or expected to vest at December 31, 2008	2,296	$21.19	3.2	$26
Exercisable at December 31, 2008	2,235	$21.38	3.1	$26

The total intrinsic value of the stock options exercised during 2006, 2007 and 2008 was $3,472, $506 and $87, respectively. In connection with these exercises, the tax benefits realized by the Company for 2006, 2007 and 2008 were $1,167, $191 and $0, respectively.

The options outstanding and exercisable at December 31, 2008 were in the following exercise price ranges:

	Options Outstanding			Options Exercisable	
Range of Exercise Prices	Shares	Weighted Average Remaining Contractual Life (years)	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
$ 0.56 - $ 14.75	472	3.7	$11.84	450	$ 11.83
$ 14.76 - $ 16.00	507	2.6	$15.72	464	$ 15.79
$ 16.11 - $ 22.13	465	4.2	$17.74	458	$ 17.76
$ 22.25 - $ 26.20	462	3.6	$24.41	462	$ 24.41
$ 26.75 - $ 50.30	401	1.9	$39.22	401	$ 39.22
$ 0.56 - $ 50.30	2,307	3.2	$21.16	2,235	$ 21.38

As of December 31, 2008, there was $535 of total unrecognized compensation cost related to stock options granted under the plans. That cost is expected to be recognized over a weighted average remaining period of 1.1 years.

Restricted Stock Unit Activity

The following table summarizes restricted stock unit activity:

A summary of the Company's restricted stock unit activity with respect to the years ended December 31, 2006, 2007 and 2008 follows:

	Number of Shares	Weighted Average Grant Date Fair Value
Nonvested at December 31, 2005	161	$16.60
Granted	228	$16.61
Vested	(48)	$16.23
Forfeited	(5)	$14.97
Nonvested at December 31, 2006	336	$16.68
Granted	463	$15.69
Vested	(86)	$16.24
Forfeited	(33)	$16.24
Nonvested at December 31, 2007	680	$16.08
Granted	334	$ 7.53
Vested	(185)	$14.77
Forfeited	(100)	$14.60
Nonvested at December 31, 2008	729	$12.70

As of December 31, 2008, there was $7,473 of total unrecognized compensation cost related to restricted stock units granted under the plans. That cost is expected to be recognized over a weighted average period of 3.0 years.

Employee Stock Purchase Plan

The Company established an Employee Stock Purchase Plan (the "ESPP") effective August 31, 1999 and amended on May 1, 2005. Under the terms of the ESPP, eligible employees may have up to 15% of eligible compensation deducted from their pay and applied to the purchase of shares of Rudolph common stock. The price the employee must pay for each share of stock will be 95% of the fair market value of the Rudolph common stock at the end of the applicable six-month purchase period. The ESPP is intended to qualify under Section 423 of the Internal Revenue Code and is a non-compensatory plan as defined by SFAS 123R. No stock-based compensation expense for the ESPP was recorded for the year ended December 31, 2007 and 2008. As of December 31, 2007 and 2008, there were 2,010 and 2,273 shares available for issuance under the ESPP, respectively.

401(k) Savings Plan

The Company has a 401(k) savings plan that allows employees to contribute up to 100% of their annual compensation to the Plan on a pre-tax or after tax basis, limited to a maximum annual amount as set periodically by the Internal Revenue Service. The plan provides a 50% match of all employee contributions up to 6 percent of the employee's salary. Company matching contributions to the plan totaled $693, $746 and $899 for the years ended December 31, 2006, 2007 and 2008, respectively.

Profit Sharing Program

The Company has a profit sharing program, wherein a percentage of pre-tax profits, at the discretion of the Board of Directors, is provided to all employees who have completed a stipulated employment period. The Company did not make contributions to this program for the years ended December 31, 2006, 2007 and 2008.

12. Interest Income and Other, Net:

	Year Ended December 31,		
	2006	2007	2008
Interest income	$3,345	$4,143	$1,230
Realized losses on sale of marketable securities	(162)	—	(79)
Rental income	8	6	—
Total interest income and other, net	$3,191	$4,149	$1,151

13. Income Taxes:

The components of income tax expense are as follows:

	Year Ended December 31,		
	2006	2007	2008
Current:			
Federal	$ 2,253	$ 3,827	$(3,985)
State	1,840	939	11
Foreign	1,920	3,395	2,308
	6,013	8,161	(1,666)
Deferred:			
Federal	5,456	(2,507)	(3,155)
State	173	(674)	572
Foreign	88	(134)	134
	5,717	(3,315)	(2,449)
Total income tax expense (benefit)	$11,730	$ 4,846	$(4,115)

Income before income tax of $13,532 and $10,904 was generated by domestic and foreign operations, respectively, in 2006. Income before income tax of $2,856 and $13,849 was generated by domestic and foreign operations, respectively, in 2007. Income (loss) before income tax of $(263,081) and $9,280 was generated by domestic and foreign operations, respectively, in 2008.

Deferred tax assets and liabilities are comprised of the following:

	December 31, 2007	December 31, 2008
Research and development credit carryforward	$ 3,709	$ 6,066
Reserves and accruals not currently deductible	1,199	1,149
Deferred revenue	2,190	1,507
Domestic net operating loss carryforwards	280	358
Depreciation	181	468
Capital losses	460	493
Foreign net operating loss and credit carryforwards	2,288	899
Intangible assets	2,293	23,045
Tax deductible transaction costs	704	648
Share-based compensation	196	1,238
Inventory obsolescence reserve	1,370	5,754
Other	182	563
Gross deferred tax assets	15,052	42,188
Valuation allowance for deferred tax assets	(1,295)	(36,491)
Deferred tax assets after valuation allowance	13,757	5,697
Intangible liabilities	(12,436)	(2,593)
Other	(212)	(201)
Gross deferred tax liabilities	(12,648)	(2,794)
Net deferred tax assets	$ 1,109	$ 2,903

At December 31, 2008 and 2007, we had valuation allowances of $36,491 and $1,295 on certain of our deferred tax assets to reflect the deferred tax asset at the net amount that is more likely than not to be realized. Valuation allowances have been recorded on substantially all of the Company's deferred tax assets as of December 31, 2008, except for $2,896 of R&D credits which are reserved for in the Company's FIN 48 provision and $7 for AMT credits, as the Company has incurred cumulative losses. The Company computes cumulative losses for these purposes by adjusting pretax results for permanent items.

The provision for income taxes differs from the amount of income tax determined by applying the applicable U.S. federal income tax rate of 35% for the years ended December 31, 2006, 2007 and 2008 to income before provision for income taxes as follows:

	Year Ended December 31,		
	2006	2007	2008
Federal income tax provision at statutory rate	$ 8,553	$ 5,847	$(88,830)
State taxes, net of federal effect	1,290	306	(1,789)
Non-deductible goodwill impairment charges	—	—	50,440
Foreign taxes net of federal effect	—	—	1,342
In-process research and development write-off	3,465	350	—
Research tax credit	(765)	(1,262)	(419)
Extraterritorial income exclusion	(296)	—	—
Domestic manufacturing benefit	(185)	(279)	—
Change in valuation allowance for deferred tax assets	(524)	331	35,196
Other	192	(447)	(55)
Provision (benefit) for income taxes	$11,730	$ 4,846	$ (4,115)
Effective tax rate	48%	29%	2%

In assessing the realizability of deferred tax assets, SFAS No. 109 establishes a more likely than not standard. If it is determined that it is more likely than not that deferred tax assets will not be realized, a valuation allowance must be established against the deferred tax assets. The ultimate realization of the assets is dependent on the generation of future taxable income during the periods in which the associated temporary differences become deductible. Management considers the scheduled reversal of deferred income tax liabilities, projected future taxable income and tax planning strategies when making this assessment.

At December 31, 2008, the Company had state and foreign net operating loss carryforwards of $5,460 and $543, respectively. The net operating loss carryforwards expire on various dates through December 31, 2028. Utilization of the net operating loss carry forwards may be subject to an annual limitation in the event of a change in ownership in future years as defined by Section 382 of the Internal Revenue Code and similar state provisions. At December 31, 2008, the Company had federal and state research & development credits and foreign tax credit carryforwards of $4,054, $3,121 and $671, respectively. The federal research & development credits are set to expire at various dates through December 31, 2028. The state research & development credits are set to expire at various dates through December 21, 2023. The foreign tax credit is set to expire at various dates through December 31, 2017.

The Company adopted the provisions of FIN 48, as amended by FSP 48-1, effective January 1, 2007. As a result of the implementation of FIN 48, as amended, the Company recognized increases in the liability for unrecognized tax benefits of $2,173, non-current deferred tax assets of $1,948 and goodwill of $245. The adoption of FIN 48, as amended, resulted in a cumulative effect adjustment to retained earnings of $20 as of January 1, 2007. FIN 48 clarifies the accounting for uncertainty in tax positions. The interpretation prescribes a recognition threshold and measurement criteria for financial statement recognition of a tax position taken or expected to be taken in a tax return. FIN 48 requires the Company to recognize in its financial statements, the impact of a tax position, if that position is more likely than not of being sustained upon examination, including resolution of any related appeals or litigation processes, based on the technical merits of the position. The interpretation also provides guidance on

derecognition, classification, interest and penalties, accounting for interim periods, disclosure and transition. The total amount of unrecognized tax benefits were as follows:

	December 31, 2007	December 31, 2008
Unrecognized tax benefits, opening balance	$4,552	$5,875
Gross increases—tax positions in prior period	635	700
Gross increases—current-period tax positions	1,301	225
Lapse of statute of limitations	(613)	(833)
Unrecognized tax benefits, ending balance	$5,875	$5,967

Included in the balance of unrecognized tax benefits at December 31, 2007 and 2008 are unrecognized tax benefits of $5,875 and $5,967, of which $3,610 and $3,306, would be reflected as an adjustment to income tax expense if recognized, respectively. It is expected that the amount of unrecognized tax benefits will change in the next 12 months; however, we do not expect the change to have a significant impact on our results of operations or financial position.

The Company recognizes accrued interest and penalties related to unrecognized tax benefits in income tax expense. During the years ended December 31, 2007 and 2008, the Company recognized approximately $33 and $37 in interest and penalties expense associated with uncertain tax positions, respectively. As of December 31, 2007 and 2008, the Company had accrued interest and penalties expense related to unrecognized tax benefits of $129 and $143, respectively.

The Company is subject to U.S. federal income tax as well as income tax in multiple state and foreign jurisdictions. Presently, the Company has not been contacted by the Internal Revenue Service for examination of income tax returns for open periods, December 31, 2005 through December 31, 2007. The Company is currently under examination by the State of New Jersey for tax years 2005 through 2007. The Company has not been contacted by any other U.S. state, local or foreign tax authority for all open tax periods beginning after December 31, 2003.

14. Segment Reporting and Geographic Information:

The Company reports one reportable segment in accordance with the provisions of SFAS No. 131, "Disclosure about Segments of an Enterprise and Related Information."

Operating segments are business units that have separate financial information and are separately reviewed by the Company's chief decision maker. The Company's chief decision maker is the Chief Executive Officer. The Company is engaged in the design, development, and manufacture of high-performance control metrology, defect inspection and data analysis systems used by semiconductor device manufacturers. The chief operating decision maker allocates resources and assesses performance of the business and other activities at the reporting segment level.

The following table lists the different sources of revenue:

	Year Ended December 31,					
	2006		2007		2008	
Systems:						
Metrology	$ 68,035	34%	$ 34,738	22%	21,118	16%
Inspection	100,666	50	85,012	53	71,348	55
Parts	14,217	7	13,678	9	19,262	15
Services	11,457	6	14,121	8	14,901	11
Software licensing	6,793	3	12,580	8	4,411	3
Total revenue	$201,168	100%	$160,129	100%	$131,040	100%

For geographical reporting, revenues are attributed to the geographic location in which the customer is located. Revenue by geographic region is as follows:

	Year Ended December 31,		
	2006	2007	2008
Revenues from third parties:			
United States	$ 59,097	$ 36,710	$ 30,744
Asia	120,472	93,631	74,661
Europe	21,599	29,788	25,635
Total	$201,168	$160,129	$131,040

One customer represented 14%, 12% and 11% of revenue for the years ended December 31, 2006, 2007 and 2008, respectively. The accounts receivable of that customer totaled $7,094, $1,680 and $1,258 at December 31, 2006, 2007 and 2008, respectively. No other customer was above 10% of revenue for the years ended December 31, 2006, 2007 or 2008.

Substantially all of the Company's assets are within the United States of America.

15. Earnings (Loss) Per Share:

Basic earnings (loss) per share is computed by dividing net income (loss) by the weighted average number of common shares outstanding during the period. Diluted earnings gives effect to all potential dilutive common shares outstanding during the period. The computation of diluted earnings per share does not assume conversion, exercise or contingent exercise of securities that would have an anti-dilutive effect.

The computations of basic and diluted earnings (loss) per share for the years ended December 31, 2006, 2007, and 2008 are as follows:

	Income (Numerator)	Shares (Denominator)	Per-Share Amount
For the year ended December 31, 2006			
Basic earnings per share:			
Net income	$ 12,706	27,276	$ 0.47
Effect of dilutive stock options and restricted stock units	—	298	(0.01)
Diluted earnings per share:			
Net income	$ 12,706	27,574	$ 0.46
For the year ended December 31, 2007			
Basic earnings per share:			
Net income	$ 11,859	29,168	$ 0.41
Effect of dilutive stock options and restricted stock units	—	144	(0.01)
Diluted earnings per share:			
Net income	$ 11,859	29,312	$ 0.40
For the year ended December 31, 2008			
Basic loss per share:			
Net loss	$(249,686)	30,614	$(8.16)
Effect of dilutive stock options and restricted stock units	—	—	—
Diluted loss per share:			
Net loss	$(249,686)	30,614	$(8.16)

For the year ended December 31, 2006, the weighted average number of stock options and restricted stock units excluded from the computation of diluted earnings per share were 2,008 and 12, respectively. For the year ended December 31, 2007, the weighted average number of stock options and restricted stock units excluded from the computation of diluted earnings per share were 2,185 and 129, respectively. For the year ended December 31, 2008, all outstanding stock options and restricted stock units totaling 2,307 and 729, respectively, were excluded from the computation of diluted loss per share because the effect in the period would be anti-dilutive.

16. Share Repurchase Program

In July 2008, the Board of Directors authorized a share repurchase program of up to 3 million shares of the Company's stock. The Company did not purchase any shares to date under this program.

17. Quarterly Consolidated Financial Data (unaudited):

The following tables present certain unaudited consolidated quarterly financial information for each of the eight quarters ended December 31, 2008. In the opinion of the Company's management, this quarterly information has been prepared on the same basis as the consolidated financial statements and includes all adjustments (consisting only of normal recurring adjustments) necessary to present fairly the information for the periods presented. The results of operations for any quarter are not necessarily indicative of results for the full year or for any future period.

Year-over-year quarterly comparisons of the Company's results of operations may not be as meaningful as the sequential quarterly comparisons set forth below tend to reflect the cyclical activity of the semiconductor industry as a whole. The 2007 fourth quarter reflects the PCTA acquisition effective December 18, 2007. The 2008 fourth quarter reflects a charge of $227,105 for the impairment of goodwill and identifiable intangible assets. Other

quarterly fluctuations in expenses are related directly to sales activity and volume and may also reflect the timing of operating expenses incurred throughout the year and the purchase accounting effects of business combinations.

	Quarters Ended				
	March 31, 2007	June 30, 2007	September 30, 2007	December 31, 2007	Total
Revenues	$48,356	$47,730	$31,461	$32,582	$160,129
Gross profit	26,250	24,850	15,540	14,600	81,240
Income (loss) before income taxes	8,705	7,749	1,203	(952)	16,705
Net income (loss)	5,564	5,451	1,388	(544)	11,859
Earnings (loss) per share:					
Basic	$ 0.19	$ 0.19	$ 0.05	$ (0.02)	$ 0.41
Diluted	$ 0.19	$ 0.19	$ 0.05	$ (0.02)	$ 0.40
Weighted average number of shares outstanding:					
Basic	29,031	29,108	29,152	29,371	29,168
Diluted	29,224	29,312	29,250	29,371	29,312

	Quarters Ended				
	March 31, 2008	June 30, 2008	September 30, 2008	December 31, 2008	Total
Revenues	$37,210	$38,416	$38,986	$ 16,428	$ 131,040
Gross profit	15,115	17,721	16,806	(5,990)	43,652
Loss before income taxes	(3,063)	(2,814)	(878)	(247,046)	(253,801)
Net loss	(1,646)	(1,985)	(448)	(245,607)	(249,686)
Loss per share:					
Basic	$ (0.05)	$ (0.06)	$ (0.01)	$ (7.96)	$ (8.16)
Diluted	$ (0.05)	$ (0.06)	$ (0.01)	$ (7.96)	$ (8.16)
Weighted average number of shares outstanding:					
Basic	30,533	30,669	30,781	30,842	30,614
Diluted	30,533	30,669	30,781	30,842	30,614

RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

SCHEDULE OF VALUATION AND QUALIFYING ACCOUNTS

(In thousands)

Column A	Column B	Column C		Column D	Column E
Description	Balance at Beginning of Period	Charged to (Recover of) Costs and Expenses	Charged to Other Accounts (net)	Deductions	Balance at End of Period
Year 2006:					
Allowance for doubtful accounts	$ 230	$ 69	$ —	$ —	$ 299
Inventory valuation	1,787	3,585	—	2,567	2,805
Warranty	1,234	2,298	1,244	2,605	2,171
Deferred tax valuation allowance	524	964	—	524	964
Year 2007:					
Allowance for doubtful accounts	$ 299	$ (85)	$ —	$ —	$ 214
Inventory valuation	2,805	661	—	72	3,394
Warranty	2,171	2,669	532	3,007	2,365
Deferred tax valuation allowance	964	331	—	—	1,295
Year 2008:					
Allowance for doubtful accounts	$ 214	$ 445	$ —	$ —	$ 659
Inventory valuation	3,394	14,124	—	5,887	11,631
Warranty	2,365	1,868	215	2,635	1,813
Deferred tax valuation allowance	1,295	35,196	—	—	36,491

SIGNATURES

PURSUANT TO THE REQUIREMENTS OF SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934, THE REGISTRANT HAS DULY CAUSED THIS REPORT TO BE SIGNED ON ITS BEHALF BY THE UNDERSIGNED, THEREUNTO DULY AUTHORIZED.

RUDOLPH TECHNOLOGIES, INC.

By: /s/ PAUL F. MCLAUGHLIN

Paul F. McLaughlin
Chairman and Chief Executive Officer

Date: March 5, 2009

PURSUANT TO THE REQUIREMENTS OF THE SECURITIES EXCHANGE ACT OF 1934, THIS REPORT HAS BEEN SIGNED BELOW BY THE FOLLOWING PERSONS ON BEHALF OF THE REGISTRANT AND IN THE CAPACITIES AND ON THE DATES INDICATED.

Signature	Title	Date
/s/ PAUL F. MCLAUGHLIN **Paul F. McLaughlin**	Chairman and Chief Executive Officer	March 5, 2009
/s/ STEVEN R. ROTH **Steven R. Roth**	Senior Vice President, Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	March 5, 2009
/s/ LEO BERLINGHIERI **Leo Berlinghieri**	Director	March 5, 2009
/s/ DANIEL H. BERRY **Daniel H. Berry**	Director	March 5, 2009
/s/ THOMAS G. GREIG **Thomas G. Greig**	Director	March 5, 2009
/s/ RICHARD F. SPANIER **Richard F. Spanier**	Director	March 5, 2009
/s/ AUBREY C. TOBEY **Aubrey C. Tobey**	Director	March 5, 2009
/s/ JOHN R. WHITTEN **John R. Whitten**	Director	March 5, 2009

EXHIBIT INDEX

Exhibit No.	Description
2.1	Agreement and Plan of Merger, dated as of June 27, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation (incorporated by reference to Exhibit 99.2 to the Company's Schedule 13D filed with the SEC on July 7, 2005).
2.2	Amendment No. 1, dated as of December 8, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation, to the Agreement and Plan of Merger, dated as of June 27, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation. (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 9, 2005).
2.3	Asset Purchase Agreement dated as of December 18, 2007, by and among the Registrant, Mariner Acquisition Company LLC, Applied Precision Holding, LLC and Applied Precision, LLC (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 21, 2007).
3.1	Restated Certificate of Incorporation of Registrant (incorporated herein by reference to Exhibit (3.1(b)) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871 filed on September 9, 1999).
3.2	Amended and Restated Bylaws of Registrant (incorporated herein by reference to Exhibit (3.2(b) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999.
3.3	Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on February 15, 2006, No. 000-27965).
3.4	Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on August 1, 2007, No. 000-27965).
3.5	Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on February 2, 2009, No. 000-27965).
4.1	Rights Agreement (incorporated by reference to Exhibit 4.1 of the Registrant's Registration Statement on Form 8-A, filed with the Commission on June 28, 2005, No 000-27965).
4.2	August Technology Corporation 1997 Stock Incentive Plan (incorporated by reference to the Appendix to August Technology Corporation's Proxy Statement for its 2004 Annual Shareholders Meeting, filed with the Commission on March 11, 2004, No. 000-30637).
10.1+	License Agreement, dated June 28, 1995, between the Registrant and Brown University Research Foundation (incorporated herein by reference to Exhibit (10.1) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.2	Form of Indemnification Agreement (incorporated herein by reference to Exhibit (10.3) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.3	Amended 1996 Non-Qualified Stock Option Plan (incorporated herein by reference to Exhibit 10.15 to Registrant's quarterly report on Form 10-Q, filed on November 14, 2001).
10.4	Form of 1999 Stock Plan (incorporated herein by reference to Exhibit (10.4) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.5	Form of 1999 Employee Stock Purchase Plan (incorporated herein by reference to Exhibit (10.5) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.6	Management Agreement, dated as of July 24, 2000, by and between Rudolph Technologies, Inc. and Paul F. McLaughlin (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000).
10.7	Management Agreement, dated as of July 24, 2000 by and between Rudolph Technologies, Inc. and Steven R. Roth (incorporated herein by reference to Exhibit 10.14 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000).

Exhibit No.	Description
10.8	Registration Agreement, dated June 14, 1996 by and among the Registrant, 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul F. McLaughlin (incorporated herein by reference to Exhibit (10.9) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.9	Stockholders Agreement, dated June 14, 1996 by and among the Registrant, Administration of Florida, Liberty Partners Holdings 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul McLaughlin, Dale Moorman, Thomas Cooper and (incorporated herein by reference to Exhibit (10.10) to the Registrant's Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.10	Form of option agreement under 1999 Stock Plan (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 5, 2004).
10.11	Form of Restricted Stock Award pursuant to the Rudolph Technologies, Inc. 1999 Stock Plan (filed with Rudolph Technologies, Inc.'s Current Report on Form 8-K filed on June 21, 2005 and incorporated herein by reference).
10.12	Form of Company Shareholder Voting Agreement (incorporated by reference to Exhibit 99.2 to the Company's Schedule 13D filed with the SEC on July 7, 2005).
14.1	Rudolph Technologies Code of Business Conduct and Ethics (incorporated herein by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006).
14.2	Rudolph Technologies Financial Code of Ethics (incorporated herein by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006).
21.1	Subsidiaries.
23.1	Consent of KPMG LLP, Independent Registered Public Accounting Firm.
23.2	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm.
31.1	Certification of Paul F. McLaughlin, Chief Executive Officer, pursuant to Securities Exchange Act Rule 13a-14(a).
31.2	Certification of Steven R. Roth, Chief Financial Officer, pursuant to Securities Exchange Act Rule 13a-14(a).
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Paul F. McLaughlin, Chief Executive Officer of Rudolph Technologies, Inc.
32.2	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Steven R. Roth, Chief Financial Officer of Rudolph Technologies, Inc.

+ Confidential treatment has been granted with respect to portions of this exhibit.

Exhibit 31.1

Certification of Chief Executive Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Paul F. McLaughlin, certify that:

1. I have reviewed this annual report on Form 10-K of Rudolph Technologies, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 5, 2009

By: /s/ PAUL F. MCLAUGHLIN

Paul F. McLaughlin
Chairman and Chief Executive Officer

Exhibit 31.2

Certification of Chief Financial Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Steven R. Roth, certify that:

1. I have reviewed this annual report on Form 10-K of Rudolph Technologies, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 5, 2009

By: /s/ STEVEN R. ROTH

Steven R. Roth
Senior Vice President and Chief Financial Officer

Exhibit 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Paul F. McLaughlin, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Rudolph Technologies, Inc. on Form 10-K for the year ended December 31, 2008 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of Rudolph Technologies, Inc.

Date: March 5, 2009

By: /s/ PAUL F. MCLAUGHLIN

Paul F. McLaughlin
Chairman and Chief Executive Officer

Exhibit 32.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Steven R. Roth, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Rudolph Technologies, Inc. on Form 10-K for the year ended December 31, 2008 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of Rudolph Technologies, Inc.

Date: March 5, 2009

By: /s/ STEVEN R. ROTH

Steven R. Roth
Senior Vice President and Chief Financial Officer

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BOARD OF DIRECTORS

Paul F. McLaughlin
Chairman of the Board and
Chief Executive Officer

John R. Whitten
Former Chief Financial Officer,
Vice President and Treasurer
Applied Industrial Technologies, Inc.

Leo Berlinghieri
Chief Executive Officer and President
MKS Instruments, Inc.

Daniel H. Berry
Operating Partner
Riverside Partners, LLC

Thomas G. Greig
Managing Director
Liberty Capital Partners, Inc.

Richard F. Spanier
Retired, Chairman Emeritus

Aubrey C. Tobey
President
ACT International

EXECUTIVE OFFICERS

Paul F. McLaughlin
Chairman of the Board and
Chief Executive Officer

Nathan H. Little
Executive Vice President and General
Manager, Inspection Business Unit

Michael P. Plisinski
Vice President and General Manager, Data
Analysis & Review Business Unit

Steven R. Roth
Senior Vice President, Finance and
Administration and Chief Financial Officer

CORPORATE HEADQUARTERS

Rudolph Technologies, Inc.
One Rudolph Road
P.O. Box 1000
Flanders, New Jersey 07836
Phone: 973 691 1300
www.rudolphtech.com

WORLDWIDE OFFICES

Rudolph Technologies
Metrology Business Unit
Budd Lake, New Jersey

Rudolph Technologies
Inspection Business Unit
Bloomington, Minnesota
Richardson, Texas
Snoqualmie, Washington
Bohemia, New York

Rudolph Technologies Data Analysis
& Review Business Unit
Lowell, Massachusetts

Rudolph Technologies Europe B.V.
Scotland, United Kingdom

Rudolph Technologies Japan K.K.
Takastu, Japan

Rudolph Technologies China
Shanghai, China

Rudolph Technologies Korea
Seoul, Korea

Rudolph Technologies Singapore
Singapore

Rudolph Technologies Taiwan
Hsin-Chu City, Taiwan

KEY EMPLOYEES

D. Mayson Brooks
Vice President, Global Sales

Scott R. Danciak
Vice President of Engineering,
Inspection Business Unit

Robert DiCrosta
Vice President, Global Customer Support

Ajay Khanna
Vice President, International Accounts

Robert A. Koch
Vice President and General Counsel

John R. Kurdock
Vice President and General Manager,
Metrology Business Unit

Ardelle R. Johnson
Vice President, Corporate Marketing

Christopher J. Morath
Vice President of Operations,
Metrology Business Unit

Jeffrey T. Nelson
Vice President of Manufacturing,
Inspection Business Unit

Rajiv Roy
Vice President, Business Development &
Director Back-end Product Management

SHAREHOLDER INFORMATION

General Shareholder and Investor
Questions may be Directed to:
Steven R. Roth
Chief Financial Officer
Rudolph Technologies, Inc.
One Rudolph Road
P.O. Box 1000
Flanders, New Jersey 07836
Phone: 973 691 1300

Independent Registered Public
Accounting Firm
Ernst & Young, LLP
Iselin, New Jersey

Registrar and Transfer Agent
American Stock Transfer &
Trust Company
59 Maiden Lane
New York, New York 10038
Phone: 212 936 5100
www.amstock.com

Stock Symbol
Common Stock is traded on the NASDAQ Global Select Market® under the symbol, RTEC.

Annual Meeting
Stockholders are invited to attend the Annual Meeting at 10:00 AM on Tuesday, May 19, 2009 at our corporate headquarters, located at One Rudolph Road, Flanders, New Jersey 07836.

Form 10-K
The Annual Report on Form 10-K filed with the Securities and Exchange Commission is available without charge upon written request to Investor Relations at our corporate headquarters address.

Rudolph Technologies, Inc.
One Rudolph Road
P.O. Box 1000
Flanders, NJ 07836

973 691 1300

www.rudolphtech.com

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

(MARK ONE)

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the Fiscal Year Ended December 31, 2008

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to

Commission File No. 000-27965

RUDOLPH TECHNOLOGIES, INC.

(Exact name of registrant as specified in its charter)

Delaware	22-3531208
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)

One Rudolph Road, P.O. Box 1000, Flanders, NJ 07836

(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (973) 691-1300

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

None

SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT:

Common Stock, $0.001 Par Value

(Title of Class)

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15 (d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☐ Accelerated filer ☒ Non-accelerated filer ☐ Smaller reporting company ☐

(Do not check if a smaller reporting company)

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the voting stock held by non-affiliates of the registrant based on the closing price of the registrant's stock price on June 30, 2008 of $7.70 was approximately $201,354,469.

The registrant had 30,737,857 shares of Common Stock outstanding as of February 6, 2009.

DOCUMENTS INCORPORATED BY REFERENCE

The following document is incorporated by reference in Part III of this Annual Report on Form 10-K: Items 10, 11, 12, 13 and 14 of Part III incorporate by reference information from the definitive proxy statement for the registrant's annual meeting of stockholders to be held on May 19, 2009.

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FORWARD LOOKING STATEMENTS

Certain statements in this Annual Report on Form 10-K are forward-looking statements, including those concerning our expectations of future revenues, gross profits, research and development and engineering expenses, selling, general and administrative expenses, product introductions, technology development, manufacturing practices, cash requirements and anticipated trends and developments in and management plans for, our business and the markets in which we operate. The statements contained in this Annual Report on Form 10-K that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 and within the meaning of the Private Securities Litigation Reform Act of 1995. In addition, we may, from time to time make oral forward-looking statements. Forward-looking statements may be identified by the words such as, but not limited to, "anticipate", "believe", "expect", "intend", "plan", "should", "may", "could", "will" and words or phrases of similar meaning, as they relate to our management or us.

The forward-looking statements contained herein reflect our current expectations with respect to future events and are subject to certain risks, uncertainties and assumptions. The forward-looking statements reflect our position as of the date of this report and we undertake no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise. Actual results may differ materially from those projected in such forward-looking statements for a number of reasons including, but not limited to, the following: variations in the level of orders which can be affected by general economic conditions and growth rates in the semiconductor manufacturing industry and in the markets served by our customers, the international economic and political climates, difficulties or delays in product functionality or performance, the delivery performance of sole source vendors, the timing of future product releases, failure to respond adequately to either changes in technology or customer preferences, changes in pricing by us or our competitors, ability to manage growth, risk of nonpayment of accounts receivable, changes in budgeted costs and the "Risk Factors" set forth in Item 1A. Our stockholders should carefully review the cautionary statements contained in this Form 10-K below. You should also review any additional disclosures and cautionary statements we make from time to time in our Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and other filings.

PART I

Item 1. Business.

General

Rudolph Technologies, Inc. is a worldwide leader in the design, development, and manufacture of high-performance process control metrology, defect inspection, and data analysis systems used by semiconductor device manufacturers. We provide yield management solutions used in both wafer processing and final manufacturing through a family of standalone systems and integrated modules for both transparent and opaque thin film measurements and macro-defect inspection. All of these systems feature sophisticated software and production-worthy automation. Rudolph systems are backed by worldwide customer service and applications support.

The purchase of intellectual property and selected assets from RVSI Inspection LLC was announced on January 22, 2008. As a result, the Wafer Scanner™ (WS) 3800 inspection system was added to the Rudolph product portfolio. The WS Series is used by many back-end manufacturers, with the highest volume found in bump applications. The new WS3840™ was launched in May and delivered to a major Asian semiconductor foundry.

Metrology Systems. The industry's first production-oriented microprocessor-controlled ellipsometer for thin transparent film measurements was introduced by Rudolph in 1977. Since that time, we have consistently provided innovative product developments designed to meet manufacturers' most advanced measurement requirements. Our patented transparent film technology uses up to four lasers operating simultaneously at multiple angles and multiple wavelengths, providing powerful analysis and measurement capabilities to handle the most challenging requirements of today's advanced processes and tomorrow's new materials. Unlike the white-light sources used in spectroscopic ellipsometers, laser light sources make our metrology tools inherently stable, increase

measurement speed and accuracy, and reduce maintenance costs by minimizing the time required to re-qualify a light source when

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it is replaced. Our systems also employ a proprietary reflectometer technology that allows the characterization of films and film stacks that cannot be performed using conventional reflectometry or ellipsometry alone.

For opaque film characterization, we brought patented optical acoustic metal film metrology technology to the semiconductor manufacturing floor that allows customers to simultaneously measure the thickness and other properties of up to six metal or other opaque film layers in a non-contact manner on product wafers. PULSE™ Technology uses an ultra-fast laser to generate sound waves that pass down through a stack of opaque films such as those used in copper or aluminum interconnect processes, sending back to the surface an echo that indicates film thickness, density, and other process critical parameters. We believe we are a leader in providing systems that can non-destructively measure opaque thin-film stacks with the speed and accuracy semiconductor device manufacturers demand in order to achieve high yields with the latest fabrication processes. The technology is ideal for characterizing copper interconnect structures and the majority of all systems sold have been for copper applications.

Inspection Systems. Chip manufacturers deploy advanced macro-defect inspection (defects greater in size than 0.5 micron) throughout the fab to monitor key process steps, gather process-enhancing information and ultimately, lower manufacturing costs. Field-established tools such as the AXi™ and NSX® are found in wafer processing (front-end) and final manufacturing (back-end) facilities around the world. These high-speed tools incorporate features such as waferless recipe creation, tool-to-tool correlation, multiple inspection resolutions and proprietary review and classification software that are required in today's high-volume integrated circuit (IC) manufacturing environments. In addition to wafer frontside inspection, Rudolph's innovative Explorer® Cluster incorporates wafer edge and backside inspection in one integrated platform to enhance productivity and continuously improve fab yield.

Data Analysis & Review Systems. Rudolph has a comprehensive offering of software solutions for process management and data review. Using wafer maps, charts and graphs, the vast amount of data gathered through automated inspection can be analyzed to determine trends that ultimately affect yield. Our goal is to provide our customers with timely and accurate information so that corrective actions can be taken. Software solutions available to our customers include products that identify, classify and analyze defect data as well as fabwide systems that are designed to determine the root cause of yield excursions as early as possible in the production flow.

Technology

We believe that our expertise in engineering and our continued investment in research and development enable us to rapidly develop new technologies and products in response to emerging industry trends. The breadth of our technology enables us to offer our customers a diverse combination of measurement technologies that provide process control for the majority of thin films used in semiconductor manufacturing. Additionally, our defect detection and classification technologies allow us to provide yield enhancement for critical front-end processes such as photolithography, diffusion, etch, CMP, and outgoing quality control. Information learned through post-fab inspection is critical. Advanced macro-defect inspection within the final manufacturing (back-end) process provides our customers with critical quality assurance and process information. Defects may be created during probing, bumping, dicing or general handling, and can have a major impact on device and process quality.

Optical Acoustics. Optical acoustic metrology involves the use of ultra-fast laser induced sonar for metal and opaque thin film measurement. This technology sends ultrasonic waves into multi-layer opaque films and then analyzes the resulting echoes to simultaneously determine the thickness of each individual layer in complex multi-layer metal film stacks. The echo's amplitude and phase can be used to detect film properties, missing layers, and interlayer problems. Since different phenomena affect amplitude and phase uniquely, a variety of process critical interlayer problems can be detected in a single measurement.

The use of optical acoustics to measure multi-layer metal and opaque films was pioneered by scientists at Brown University in collaboration with engineers at Rudolph. The proprietary optical acoustic technology in our PULSE™ Technology systems measures the thickness of single or multi-layer opaque films ranging from less than 40 Angstroms to greater than five microns. It provides these

measurements at a rate of up to 70 wafers per hour within one to two percent accuracy and typically less than one percent repeatability. This range of thicknesses covers the majority of thick and thin metal fiims projected by the International Roadmap for Semiconductors to be

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used through the end of this decade. Our non-contact, non-destructive optical acoustic technology and small spot size enable our PULSE Technology systems to measure film properties directly on product wafers.

Ellipsometry. Ellipsometry is a non-contact, non-destructive optical technique for transparent thin film measurement. We have been an industry leader in ellipsometry technology for the last three decades. We hold patents on several ellipsometry technologies, including our proprietary technique that uses four lasers for multiple-angle of incidence, multiple wavelength ellipsometry. Laser ellipsometry technology enables our transparent film systems to continue to provide the increasingly higher level of accuracy needed as thinner films and newer materials are introduced for future generations of semiconductor devices. We extended this same optical technology to characterize the scatterometry signal from patterned surfaces, allowing measurement of critical dimensions.

Reflectometry. For applications requiring broader spectral coverage, some of our ellipsometry tools are also equipped with a reflectometer. Reflectometry uses a white or ultraviolet light source to determine the properties of transparent thin films by analyzing the wavelength and intensity of light reflected from the surface of a wafer. This optical information is processed with software algorithms to determine film thickness and other material properties. By combining data from both the laser ellipsometer and broad spectrum reflectometer, it is possible to characterize films and film stacks that cannot be adequately analyzed by either method individually.

Automated Defect Detection and Classification. Automating the defect detection and classification process is best done by a system that can mimic, or even extend, the response of the human eye, but at a much higher speed, with high resolution and more consistently. To do this, our systems capture full-color whole wafer images using simultaneous dark and bright field illumination. The resulting bright and dark field images are compared to those from an "ideal" wafer having no defects. When a difference is detected, its image is broken down into mathematical vectors that allow rapid and accurate comparison with a library of known classified defects stored in the tool's database. Patented and proprietary enhancements of this approach enable very fast and highly repeatable image classification. The system is pre-programmed with an extensive library of default local, global, and color defects and can also absorb a virtually unlimited amount of new defect classes. This allows customers to define defects based on their existing defect classification system, provides more reliable automated rework decisions, and enables more accurate statistical process control data.

All-surface Inspection. All-surface refers to inspection of the wafer frontside, edge, and backside as well as post-fab die. The edge inspection process focuses on the area near the wafer edge, an area that poses difficulty for traditional wafer frontside inspection technology due to its varied topography and process variation. Edge bevel inspection looks for defects on the side edge of a wafer. The edge bead removal and edge exclusion metrology involve a topside surface measurement required exclusively in the photolithography process, primarily to determine if wafers have been properly aligned for the edge exclusion region. The primary reason for wafer backside inspection is to determine if contamination has been created that may spread throughout the fab. For instance, it is critical that the wafer backside be free of defects prior to the photolithography process to prevent focus and exposure problems on the wafer front-side.

In addition to the wafer processing floor, Rudolph automated inspection systems are used in several post-fab processes such as bump inspection, wafer probe, wafer saw and quality control.

Probe Card Test and Analysis. The combination of Fast 3D-OCM® (optical comparative metrology) Technology with improved testing accuracy and repeatability is designed to reduce total test time for even the most advanced large area probe cards. 3-D capabilities enable users to analyze probe marks and probe tips in a rapid and information-rich format.

Classification. Classifying defects off-line enables automated inspection systems to maintain their high throughput. Using defect image files captured by automated inspection systems, operators are able to view high-resolution defect images to determine killer defects. Classifying defects enables faster analysis by grouping defects found together as one larger defect, a scratch for example, and defects of similar types across a wafer lot to be grouped based on size, repeating defects and other user-defined specifications. Automatically classifying defects provides far greater yield learning than human classification.

Yield Analysis. Using wafer maps, charts and graphs, the vast amounts of data gathered through

automated inspection can be analyzed to determine trends across bumps, die, wafers and lots. This analysis may determine

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where in the process an inconsistency is being introduced, allowing for enhancements to be made and yields improved. Defect data analysis is performed to identify, analyze and locate the source of defects and other manufacturing process excursions. Using either a single wafer map or a composite map created from multiple wafer maps, this analysis enables identification of defect patterns and distribution. When combined with inspection data from strategically-placed inspection points, this analysis may pinpoint the source of the defects so corrective action can be taken.

Products

We market and sell products to all major logic, memory, data storage and application-specific integrated circuit (ASIC) device manufacturers. Our customers rely on Rudolph for versatile full-fab metrology and inspection systems as well as yield management software solutions. These systems are designed for high-volume production facilities and offer automated wafer handling for 200 and 300 mm configurations. Our systems operate at high throughput with ultraclean operation and high reliability.

			Type of Fab	
Product	**Introduced**	**Functionality**	**Wafer Processing**	**Final Manufacturing**
		Metrology Systems		
*Meta*PULSE®	1997	- Non-contact system for thin opaque films		
*Meta*PULSE-II	2001	- Patented Picosecond Ultrasonic Laser Sonar Technology (PULSE™)	X	
*Meta*PULSE-III	2005	- Designed for advanced copper and non-copper applications		
*Meta*PULSE-IIIa	2007	- Improved throughput and repeatability		
S3000A™	2007	- Superior accuracy for transparent film measurements	X	
S3000™/S2000™	2006	- Incorporates ellipsometry technology for transparent film application - Optimized price/performance for fabwide applications - Available with pattern recognition software - Enhanced data review mode	X	

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Product	Introduced	Functionality	Type of Fab: Wafer Processing	Type of Fab: Final Manufacturing
Inspection & Probe Card Test Systems				
AXi™ Series	2003	- Advanced detection of defects >0.5 micron - Inspection of patterned and unpatterned wafers - In line, high-speed, 100% inspection - Full color review	X	
E30™ System	2003	- 2D defect detection of the wafer's edge - Metrology of edge feature - Incorporated into the Explorer Cluster	X	X
B30™ System	2003	- 2D defect detection of the wafer's backside - Darkfield, brightfield and color imaging - Incorporated into the Explorer Cluster	X	X
NSX® Series	1997	- Fully automated defect detection >0.5 micron - 2D wafer, die & bump inspection - In line, high-speed, 100% inspection		X
Wafer Scanner™ Series	1999	- 2D/3D bump dimensional inspection - 2D bump/surface defect inspection - In line, high-speed, 100% inspection		X
Precision WoRx®	2008	- Probe card test & analysis - Configurable channels - High load forces		X
ProbeWoRx®	2003	- Probe card production metrology - 3D Optical Comparative Metrology - High-speed test times - Automated, one-touch measurements		X
WaferWoRx®	2006	- Probing process analysis - 3D probe tip analysis - Proprietary, advanced software		X
PrecisionPoint®	2002	- Probe card analyzer - Tests devices simultaneously - Upgradable		X

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Product	Introduced	Functionality	Type of Fab: Wafer Processing	Type of Fab: Final Manufacturing
		Software Solutions		
Discover®	2007	- Fabwide software for archival and retrieval of process related data - Facilitates root cause analysis, yield enhancement and yield learning	X	
Discover® Enterprise	2005	- In line, all surface defect analysis and data management - Trend analysis and visualization tools - Wafer maps visualize all-surface defects - Identifies root cause of defects and process excursions	X	X
HarmonyASR™	2005	- Off line defect review and classification - Defects displayed in real time - Rapid classification of unknown defects; review of previously-classified defects	X	X
TrueADC™	2005	- Automatic defect classification - High accuracy, consistency and scalability - Patented feature-based defect matching technology - Utilizes dynamic defect library method	X	X
Process Sentinel™	2006	- Fabwide spatial process control system - Traces patterns back to yield-killing process issues - Combined defect and sort solution - Quickly isolates systemic faults - Advanced segmentation and wafer stacking capability	X	
TrueADC™ Enterprise	2007	- Serving the entire fab - Defect classification with a high level of accuracy - Ensures database lookup, classification and timely response to the tool - Minimum impact to throughput	X	X
Yield™ Optimizer	2006	- Builds predictive models - Optimizes yield and reduces excursions - Identifies the most critical metrology measurements for controlling yield	X	X

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Customers

Over 90 semiconductor device manufacturers have purchased Rudolph tools and software for installation at multiple sites. We support a diverse customer base in terms of both geographic location and type of semiconductor device manufactured. Our customers are located in 20 countries.

We depend on a relatively small number of customers and end users for a large percentage of our revenues. In the years 2006, 2007 and 2008, sales to end user customers that individually represented at least five percent of our revenues accounted for 40.9%, 37.1% and 36.3% of our revenues, respectively. In 2006, 2007 and 2008, sales to Intel Corporation accounted for 14.0%, 11.5% and 10.9% of our revenues, respectively. No other individual end user customer accounted for more than 10% of our revenues in 2006, 2007 and 2008. We do not have purchase contracts with any of our customers that obligate them to continue to purchase our products.

Research and Development

The thin film transparent, opaque process control and macro-defect inspection metrology market is characterized by continuous technological development and product innovations. We believe that the rapid and ongoing development of new products and enhancements to existing products is critical to our success. Accordingly, we devote a significant portion of our technical, management and financial resources to research and development programs.

The core competencies of our research and development team include metrology systems for high volume manufacturing, ellipsometry, ultra-fast optics, picosecond acoustic and optical design, advanced metrology application development and algorithm development. To leverage our internal research and development capabilities, we maintain close relationships with leading research institutions in the metrology field, including Brown University. Our relationship with Brown University has resulted in the development of the optical acoustic technology underlying our *Meta*PULSE product line. We have been granted exclusive licenses from Brown University Research Foundation, subject to rights retained by Brown and the United States government for their own non-commercial uses for several patents relating to this technology.

Our research and development expenditures in 2006, 2007 and 2008 were $29.9 million, $30.0 million and $31.6 million, respectively. We plan to continue our strong commitment to new product development in the future, and we expect that our level of research and development expenses will increase in absolute dollar terms in future periods.

Sales, Customer Service and Application Support

We maintain an extensive network of direct sales, customer service and application support offices in several locations throughout the world. We maintain sales, service or applications offices in locations including but not limited to, New Jersey, Minnesota, Massachusetts, Texas, Washington, New York, Germany, Scotland, Ireland, Israel, Korea, Singapore, Taiwan, China and Japan.

We provide our customers with comprehensive support before, during and after the delivery of our products. For example, in order to facilitate the smooth integration of our tools into our customers' operations, we often assign dedicated, site-specific field service and applications engineers to provide long-term support at selected customer sites. We also provide comprehensive service and applications training for customers at our training facility in Budd Lake, New Jersey and at customer locations. In addition, we maintain a group of highly skilled applications scientists at strategically located facilities throughout the world and at selected customer locations.

Manufacturing

Our principal manufacturing activities include assembly, final test and calibration. These activities are conducted in our manufacturing facilities in New Jersey, Minnesota, and Washington. Our core manufacturing competencies include electrical, optical and mechanical assembly and testing as well as the management of new product transitions. While we use standard components and subassemblies wherever possible, most mechanical parts, metal fabrications and critical components used in our products are engineered and manufactured to our

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specifications. We expect to rely increasingly on subcontractors and turnkey suppliers to fabricate components, build assemblies and perform other non-core activities in a cost-effective manner.

We rely on a number of limited source suppliers for certain parts and subassemblies. This reliance creates a potential inability to obtain an adequate supply of required components, and reduced control over pricing and time of delivery of components. An inability to obtain adequate supplies would require us to seek alternative sources of supply or might require us to redesign our systems to accommodate different components or subassemblies. To date, we have not experienced any significant delivery delays. However, if we were forced to seek alternative sources of supply, manufacture such components or subassemblies internally, or redesign our products, this could prevent us from shipping our products to our customers on a timely basis, which could have a material adverse effect on our operations.

Intellectual Property

We have a policy of seeking patents on inventions governing new products or technologies as part of our ongoing research, development, and manufacturing activities. As of December 31, 2008, we have been granted, or hold exclusive licenses to, 150 U.S. and foreign patents. The patents we own, jointly own or exclusively license have expiration dates ranging from 2009 to 2025. We also have 98 pending regular and provisional applications in the U.S. and other countries. Our patents and applications principally cover various aspects of transparent thin film measurement, altered material characterization and macro-defect detection and classification.

We have been granted exclusive licenses from Brown University Research Foundation, subject to rights retained by Brown and the United States government for their own non-commercial uses, for several patents relating to the optical acoustic technology underlying our *Meta*PULSE product family. The terms of these exclusive licenses are equal to the lives of the patents. We pay royalties to Brown based upon a percentage of our revenues from the sale of systems that incorporate technology covered by the Brown patents. We also have the right to support patent activity with respect to new ultra-fast acoustic technology developed by Brown scientists, and to acquire exclusive licenses to this technology. Brown may terminate the licenses if we fail to pay royalties to Brown or if we materially breach our license agreement with Brown.

Our pending patents may never be issued, and even if they are, these patents, our existing patents and the patents we license may not provide sufficiently broad protection to protect our proprietary rights, or they may prove to be unenforceable. To protect our proprietary rights, we also rely on a combination of copyrights, trademarks, trade secret laws, contractual provisions and licenses. There can be no assurance that any patents issued to or licensed by us will not be challenged, invalidated or circumvented or that the rights granted thereunder will provide us with a competitive advantage.

The laws of some foreign countries do not protect our proprietary rights to as great an extent as do the laws of the United States, and many U.S. companies have encountered substantial infringement problems in protecting their proprietary rights against infringement in such countries, some of which are countries in which we have sold and continue to sell products. There is a risk that our means of protecting our proprietary rights may not be adequate. For example, our competitors may independently develop similar technology or duplicate our products. If we fail to adequately protect our intellectual property, it would be easier for our competitors to sell competing products.

Competition

The market for semiconductor capital equipment is highly competitive. We face substantial competition from established companies in each of the markets that we serve. We principally compete with KLA-Tencor and Camtek. We compete to a lesser extent with companies such as Nanometrics, Vistec, and Nikon. Each of our products also competes with products that use different metrology techniques. Some of our competitors have greater financial, engineering, manufacturing and marketing resources, broader product offerings and service capabilities and larger installed customer bases than we do.

Significant competitive factors in the market for metrology systems include system performance, ease of use, reliability, cost of ownership, technical support and customer relationships. We believe that, while price and delivery are important competitive factors, the customers' overriding requirement

is for a product that meets their

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technical capabilities. To remain competitive, we believe we will need to maintain a high level of investment in research and development and process applications. No assurances can be given that we will continue to be competitive in the future.

Backlog

We schedule production of our systems based upon order backlog and informal customer forecasts. We include in backlog only those orders to which the customer has assigned a purchase order number and for which delivery has been specified within 12 months. Because shipment dates may be changed and customers may cancel or delay orders with little or no penalty, our backlog as of any particular date may not be a reliable indicator of actual sales for any succeeding period. At December 31, 2008, we had a backlog of approximately $20.4 million compared with a backlog of approximately $26.7 million at December 31, 2007.

Employees

As of December 31, 2008, we had 536 employees. Our employees are not represented by any collective bargaining agreements, and we have never experienced a work stoppage. We believe our employee relations are good.

Available Information

We were incorporated in New Jersey in 1958 and reincorporated in Delaware in 1999. The Internet website address of Rudolph Technologies, Inc. is http://www.rudolphtech.com. The information on our website is not incorporated into this Annual Report. The Company's Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K (and any amendments to those reports) are made available free of charge, on or through our Internet website, as soon as reasonably practicable after such material is electronically filed with or furnished to the Securities and Exchange Commission, or SEC. All reports we file with the SEC are also available free of charge via EDGAR through the SEC's website at http://www.sec.gov.

We also make available, free of charge, through the investors page on our corporate website Rudolph Technologies' corporate summary, Code of Business Conduct and Ethics and Financial Code of Ethics, charters of the committees of our board of directors, as well as other information and materials, including information about how to contact our board of directors, its committees and their members. To find this information and obtain copies, visit our website at http://www.rudolphtech.com.

Item 1A. Risk Factors.

Risks Related to Rudolph

Our operating results have varied and will likely continue to vary significantly from quarter to quarter in the future, causing volatility in our stock price

Our quarterly operating results have varied in the past and will likely continue to vary significantly from quarter to quarter in the future, causing volatility in our stock price. Some of the factors that may influence our operating results and subject our stock to extreme price and volume fluctuations include:

- changes in customer demand for our systems, which is influenced by economic conditions in the semiconductor device industry, demand for products that use semiconductors, market acceptance of our systems and products of our customers and changes in our product offerings;
- seasonal variations in customer demand, including the tendency of European sales to slow significantly in the third quarter of each year;
- the timing, cancellation or delay of customer orders, shipments and acceptance;
- product development costs, including increased research, development, engineering and marketing expenses associated with our introduction of new products and product enhancements; and
- the levels of our fixed expenses, including research and development costs associated with

product development, relative to our revenue levels.

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In light of these factors and the cyclical nature of the semiconductor industry, we expect to continue to experience significant fluctuations in quarterly and annual operating results. Moreover, many of our expenses are fixed in the short-term which, together with the need for continued investment in research and development, marketing and customer support, limits our ability to reduce expenses quickly. As a result, declines in net sales could harm our business and the price of our common stock could substantially decline.

Our largest customers account for a significant portion of our revenues, and our revenues and cash flows would significantly decline if one or more of these customers were to purchase significantly fewer of our systems or they delayed or cancelled a large order

Sales to end user customers that individually represent at least five percent of our revenues typically account for, in the aggregate, a considerable amount of our revenues. We operate in the highly concentrated, capital-intensive semiconductor device manufacturing industry. Historically, a significant portion of our revenues in each quarter and year has been derived from sales to relatively few customers, and this trend is expected to continue. If any of our key customers were to purchase significantly fewer of our systems in the future, or if a large order were delayed or cancelled, our revenues and cash flows would significantly decline. We expect that we will continue to depend on a small number of large customers for a significant portion of our revenues for at least the next several years. In addition, as large semiconductor device manufacturers seek to establish closer relationships with their suppliers, we expect that our customer base will become even more concentrated.

Our customers may be unable to pay us for our products and services

Our customers include some companies that may from time to time encounter financial difficulties, especially in light of the current economic environment and the turmoil in the credit markets. If a customer's financial difficulties become severe, the customer may be unwilling or unable to pay our invoices in the ordinary course of business, which could adversely affect collections of both our accounts receivable and unbilled services. The bankruptcy of a customer with a substantial account receivable could have a material adverse effect on our financial condition and results of operations. In addition, if a customer declares bankruptcy after paying us certain invoices, a court may determine that we are not properly entitled to that payment and may require repayment of some or all of the amount we received, which could adversely affect our financial condition and results of operations.

Our revenue may vary significantly each quarter due to relatively small fluctuations in our unit sales

During any quarter, a significant portion of our revenue may be derived from the sale of a relatively small number of systems. Our transparent film measurement systems range in selling price from approximately $250,000 to $1.0 million per system, our opaque film measurement systems range in selling price from approximately $900,000 to $2.0 million per system and our macro-defect inspection and probe card and test analysis systems range in selling price from approximately $250,000 to $1.4 million per system. Accordingly, a small change in the number of systems we sell may also cause significant changes in our operating results. This, in turn, could cause fluctuations in the market price of our common stock.

Variations in the amount of time it takes for us to sell our systems may cause fluctuations in our operating results, which could cause our stock price to decline

Variations in the length of our sales cycles could cause our revenues and cash flows, and consequently, our business, financial condition, operating results and cash flows, to fluctuate widely from period to period. This variation could cause our stock price to decline. Our customers generally take a long time to evaluate our inspection and/or film metrology systems and many people are involved in the evaluation process. We expend significant resources educating and providing information to our prospective customers regarding the uses and benefits of our systems in the semiconductor fabrication process. The length of time it takes for us to make a sale depends upon many factors including, but not limited to:

- the efforts of our sales force;

- the complexity of the customer's fabrication processes;
- the internal technical capabilities and sophistication of the customer;

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- the customer's budgetary constraints; and
- the quality and sophistication of the customer's current metrology and/or inspection equipment.

Because of the number of factors influencing the sales process, the period between our initial contact with a customer and the time when we recognize revenue from that customer, if ever, and receive payment varies widely in length. Our sales cycles, including the time it takes for us to build a product to customer specifications after receiving an order to the time we recognize revenue, typically range from six to 15 months. Sometimes our sales cycles can be much longer, particularly with customers in Japan. During these cycles, we commit substantial resources to our sales efforts in advance of receiving any revenue, and we may never receive any revenue from a customer despite our sales efforts. If we do make a sale, our customers often purchase only one of our systems, and then evaluate its performance for a lengthy period before purchasing any more of our systems. The number of additional products a customer purchases, if any, depends on many factors, including a customer's capacity requirements. The period between a customer's initial purchase and any subsequent purchases can vary from six months to a year or longer, and variations in the length of this period could cause further fluctuations in our operating results and possibly in our stock price.

Most of our revenues have been derived from customers outside of the United States subjecting us to operational, financial and political risks, such as unexpected changes in regulatory requirements, tariffs, political and economic instability, outbreaks of hostilities, and difficulties in managing foreign sales representatives and foreign branch operations

Due to the significant level of our international sales, we are subject to a number of material risks, including:

Unexpected changes in regulatory requirements including tariffs and other market barriers. The semiconductor device industry is a high-visibility industry in many of the European and Asian countries in which we sell our products. Because the governments of these countries have provided extensive financial support to our semiconductor device manufacturing customers in these countries, we believe that our customers could be disproportionately affected by any trade embargoes, excise taxes or other restrictions imposed by their governments on trade with United States companies such as ourselves. Any restrictions of these types could result in a reduction in our sales to customers in these countries.

Political and economic instability. We are subject to various global risks related to political and economic instabilities in countries in which we derive sales. If terrorist activities, armed conflict, civil or military unrest or political instability occurs outside of the U.S., these events may result in reduced demand for our products. There is considerable political instability in Taiwan related to its disputes with China and in South Korea related to its disputes with North Korea. In addition, several Asian countries, particularly Japan, have experienced significant economic instability. An outbreak of hostilities or other political upheaval in China, Taiwan or South Korea, or an economic downturn in Japan or other countries, would likely harm the operations of our customers in these countries. The effect of these types of events on our revenues and cash flows could be material because we derive substantial revenues from sales to semiconductor device foundries in Taiwan such as Taiwan Semiconductor Manufacturing Company Ltd. and United Microelectronics Corporation, from memory chip manufacturers in South Korea such as Hynix and Samsung, and from semiconductor device manufacturers in Japan such as NEC and Toshiba.

Difficulties in staffing and managing foreign branch operations. During periods of tension between the governments of the United States and certain other countries, it is often difficult for United States companies such as ourselves to staff and manage operations in such countries.

Currency fluctuations as compared to the U.S. Dollar. A substantial portion of our international sales are denominated in U.S. dollars. As a result, if the dollar rises in value in relation to foreign currencies, our systems will become more expensive to customers outside the United States and less competitive with systems produced by competitors outside the United States. These conditions could negatively impact our international sales. Foreign sales also expose us to collection risk in the event it becomes more expensive for our foreign customers to convert their local currencies into U.S. dollars.

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If we deliver systems with defects, our credibility will be harmed and the sales and market acceptance of our systems will decrease

Our systems are complex and have occasionally contained errors, defects and bugs when introduced. When this occurs, our credibility and the market acceptance and sales of our systems could be harmed. Further, if our systems contain errors, defects or bugs, we may be required to expend significant capital and resources to alleviate these problems. Defects could also lead to product liability as a result of product liability lawsuits against us or against our customers. We have agreed to indemnify our customers under certain circumstances against liability arising from defects in our systems. Our product liability policy currently provides $2.0 million of coverage per claim, with an overall umbrella limit of $14.0 million. In the event of a successful product liability claim, we could be obligated to pay damages significantly in excess of our product liability insurance limits.

If we are not successful in developing new and enhanced products for the semiconductor device manufacturing industry we will lose market share to our competitors

We operate in an industry that is highly competitive and subject to evolving industry standards, rapid technological changes, rapid changes in consumer demands and the rapid introduction of new, higher performance systems with shorter product life cycles. To be competitive in our demanding market, we must continually design, develop and introduce in a timely manner new inspection and film metrology systems that meet the performance and price demands of semiconductor device manufacturers. We must also continue to refine our current systems so that they remain competitive. We expect to continue to make significant investments in our research and development activities. We may experience difficulties or delays in our development efforts with respect to new systems, and we may not ultimately be successful in our product enhancement efforts to improve and advance products or in responding effectively to technological change, as not all research and development activities result in viable commercial products. In addition, we cannot provide assurance that we will be able to develop new products for the most opportunistic new markets and applications. Any significant delay in releasing new systems could cause our products to become obsolete, adversely affect our reputation, give a competitor a first-to-market advantage or cause a competitor to achieve greater market share. In addition, new product offerings that are highly complex in terms of software or hardware may require application or service work such as bug fixing prior to acceptance, thereby delaying revenue recognition.

If new products developed by us do not gain general market acceptance, we will be unable to generate revenues and recover our research and development costs

Metrology and inspection product development is inherently risky because it is difficult to foresee developments in semiconductor device manufacturing technology, coordinate technical personnel, and identify and eliminate system design flaws. Further, our products are complex and often the applications to our customers' businesses are unique. Any new systems we introduce may not achieve or sustain a significant degree of market acceptance and sales.

We expect to spend a significant amount of time and resources developing new systems and refining our existing systems. In light of the long product development cycles inherent in our industry, these expenditures will be made well in advance of the prospect of deriving revenue from the sale of those systems. Our ability to commercially introduce and successfully market new systems are subject to a wide variety of challenges during the development cycle, including start-up bugs, design defects, and other matters that could delay introduction of these systems. In addition, since our customers are not obligated by long-term contracts to purchase our systems, our anticipated product orders may not materialize, or orders that are placed may be cancelled. As a result, if we do not achieve market acceptance of new products, we may be unable to generate sufficient revenues and cash flows to recover our research and development costs and our market share, revenue, operating results or stock price would be negatively impacted.

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Even if we are able to develop new products that gain market acceptance, sales of these new products could impair our ability to sell existing products

Competition from our new systems could have a negative effect on sales of our existing systems and the prices that we could charge for these systems. We may also divert sales and marketing resources from our current systems in order to successfully launch and promote our new or next generation systems. This diversion of resources could have a further negative effect on sales of our current systems and the value of inventory.

If our relationships with our large customers deteriorate, our product development activities could be adversely affected

The success of our product development efforts depends on our ability to anticipate market trends and the price, performance and functionality requirements of semiconductor device manufacturers. In order to anticipate these trends and ensure that critical development projects proceed in a coordinated manner, we must continue to collaborate closely with our largest customers. Our relationships with these and other customers provide us with access to valuable information regarding trends in the semiconductor device industry, which enables us to better plan our product development activities. If our current relationships with our large customers are impaired, or if we are unable to develop similar collaborative relationships with important customers in the future, our product development activities could be adversely affected.

Our ability to reduce costs is limited by our ongoing need to invest in research and development and to provide customer support activities

Our industry is characterized by the need for continual investment in research and development as well as customer service and support. As a result, our operating results could be materially affected if operating costs associated with our research and development as well as customer support activities increase in the future or we are unable to reduce those activities.

We may fail to adequately protect our intellectual property and, therefore, lose our competitive advantage

Our future success and competitive position depend in part upon our ability to obtain and maintain proprietary technology for our principal product families, and we rely, in part, on patent and trade secret law and confidentiality agreements to protect that technology. If we fail to adequately protect our intellectual property, it will give our competitors a significant advantage. We own or have licensed a number of patents relating to our transparent and opaque thin film metrology and macro-defect inspection systems, and have filed applications for additional patents. Any of our pending patent applications may be rejected, and we may be unable to develop additional proprietary technology that is patentable in the future.

In addition, the patents that we do own or that have been issued or licensed to us may not provide us with competitive advantages and may be challenged by third parties. Further, third parties may also design around these patents. In addition to patent protection, we rely upon trade secret protection for our confidential and proprietary information and technology. We routinely enter into confidentiality agreements with our employees and other third parties. However, in the event that a confidentiality agreement is breached, we may not have adequate remedies. Our confidential and proprietary information and technology might also be independently developed by, or become otherwise known to, third parties.

Protection of our intellectual property rights, or the efforts of third parties to enforce their own intellectual property rights against us, may result in costly and time-consuming litigation, substantial damages, lost product sales and/or the loss of important intellectual property rights

We may be required to initiate litigation in order to enforce any patents issued to or licensed by us, or to determine the scope or validity of a third party's patent or other proprietary rights. Any litigation, regardless of outcome, could be expensive and time consuming, and could subject us to significant liabilities or require us to re-engineer our products or obtain expensive licenses from third parties.

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In addition, our commercial success depends in part on our ability to avoid infringing or misappropriating patents or other proprietary rights owned by third parties. From time to time we may receive communications from third parties asserting that our products or systems infringe, or may infringe, the proprietary rights of these third parties. These claims of infringement may lead to protracted and costly litigation, which could require us to pay substantial damages or have the sale of our products or systems stopped by an injunction. Infringement claims could also cause product or system delays or require us to redesign our products or systems, and these delays could result in the loss of substantial revenues. We may also be required to obtain a license from the third party or cease activities utilizing the third party's proprietary rights. We may not be able to enter into such a license or such a license may not be available on commercially reasonable terms. Accordingly, the loss of important intellectual property rights could hinder our ability to sell our systems, or make the sale of these systems more expensive.

Our efforts to protect our intellectual property may be less effective in certain foreign countries, where intellectual property rights are not as well protected as in the United States

The laws of some foreign countries do not protect our proprietary rights to as great an extent as do the laws of the United States, and many U.S. companies have encountered substantial problems in protecting their proprietary rights against infringement abroad. For example, Taiwan is not a signatory of the Patent Cooperation Treaty, which is designed to specify rules and methods for defending intellectual property internationally. The publication of a patent in Taiwan prior to the filing of a patent in Taiwan would invalidate the ability of a company to obtain a patent in Taiwan. Similarly, in contrast to the United States where the contents of patents remain confidential during the patent application process, in Taiwan the contents of a patent are published upon filing which provides competitors an advance view of the contents of a patent application prior to the establishment of patent rights. Consequently, there is a risk that we may be unable to adequately protect its proprietary rights in certain foreign countries. If this occurs, it would be easier for our competitors to develop and sell competing products in these countries.

Some of our current and potential competitors have significantly greater resources than we do, and increased competition could impair sales of our products or cause us to reduce our prices

The market for semiconductor capital equipment is highly competitive. We face substantial competition from established companies in each of the markets we serve. We principally compete with KLA-Tencor and Camtek. We compete to a lesser extent with companies such as Nanometrics, Vistec and Nikon. Each of our products also competes with products that use different metrology or inspection techniques. Some of our competitors have greater financial, engineering, manufacturing and marketing resources, broader product offerings and service capabilities and larger installed customer bases than we do. As a result, these competitors may be able to respond more quickly to new or emerging technologies or market developments by devoting greater resources to the development, promotion and sale of products, which, in turn, could impair sales of our products. Further, there may be significant merger and acquisition activity among our competitors and potential competitors, which, in turn, may provide them with a competitive advantage over us by enabling them to rapidly expand their product offerings and service capabilities to meet a broader range of customer needs.

Many of our customers and potential customers in the semiconductor device manufacturing industry are large companies that require global support and service for their semiconductor capital equipment. We believe that our global support and service infrastructure is sufficient to meet the needs of our customers and potential customers. However, some of our competitors have more extensive infrastructures than we do, which could place us at a disadvantage when competing for the business of global semiconductor device manufacturers. Many of our competitors are investing heavily in the development of new systems that will compete directly with our systems. We have from time to time selectively reduced prices on our systems in order to protect our market share, and competitive pressures may necessitate further price reductions. We expect our competitors in each product area to continue to improve the design and performance of their products and to introduce new products with competitive prices and performance characteristics. These product introductions would likely require us to decrease the prices of our systems and increase the level of discounts that we grant our customers. Price reductions or lost sales as a result of these competitive pressures would reduce our total revenues and could adversely impact our financial results.

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Because of the high cost of switching equipment vendors in our markets, it is sometimes difficult for us to win customers from our competitors even if our systems are superior to theirs

We believe that once a semiconductor device manufacturer has selected one vendor's capital equipment for a production-line application, the manufacturer generally relies upon that capital equipment and, to the extent possible, subsequent generations of the same vendor's equipment, for the life of the application. Once a vendor's equipment has been installed in a production line application, a semiconductor device manufacturer must often make substantial technical modifications and may experience production-line downtime in order to switch to another vendor's equipment. Accordingly, unless our systems offer performance or cost advantages that outweigh a customer's expense of switching to our systems, it will be difficult for us to achieve significant sales to that customer once it has selected another vendor's capital equipment for an application.

We must attract and retain key personnel with knowledge of semiconductor device manufacturing and inspection and/or metrology equipment to help support our future growth, and competition for such personnel in our industry is high

Our success depends to a significant degree upon the continued contributions of our key management, engineering, sales and marketing, customer support, finance and manufacturing personnel. The loss of any of these key personnel, each of whom would be extremely difficult to replace, could harm our business and operating results. Although we have employment and noncompetition agreements with key members of our senior management team, including Messrs. McLaughlin and Roth, these individuals or other key employees may still leave us. We do not have key person life insurance on any of our executives. In addition, to support our future growth, we will need to attract and retain additional qualified employees. Competition for such personnel in our industry is intense, and we may not be successful in attracting and retaining qualified employees.

We obtain some of the components and subassemblies included in our systems from a limited group of suppliers, and the partial or complete loss of one of these suppliers could cause production delays and a substantial loss of revenues

We obtain some of the components and subassemblies included in our systems from a limited group of suppliers and do not have long-term contracts with many of our suppliers. Our dependence on limited source suppliers of components and our lack of long-term contracts with many of our suppliers exposes us to several risks, including a potential inability to obtain an adequate supply of components, price increases, late deliveries and poor component quality. Disruption or termination of the supply of these components could delay shipments of our systems, damage our customer relationships and reduce our sales. From time to time in the past, we have experienced temporary difficulties in receiving shipments from our suppliers. The lead-time required for shipments of some of our components can be as long as four months. In addition, the lead time required to qualify new suppliers for lasers could be as long as a year, and the lead time required to qualify new suppliers of other components could be as long as nine months. If we are unable to accurately predict our component needs, or if our component supply is disrupted, we may miss market opportunities by not being able to meet the demand for our systems. Further, a significant increase in the price of one or more of these components or subassemblies could seriously harm our results of operations and cash flows.

Any prolonged disruption in the operations of our manufacturing facilities could have a material adverse effect on our revenues

Our manufacturing processes are highly complex and require sophisticated and costly equipment and a specially designed facility. As a result, any prolonged disruption in the operations of our manufacturing facilities, whether due to technical or labor difficulties, or destruction of or damage as a result of a fire or any other reason, could seriously harm our ability to satisfy our customer order deadlines. If we cannot timely deliver our systems, our results from operations and cash flows could be materially and adversely affected.

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Failure to adjust our orders for parts and subcomponents in an accurate and timely manner in response to changing market conditions or customer acceptance of our products could adversely affect our financial position and results of operations

Our earnings could be negatively affected and our inventory levels could materially increase if we are unable to predict our inventory needs in an accurate and timely manner and adjust our orders for parts and subcomponents should our needs increase or decrease materially due to unexpected increases or decreases in demand for our products. Any material increase in our inventories could result in an adverse effect on our financial position, while any material decrease in our ability to procure needed inventories could result in an inability to supply customer demand for our products thus adversely affecting our revenues.

We may choose to acquire new and complementary businesses, products or technologies instead of developing them ourselves, and may be unable to complete these acquisitions or may not be able to successfully integrate an acquired business in a cost-effective and non-disruptive manner

Our success depends on our ability to continually enhance and broaden our product offerings in response to changing technologies, customer demands and competitive pressures. To this end, we have, from time to time, engaged in the process of identifying, analyzing and negotiating possible acquisition transactions and we expect to continue to do so in the future. We may choose to acquire new and complementary businesses, products, technologies and/or services instead of developing them ourselves. We may, however, face competition for acquisition targets from larger and more established companies with greater financial resources, making it more difficult for us to complete acquisitions. We cannot provide any assurance that we will be successful in consummating future acquisitions on favorable terms or that we will realize the benefits that we anticipate from one or more acquisitions that we consummate. Integrating any business, product technology or service we acquire could be expensive and time-consuming and/or disrupt our ongoing business. Further, there are numerous risks associated therewith, including but not limited to:

- diversion of management's attention from day-to-day operational matters and current products and customers;
- lack of synergy, or the inability to realize expected synergies;
- failure to commercialize the new technology or business;
- failure to meet the expected performance of the new technology or business;
- failure to retain key employees and customer or supplier relationships;
- lower-than-expected market opportunities or market acceptance of any new products; and
- unexpected reduction of sales of existing products by new products.

Our inability to consummate one or more acquisitions on such favorable terms or our failure to realize the intended benefits from one or more acquisitions, could have a material adverse effect on our business, liquidity, financial position and/or results of operations, including as a result of our incurrence of indebtedness and related interest expense and our assumption of unforeseen contingent liabilities. In order to finance any acquisitions, we might need to raise additional funds through public or private equity or debt financings. In that event, we could be forced to obtain financing on terms that are not favorable to us and, in the case of equity financing, that result in dilution to our stockholders. In addition, any impairment of goodwill or other intangible assets, amortization of intangible assets, write-down of other assets or charges resulting from the costs of acquisitions and purchase accounting could harm our business and operating results.

If we cannot effectively manage our growth, our business may suffer

Over the long-term we intend to continue to grow by increasing our sales efforts and completing strategic acquisitions. To effectively manage our growth, we must, among other things:

- engage, train and manage a larger sales force and additional service personnel;
- expand the geographic coverage of our sales force;

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- expand our information systems;
- identify and successfully integrate acquired businesses into our operations; and
- administer appropriate financial and administrative control procedures.

Our anticipated growth will likely place a significant strain on our management, financial, operational, technical, sales and administrative resources. Any failure to effectively manage our growth may cause our business to suffer and our stock price to decline.

Changes in tax rates or tax liabilities could affect results

As a global company, we are subject to taxation in the United States and various other countries. Significant judgment is required to determine and estimate worldwide tax liabilities. Our future annual and quarterly tax rates could be affected by numerous factors, including changes in the (1) applicable tax laws; (2) composition of earnings in countries with differing tax rates; or (3) valuation of our deferred tax assets and liabilities. In addition, we are subject to regular examination of our income tax returns by the Internal Revenue Service and other tax authorities. We regularly assess the likelihood of favorable or unfavorable outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. Although we believe our tax estimates are reasonable, there can be no assurance that any final determination will not be materially different from the treatment reflected in our historical income tax provisions and accruals, which could materially and adversely affect our results of operations.

Recent turmoil in the credit markets and the financial services industry may negatively impact our business, results of operations, financial condition or liquidity

Recently, the credit markets and the financial services industry have been experiencing a period of unprecedented turmoil and upheaval characterized by the bankruptcy, failure, collapse or sale of various financial institutions and an unprecedented level of intervention from the United States federal government. While the ultimate outcome of these events cannot be predicted, they may have a material adverse effect on our liquidity and financial condition if our ability to obtain credit from trade creditors were to be impaired. In addition, the recent economic crisis could also adversely impact our customers' ability to finance the purchase of systems from us or our suppliers' ability to provide us with product, either of which may negatively impact our business and results of operations.

Risks Related to the Semiconductor Device Industry

Cyclicality in the semiconductor device industry has led to substantial decreases in demand for our systems and may from time to time continue to do so

Our operating results are subject to significant variation due to the cyclical nature of the semiconductor device industry. Our business depends upon the capital expenditures of semiconductor device manufacturers, which, in turn, depend upon the current and anticipated market demand for semiconductors and products using semiconductors. The timing, length and severity of the up-and-down cycles in the semiconductor equipment industry are difficult to predict. This cyclical nature of the industry in which we operate affects our ability to accurately predict future revenue and, thus, future expense levels. When cyclical fluctuations result in lower than expected revenue levels, operating results may be adversely affected and cost reduction measures may be necessary in order for us to remain competitive and financially sound. During a down cycle, we must be in a position to adjust our cost and expense structure to prevailing market conditions and to continue to motivate and retain our key employees. In addition, during periods of rapid growth, we must be able to increase manufacturing capacity and personnel to meet customer demand. We can provide no assurance that these objectives can be met in a timely manner in response to industry cycles. If we fail to respond to industry cycles, our business could be seriously harmed.

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Our future rate of growth is highly dependent on the development and growth of the market for microelectronic device inspection and metrology equipment

We target our products to address the needs of microelectronic device manufacturers for defect inspection and metrology. If for any reason the market for microelectronic device inspection or metrology equipment fails to grow in the long term, we may be unable to maintain current revenue levels in the short term and maintain our historical growth in the long term. Growth in the inspection market is dependent to a large extent upon microelectronic manufacturers replacing manual inspection with automated inspection technology. Growth in the metrology market is dependent to a large extent upon new chip designs and capacity expansion of microelectronic manufacturers. There is no assurance that manufacturers will undertake these actions at the rate we expect.

Risks Related to our Stock

Provisions of our charter documents and Delaware law, as well as our stockholder rights plan, could discourage potential acquisition proposals and/or delay, deter or prevent a change in control of our company

Provisions of our certificate of incorporation and bylaws, as well as our stockholder rights plan, may inhibit changes in control of our company not approved by our board of directors. These provisions also limit the circumstances in which a premium can be paid for the common stock, and in which a proxy contest for control of our board may be initiated. These provisions provide for:

- a prohibition on stockholder actions through written consent;
- a requirement that special meetings of stockholders be called only by our chief executive officer or board of directors;
- advance notice requirements for stockholder proposals and director nominations by stockholders;
- limitations on the ability of stockholders to amend, alter or repeal our by-laws;
- the authority of our board to issue, without stockholder approval, preferred stock with such terms as the board may determine; and
- the authority of our board, without stockholder approval, to adopt a Stockholder Rights Plan. Such a Shareholder Rights Plan was adopted by the board of directors on June 27, 2005.

We are also entitled to avail ourselves of the protections of Section 203 of the Delaware General Corporation Law, which could inhibit changes in control of us.

Item 1B. Unresolved Staff Comments.

None.

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Item 2. Properties.

Our executive office building is located at One Rudolph Road in Flanders, New Jersey. We own and lease facilities for engineering, sales and service related purposes in the United States and six other countries — China, Japan, Korea, Singapore, Taiwan and Scotland. The following table indicates the general location, the general purpose and the square footage of our principal facilities. The expiration years of the leases covering the leased facilities are also indicated.

Location	Facility Purpose	Approximate Square Footage	Lease Expiration Year, Unless Owned
Flanders, New Jersey	Executive Office	20,000	Owned
Budd Lake, New Jersey	Engineering, Manufacturing and Service	83,500	2016
Bloomington, Minnesota	Engineering, Manufacturing and Service	78,500	2012
Lowell, Massachusetts	Engineering, Manufacturing and Service	9,500	2010
Richardson, Texas	Yield Metrology Group	21,000	Owned
Bohemia, New York	Engineering	6,000	2011
Snoqualmie, Washington	Engineering, Manufacturing and Service	27,000	2018
Hsin-Chu, Taiwan	Sales and Service	10,500	2010
Takatsu, Japan	Sales and Service	5,000	2010
Sungnam-si, Korea	Sales and Service	9,500	2009
Shanghai, China	Sales and Service	3,500	2009
Singapore	Sales and Service	2,000	2009
Scotland, United Kingdom	Sales and Service	1,000	2009

We also lease office space for other smaller sales and service offices in several locations throughout the world.

We believe that our existing facilities and capital equipment are adequate to meet our current requirements, and that suitable additional or substitute space is available on commercially reasonable terms if needed.

Item 3. Legal Proceedings.

From time to time we are subject to legal proceedings and claims in the ordinary course of business. We are not aware of any legal proceedings or claims that management currently believes would have a material adverse effect on our consolidated financial statements taken as a whole if determined adversely to the Company.

On March 5, 2009, the Company announced a favorable verdict in its patent infringement suit against Camtek, Ltd., of Migdal Hamek, Israel, concerning Rudolph's proprietary continuous scan wafer inspection technology. The jury determined in its verdict that all models of Camtek's Falcon inspection systems infringe Rudolph's US patent no. 6,826,298. In awarding approximately $6.8 million to Rudolph, the jury also rejected entirely Camtek's arguments that Rudolph's patent is invalid. This lawsuit was initially brought in 2005 by August Technology prior to its merger with Rudolph.

Item 4. Submission of Matters to a Vote of Security Holders.

No matters were submitted to a vote of security holders during the fourth quarter of the fiscal year covered by this report.

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PART II

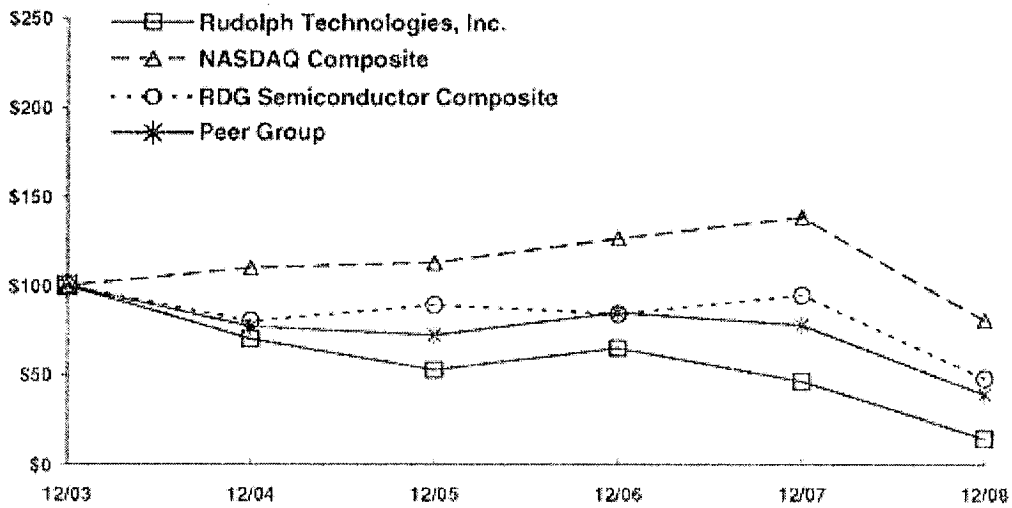
Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Our common stock is traded on the Nasdaq National Market under the symbol "RTEC." Set forth below is a line graph comparing the annual percentage change in the cumulative return to the stockholders of the Company's Common Stock with the cumulative return of the Nasdaq Composite Index, the Research Data Group (RDG) Semiconductor Composite Index, and a custom peer group for the period commencing on December 31, 2003, and ending on December 31, 2008. The peer group is comprised of capital equipment manufacturers for the semiconductor industry with relatively comparable revenues and market capitalizations to that of the Company. The peer group was recommended by a global management consulting firm. The companies included in the peer group are MKS Instruments, Inc., FEI Co., Brooks Automation, Inc., Cymer, Inc. , Veeco Instruments, Inc., Cabot Microelectronics Corp., ATMI, Inc., FormFactor, Inc., Axcelis Technologies, Inc., Advanced Energy Industries, Inc., Cohu, Inc., EMCORE Corp., Semitool, Inc., Mattson Technology, Inc., LTX-Credence, Corp, Nanometrics, Inc., Ultratech, Inc., PDF Solutions, Inc., and AXT, Inc.

The information contained in the performance graph shall not be deemed to be "soliciting material" or to be "filed" with the SEC, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent that the Company specifically incorporates it by reference into such filing.

The graph assumes that $100 was invested on December 31, 2003 in the Company's Common Stock and in each index, and that all dividends were reinvested. No cash dividends have been declared or paid on the Company's Common Stock. Stockholder returns over the indicated period should not be considered indicative of future stockholder returns. The Company operates on a 52-week calendar year.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*
Among Rudolph Technologies, Inc., The NASDAQ Composite Index,
The RDG Semiconductor Composite Index And A Peer Group



* $100 invested on 12/31/03 in stock or index-including reinvestment of dividends.
Fiscal year ending December 31.

	12/03	12/04	12/05	12/06	12/07	12/08
Rudolph Technologies, Inc.	100.0	69.97	52.49	64.87	46.13	14.38
NASDAQ Composite	100.0	110.06	112.92	126.61	138.33	80.65
RDG Semiconductor Composite	100.0	79.86	89.16	84.15	94.72	47.83
Peer Group	100.0	76.87	72.15	84.87	77.88	38.78

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The following table sets forth, for the periods indicated, the high and low sale prices per share of our common stock as reported on the NASDAQ National Market.

	Price Range of Common Stock	
	High	Low
Year Ended December 31, 2007		
First Quarter	$18.10	$14.83
Second Quarter	$18.21	$14.95
Third Quarter	$18.29	$11.50
Fourth Quarter	$15.09	$10.03
Year Ended December 31, 2008		
First Quarter	$11.45	$ 8.11
Second Quarter	$10.99	$ 7.70
Third Quarter	$11.02	$ 7.22
Fourth Quarter	$ 8.44	$ 2.03

As of February 19, 2009, there were 93 stockholders of record of our common stock and approximately 4,913 beneficial stockholders. The closing market value of our common stock on February 19, 2009 was $3.15.

We have never declared or paid a cash dividend on our common stock and do not anticipate paying any cash dividends in the foreseeable future. We currently intend to retain our earnings, if any, for the development of our business. The declaration of any future dividends by us is within the discretion of our Board of Directors and will be dependent on our earnings, financial condition and capital requirements as well as any other factors deemed relevant by our Board of Directors.

Certain Equity Compensation Plan Information included in Item 12 of Part III, hereof, is hereby incorporated into this Item 5 of Part II and will be included in our Proxy Statement for the 2009 Annual Meeting of Stockholders.

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Item 6. Selected Financial Data.

The following selected financial data should be read in conjunction with our Consolidated Financial Statements and the related Notes thereto appearing elsewhere in this Form 10-K, and "Management's Discussion and Analysis of Financial Condition and Results of Operations." The balance sheet data as of December 31, 2007 and 2008 and the statement of operations data for the years ended December 31, 2006, 2007 and 2008 set forth below were derived from our audited consolidated financial statements included elsewhere in this Form 10-K. The balance sheet data as of December 31, 2004, 2005 and 2006, and the statement of operations data for the years ended December 31, 2004 and 2005 were derived from our audited consolidated financial statements not included herein.

	Year Ended December 31,				
	2004	2005	2006(1)	2007(2)	2008(3)
	(In thousands, except per share data)				
Statement of Operations Data:					
Revenues	$84,248	$82,918	$201,168	$160,129	$ 131,040
Cost of revenues	44,595	44,390	103,726	78,889	87,388
Gross profit	39,653	38,528	97,442	81,240	43,652
Operating expenses:					
Research and development	15,847	11,901	29,856	29,993	31,644
In-process research and development	—	—	9,900	1,000	—
Selling, general and administrative	15,222	20,373	32,393	33,204	33,965
Impairment charge for goodwill and identifiable intangible assets	—	—	—	—	227,105
Amortization	876	876	4,048	4,487	5,890
Total operating expenses	31,945	33,150	76,197	68,684	298,604
Operating income (loss)	7,708	5,378	21,245	12,556	(254,952)
Interest income and other, net	1,899	1,388	3,191	4,149	1,151
Income (loss) before provision for income taxes	9,607	6,766	24,436	16,705	(253,801)
Provision (benefit) for income taxes	2,855	1,789	11,730	4,846	(4,115)
Net income (loss)	$ 6,752	$ 4,977	$ 12,706	$ 11,859	$(249,686)
Earnings (loss) per share:					
Basic	$ 0.40	$ 0.29	$ 0.47	$ 0.41	$ (8.16)
Diluted	$ 0.40	$ 0.29	$ 0.46	$ 0.40	$ (8.16)
Weighted average shares outstanding:					
Basic	16,746	16,899	27,276	29,168	30,614
Diluted	16,914	16,942	27,574	29,312	30,614

	December 31,				
	2004	2005	2006	2007	2008
Balance Sheet Data:					
Cash and cash equivalents	$ 12,627	$ 37,986	$ 72,479	$ 57,420	$ 67,735
Marketable securities	64,120	42,821	33,714	16,505	10,549
Working capital	120,403	125,678	200,942	176,298	147,688
Total assets	171,280	180,001	440,486	460,216	197,432
Retained earnings (accumulated deficit)	15,214	20,191	32,897	44,776	(204,910)
Total stockholders' equity	156,775	164,534	392,876	424,478	176,088

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(1) Effective January 1, 2006, we adopted the provisions prescribed by the Financial Accounting Standards Board in Statement of Financial Accounting Standards No. 123 (revised 2004), "Share-Based Payment." Consequently, we began recognizing compensation cost measured at fair value over the service period for stock awards expected to vest. In addition, Statement of Operations data reflects the results of operations of August Technology since February 15, 2006.

(2) Statement of Operations data reflects the results of operations of PCTA since December 18, 2007.

(3) Statement of Operations data reflects the results of operations of WSPG since January 22, 2008.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

Overview

We are a worldwide leader in the design, development, manufacture and support of high-performance process control metrology, defect inspection, and data analysis systems used by semiconductor device manufacturers. We provide yield management solutions used in both wafer processing and final manufacturing through a family of standalone systems and integrated modules for both transparent and opaque thin film measurements and macro-defect inspection. All of these systems feature production-worthy automation and are backed by worldwide customer support.

On February 15, 2006, the merger with August Technology was completed. Under the terms of the agreement, we paid an aggregate of $37.2 million in cash and issued an aggregate of 11.3 million shares of our common stock to former August Technology shareholders for a total purchase price of $246.7 million. The results of operations of August Technology have been included in our consolidated financial statements since the date of the merger. Due to the size of August Technology and the effects of purchase accounting, our financial position, results of operations and cash flows may not be comparable to prior periods. With the exception of future tax adjustments related to the merger, the effects of purchase accounting were completed in 2006.

On December 18, 2007, Rudolph and a wholly-owned subsidiary entered into and consummated the transactions contemplated by, an agreement with Applied Precision Holdings, LLC and Applied Precision, LLC (collectively, "Applied"), pursuant to which we purchased substantially all of the assets and assumed certain liabilities of the semiconductor division of Applied to be known as the Probe Card Test and Analysis division ("PCTA"). We paid $59.1 million in cash and acquisition costs and issued 1.3 million shares of common stock for a total purchase price of $73.2 million. PCTA is engaged in the business of designing, developing, manufacturing, marketing, selling and supporting advanced probe card metrology and wafer probe process monitoring equipment and is complementary to our existing business.

On January 22, 2008, we announced that we had acquired all intellectual property and selected assets from privately-held RVSI Inspection, LLC, headquartered in Hauppauge, New York. The acquired business is currently known as the Rudolph Technologies Wafer Scanner Product Group ("WSPG"). The transaction was accounted for using the purchase method of accounting for business combinations. The impact of the acquisition was not material to our consolidated financial position or results of operations.

Rudolph's business is affected by the annual spending patterns of our customers on semiconductor capital equipment. The amount that our customers devote to capital equipment spending depends on a number of factors, including general worldwide economic conditions as well as other economic drivers such as personal computer, cell phone and personal electronic device sales. Current forecasts by industry analysts for the semiconductor device manufacturing industry project a year-over-year decrease in capital spending of 40-50% for 2009. We monitor capital equipment spending through announced capital spending plans by our customers and monthly-published industry data such as the book-to-bill ratio. The book-to-bill ratio is a 3-month running statistic that compares bookings or orders placed with capital equipment suppliers to billings or shipments. A book-to-bill above one shows that semiconductor device equipment manufacturers are ordering equipment at a pace that exceeds the equipment suppliers' shipments for the period. The three month rolling average North American semiconductor equipment book-to-bill ratio was 0.9 for the month of December 2008, increasing from the September 2008 book-to-bill ratio of 0.7.

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Historically, a significant portion of our revenues in each quarter and year has been derived from sales to relatively few customers, and we expect this trend to continue. For the years ended December 31, 2006, 2007 and 2008, sales to customers that individually represented at least five percent of our revenues accounted for 40.9%, 37.1%, and 36.3% of our revenues, respectively. For the years ended December 31, 2006, 2007 and 2008, sales to Intel accounted for 14.0%, 11.5% and 10.9% of our revenues, respectively.

We do not have purchase contracts with any of our customers that obligate them to continue to purchase our products, and they could cease purchasing products from us at any time. A delay in purchase or cancellation by any of our large customers could cause quarterly revenues to vary significantly. In addition, during a given quarter, a significant portion of our revenues may be derived from the sale of a relatively small number of systems. Our transparent film measurement systems range in average selling price from approximately $250,000 to $1.0 million per system, our opaque film measurement systems range in average selling price from approximately $900,000 to $2.0 million per system and our macro-defect inspection and probe card and test analysis systems range in average selling price from approximately $250,000 to $1.4 million per system. Accordingly, a small change in the number of systems we sell may also cause significant changes in our operating results. Because fluctuations in the timing of orders from our major customers or in the number of our individual systems we sell could cause our revenues to fluctuate significantly in any given quarter or year, we do not believe that period-to-period comparisons of our financial results are necessarily meaningful, and they should not be relied upon exclusively as an indication of our future performance.

A significant portion of our revenues has been derived from customers outside of the United States. In 2006, approximately 70.6% of our revenues were derived from customers outside of the United States, of which 59.9% were derived from customers in Asia and 10.7% were derived from customers in Europe. In 2007, approximately 77.1% of our revenues were derived from customers outside of the United States, of which 58.5% were derived from customers in Asia and 18.6% were derived from customers in Europe. In 2008, approximately 76.5% of our revenues were derived from customers outside of the United States, of which 57.0% were derived from customers in Asia and 19.5% were derived from customers in Europe. We expect that revenues generated from customers outside of the United States will continue to account for a significant percentage of our revenues.

The sales cycle for our systems typically ranges from six to 15 months, and can be longer when our customers are evaluating new technology. Due to the length of these cycles, we invest significantly in research and development and sales and marketing in advance of generating revenues related to these investments. Additionally, the rate and timing of customer orders may vary significantly from month to month. Accordingly, if sales of our products do not occur when we expect, our expenses and inventory levels may increase relative to revenues and total assets.

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Results of Operations

The following table sets forth, for the periods indicated, our statements of operations data as percentages of our revenues. Our results of operations are reported as one business segment.

	Year Ended December 31,		
	2006	2007	2008
Revenues	100.0%	100.0%	100.0%
Cost of revenues	51.6	49.3	66.7
Gross profit	48.4	50.7	33.3
Operating expenses:			
Research and development	14.9	18.7	24.2
In-process research and development	4.9	0.6	—
Selling, general and administrative	16.1	20.8	25.9
Impairment charge for goodwill and identifiable intangible assets	—	—	173.3
Amortization	2.0	2.8	4.5
Total operating expenses	37.9	42.9	227.9
Operating income (loss)	10.5	7.8	(194.6)
Interest income and other, net	1.6	2.6	0.9
Income before provision (benefit) income taxes	12.1	10.4	(193.7)
Provision (benefit) for income taxes	5.8	3.0	(3.1)
Net income (loss)	6.3%	7.4%	(190.6)%

Results of Operations 2006, 2007 and 2008

Revenues. Our revenues are derived from the sale of our systems, services, spare parts and software licensing. Our revenues were $201.2 million, $160.1 million and $131.0 million in the years 2006, 2007 and 2008. These changes represent a decrease of 20.4% from 2006 to 2007 and a decrease of 18.2% from 2007 to 2008. The decreases in revenue from 2006 through 2008 are primarily due to the continued weakness in the overall semiconductor equipment manufacturing sector.

The following table lists, for the periods indicated, the different sources of our revenues in dollars and as percentages of our total revenues:

	Year Ended December 31,					
	2006		2007		2008	
Systems:						
Metrology	$ 68,035	34%	$ 34,738	22%	$ 21,118	16%
Inspection	100,666	50	85,012	53	71,348	55
Parts	14,217	7	13,678	9	19,262	15
Services	11,457	6	14,121	8	14,901	11
Software licensing	6,793	3	12,580	8	4,411	3
Total revenue	$201,168	100%	$160,129	100%	$131,040	100%

Systems revenue decreased from 2006 through 2008 due to continued weakness in the overall semiconductor equipment manufacturing sector and reflects a decrease in metrology systems revenue of $33.3 million and a decrease in inspection systems revenue of $15.7 million from 2006 to 2007, a decrease in metrology systems revenue of $13.6 and a decrease in inspection systems revenues of $13.7 million for 2007 to 2008. Systems revenue generated by our latest product releases and major enhancements in each of our product families amounted to 31% of total revenue for 2006 compared to 29% of total revenue for 2007 and 40% of total revenue for 2008. The year-

over-year increase in parts and service revenues in absolute dollars from 2006 to 2007 is primarily due to customers continuing to spend more on repair and maintenance of their existing equipment. Parts and services revenues are generated from part sales, maintenance service contracts, system upgrades, as well as time and material billable service calls. The year-over-year increase in parts and service revenues in absolute dollars from 2007 to 2008 reflects additional parts and service revenues from the PCTA and WSPG acquisitions. The year-over-year increase in software licensing revenues of $5.8 million from 2006 to 2007 reflects the sale of certain technology rights to Tokyo Electron. The year-over-year decrease in software licensing revenues of $8.2 million from 2007 to 2008 reflects the sale of certain technology rights to Tokyo Electron in 2007 not occurring in 2008 and weakness in the semiconductor market.

Deferred revenues of $4.4 million are recorded in other current liabilities at December 31, 2008 and primarily consist of $4.0 million for deferred maintenance agreements and $0.4 million for systems awaiting acceptance and outstanding deliverables.

Gross Profit. Our gross profit has been and will continue to be affected by a variety of factors, including inventory step-up from purchase accounting, manufacturing efficiencies, excess and obsolete inventory write-offs, pricing by competitors or suppliers, new product introductions, product sales mix, production volume, customization and reconfiguration of systems, international and domestic sales mix, and parts and service margins. Our gross profit was $97.4 million, $81.2 million and $43.7 million in 2006, 2007 and 2008, respectively. The increase in gross profit as a percentage of revenue from 2006 to 2007 is primarily due to the sales and transfer of certain technology rights to Tokyo Electron and higher charges to cost of goods sold in 2006. The decrease in gross profit as a percentage of revenue from 2007 to 2008 is primarily due to the inventory write-offs of $11.3 million and acquired inventory sold in the 2008 that was written up to fair value in purchase accounting.

Research and Development. The thin film transparent, opaque process control and macro-defect inspection and probe card test analysis market is characterized by continuous technological development and product innovations. We believe that the rapid and ongoing development of new products and enhancements to existing products, including the transition to copper and low-k dielectrics, the progression to 300 mm wafers, the continuous shrinkage in critical dimensions, and the evolution of ultra-thin gate process control, is critical to our success. Accordingly, we devote a significant portion of our technical, management and financial resources to research and development programs. Research and development expenditures consist primarily of salaries and related expenses of employees engaged in research, design and development activities. They also include consulting fees and the cost of related supplies. Our research and development expense was $29.9 million, $30.0 million and $31.6 million in 2006, 2007 and 2008, respectively. The year-over-year dollar increase from 2006 to 2007 is primarily due to the engineering team from the August Technology merger being included for the full year ended December 31, 2007, and the write-off of $0.5 million for certain software project costs, partially offset by cost containment initiatives. The year-over-year dollar increase from 2007 to 2008 primarily due to the engineering teams from the PCTA and WSPG acquistions being included for 2008, partially offset by headcount reductions and lower project costs as part of our cost reduction efforts. We continue to maintain our commitment to investing in new product development and enhancement to existing products in order to position ourselves for future growth.

In-Process Research and Development. In 2006, the merger with August Technology resulted in our recording of $9.9 million for the write-off of IPRD. At the time of the merger, we determined that the IPRD had not reached technological feasibility and that it did not have an alternative future use. The purchased in-process technology projects, which were comprised of macro-defect inspection and software projects, had a value assigned to them of $6.9 million and $3.0 million, respectively. The defect inspection projects, related to the next generation of our AXi defect detection systems with enhanced defect capture capabilities, and were approximately 90% complete as of the date of merger. The estimated costs to complete these projects consisted primarily of internal engineering labor costs and were completed by the third quarter of 2006. The software projects, related to new enhancement features to our next generation inspection products, and were approximately 50% complete as of the date of merger, with the remaining cost to complete consisting primarily of internal software development labor cost. The software projects were completed in 2007. We generated revenue from the inspection project in the third quarter of 2006 and the software project in 2007.

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In 2007, the acquisition of the PCTA resulted in our recording of $1.0 million for the write-off of IPRD. At the time of the acquisition, we determined that the IPRD had not reached technological feasibility and that it did not have an alternative future use. The purchased in-process technology project was a probe card test project related to the next generation of our ProbeWoRx systems with enhanced capabilities, and was approximately 20% complete as of the date of acquisition. The estimated costs to complete this project of $2.1 million consist primarily of internal engineering labor costs which will be completed in the first half of 2009. If we are not successful in completing the inspection project on a timely basis, the future sales of our inspection products may be adversely affected resulting in erosion of our market share.

Selling, General and Administrative. Selling, general and administrative expense is primarily comprised of salaries and related costs for sales, marketing, and general administrative personnel, as well as commissions and other non-personnel related expenses. Our selling, general and administrative expense was $32.4 million, $33.2 million and $34.0 million in 2006, 2007 and 2008, respectively. The year-over-year dollar increase from 2006 to 2007 in selling, general and administrative expense was primarily due to administrative costs associated with the merged activities of August Technology being included for the full year of 2007 and increased compensation costs. The year-over-year dollar increase from 2007 to 2008 in selling, general and administrative expense was primarily due to administrative costs associated with the merged activities of the PCTA and WSPG being included for 2008, partially offset by foreign exchange gains from our international operations.

Impairment Charge for Goodwill and Identifiable Intangible Assets. Impairment charge for goodwill and identifiable intangible assets was $0 for both 2006 and 2007 and $227.1 million in 2008. We performed our annual goodwill impairment test on October 31st. During October 2008, we experienced a significant decline in our stock price. As a result of the decline in stock price, our market capitalization plus an implied control premium fell significantly below the recorded value of our consolidated net assets as of the testing date. In performing the goodwill impairment test, we used current market capitalization, control premiums, discounted cash flows and other factors as the best evidence of fair value. The impairment test resulted in no value attributable to our goodwill and accordingly, we wrote off all of our $192.9 million of goodwill as of October 31, 2008.

In connection with the goodwill impairment test, we determined that our identifiable acquired intangible assets were impaired. The determination was based on the carrying values exceeding the future undiscounted cash flows and fair value attributable to such intangible assets. As a result, we recorded an impairment charge of $34.2 million as of October 31, 2008, which represents the difference between the estimated fair values of these long-lived assets as compared to their carrying values. Fair values were determined based upon market conditions, the relief from royalty approach which utilized cash flow projections, and other factors.

Interest Income and Other, Net. Interest income and other, net was $3.2 million, $4.1 million and $1.2 million in 2006, 2007 and 2008, respectively. Interest income and other, net consisted primarily of interest income and realized gains and losses on sales of marketable securities. The year-over year increase in interest income and other, net of $1.0 million from 2006 to 2007 is primarily due to higher invested cash balances and higher average interest rates. The year-over-year decrease in interest income and other, net of $2.9 million from 2007 to 2008 is primarily due to lower average invested cash balances and lower average interest rates.

Income Taxes. Income tax expense was $11.7 million, $4.8 million, respectively, in 2006 and 2007. In 2008 there was an income tax benefit of $4.1 million. Income tax expense for the years ended December 31, 2006 and 2007 was 48.0% and 29.0% of income before provision for income taxes, respectively. This differs from the federal statutory income tax rate of 35%, primarily as a result of state income taxes offset by benefits from research and development tax credits, the domestic manufacturing production deduction and tax exempt interest. In addition, our effective tax rate was impacted by the non-deductibility of the IPRD charges for tax purposes of $9.9 million and $1.0 million, respectively.

The income tax benefit for the year ended December 31, 2008 was $4.1 million or 1.6% of loss before benefit for income taxes. The income tax benefit differs from the amount that would result from applying the federal statutory income tax rate of 35% to our loss before benefit for income taxes, primarily due to our inability to record a full income tax benefit for the impairments of the goodwill and long-lived assets and valuation allowances in taxable jurisdictions.

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We evaluate the recoverability of deferred tax assets from future taxable income and establish valuation allowances if recovery is deemed not likely. The valuation allowance increased $0.3 million and $35.2 million in 2007 and 2008, respectively.

Liquidity and Capital Resources

At December 31, 2006, our cash, cash equivalents and marketable securities totaled $106.2 million, while working capital amounted to $200.9 million. At December 31, 2007, we had $73.9 million of cash, cash equivalents and marketable securities and $176.3 million in working capital. At December 31, 2008, we had $78.3 million of cash, cash equivalents and marketable securities and $147.7 million in working capital.

Typically during periods of revenue growth, changes in accounts receivable and inventories represent a use of cash as we incur costs and expend cash in advance of receiving cash from our customers. Similarly, during periods of declining revenue, changes in accounts receivable and inventories represent a source of cash as inventory purchases decline and revenue from prior periods is collected. However, in 2007 and 2008, as our revenues declined our change in inventories represented a use of cash. This was primarily due to increasing inventory related to new products and the acceleration of the slowdown in the semiconductor industry. Because of the lack of visibility in projected sales for 2009, we are uncertain as to the level of expected cash to be used in operating activities in 2009.

Net cash provided by operating activities in 2006, 2007 and 2008 totaled $20.6 million, $23.6 million and $15.4 million, respectively. During 2006, cash provided by operating activities was primarily due to net income, adjusted to exclude the effect of non-cash charges, of $42.6 million, an increase in deferred revenue of $7.9 million, an increase in other current liabilities of $1.0 million, an increase in accrued liabilities of $0.8 million and an increase in income taxes payable of $0.6 million, partially offset by an increase in accounts receivable of $25.1 million and an increase in inventories of $7.1 million. During 2007, cash provided by operating activities was primarily due to net income, adjusted to exclude the effect of non-cash charges, of $23.4 million and a decrease in accounts receivable of $21.4 million, partially offset by a decrease in deferred revenue of $6.1 million, an increase in inventories of $5.4 million, a decrease in accrued liabilities of $4.0 million, a decrease in accounts payable of $3.3 million and an increase in prepaid expenses and other assets of $2.3 million. During 2008, cash provided by operating activities was primarily due to a decrease in accounts receivable of $31.3 million, net loss, adjusted to exclude the effect of non-cash charges, of $2.2 million, partially offset by a decrease in accounts payable of $5.6 million, an increase in income taxes receivable of $4.2 million, an increase in inventories of $4.3 million, a decrease in accrued liabilities of $2.5 million and a decrease in deferred revenue of $1.6 million.

Net cash provided by investing activities in 2006 totaled $3.6 million. Net cash used in investing activities in 2007 and 2008 totaled $40.5 million and $5.7 million, respectively. In 2006, net cash provided by investing activities included proceeds from sales of marketable securities of $93.4 million, partially offset by purchases of marketable securities of $70.8 million, capital expenditures of $4.7 million, costs incurred for capitalized software of $2.2 million and acquisition costs for the August Technology merger of $12.1 million net of cash acquired of $29.9 million. In 2007, net cash used by investing activities included purchases of marketable securities of $77.7 million, acquisition costs for business combinations of $56.2 million, capital expenditures of $1.0 million, costs incurred for capitalized software of $0.7 million, partially offset by proceeds from sales of marketable securities of $95.1 million. In 2008, net cash used by investing activities included purchases of marketable securities of $15.5 million, acquisition costs for business combinations of $8.5 million, capital expenditures of $3.0 million, partially offset by proceeds from sales of marketable securities of $21.3 million. Capital expenditures over the next six months are expected to be approximately $1.3 million.

Net cash provided by financing activities was $10.1 million, $1.5 million and $0.2 million in 2006, 2007 and 2008, respectively. In 2006, net cash provided by financing activities was a result of proceeds received from sales of shares through share-based compensation plans of $9.0 million and tax benefit from share-based compensation plans of $1.2 million. In 2007, net cash provided by financing activities was a result of proceeds received from sales of shares through share-based compensation plans of $1.3 million and tax benefit from share-based compensation plans of $0.1 million. In 2008, net cash provided by financing activities was a result of proceeds received from

sales of shares through share-based compensation plans of $0.2 million.

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From time to time we evaluate whether to acquire new or complementary businesses, products and/or technologies. We may fund all or a portion of the purchase price of these acquisitions in cash. On December 18, 2007, we announced that our acquisition of the semiconductor division of Applied Precision Holdings, LLC had been completed. Under the terms of the agreement, we paid an aggregate of $59.1 million in cash and issued an aggregate of 1.3 million shares of our common stock to Applied Precision Holdings, LLC. On January 22, 2008, we announced that we had acquired all intellectual property and selected assets from privately-held RVSI Inspection, LLC, headquartered in Hauppauge, New York.

In July 2008, our Board of Directors approved a stock repurchase program of up to 3 million shares. We did not purchase any shares to date under this program.

Our future capital requirements will depend on many factors, including the timing and amount of our revenues and our investment decisions, which will affect our ability to generate additional cash. We believe that our existing cash, cash equivalents and marketable securities will be sufficient to meet our anticipated cash requirements for working capital and capital expenditures for the foreseeable future. Thereafter, if cash generated from operations and financing activities is insufficient to satisfy our working capital requirements, we may seek additional funding through bank borrowings, sales of securities or other means. There can be no assurance that we will be able to raise any such capital on terms acceptable to us or at all.

Contractual Obligations

The following table summarizes our significant contractual obligations at December 31, 2008, and the effect such obligations are expected to have on our liquidity and cash flows in future periods. This table excludes the liability for unrecognized tax benefits that totaled approximately $6.0 million at December 31, 2008. We are currently unable to provide a reasonably reliable estimate of the amount or periods when cash settlement of this liability may occur.

	Payments due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Operating lease obligations	$15,246	$ 2,691	$4,459	$3,082	$ 5,014
Open and committed purchase orders	10,471	10,471	—	—	—
Total	$25,717	$ 13,162	$4,459	$3,082	$ 5,014

Off-Balance Sheet Arrangements

The Company does not have any off-balance sheet arrangements that have or are reasonably likely to have a material effect on our financial condition, results of operations or liquidity and capital resources.

Critical Accounting Policies

Management's discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. We review the accounting policies we use in reporting our financial results on a regular basis. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities. On an ongoing basis, we evaluate our estimates, including those related to revenue recognition, accounts receivable, inventories, business acquisitions, intangible assets, share-based payments, income taxes and warranty obligations. We base our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Results may differ from these estimates due to actual outcomes being different from those on which we based our assumptions. These estimates and judgments are reviewed by management on an ongoing basis, and by the Audit Committee at the end of each quarter prior to the public release of our financial results. We believe the following critical accounting

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policies affect our more significant judgments and estimates used in the preparation of our consolidated financial statements.

Revenue Recognition. Revenue is recognized when there is persuasive evidence of an arrangement, delivery has occurred, the sales price is fixed or determinable, and collection of the related receivable is reasonably assured. Certain sales of our products are sold and accounted for as multiple element arrangements, consisting primarily of the sale of the product, software, installation and training services. We generally recognize product revenue upon shipment. In the limited circumstances where customer acceptance is subjective and not obtained prior to shipment, we defer product revenue until such time as positive affirmation of acceptance has been obtained from the customer. Customer acceptance is generally based on our products meeting published performance specifications. The amount of revenue allocated to the shipment of products is done on a residual method basis. Under this method, the total arrangement value is allocated first to undelivered contract elements, based on their fair values, with the remainder being allocated to product revenue. The fair value of installation and training services is based upon billable hourly rates and the estimated time to complete the service. Revenue related to undelivered installation services is deferred until such time as installation is completed at the customer's site. Revenue related to training services is recognized ratably over the training period. Revenue from software license fees is recognized upon shipment if collection of the resulting receivable is probable, the fee is fixed or determinable, and vendor-specific objective evidence exists to allocate a portion of the total fee to any undelivered elements of the arrangement. Such undelivered elements in these arrangements typically consist of follow-on support. If vendor-specific objective evidence does not exist for the undelivered elements of the arrangement, all revenue is deferred and recognized ratably over the support period.

Allowance for Doubtful Accounts. We maintain allowances for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. We specifically analyze accounts receivable and analyze historical bad debts, customer concentrations, customer credit-worthiness, current economic trends and changes in our customer payment terms when evaluating the adequacy of the allowance for doubtful accounts. If the financial condition of our customers were to deteriorate, resulting in an impairment of their ability to make payments or our assumptions are otherwise incorrect, additional allowances may be required.

Excess and Obsolete Inventory. We write down our excess and obsolete inventory equal to the difference between the cost of inventory and the estimated market value based upon assumptions about future product life-cycles, product demand and market conditions. If actual product life-cycles, product demand and market conditions are less favorable than those projected by management, additional inventory write-downs may be required.

Business Acquisitions. We account for acquired or merged businesses using the purchase method of accounting which requires that the assets acquired and liabilities assumed be recorded at the date of acquisition or merger at their respective fair values. The judgments made in determining the estimated fair value assigned to each class of assets acquired and liabilities assumed, as well as asset lives, can materially impact our consolidated financial position and results of operations. Accordingly, for significant items, we typically obtain assistance from independent valuation specialists.

There are several methods that can be used to determine the fair value of assets acquired and liabilities assumed. For intangible assets, we normally utilize the "income method." This method starts with a forecast of all of the expected future net cash flows. These cash flows are then adjusted to present value by applying an appropriate discount rate that reflects the risk factors associated with the cash flow streams. Some of the more significant estimates and assumptions inherent in the income method or other methods include the projected future cash flows (including timing) and the discount rate reflecting the risks inherent in the future cash flows. Determining the useful life of an intangible asset also requires judgment. For example, different types of intangible assets will have different useful lives and certain assets may even be considered to have indefinite useful lives. All of these judgments and estimates can significantly impact our consolidated financial position and results of operations.

The purchase price is preliminarily allocated based on estimates of the fair values of assets acquired and liabilities assumed. The final valuation of net assets is expected to be completed within one year from the acquisition or merger date. At the acquisition or merger date, we begin to formulate a plan to exit or restructure certain activities, if applicable. As we finalize our plans to exit or

restructure activities, we may record additional

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liabilities for, among other things, severance and severance related costs, which would also increase the goodwill recorded.

Goodwill. Our formal annual impairment testing date for goodwill is October 31st or prior to the next annual testing date if an event occurs or circumstances change that would make it more likely than not that the fair value of a reporting unit is below its carrying amount. The goodwill impairment test is a two-step process which requires us to make judgmental assumptions regarding fair value. The initial first step consists of estimating the fair value of our aggregated reporting unit using the market value of our common stock at October 31, multiplied by the number of outstanding common shares (market capitalization) and an implied control premium as if it were to be acquired by a single stockholder. We obtain information on completed sales of similar companies in a comparable industry to estimate an implied control premium for us. We compare the estimated fair value of the reporting unit to its carrying value which includes goodwill. If the results of the initial market capitalization test produce results which are below the reporting unit carrying value, we will also consider if, the market capitalization is temporarily low and, if so, we may also perform a discounted cash flow test. If the estimated fair value is less than the carrying value, the second step is completed to compute the impairment amount by determining the "implied fair value" of goodwill. This determination requires the allocation of the estimated fair value of the reporting unit to the assets and liabilities of the reporting unit. Any remaining unallocated fair value represents the "implied fair value" of goodwill which is compared to the corresponding carrying value to compute the goodwill impairment amount.

We performed our annual goodwill impairment test on October 31st. During the fourth quarter of 2008, the Company experienced a significant decline in its stock price. As a result of the decline in stock price, the Company's market capitalization plus an implied control premium fell significantly below the recorded value of its consolidated net assets as of the testing date. In performing the goodwill impairment test, the Company used current market capitalization, control premiums, discounted cash flows and other factors as the best evidence of fair value. The impairment test resulted in no value attributable to the Company's goodwill and accordingly, the Company wrote off all of its $192.9 million of goodwill as of October 31, 2008.

Long-Lived Assets and Acquired Intangible Assets. We periodically review long-lived assets, other than goodwill, for impairment whenever changes in events or circumstances indicate that the carrying amount of an asset may not be recoverable. Assumptions and estimates used in the determination of impairment losses, such as future cash flows and disposition costs, may affect the carrying value of long-lived assets and the impairment of such long-lived assets, if any, could have a material effect on our consolidated financial statements.

In connection with the goodwill impairment test as of October 31, 2008, the Company determined that its identifiable acquired intangible assets were impaired. The determination was based on the carrying values exceeding the future undiscounted cash flows and fair value attributable to such intangible assets. As a result, the Company recorded an impairment charge of $34.2 million, which represents the difference between the estimated fair values of these long-lived assets as compared to their carrying values. Fair values were determined based upon market conditions, the relief from royalty approach which utilized cash flow projections, and other factors.

As of December 31, 2008, we again tested for impairment of our long-lived assets and acquired intangible assets and determined no further impairment existed.

Share-Based Compensation. Effective January 1, 2006, we adopted the provisions of Statement of Financial Accounting Standards ("SFAS") No. 123 (revised 2004) "Share-Based Payment" ("SFAS 123R") using the modified-prospective-transition method. SFAS 123R requires companies to recognize the fair-value of share-based compensation transactions in the statement of operations. The fair value of our stock options is estimated at the date of grant using the Black-Scholes option pricing model. The Black-Scholes valuation calculation requires us to estimate key assumptions such as future stock price volatility, expected terms, risk-free rates and dividend yield. Expected stock price volatility is based on historical volatility of our stock. We use historical data to estimate option exercises and employee terminations within the valuation model. The expected term of options granted is derived from an analysis of historical exercises and remaining contractual life of stock options, and represents the period of time that options granted are expected to be outstanding. The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant. We have never paid cash dividends, and do not currently intend to pay cash dividends, and thus have assumed a 0% dividend

yield. If our actual experience differs significantly from the assumptions used

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to compute our share-based compensation cost, or if different assumptions had been used, we may have recorded too much or too little share-based compensation cost. In addition, we are required to estimate the expected forfeiture rate of our share grants and only recognize the expense for those shares expected to vest. If the actual forfeiture rate is materially different from our estimate, our share-based compensation expense could be materially different.

Warranties. We provide for the estimated cost of product warranties at the time revenue is recognized. While we engage in product quality programs and processes, our warranty obligation is affected by product failure rates, material usage and service delivery costs incurred in correcting a product failure. Should actual product failure rates, material usage or service delivery costs differ from our estimates, revisions to the estimated warranty liability would be required.

Accounting for Income Taxes. As part of the process of preparing our consolidated financial statements, we are required to estimate our actual current tax exposure together with our temporary differences resulting from differing treatment of items for tax and accounting purposes. These temporary differences result in deferred tax assets and liabilities, which are included within our consolidated balance sheet. We must then assess the likelihood that our deferred tax assets will be recovered from future taxable income and to the extent we believe that recovery is not likely, we must establish a valuation allowance. Significant management judgment is required in determining our provision for income taxes and any valuation allowance recorded against our deferred tax assets. The need for a valuation allowance is based on our estimates of taxable income by jurisdiction in which we operate and the period over which our deferred taxes will be recoverable. In the event that actual results differ from these estimates or we adjust these estimates in future periods, we may need to adjust the valuation allowance, which could materially impact our financial position and results of operations. At December 31, 2008, we had a valuation allowance of $36.5 million on most of our deferred tax assets to reflect the deferred tax asset at the net amount that is more likely than not to be realized.

We adopted FASB Financial Interpretation No. ("FIN") 48, "Accounting for Uncertainty in Income Taxes," at the beginning of fiscal 2007. As a result of the adoption of FIN 48, we recognize liabilities for uncertain tax positions based on the two-step process prescribed by the interpretation. The first step requires us to determine if the weight of available evidence indicates that the tax position has met the threshold for recognition; therefore, we must evaluate whether it is more likely than not that the position will be sustained on audit, including resolution of any related appeals or litigation processes. The second step requires us to measure the tax benefit of the tax position taken, or expected to be taken, in an income tax return as the largest amount that is more than 50% likely of being realized when effectively settled. This measurement step is inherently difficult and requires subjective estimations of such amounts to determine the probability of various possible outcomes. We reevaluate the uncertain tax positions each quarter based on factors including, but not limited to, changes in facts or circumstances, changes in tax law, effectively settled issues, and new audit activity. Such a change in recognition or measurement could result in the recognition of a tax benefit or an additional charge to the tax provision in the period.

Although we believe the measurement of our liabilities for uncertain tax positions is reasonable, no assurance can be given that the final outcome of these matters will not be different than what is reflected in the historical income tax provisions and accruals. If additional taxes are assessed as a result of an audit or litigation, it could have a material effect on our income tax provision and net income in the period or periods for which that determination is made.

Impact of Recent Accounting Pronouncements

In March 2008, the Financial Accounting Standards Board ("FASB") issued SFAS No. 161, "Disclosure about Derivatives Instruments and Hedging Activities-an amendment of FASB Statement No. 133" ("SFAS 161"), which requires enhanced disclosures about an entity's derivative and hedging activities and thereby improves the transparency of financial reporting. SFAS 161 is effective for financial statements issued for fiscal years and interim periods beginning after November 15, 2008 with early application encouraged. We are currently evaluating the potential impact of adopting SFAS 161.

In February 2008, the FASB adopted FASB Staff Position SFAS No. 157-2 - "Effective Date of FASB Statement No. 157" delaying the effective date of SFAS No. 157 for one year for all non

financial assets and non financial liabilities, except those that are recognized or disclosed at fair value in the financial statements on a recurring basis (at least annually). We are currently evaluating the impact of the implementation of SFAS No. 157 for non-financial assets and liabilities on our consolidated financial position, results of operations and cash flows.

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In December 2007, the FASB issued SFAS No. 141R, "Business Combinations" ("SFAS 141R"), which establishes principles and requirements for how an acquirer recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, any noncontrolling interest in an acquiree, and the recognition and measurement of goodwill acquired in a business combination or a gain from a bargain purchase. SFAS 141R applies prospectively to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after December 15, 2008.

In November 2007, the Emerging Issues Task Force ("EITF") issued EITF Issue No. 07-1 ("EITF 07-1"), "Accounting for Collaborative Arrangements," which defines collaborative arrangements and establishes reporting and disclosure requirements for such arrangements. EITF 07-1 is effective for fiscal years beginning after December 15, 2008. We are continuing to evaluate the impact of adopting the provisions EITF 07-1; however, we do not anticipate that adoption will have a material effect on our financial position or results of operations.

In February 2007, the FASB issued SFAS No. 159 ("SFAS 159"), "The Fair Value Option for Financial Assets and Financial Liabilities-Including an amendment of FASB Statement No. 115." SFAS 159 permits entities to choose to measure many financial instruments and certain other items at fair value. The objective is to improve financial reporting by providing entities with the opportunity to mitigate volatility in reporting earnings caused by measuring related assets and liabilities differently without having to apply complex hedge accounting provisions. SFAS 159 is effective for fiscal years that begin after November 15, 2007. We adopted SFAS 159 on January 1, 2008 and did not elect the fair value option for our financial instruments.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Interest Rate and Credit Market Risk

We are exposed to changes in interest rates and market liquidity primarily from our investments in certain available-for-sale securities. Our available-for-sale securities consist of fixed and variable rate income investments (U.S. Treasury and Agency securities, asset-backed securities, mortgage-backed securities, auction rate securities and corporate bonds). We continually monitor our exposure to changes in interest rates, market liquidity and credit ratings of issuers from our available-for-sale securities. It is possible that we are at risk if interest rates, market liquidity or credit ratings of issuers change in an unfavorable direction. The magnitude of any gain or loss will be a function of the difference between the fixed rate of the financial instrument and the market rate and our financial condition and results of operations could be materially affected. Based on sensitivity analysis performed on our financial investments held as of December 31, 2008, an immediate adverse change of 10% in interest rates (e.g. 3.00% to 3.30%) would result in an immaterial decrease in the fair value of our available-for-sale securities.

Foreign Currency Risk

We have branch operations in Taiwan, Singapore, China and Korea and wholly-owned subsidiaries in Europe and Japan. Our international subsidiaries and branches operate primarily using local functional currencies. These foreign branches and subsidiaries are limited in their operations and level of investment so that the risk of currency fluctuations is not material. A substantial portion of our international systems sales are denominated in U.S. dollars with the exception of Japan and, as a result, we have relatively little exposure to foreign currency exchange risk with respect to these sales. Substantially all our sales in Japan are denominated in Japanese yen. From time to time, we may enter into forward exchange contracts to economically hedge a portion of, but not all, existing and anticipated foreign currency denominated transactions expected to occur within 12 months. The change in fair value of the forward contracts is recognized in the Consolidated Statements of Operations each reporting period. As of December 31, 2007 and 2008, we had seventeen and sixteen forward contracts outstanding, respectively. The total notional contract value of these outstanding forward contracts at December 31, 2007 and 2008 was $5.7 million and $2.3 million, respectively. We do not use derivative financial instruments for trading or speculative purposes.

Item 8. Financial Statements and Supplementary Data.

The consolidated financial statements required by this item are set forth on the pages indicated at Item 15(a) of this Annual Report on Form 10-K.

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Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

A change in accountants was previously reported on a Current Report on Form 8-K filed on March 24, 2008.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time period specified in SEC rules and forms. These controls and procedures are also designed to ensure that such information is accumulated and communicated to our management, including our principal executive and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating disclosure controls and procedures, we have recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. Management is required to apply judgment in evaluating its controls and procedures.

We performed an evaluation under the supervision and with the participation of our management, including our principal executive and principal financial officers, to assess the effectiveness of the design and operation of our disclosure controls and procedures under the Exchange Act as of December 31, 2008. Based on that evaluation, our management, including our principal executive and principal financial officers, concluded that our disclosure controls and procedures were effective as of December 31, 2008.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on our evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2008.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our consolidated financial statements as of and for the year ended December 31, 2008 have been audited by Ernst & Young LLP, our independent registered public accounting firm, in accordance with the standards of the Public Company Accounting Oversight Board (United States). Ernst & Young LLP has also audited our internal control over financial reporting as of December 31, 2008, as stated in its attestation report included elsewhere in this Annual Report on Form 10-K.

There have been no changes during the Company's quarter ended December 31, 2008 in its internal control over financial reporting (as defined in Rules 13a-15(f) under the Exchange Act) that have materially affected, or are reasonably likely to materially affect, its internal control over financial reporting.

Item 9B. Other Information.

None.

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PART III

Certain information required by Part III is omitted from this Annual Report on Form 10-K because we will file a definitive proxy statement within one hundred twenty (120) days after the end of the fiscal year pursuant to Regulation 14A (the "Proxy Statement") for our Annual Meeting of Stockholders currently scheduled for May 19, 2009, and the information included in the Proxy Statement is incorporated herein by reference.

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this Item with respect to directors and executive officers is incorporated by reference to the Proxy Statement. Information regarding compliance with Section 16 of the Securities Exchange Act of 1934, as amended, is incorporated by reference to the information under the heading "Section 16(a) Beneficial Ownership Reporting Compliance" in the Proxy Statement.

Code of Ethics. We have adopted a code of ethics that applies to our principal executive officer, principal financial officer and controller. This code of ethics is posted on our internet website address at http://www.rudolphtech.com.

Item 11. Executive Compensation.

The information required by this Item is incorporated by reference to the Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this Item is incorporated by reference to the Proxy Statement.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this Item is incorporated by reference to the Proxy Statement.

Item 14. Principal Accounting Fees and Services.

The information required by this Item is incorporated by reference to the Proxy Statement.

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PART IV

Item 15. Exhibits and Financial Statement Schedule.

(a) The following documents are filed as part of this Annual Report on Form 10-K:

1. Financial Statements

The consolidated financial statements and consolidated financial statement information required by this Item are included on pages F-1 through F-8 of this report. The Reports of Independent Registered Public Accounting Firms appear on pages F-2 through F-4 of this report.

2. Financial Statement Schedule

See Index to financial statements on page F-1 of this report.

3. Exhibits

The following is a list of exhibits. Where so indicated, exhibits, which were previously filed, are incorporated by reference.

Exhibit No.	Description
2.1	Agreement and Plan of Merger, dated as of June 27, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation (incorporated by reference to Exhibit 99.2 to the Company's Schedule 13D filed with the SEC on July 7, 2005).
2.2	Amendment No. 1, dated as of December 8, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation, to the Agreement and Plan of Merger, dated as of June 27, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 9, 2005).
2.3	Asset Purchase Agreement dated as of December 18, 2007, by and among the Registrant, Mariner Acquisition Company LLC, Applied Precision Holding, LLC and Applied Precision, LLC (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 21, 2007).
3.1	Restated Certificate of Incorporation of Registrant (incorporated herein by reference to Exhibit (3.1(b)) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871 filed on September 9, 1999).
3.2	Amended and Restated Bylaws of Registrant (incorporated herein by reference to Exhibit (3.2(b)) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
3.3	Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on February 15, 2006, No. 000-27965).
3.4	Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on August 1, 2007, No. 000-27965).
3.5	Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on February 2, 2009, No. 000-27965).
4.1	Rights Agreement (incorporated by reference to Exhibit 4.1 of the Registrant's Registration Statement on Form 8-A, filed with the Commission on June 28, 2005, No 000-27965).
4.2	August Technology Corporation 1997 Stock Incentive Plan (incorporated by reference to the Appendix to August Technology Corporation's Proxy Statement for its 2004 Annual Shareholders Meeting, filed with the Commission on March 11, 2004, No. 000-30637).
10.1+	License Agreement, dated June 28, 1995, between the Registrant and Brown University Research Foundation (incorporated herein by reference to Exhibit (10.1) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on

September 9, 1999).

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Exhibit No.	Description
10.2	Form of Indemnification Agreement (incorporated herein by reference to Exhibit (10.3) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.3	Amended 1996 Non-Qualified Stock Option Plan (incorporated herein by reference to Exhibit 10.15 to Registrant's quarterly report on Form 10-Q, filed on November 14, 2001).
10.4	Form of 1999 Stock Plan (incorporated herein by reference to Exhibit (10.4) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.5	Form of 1999 Employee Stock Purchase Plan (incorporated herein by reference to Exhibit (10.5) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.6	Management Agreement, dated as of July 24, 2000, by and between Rudolph Technologies, Inc. and Paul F. McLaughlin (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000).
10.7	Management Agreement, dated as of July 24, 2000 by and between Rudolph Technologies, Inc. and Steven R. Roth (incorporated herein by reference to Exhibit 10.14 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000).
10.8	Registration Agreement, dated June 14, 1996 by and among the Registrant, 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul F. McLaughlin (incorporated herein by reference to Exhibit (10.9) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.9	Stockholders Agreement, dated June 14, 1996 by and among the Registrant, Administration of Florida, Liberty Partners Holdings 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul McLaughlin, Dale Moorman, Thomas Cooper and (incorporated herein by reference to Exhibit (10.10) to the Registrant's Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.10	Form of option agreement under 1999 Stock Plan (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 5, 2004).
10.11	Form of Restricted Stock Award pursuant to the Rudolph Technologies, Inc. 1999 Stock Plan (filed with Rudolph Technologies, Inc.'s Current Report on Form 8-K filed on June 21, 2005 and incorporated herein by reference).
10.12	Form of Company Shareholder Voting Agreement (incorporated by reference to Exhibit 99.2 to the Company's Schedule 13D filed with the SEC on July 7, 2005).
14.1	Rudolph Technologies Code of Business Conduct and Ethics (incorporated herein by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006).
14.2	Rudolph Technologies Financial Code of Ethics (incorporated herein by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006).
21.1	Subsidiaries.
23.1	Consent of KPMG LLP, Independent Registered Public Accounting Firm.
23.2	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm.
31.1	Certification of Paul F. McLaughlin, Chief Executive Officer, pursuant to Securities Exchange Act Rule 13a-14(a).
31.2	Certification of Steven R. Roth, Chief Financial Officer, pursuant to Securities Exchange Act Rule 13a-14(a).
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Paul F. McLaughlin, Chief Executive Officer of Rudolph Technologies, Inc.
32.2	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Steven R. Roth, Chief Financial Officer of Rudolph Technologies, Inc.

+ Confidential treatment has been granted with respect to portions of this exhibit.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS AND FINANCIAL STATEMENT SCHEDULE

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Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors of Rudolph Technologies, Inc.:

We have audited the accompanying consolidated balance sheet of Rudolph Technologies, Inc. and subsidiaries as of December 31, 2007 and the related consolidated statements of operations, stockholders' equity and comprehensive income (loss), and cash flows for each of the years in the two-year period ended December 31, 2007. In connection with our audits of the consolidated financial statements, we also have audited the consolidated financial statement schedule for each of the years in the two-year period ended December 31, 2007. These consolidated financial statements and the financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements and the financial statement schedule based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Rudolph Technologies, Inc. and subsidiaries as of December 31, 2007, and the results of their operations and their cash flows for each of the years in the two-year period ended December 31, 2007, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the related financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

As discussed in Note 13 to the consolidated financial statements, the Company adopted Financial Accounting Standards Board Interpretation No. 48, "Accounting for Uncertainties in Income Taxes", effective January 1, 2007.

As discussed in Note 2 to the consolidated financial statements, the Company adopted Statement of Financial Accounting Standards No. 123(R), "Share-Based Payment", effective January 1, 2006.

/s/ KPMG LLP

Short Hills, New Jersey
March 3, 2008

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
Rudolph Technologies, Inc.

We have audited the accompanying consolidated balance sheet of Rudolph Technologies, Inc. as of December 31, 2008, and the related consolidated statements of operations, stockholder's equity and comprehensive income (loss), and cash flows for the year ended December 31, 2008. Our audit also included the financial statement schedule listed in the index at Item 15(a). These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and schedule based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Rudolph Technologies, Inc. at December 31, 2008, and the consolidated results of its operations and its cash flows for the year ended December 31, 2008, in conformity with U.S. generally accepted accounting principles. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

As discussed in Note 4 to the consolidated financial statements, the Company adopted Statement of Financial Accounting Standards No. 159, "The Fair Value Option for Financial Assets and Financial Liabilities including an amendment of FASB Statement No. 115", effective January 1, 2008.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company's internal control over financial reporting as of December 31, 2008, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 5, 2009, expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Metropark, New Jersey
March 5, 2009

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
Rudolph Technologies, Inc.

We have audited Rudolph Technologies, Inc.'s internal control over financial reporting as of December 31, 2008, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (the COSO criteria). Rudolph Technologies, Inc.'s management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Rudolph Technologies, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2008, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheet of Rudolph Technologies, Inc. as of December 31, 2008, and the related consolidated statements of income, stockholders' equity and comprehensive income (loss) and cash flows for the year ended December 31, 2008 of Rudolph Technologies, Inc. and our report dated March 5, 2009 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Metropark, NJ
March 5, 2009

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS
(In thousands, except per share data)

	December 31, 2007	December 31, 2008
ASSETS		
Current Assets:		
Cash and cash equivalents	$ 57,420	$ 67,735
Marketable securities	16,505	10,549
Accounts receivable, less allowance of $214 in 2007 and $659 in 2008	50,015	21,764
Inventories	70,987	57,076
Income taxes receivable	404	4,698
Deferred income taxes	4,665	—
Prepaid expenses and other current assets	3,631	1,626
Total current assets	203,627	163,448
Property, plant and equipment, net	16,062	19,053
Goodwill	188,832	—
Identifiable intangible assets, net	48,125	9,654
Capitalized software	3,097	1,774
Deferred income taxes	—	2,903
Other assets	473	600
Total assets	$460,216	$ 197,432
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 7,975	$ 2,354
Accrued liabilities:		
Payroll and related expenses	3,910	2,805
Royalties	780	197
Warranty	2,365	1,813
Deferred revenue	5,956	4,422
Other current liabilities	6,343	4,169
Total current liabilities	27,329	15,760
Deferred income taxes	3,556	—
Other non-current liabilities	4,853	5,584
Total liabilities	35,738	21,344
Commitments and contingencies (Note 9)		
Stockholders' equity:		
Preferred stock, $0.001 par value, 5,000 shares authorized, no shares issued and outstanding at December 31, 2007 and 2008	—	—
Common stock, $0.001 par value, 50,000 shares authorized, 30,480 and 30,703 issued and outstanding at December 31, 2007 and 2008, respectively	30	31
Additional paid-in capital	379,886	383,510
Accumulated other comprehensive loss	(214)	(2,543)
Retained earnings (accumulated deficit)	44,776	(204,910)
Total stockholders' equity	424,478	176,088
Total liabilities and stockholders' equity	$460,216	$ 197,432

The accompanying notes are an integral part of these consolidated financial statements.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share data)

	Year Ended December 31,		
	2006	2007	2008
Revenues	$201,168	$160,129	$ 131,040
Cost of revenues	103,726	78,889	87,388
Gross profit	97,442	81,240	43,652
Operating expenses:			
Research and development	29,856	29,993	31,644
In-process research and development	9,900	1,000	—
Selling, general and administrative	32,393	33,204	33,965
Impairment charge for goodwill and identifiable intangible assets	—	—	227,105
Amortization	4,048	4,487	5,890
Total operating expenses	76,197	68,684	298,604
Operating income (loss)	21,245	12,556	(254,952)
Interest income and other, net	3,191	4,149	1,151
Income (loss) before provision (benefit) for income taxes	24,436	16,705	(253,801)
Provision (benefit) for income taxes	11,730	4,846	(4,115)
Net income (loss)	$ 12,706	$ 11,859	$(249,686)
Earnings (loss) per share:			
Basic	$ 0.47	$ 0.41	$ (8.16)
Diluted	$ 0.46	$ 0.40	$ (8.16)
Weighted average number of shares outstanding:			
Basic	27,276	29,168	30,614
Diluted	27,574	29,312	30,614

The accompanying notes are an integral part of these consolidated financial statements.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY AND COMPREHENSIVE INCOME (LOSS)
For the years ended December 31, 2006, 2007 and 2008
(In thousands)

	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Unearned Compensation	Retained Earnings (Accumulated Deficit)	Total	Comprehensive Income (Loss)
Balance at December 31, 2005	16,941	17	$ 147,278	$ (928)	$ (2,024)	$ 20,191	$ 164,534	
Proceeds from sales of shares through share-based compensation plans	738	1	8,957	—	—	—	8,958	
Net income	—	—	—	—	—	12,706	12,706	$ 12,706
Share-based compensation	—	—	1,936	—	—	—	1,936	
Adoption of SFAS 123R	—	—	(2,024)	—	2,024	—	—	
Excess tax benefit for sale of shares through share-based compensation plans	—	—	1,167	—	—	—	1,167	
Common stock issued in merger	11,298	11	197,822	—	—	—	197,833	
Assumed August Technology options	—	—	6,040	—	—	—	6,040	
Tax benefit on tax deductible transaction costs	—	—	(48)	—	—	—	(48)	
Currency translation	—	—	—	(401)	—	—	(401)	(401)
Unrealized gain on investments	—	—	—	151	—	—	151	151
Comprehensive income								$ 12,456
Balance at December 31, 2006	28,977	29	361,128	(1,178)	—	32,897	392,876	
Proceeds from sales of shares through share-based compensation plans	196	—	1,344	—	—	—	1,344	
Net income	—	—	—	—	—	11,859	11,859	$ 11,859
Adoption of FIN 48	—	—	—	—	—	20	20	
Share-based compensation	—	—	3,119	—	—	—	3,119	
Excess tax benefit for sale of shares through share-based compensation plans	—	—	148	—	—	—	148	
Common stock issued in acquisition	1,307	1	14,147	—	—	—	14,148	
Currency translation	—	—	—	812	—	—	812	812
Unrealized gain on investments	—	—	—	152	—	—	152	152
Comprehensive income								$ 12,823
Balance at December 31, 2007	30,480	30	379,886	(214)	—	44,776	424,478	
Proceeds from sales of shares through share-based compensation plans	223	1	219	—	—	—	220	
Net loss	—	—	—	—	—	(249,686)	(249,686)	$ (249,686)
Share-based compensation	—	—	3,405	—	—	—	3,405	—
Currency translation	—	—	—	(2,198)	—	—	(2,198)	(2,198)
Unrealized loss on investments	—	—	—	(131)	—	—	(131)	(131)
Comprehensive loss								$ (252,015)
Balance at December 31, 2008	30,703	$ 31	$ 383,510	$ (2,543)	$ —	$ (204,910)	$ 176,088	

The accompanying notes are an integral part of these consolidated financial statements.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,		
	2006	2007	2008
Cash flows from operating activities:			
Net income (loss)	$ 12,706	$ 11,859	$(249,686)
Adjustments to reconcile net income (loss) to net cash and cash equivalents provided by operating activities:			
Impairment of goodwill and identifiable intangible assets	—	—	227,105
Amortization	4,372	5,700	7,243
Depreciation	4,300	4,500	4,500
In-process research and development	9,900	1,000	—
Foreign currency exchange (gain) loss	55	45	(2,547)
Net loss on sale of marketable securities	162	—	79
Share-based compensation	1,936	3,119	3,405
Provision for doubtful accounts and inventory valuation	3,497	496	14,569
Deferred income taxes	5,718	(3,314)	(2,449)
Change in operating assets and liabilities excluding effects of business combinations:			
Accounts receivable	(25,096)	21,401	31,290
Income taxes receivable	—	(1,089)	(4,164)
Inventories	(7,079)	(5,395)	(4,287)
Prepaid expenses and other assets	323	(2,339)	815
Accounts payable	(438)	(3,326)	(5,571)
Accrued liabilities	790	(3,958)	(2,471)
Income taxes payable	610	(537)	—
Deferred revenue	7,873	(6,131)	(1,581)
Other current liabilities	1,017	(617)	(1,501)
Non-current liabilities	(1)	2,168	640
Net cash and cash equivalents provided by operating activities	20,645	23,582	15,389
Cash flows from investing activities:			
Purchases of marketable securities	(70,803)	(77,748)	(15,541)
Proceeds from sales of marketable securities	93,410	95,147	21,302
Purchases of property, plant and equipment	(4,664)	(1,007)	(2,966)
Capitalized software	(2,230)	(712)	(30)
Purchase of business, net of cash acquired	(12,109)	(56,166)	(8,474)
Net cash and cash equivalents provided by (used in) investing activities	3,604	(40,486)	(5,709)
Cash flows from financing activities:			
Proceeds from sales of shares through share-based compensation plans	8,957	1,344	220
Tax benefit for sale of shares through share-based compensation plans	1,167	148	—
Net cash and cash equivalents provided by financing activities	10,124	1,492	220
Effect of exchange rate changes on cash and cash equivalents	120	353	415
Net increase (decrease) in cash and cash equivalents	34,493	(15,059)	10,315
Cash and cash equivalents at beginning of year	37,986	72,479	57,420
Cash and cash equivalents at end of year	$ 72,479	$ 57,420	$ 67,735
Supplemental disclosure of cash flow information:			
Net cash paid during the period for:			
Income taxes	$ 4,097	$ 8,170	$ 1,945
Non-cash investing activities:			
Acquisition costs for business combinations	$ 6,039	$ 1,315	$ —
Stock issued for business combinations	$197,833	$ 14,022	$ —

The accompanying notes are an integral part of these consolidated financial statements.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(In thousands, except per share data)

1. Organization and Nature of Operations:

Rudolph Technologies, Inc. (the "Company") designs, develops, manufactures and supports high-performance process control equipment used in semiconductor device manufacturing. The Company has branch sales and service offices in China, Korea, Taiwan and Singapore and wholly-owned sales and service subsidiaries in Europe, Japan and Minnesota. The Company operates in a single segment and supports a wide variety of applications in the areas of diffusion, etch, lithography, CVD, PVD, CMP and macro-defect detection and classification.

On February 15, 2006, the Company completed its merger with August Technology Corporation. August Technology was a world-class provider of automated defect detection and product characterization systems for microelectronic device manufacturers. Their systems provided manufacturers with information that enables process-enhancing decisions, ultimately lowering manufacturing costs and decreasing time-to-market. They had traditionally provided systems to address the automated inspection needs of the early stages of the final manufacturing or back-end of the microelectronic device manufacturing process. In addition, they had introduced new products for edge and backside inspection systems for advanced macro-defect detection primarily in the front-end of the wafer manufacturing process. When used in conjunction with one another these systems allow a manufacturer to inspect the top, edge and back of a wafer's surface.

On December 18, 2007, the Company and a wholly-owned subsidiary of the Company entered into and consummated the transactions contemplated by, an agreement with Applied Precision Holdings, LLC and Applied Precision, LLC (collectively, "Applied"), pursuant to which it purchased substantially all of the assets and assumed certain liabilities of the semiconductor division of Applied to be known as the Rudolph Technologies Probe Card Test and Analysis division ("PCTA"). The PCTA is engaged in the business of designing, developing, manufacturing, marketing, selling and supporting advanced probe card metrology and wafer probe process monitoring equipment and is complementary to the Company's existing business.

2. Summary of Significant Accounting Policies:

A. Consolidation:

The consolidated financial statements reflect the accounts of the Company and its wholly-owned subsidiaries. All intercompany accounts and transactions have been eliminated.

B. Revenue Recognition:

Revenue is recognized upon shipment provided that there is persuasive evidence of an arrangement, delivery has occurred, the sales price is fixed or determinable, and collection of the related receivable is reasonably assured. Certain sales of the Company's products are sold and accounted for as multiple element arrangements, consisting primarily of the sale of the product, software, installation and training services. The Company generally recognizes product revenue upon shipment. In the limited circumstances where customer acceptance is subjective and not obtained prior to shipment, the Company defers product revenue until such time as positive affirmation of acceptance has been obtained from the customer. Customer acceptance is generally based on the Company's products meeting published performance specifications. The amount of revenue allocated to the shipment of products is done on a residual method basis. Under this method, the total arrangement value is allocated first to undelivered contract elements, based on their fair values, with the remainder being allocated to product revenue. The fair value of installation, training and other services is based upon billable hourly rates and the estimated time to complete the service. Revenue related to undelivered installation services is deferred until such time as installation is completed at the customer's site. Revenue related to training services is recognized ratably over the training period. Revenue from software license fees is recognized upon shipment if collection of the resulting receivable is probable, the fee is fixed or determinable, and vendor-specific objective evidence exists to allocate a portion of the total fee to any undelivered elements of the arrangement. If vendor specific

objective evidence does not exist for the

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undelivered elements of an arrangement that includes software, all revenue is deferred and recognized ratably over the period required to deliver the remaining elements.

Revenues from parts sales are recognized at the time of shipment. Revenue from service contracts is recognized ratably over the period of the contract. A provision for the estimated cost of fulfilling warranty obligations is recorded at the time the related revenue is recognized.

License support and maintenance revenue is recognized ratably over the contract period.

C. Estimates:

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Significant estimates made by management include allowance for doubtful accounts, inventory obsolescence, purchase accounting allocations, recoverability and useful lives of property, plant and equipment and identifiable intangible assets, recoverability of goodwill, recoverability of deferred tax assets, liabilities for product warranty, accruals for contingencies and share-based payments, including forfeitures and liabilities for tax uncertainties. Actual results could differ from those estimates.

D. Cash and Cash Equivalents:

Cash and cash equivalents include cash and highly liquid debt instruments with original maturities of three months or less when purchased.

E. Marketable Securities:

The Company determined that all of its investment securities are to be classified as available-for-sale. Available-for-sale securities are carried at fair value, with the unrealized gains and losses reported in stockholders' equity under the caption "Accumulated other comprehensive loss." Realized gains and losses, interest and dividends on available-for-sale securities are included in interest income and other, net. Available-for-sale securities are classified as current assets regardless of their maturity date if they are available for use in current operations. The Company reviews its investment portfolio to identify and evaluate investments that have indications of possible impairment. Factors considered in determining whether a loss is other-than-temporary include the length of time and extent to which fair value has been less than the cost basis, credit quality and the Company's ability and intent to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value. When a decline in fair value is determined to be other-than-temporary, unrealized losses on available-for-sale securities are charged against earnings. The specific identification method is used to determine the gains and losses on marketable securities.

For additional information on the Company's marketable securities, see Note 5 of Notes to the Consolidated Financial Statements.

F. Allowance for Doubtful Accounts:

The Company evaluates the collectability of accounts receivable based on a combination of factors. In the cases where the Company is aware of circumstances that may impair a specific customer's ability to meet its financial obligation, the Company records a specific allowance against amounts due, and thereby reduces the net recognized receivable to the amount management reasonably believes will be collected. For all other customers, the Company recognizes allowances for doubtful accounts based on the length of time the receivables are outstanding, industry and geographic

concentrations, the current business environment and historical experience.

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G. Inventories:

Inventories are stated at the lower of cost (first-in, first-out) or market. Cost includes material, labor and overhead costs. Demonstration units, which are available for sale, are stated at their manufacturing costs and reserves are recorded to adjust the demonstration units to their net realizable value, if lower than cost.

H. Property, Plant and Equipment:

Property, plant and equipment are stated at cost. Depreciation of property, plant and equipment is computed using the straight-line method over the estimated useful lives of the assets which are thirty years for buildings, four to seven years for machinery and equipment, seven years for furniture and fixtures, and three years for computer equipment. Leasehold improvements are amortized using the straight-line method over the lesser of the lease term or the estimated useful life of the related asset. Repairs and maintenance costs are expensed as incurred and major renewals and betterments are capitalized.

I. Impairment of Long-Lived Assets:

Long-lived assets, such as property, plant, and equipment, and identifiable acquired intangible assets with definite useful lives, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized by the amount by which the carrying amount of the asset exceeds the fair value of the asset, which is generally based on discounted cash flows.

J. Goodwill and Other Intangible Assets:

Intangible assets with definitive useful lives are amortized using the straight-line method over their estimated useful lives. Goodwill and intangible assets with indefinite useful lives are not amortized but are tested for impairment at least annually and when there are indications of impairment in accordance with the provisions of Statement of Financial Accounting Standards ("SFAS") No. 142, "Goodwill and Other Intangible Assets." Under SFAS No. 142, goodwill impairment is deemed to exist if the net book value of a reporting unit exceeds its estimated fair value. The Company estimates the fair value of its aggregated reporting unit using the market value of its common stock at October 31 multiplied by the number of outstanding common shares (market capitalization) and an implied control premium as if it were to be acquired by a single stockholder. The Company obtains information on completed sales of similar companies in our industry to estimate the implied control premium for the Company. If the results of the initial market capitalization test produce results which are below the reporting unit carrying value, the Company may also perform a discounted cash flow test. The Company tested for goodwill impairment on October 31, 2008.

For additional information on the Company's goodwill and other intangible assets, see Note 8 of Notes to the Consolidated Financial Statements.

K. Concentration of Credit Risk:

Financial instruments, which potentially subject the Company to concentrations of credit risk, consist primarily of accounts receivable, cash and cash equivalents and marketable securities. The Company performs ongoing credit evaluations of its customers and generally does not require collateral for sales on credit. The Company maintains allowances for potential credit losses. The Company maintains cash and cash equivalents and marketable securities with higher credit quality

issuers and monitors the amount of credit exposure to any one issuer.

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L. Warranties:

The Company generally provides a warranty on its products for a period of twelve to fifteen months against defects in material and workmanship. The Company provides for the estimated cost of product warranties at the time revenue is recognized.

M. Income Taxes:

The Company accounts for income taxes using the asset and liability approach for deferred taxes which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in the Company's consolidated financial statements or tax returns. A valuation allowance is recorded to reduce a deferred tax asset to that portion which more likely than not will be realized. Additionally, taxes are separated into current and non-current amounts based on the classification of the related amounts for financial reporting purposes. The Company does not provide for federal income taxes on the undistributed earnings of its foreign operations as it is the Company's intention to permanently re-invest undistributed earnings.

On July 13, 2006, the Financial Accounting Standards Board ("FASB") issued Interpretation No. 48, "Accounting for Uncertainty in Income Taxes — An Interpretation of FASB Statement No. 109" ("FIN 48"). Under FIN 48, the impact of an uncertain income tax position is recognized at the largest amount that is more-likely-than-not to be sustained upon audit by the relevant taxing authority and includes consideration of interest and penalties. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained. Under FIN 48, the liability for unrecognized tax benefits is classified as non-current unless the liability is expected to be settled in cash within 12 months of the reporting date.

For additional information on the Company's income taxes, see Note 13 of Notes to the Consolidated Financial Statements.

N. Translation of Foreign Currencies:

The Company's international subsidiaries and branch offices operate primarily using local functional currencies. Assets and liabilities are translated at exchange rates in effect at the balance sheet date, and income and expense accounts and cash flow items are translated at average monthly exchange rates during the period.

Net exchange gains or losses resulting from the translation of foreign financial statements and the effect of exchange rates on intercompany transactions of a long-term investment nature are recorded directly as a separate component of stockholders' equity under the caption, "Accumulated other comprehensive loss". Any foreign currency gains or losses related to transactions are included in operating results. The Company had accumulated exchange losses resulting from the translation of foreign operation financial statements of $198 and $2,396 as of December 31, 2007 and 2008, respectively.

O. Share-based Compensation:

On January 1, 2006, the Company adopted SFAS No. 123 (revised 2004), "Share-Based Payment" ("SFAS 123R") using the modified prospective method, which requires measurement of compensation cost for all stock awards at fair value on date of grant and recognition of compensation cost over the service period for awards expected to vest. The fair value of stock options is determined using the Black-Scholes valuation model, which is consistent with the Company's valuation model previously utilized for options in footnote disclosures required under SFAS 123, as amended by SFAS 148. The Black-Scholes valuation calculation requires the Company to estimate key assumptions such as future stock price volatility, expected terms, risk-free interest rates and dividend yield. Expected stock price volatility is based on historical volatility of the Company's stock. The

Company uses historical data to estimate option exercises and employee terminations within the valuation model. The expected term of options granted is derived from an analysis of historical exercises and remaining contractual

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life of stock options, and represents the period of time that options granted are expected to be outstanding. The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant. The Company has never paid cash dividends, and does not currently intend to pay cash dividends, and thus has assumed a 0% dividend yield. Such value is recognized as expense over the service period, net of estimated forfeitures. The estimation of stock awards that will ultimately vest requires significant judgment. The Company considers many factors when estimating expected forfeitures, including types of awards, employee class, and historical experience. Actual results, and future changes in estimates, may differ substantially from the Company's current estimates. Prior to the adoption of SFAS 123R, the Company recorded forfeitures as incurred. Upon adoption of SFAS 123R, compensation expense for all share-based payments includes an estimate for forfeitures and is recognized over the expected term of the share-based awards using the straight-line method. The impact of this change on prior period compensation cost was immaterial. Additionally, the unearned compensation of $2,021 at the SFAS 123R adoption date relating to previous restricted stock unit grants was offset against additional paid-in capital.

For additional information on the Company's share-based compensation plans, see Note 11 of Notes to the Consolidated Financial Statements.

P. Research and Development and Software Development Costs:

Expenditures for research and development are expensed as incurred. The Company accounts for software development costs in accordance with SFAS No. 86, "Accounting for Costs of Computer Software to Be Sold, Leased or Marketed." SFAS No. 86 requires that certain software product development costs incurred after technological feasibility has been established, be capitalized and amortized, commencing upon the general release of the software product to the Company's customers, over the economic life of the software product. Annual amortization of capitalized costs is computed using the greater of: (i) the ratio of current gross revenues for the software product over the total of current and anticipated future gross revenues for the software product or (ii) the straight-line basis, typically over seven years. Software product development costs incurred prior to the product reaching technological feasibility are expensed as incurred and included in research and development costs. At December 31, 2007 and 2008, capitalized software development costs were $3,097 and $1,774, respectively. During the years ended December 31, 2006, 2007 and 2008, software development cost amortization totaled $345, $704 and $689, respectively. During 2007 and 2008, the Company recorded write-downs of capitalized software of $507 and $664, respectively, in research and development in the Consolidated Statement of Operations.

Q. Fair Value of Financial Instruments:

The carrying amounts of the Company's financial instruments, including cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities, approximate fair value due to their short maturities.

R. Derivative Instruments and Hedging Activities:

The Company reports derivatives and hedging activities in accordance with SFAS No. 133, "Accounting for Derivative Instruments and Hedging Activities." This statement requires that all derivative instruments be recorded on the balance sheet at fair value. Changes in the fair value of derivatives are recorded each period in current earnings or accumulated other comprehensive loss, depending on whether the derivative is designated as part of a hedge transaction, and if it is, depending on the type of hedge transaction.

The Company, when it considers it to be appropriate, enters into forward contracts to hedge the economic exposures arising from foreign currency denominated transactions. At December 31, 2007 and 2008, these contracts included the sale of Japanese Yen to purchase U.S. dollars. The foreign

currency forward contracts were entered into by our Japanese subsidiary to hedge a portion of certain intercompany obligations. The forward contracts are not designated as hedges for accounting purposes and therefore, the change in fair value is recorded in selling, general and administrative expenses in the Consolidated Statements of Operations.

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The dollar equivalent of the US dollar forward contracts and related fair values as of December 31, 2007 and 2008 were as follows:

	December 31,	
	2007	2008
Notional amount	$5,706	$2,322
Fair value of liability	$ 127	$ 226

The Company recognized a gain of $106 and $278 with respect to forward contracts which matured during 2006 and 2007, respectively. The Company recognized a loss of $720 with respect to forward contracts which matured during 2008. The aggregate notional amount of these contracts was $6,277, $8,802 and $6,964, for 2006, 2007 and 2008, respectively.

S. Recent Accounting Pronouncements:

In March 2008, the Financial Accounting Standards Board ("FASB") issued SFAS No. 161, "Disclosure about Derivatives Instruments and Hedging Activities-an amendment of FASB Statement No. 133" ("SFAS 161"), which requires enhanced disclosures about an entity's derivative and hedging activities and thereby improves the transparency of financial reporting. SFAS 161 is effective for financial statements issued for fiscal years and interim periods beginning after November 15, 2008 with early application encouraged. The Company is currently evaluating the potential impact of adopting SFAS 161.

In February 2008, the FASB adopted FASB Staff Position SFAS No. 157-2 - "Effective Date of FASB Statement No. 157" delaying the effective date of SFAS No. 157 for one year for all non financial assets and non financial liabilities, except those that are recognized or disclosed at fair value in the financial statements on a recurring basis (at least annually). The Company is currently evaluating the impact of the implementation of SFAS No. 157 for non-financial assets and liabilities on its consolidated financial position, results of operations and cash flows.

In December 2007, the FASB issued SFAS No. 141R, "Business Combinations" ("SFAS 141R"), which establishes principles and requirements for how an acquirer recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, any noncontrolling interest in an acquiree, and the recognition and measurement of goodwill acquired in a business combination or a gain from a bargain purchase. SFAS 141R applies prospectively to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after December 15, 2008.

In November 2007, the EITF issued EITF Issue No. 07-1 ("EITF 07-1"), "Accounting for Collaborative Arrangements," which defines collaborative arrangements and establishes reporting and disclosure requirements for such arrangements. EITF 07-1 is effective for fiscal years beginning after December 15, 2008. The Company is continuing to evaluate the impact of adopting the provisions EITF 07-1; however, it does not anticipate that adoption will have a material effect on its financial position or results of operations.

In February 2007, the FASB issued SFAS No. 159 ("SFAS 159"), "The Fair Value Option for Financial Assets and Financial Liabilities-Including an amendment of FASB Statement No. 115." SFAS 159 permits entities to choose to measure many financial instruments and certain other items at fair value. The objective is to improve financial reporting by providing entities with the opportunity to mitigate volatility in reporting earnings caused by measuring related assets and liabilities differently without having to apply complex hedge accounting provisions. SFAS 159 is effective for fiscal years that begin after November 15, 2007. The Company adopted SFAS 159 on January 1, 2008 and did not elect the fair value option for its financial instruments.

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3. Business Combinations:

August Technology

On February 15, 2006, the merger with August Technology was approved by its shareholders, and the issuance of shares of Rudolph common stock was approved by Rudolph's stockholders, at their respective special meetings. The combined company is known as Rudolph Technologies, Inc. The aggregate purchase price was $246,739, consisted of $37,200 in cash, 11,298 shares of common stock valued at $197,833, the fair value of assumed August Technology options of $6,040 and transaction costs of $5,666.

The transaction was accounted for using the purchase method of accounting for business combinations and, accordingly, the results of operations of August Technology have been included in the Company's consolidated financial statements since the date of merger. With the exception of future tax adjustments related to the merger, the effects of purchase accounting were completed during 2006. The fair value of inventories included a step-up of $3,842, of which $3,699 and $143 were recognized in cost of revenues for the years ended December 31, 2006 and 2007, respectively. At the merger date, the Company formulated a plan to exit or restructure certain activities. The Company recorded $173 for these activities, which have occurred during the year ended December 31, 2006.

Approximately $9.9 million of the acquired identifiable intangible assets represented the estimated fair value of in-process research and development ("IPRD") projects that had not yet reached technological feasibility and had no alternative future use. Accordingly, this amount was immediately expensed in the Consolidated Statement of Operations at the merger date.

PCTA

On December 18, 2007, Rudolph and a wholly-owned subsidiary of the Company entered into, and consummated the transactions contemplated by, an Asset Purchase Agreement with Applied Precision Holdings, LLC and Applied Precision, LLC (collectively, "Applied"), pursuant to which the Company purchased substantially all of the assets and assumed certain liabilities of the semiconductor division of Applied to be known as the Rudolph Technologies Probe Card Test and Analysis division ("PCTA"). The PCTA is engaged in the business of designing, developing, manufacturing, marketing, selling and supporting advanced probe card metrology and wafer probe process monitoring equipment and is complementary to the Company's existing business.

The closing under the Asset Purchase Agreement occurred on December 18, 2007 and the Company paid $59,134 in cash and acquisition costs, of which $57,897 was paid during 2007, and issued 1,307 shares of common stock for a total purchase price of $73,168. The measurement date was determined to be the date the acquisition was consummated since the number of shares to be distributed was not determinable until that date. The market price used to value the Rudolph shares issued as consideration for PCTA was $10.73, which represents the average closing market price of Rudolph's common stock for the three day period ended December 18, 2007.

The Company agreed to assume the following liabilities of the PCTA: accounts payable, assigned contracts, licenses and leases, warranty claims and employee liabilities, all as more fully described in the Asset Purchase Agreement. In addition, the Company agreed to assume the defense of and all obligations relating to certain litigation pending against Applied at the acquisition date.

The transaction was accounted for using the purchase method of accounting for business combinations and, accordingly, the results of operations of the PCTA have been included in the Company's consolidated financial

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statements since the date of acquisition. The following table summarizes the fair value of the assets acquired and liabilities assumed at the date of acquisition:

Accounts receivable	$ 5,659
Inventories	9,631
Prepaid expenses and other current assets	61
Property, plant and equipment	1,122
Goodwill	46,175
Identifiable assets	16,200
Accounts payable and accrued liabilities	(5,521)
Deferred revenue	(159)
	$73,168

The fair value of inventories included a step-up of $2,252, of which $1,236 was recognized in cost of revenues for the year ended December 31, 2008. At the acquisition date, the Company formulated a plan to exit or restructure certain activities. The Company recorded $254 for these activities during the year ended December 31, 2007.

Factors that contributed to a purchase price that resulted in recognition of goodwill include:

- the combination of PCTA and Rudolph products should allow the combined company to offer its customers a more comprehensive suite of tools and a better integrated set of tools, thus enhancing the Company's ability to compete more effectively;
- the ability of the assembled workforce to continue to deliver value-added solutions and develop new products and industry leading production technologies that solve customer problems;
- consolidation of territorial sales activities and common marketing programs;
- redeployment or elimination of duplicative functional and facilities costs;
- reduction of customer service costs as a result of the consolidation of the companies' global customer service and regional support networks; and
- the combined experience, financial resources, development expertise, size and breadth of product offerings of the combined company may allow it to respond more quickly and effectively to technological change, increased consolidation and industry demands

Of the $16,200 of acquired identifiable assets, the following table reflects the allocation of the acquired identifiable assets and related preliminary estimates of useful lives:

Developed technology	$11,600	8 years estimated useful life
Customer and distributor relationships	2,900	7.2 years weighted average estimated useful life
Trade names	700	3 years estimated useful life
In-process research and development	1,000	
	$16,200	

Approximately $1.0 million of the acquired identifiable intangible assets represents the estimated fair value of in-process research and development ("IPRD") projects that had not yet reached technological feasibility and had no alternative future use. Accordingly, this amount was immediately expensed in the Consolidated Statement of Operations at the merger date. The purchased in-process technology project was a probe card test project, related to the next generation of the company's ProbeWoRx systems with enhanced capabilities, and was approximately 20%

complete as of the date of acquisition. The costs to complete this project consist primarily of internal engineering labor costs and will be completed in the first half of 2009. If we are not successful in completing the inspection project on a timely basis, the future sales of the Company's inspection products may be adversely affected resulting in erosion of the Company's market share.

Pro Forma Combined Results of Operations

The following unaudited pro forma consolidated financial information presents the combined results of operations of the Company and PCTA as if the respective merger and acquisition occurred at the beginning of the period presented, after giving effect to certain adjustments, including interest income and amortization expense. Due to the non-recurring nature of the IPRD and inventory step-up charges, these amounts have not been included in the unaudited pro forma consolidated financial information. The unaudited pro forma consolidated financial information does not necessarily reflect the results of operations that would have occurred had the merger and acquisition been completed as of the date indicated or of the results that may be obtained in the future.

	Year Ended December 31,	
	2006	2007
	(Unaudited)	
Revenues	$249,731	$194,262
Net income	$ 25,526	$ 13,213
Earnings per share:		
Basic	$ 0.85	$ 0.43
Diluted	$ 0.84	$ 0.43

RVSI Inspection

On January 22, 2008, the Company announced that it had acquired all intellectual property and selected assets from privately-held RVSI Inspection, LLC, headquartered in Hauppauge, New York. The acquired business is currently known as the Rudolph Technologies Wafer Scanner Product Group. The transaction was accounted for using the purchase method of accounting for business combinations. The impact of the acquisition was not material to the Company's consolidated financial position or results of operations.

4. Fair Value Measurements:

In September 2006, the FASB issued SFAS No. 157, which is effective for fiscal years beginning after November 15, 2007 and for interim periods within those years. This statement defines fair value, establishes a framework for measuring fair value and expands the related disclosure requirements. This statement applies under other accounting pronouncements that require or permit fair value measurements. The statement indicates, among other things, that a fair value measurement assumes that the transaction to sell an asset or transfer a liability occurs in the principal market for the asset or liability or, in the absence of a principal market, the most advantageous market for the asset or liability. SFAS No. 157 defines fair value based upon an exit price model.

The Company adopted SFAS No. 157 on January 1, 2008, with the exception of the application of the statement to non-recurring measurements of nonfinancial assets and nonfinancial liabilities. Non-recurring nonfinancial assets and nonfinancial liabilities for which the Company has not applied the provisions of SFAS No. 157 to include those measured at fair value in goodwill impairment testing and those initially measured at fair value in a business combination.

SFAS No. 157 establishes a valuation hierarchy for disclosure of the inputs to valuation used to measure fair value. This hierarchy prioritizes the inputs into three broad levels as follows. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities. Level 2 inputs are quoted prices for similar assets

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and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument. Level 3 inputs are unobservable inputs based on the management's assumptions used to measure assets and liabilities at fair value. A financial asset or liability's classification within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement.

The following table provides the assets carried at fair value measured on a recurring basis as of December 31, 2008:

		Fair Value Measurements at December 31, 2008		
	Total Carrying Value at December 31, 2008	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
U.S. Treasury notes	$ 219	$ 219	$ —	$ —
Auction rate securities	361	—	—	361
All other marketable securities	9,969	—	9,969	—
Foreign currency forward contracts	(226)	(226)	—	—
Total	$ 10,323	$ (7)	$ 9,969	$ 361

The Company's investments classified as Level 1 are based on quoted prices that are available in active markets. The forward foreign currency exchange contracts are primarily measured based on the foreign currency spot and forward rates quoted by the banks or foreign currency dealers. The U.S. Treasury Notes are measured based on quoted market prices.

Level 2 investments are valued using observable inputs to quoted market prices, benchmark yields, reported trades, broker/dealer quotes or alternative pricing sources with reasonable levels of price transparency. These investments, which are held by a custodian, include: corporate debt securities, government-sponsored enterprise and asset-backed securities. Investment prices are obtained from third party pricing providers, which models prices utilizing the above observable inputs, for each asset class.

Level 3 investments consist of auction rate securities for which the Company uses a discounted cashflow model to value these investments.

The carrying value of other financial instruments, including cash and cash equivalents, accounts receivable, accounts payable, and accrued liabilities approximate fair value due to their short maturities.

The Company has adopted SFAS No. 159 effective January 1, 2008 and did not elect the fair value option for its financial instruments.

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5.Marketable Securities:

At December 31, 2007, marketable securities are categorized as follows:

	Amortized Cost	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Fair Value
Treasury notes and obligations of agencies	$ 2,938	$ 25	$ (5)	$ 2,958
Tax-free auction rate securities	9,227	—	—	9,227
Asset-backed securities	1,132	—	(7)	1,125
Corporate bonds	2,605	2	(125)	2,482
Mortgage-backed securities	726	2	(15)	713
Total marketable securities	$ 16,628	$ 29	$ (152)	$16,505

At December 31, 2008, marketable securities are categorized as follows:

	Amortized Cost	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Fair Value
Treasury notes and obligations of agencies	$ 9,941	$ 15	$ (27)	$ 9,929
Tax-free auction rate securities	500	—	(139)	361
Asset-backed securities	257	2	—	259
Total marketable securities	$ 10,698	$ 17	$ (166)	$10,549

The amortized cost and estimated fair value of marketable securities classified by the maturity date listed on the security, regardless of the Consolidated Balance Sheet classification, is as follows at December 31, 2007 and 2008:

	December 31, 2007		December 31, 2008	
	Amortized Cost	Fair Value	Amortized Cost	Fair Value
Due within one year	$ 9,857	$ 9,848	$ 9,901	$ 9,740
Due after one through five years	4,240	4,142	797	809
Due after five through ten years	222	219	—	—
Due after ten years	2,309	2,296	—	—
Total marketable securities	$ 16,628	$16,505	$ 10,698	$10,549

Net realized losses of $162, $0 and $79 were included in the Consolidated Statement of Operations for 2006, 2007 and 2008, respectively.

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The following table summarizes the estimated fair value and gross unrealized holding losses of marketable securities, aggregated by investment instrument and period of time in an unrealized loss position at December 31, 2007:

	In Unrealized Loss Position for less than 12 Months		In Unrealized Loss Position for 12 Months or Greater		Total in Unrealized Loss Position	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Treasury notes and obligations of agencies	$ —	$ —	$ 996	$ (5)	$ 996	$ (5)
Asset-backed securities	16	—	1,006	(7)	1,022	(7)
Corporate bonds	45	(1)	2,203	(124)	2,248	(125)
Mortgage-backed securities	—	—	505	(15)	505	(15)
Total marketable securities	$ 61	$ (1)	$4,710	$ (151)	$4,771	$ (152)

The following table summarizes the estimated fair value and gross unrealized holding losses of marketable securities, aggregated by investment instrument and period of time in an unrealized loss position at December 31, 2008. No amounts have been in an unrealized loss position for 12 months or greater.

	In Unrealized Loss Position for less than 12 Months	
	Fair Value	Gross Unrealized Losses
Treasury notes and obligations of agencies	$6,301	$ (27)
Tax-free auction rate securities	361	(139)
Total marketable securities	$6,662	$ (166)

The Company has determined that the gross unrealized losses on its marketable securities at December 31, 2007 and 2008 are temporary in nature. The Company reviews its investment portfolio to identify and evaluate investments that have indications of possible impairment. Factors considered in determining whether a loss is other-than-temporary include the length of time and extent to which fair value has been less than the cost basis, credit quality and the Company's ability and intent to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value.

6. Inventories:

Inventories are comprised of the following:

	December 31,	
	2007	2008
Materials	$34,556	$23,821
Work-in-process	20,820	15,202
Finished goods	15,611	18,053
Total inventories	$70,987	$57,076

The Company has established reserves of $3,394 and $11,631 at December 31, 2007 and 2008, respectively, for slow moving and obsolete inventory. During 2007, the Company recorded a charge of $661 for the write-down of inventory for excess parts, for older product lines and for parts that design and engineering advancements rendered obsolete. In 2007, the Company disposed of $72 of inventory. During 2008, the Company recorded a charge of

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$14,124 for the write-down of inventory for excess parts, for older product lines and for parts that design and engineering advancements rendered obsolete. In 2008, the Company disposed of $5,887 of inventory.

7. Property, Plant and Equipment:

Property, plant and equipment, net is comprised of the following:

	December 31,	
	2007	2008
Land and building	$ 5,185	$ 4,927
Machinery and equipment	11,829	16,647
Furniture and fixtures	2,668	2,710
Computer equipment	6,407	6,262
Leasehold improvements	5,791	6,986
	31,880	37,532
Accumulated depreciation	(15,818)	(18,479)
Property, plant and equipment, net	$ 16,062	$ 19,053

Depreciation expense amounted to $4,300, $4,500 and $4,500 for the years ended December 31, 2006, 2007, and 2008, respectively.

8. Identifiable Intangible Assets and Goodwill:

Identifiable Intangible Assets

Identifiable intangible assets as of December 31, 2007 are as follows:

	Gross Carrying Amount	Accumulated Amortization	Net
Developed technology	$ 49,591	$ 11,324	$38,267
Customer and distributor relationships	7,300	917	6,383
Trade names	4,100	625	3,475
Total identifiable intangible assets	$ 60,991	$ 12,866	$48,125

Identifiable intangible assets as of December 31, 2008 are as follows:

	Gross Carrying Amount	Accumulated Amortization	Impairment	Net
Developed technology	$ 51,243	$ 15,858	$ 28,259	$7,126
Customer and distributor relationships	7,300	1,766	4,810	724
Trade names	4,100	1,132	1,164	1,804
Total identifiable intangible assets	$ 62,643	$ 18,756	$ 34,233	$9,654

Intangible asset amortization expense amounted to $4,027, $4,476 and $5,890 for the years ended December 31, 2006, 2007 and 2008, respectively. Assuming no change in the gross carrying value of identifiable intangible assets and estimated lives, estimated amortization expense amounts to $1,147 for 2009, $1,146 for 2010, $1,043 for 2011, $1,043 for 2012, and $1,043 for 2013.

Identifiable Intangible Assets Impairment

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In connection with the goodwill impairment test, the Company determined that its identifiable acquired intangible assets were impaired. The determination was based on the carrying values exceeding the future undiscounted cash flows and fair value attributable to such intangible assets. As a result, the Company recorded an impairment charge of $34.2 million as of October 31, 2008, which represents the difference between the estimated fair values of these long-lived assets as compared to their carrying values. Fair values were determined based upon market conditions, the relief from royalty approach which utilized cash flow projections, and other factors.

Goodwill

The changes in the carrying amount of goodwill are as follows:

Balance as of December 31, 2006	$ 145,176
PCTA acquisition	43,194
Tax adjustments related to prior acquisition	462
Balance as of December 31; 2007	188,832
PCTA acquisition	2,981
Tax adjustments related to prior acquisition	1,059
Goodwill impairment	(192,872)
Balance as of December 31, 2008	$ —

Goodwill Impairment

In accordance with SFAS No. 142, the Company tests goodwill for impairment annually and when an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying value.

The Company performed its annual goodwill impairment test on October 31st. During October 2008, the Company experienced a significant decline in its stock price. As a result of the decline in stock price, the Company's market capitalization plus an implied control premium fell significantly below the recorded value of its consolidated net assets as of the testing date. In performing the goodwill impairment test, the Company used current market capitalization, control premiums, discounted cash flows and other factors as the best evidence of fair value. The impairment test resulted in no value attributable to the Company's goodwill and accordingly, the Company wrote off all of its $192.9 million of goodwill as of October 31, 2008.

9. Commitments and Contingencies:

Intellectual Property Indemnification Obligations

The Company has entered into agreements with customers that include limited intellectual property indemnification obligations that are customary in the industry. These guarantees generally require the Company to compensate the other party for certain damages and costs incurred as a result of third party intellectual property claims arising from these transactions. The nature of the intellectual property indemnification obligations prevents the Company from making a reasonable estimate of the maximum potential amount it could be required to pay to its customers. Historically, the Company has not made any indemnification payments under such agreements and no amount has been accrued in the accompanying consolidated financial statements with respect to these indemnification guarantees.

Warranty Reserves

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The Company generally provides a warranty on its products for a period of twelve to fifteen months against defects in material and workmanship. The Company estimates the costs that may be incurred during the warranty period and records a liability in the amount of such costs at the time revenue is recognized. The Company's estimate is based primarily on historical experience. The Company periodically assesses the adequacy of its recorded warranty liabilities and adjusts the amounts as necessary. Settlements of warranty reserves are generally associated with sales that occurred during the 12 to 15 months prior to the year-end and warranty accruals are related to sales during the year.

Changes in the Company's warranty reserves are as follows:

	Year Ended December 31,		
	2006	2007	2008
Balance, beginning of the year	$ 1,234	$ 2,171	$ 2,365
Accruals	2,298	2,669	1,868
Warranty liability assumed in merger	1,244	532	215
Settlements	(2,605)	(3,007)	(2,635)
Balance, end of the year	$ 2,171	$ 2,365	$ 1,813

Legal Matters

From time to time the Company is subject to legal proceedings and claims in the ordinary course of business. The Company is not aware of any legal proceedings or claims that management believes would have a material adverse effect on the Company's consolidated financial statements taken as a whole.

Lease Agreements

The Company rents space for its manufacturing and service operations and sales offices, which expire through 2018. Total rent expense for these facilities amounted to $2,162, $2,264 and $2,821 for the years ended December 31, 2006, 2007 and 2008, respectively.

The Company also leases certain equipment pursuant to operating leases, which expire through 2013. Rent expense related to these leases amounted to $165, $171 and $148 for the years ended December 31, 2006, 2007 and 2008, respectively.

Total future minimum lease payments under noncancelable operating leases as of December 31, 2008 amounted to $2,691 for 2009, $2,401 for 2010, $2,058 for 2011, $1,628 for 2012, $1,453 for 2013 and $5,014 for all periods thereafter.

Royalty Agreements

Under various licensing agreements, the Company is obligated to pay royalties based on net sales of products sold. There are no minimum annual royalty payments. Royalty expense amounted to $2,990, $1,389 and $838 for the years ended December 31, 2006, 2007 and 2008, respectively.

Open and Committed Purchase Orders

The Company has open and committed purchase orders of $10,471 as of December 31, 2008.

10. Preferred Share Purchase Rights:

On June 27, 2005, the Board of Directors of the Company adopted a Stockholder Rights Plan (the "Rights Plan") and declared a dividend distribution of one Preferred Share Purchase Right (a "Right") on each outstanding share of Company common stock. Each right entitles stockholders to buy one one-thousandth of a share of newly

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created Series A Junior Participating Preferred Stock of Rudolph at an exercise price of $120. The Company's Board is entitled to redeem the Rights at $0.001 per Right at any time before a person has acquired 15% or more of the outstanding Rudolph common stock.

Subject to limited exceptions, the Rights will be exercisable if a person or group acquires 15% or more of Rudolph common stock or announces a tender offer for 15% or more of the common stock. Each Right other than Rights held by the Acquiring Person which will become void entitles its holder to purchase a number of common shares of Rudolph having a market value at that time of twice the Right's exercise price.

The Rights Plan will expire in 2015. The adoption of the Rights Plan had no impact on the financial position or results of operations of the Company.

11. Share-Based Compensation and Employee Benefit Plans:

Share-Based Compensation Plans

The Company's share-based compensation plans are intended to attract and retain employees and to provide an incentive for them to assist the Company to achieve long-range performance goals and to enable them to participate in long-term growth of the Company. The Company settles stock option exercises and restricted stock awards with newly issued common shares.

In 1996, the Company adopted the 1996 Stock Option Plan (the "Option Plan"). Under the Option Plan, the Company was authorized to grant options to purchase up to 1,070 shares of common stock. All of the outstanding options became 100% vested upon the initial public offering of the Company on November 12, 1999. As of December 31, 2007 and 2008, there were no shares of common stock reserved for future grants under the Option Plan.

The Company established the 1999 Stock Plan (the "1999 Plan") effective August 31, 1999. The 1999 Plan provides for the grant of 2,000 stock options and stock purchase rights, subject to annual increases, to employees, directors and consultants at an exercise price equal to or greater than the fair market value of the common stock on the date of grant. Options granted under the 1999 Plan typically grade vest over a five-year period and expire ten years from the date of grant. Restricted stock units granted under the 1999 Plan typically vest over a five-year period for employees and one year for directors. Restricted stock units granted to employees have time based vesting or performance and time based vesting. As of December 31, 2007 and 2008, there were 1,029 and 1,562 shares of common stock reserved for future grants under the 1999 Plan, respectively.

The Company assumed the August Technology Corporation 1997 Stock Plan (the "1997 Plan") at the merger date. Stock options granted under the 1997 Plan vest over periods that range from immediate to five-years and expire in either seven or ten years from the date of grant. In the third quarter of 2007, the 1997 Plan expired and as of December 31, 2007, there were no shares of common stock reserved for future grants under the 1997 Plan.

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The following table reflects share-based compensation expense by type of award in accordance with SFAS 123R:

	Year Ended December 31,		
	2006	2007	2008
Share-based compensation expense:			
Stock options	$ 750	$ 721	$ 508
Restricted stock units	1,186	2,398	2,897
Total share-based compensation	1,936	3,119	3,405
Tax effect on share-based compensation	757	1,279	1,396
Net effect on net income	$1,179	$1,840	$2,009
Tax effect on:			
Cash flows from financing activities	$1,167	$ 148	$ —
Effect on earnings per share—basic	$(0.04)	$(0.06)	$(0.07)
Effect on earnings per share—diluted	$(0.04)	$(0.06)	$(0.07)

Valuation Assumptions for Stock Options

For the year ended December 31, 2006, there were 5 stock options granted and 369 unvested options and 1,049 vested options assumed from the August Technology merger. The fair value of the vested options assumed from the August Technology merger was $6,040, the fair value at the merger date. For the years ended, December 31, 2007 and 2008, there were no stock options granted. The fair value of each option was estimated on the date of grant for the granted options and the merger date for the unvested options assumed from the August Technology merger, using the Black-Scholes option-pricing model with the following assumptions:

	Year Ended December 31, 2006
Expected life (years)	3.4
Expected volatility	55.1%
Expected dividend yield	0.0%
Risk-free interest rate	4.6%
Weighted average fair value per option	$ 8.99

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Stock Option Activity

The following table summarizes stock option activity:

	Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
Outstanding at December 31, 2005	2,514	$ 22.67		
Granted	5	16.72		
Assumed from August Technology	1,418	14.02		
Exercised	(674)	12.84		
Expired	(113)	22.27		
Forfeited	(42)	13.56		
Outstanding at December 31, 2006	3,108	20.98		
Granted	—	—		
Exercised	(96)	11.54		
Expired	(241)	14.39		
Forfeited	(16)	21.93		
Outstanding at December 31, 2007	2,755	21.27		
Granted	—	—		
Exercised	(11)	1.95		
Expired	(425)	22.52		
Forfeited	(12)	15.96		
Outstanding at December 31, 2008	2,307	$ 21.16	3.2	$ 26
Vested or expected to vest at December 31, 2008	2,296	$ 21.19	3.2	$ 26
Exercisable at December 31, 2008	2,235	$ 21.38	3.1	$ 26

The total intrinsic value of the stock options exercised during 2006, 2007 and 2008 was $3,472, $506 and $87, respectively. In connection with these exercises, the tax benefits realized by the Company for 2006, 2007 and 2008 were $1,167, $191 and $0, respectively.

The options outstanding and exercisable at December 31, 2008 were in the following exercise price ranges:

	Options Outstanding			Options Exercisable	
Range of Exercise Prices	Shares	Weighted Average Remaining Contractual Life (years)	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
$ 0.56 - $ 14.75	472	3.7	$ 11.84	450	$ 11.83
$ 14.76 - $ 16.00	507	2.6	$ 15.72	464	$ 15.79
$ 16.11 - $ 22.13	465	4.2	$ 17.74	458	$ 17.76
$ 22.25 - $ 26.20	462	3.6	$ 24.41	462	$ 24.41
$ 26.75 - $ 50.30	401	1.9	$ 39.22	401	$ 39.22
$ 0.56 - $ 50.30	2,307	3.2	$ 21.16	2,235	$ 21.38

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As of December 31, 2008, there was $535 of total unrecognized compensation cost related to stock options granted under the plans. That cost is expected to be recognized over a weighted average remaining period of 1.1 years.

Restricted Stock Unit Activity

The following table summarizes restricted stock unit activity:

A summary of the Company's restricted stock unit activity with respect to the years ended December 31, 2006, 2007 and 2008 follows:

	Number of Shares	Weighted Average Grant Date Fair Value
Nonvested at December 31, 2005	161	$ 16.60
Granted	228	$ 16.61
Vested	(48)	$ 16.23
Forfeited	(5)	$ 14.97
Nonvested at December 31, 2006	336	$ 16.68
Granted	463	$ 15.69
Vested	(86)	$ 16.24
Forfeited	(33)	$ 16.24
Nonvested at December 31, 2007	680	$ 16.08
Granted	334	$ 7.53
Vested	(185)	$ 14.77
Forfeited	(100)	$ 14.60
Nonvested at December 31, 2008	729	$ 12.70

As of December 31, 2008, there was $7,473 of total unrecognized compensation cost related to restricted stock units granted under the plans. That cost is expected to be recognized over a weighted average period of 3.0 years.

Employee Stock Purchase Plan

The Company established an Employee Stock Purchase Plan (the "ESPP") effective August 31, 1999 and amended on May 1, 2005. Under the terms of the ESPP, eligible employees may have up to 15% of eligible compensation deducted from their pay and applied to the purchase of shares of Rudolph common stock. The price the employee must pay for each share of stock will be 95% of the fair market value of the Rudolph common stock at the end of the applicable six-month purchase period. The ESPP is intended to qualify under Section 423 of the Internal Revenue Code and is a non-compensatory plan as defined by SFAS 123R. No stock-based compensation expense for the ESPP was recorded for the year ended December 31, 2007 and 2008. As of December 31, 2007 and 2008, there were 2,010 and 2,273 shares available for issuance under the ESPP, respectively.

401(k) Savings Plan

The Company has a 401(k) savings plan that allows employees to contribute up to 100% of their annual compensation to the Plan on a pre-tax or after tax basis, limited to a maximum annual amount as set periodically by the Internal Revenue Service. The plan provides a 50% match of all employee contributions up to 6 percent of the employee's salary. Company matching contributions to the plan totaled $693, $746 and $899 for the years ended December 31, 2006, 2007 and 2008, respectively.

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Profit Sharing Program

The Company has a profit sharing program, wherein a percentage of pre-tax profits, at the discretion of the Board of Directors, is provided to all employees who have completed a stipulated employment period. The Company did not make contributions to this program for the years ended December 31, 2006, 2007 and 2008.

12. Interest Income and Other, Net:

	Year Ended December 31,		
	2006	2007	2008
Interest income	$3,345	$4,143	$1,230
Realized losses on sale of marketable securities	(162)	—	(79)
Rental income	8	6	—
Total interest income and other, net	$3,191	$4,149	$1,151

13. Income Taxes:

The components of income tax expense are as follows:

	Year Ended December 31,		
	2006	2007	2008
Current:			
Federal	$ 2,253	$ 3,827	$(3,985)
State	1,840	939	11
Foreign	1,920	3,395	2,308
	6,013	8,161	(1,666)
Deferred:			
Federal	5,456	(2,507)	(3,155)
State	173	(674)	572
Foreign	88	(134)	134
	5,717	(3,315)	(2,449)
Total income tax expense (benefit)	$11,730	$ 4,846	$(4,115)

Income before income tax of $13,532 and $10,904 was generated by domestic and foreign operations, respectively, in 2006. Income before income tax of $2,856 and $13,849 was generated by domestic and foreign operations, respectively, in 2007. Income (loss) before income tax of $(263,081) and $9,280 was generated by domestic and foreign operations, respectively, in 2008.

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Deferred tax assets and liabilities are comprised of the following:

	December 31,	
	2007	2008
Research and development credit carryforward	$ 3,709	$ 6,066
Reserves and accruals not currently deductible	1,199	1,149
Deferred revenue	2,190	1,507
Domestic net operating loss carryforwards	280	358
Depreciation	181	468
Capital losses	460	493
Foreign net operating loss and credit carryforwards	2,288	899
Intangible assets	2,293	23,045
Tax deductible transaction costs	704	648
Share-based compensation	196	1,238
Inventory obsolescence reserve	1,370	5,754
Other	182	563
Gross deferred tax assets	15,052	42,188
Valuation allowance for deferred tax assets	(1,295)	(36,491)
Deferred tax assets after valuation allowance	13,757	5,697
Intangible liabilities	(12,436)	(2,593)
Other	(212)	(201)
Gross deferred tax liabilities	(12,648)	(2,794)
Net deferred tax assets	$ 1,109	$ 2,903

At December 31, 2008 and 2007, we had valuation allowances of $36,491 and $1,295 on certain of our deferred tax assets to reflect the deferred tax asset at the net amount that is more likely than not to be realized. Valuation allowances have been recorded on substantially all of the Company's deferred tax assets as of December 31, 2008, except for $2,896 of R&D credits which are reserved for in the Company's FIN 48 provision and $7 for AMT credits, as the Company has incurred cumulative losses. The Company computes cumulative losses for these purposes by adjusting pretax results for permanent items.

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The provision for income taxes differs from the amount of income tax determined by applying the applicable U.S. federal income tax rate of 35% for the years ended December 31, 2006, 2007 and 2008 to income before provision for income taxes as follows:

	Year Ended December 31,		
	2006	2007	2008
Federal income tax provision at statutory rate	$ 8,553	$ 5,847	$(88,830)
State taxes, net of federal effect	1,290	306	(1,789)
Non-deductible goodwill impairment charges	—	—	50,440
Foreign taxes net of federal effect	—	—	1,342
In-process research and development write-off	3,465	350	—
Research tax credit	(765)	(1,262)	(419)
Extraterritorial income exclusion	(296)	—	—
Domestic manufacturing benefit	(185)	(279)	—
Change in valuation allowance for deferred tax assets	(524)	331	35,196
Other	192	(447)	(55)
Provision (benefit) for income taxes	$11,730	$ 4,846	$ (4,115)
Effective tax rate	48%	29%	2%

In assessing the realizability of deferred tax assets, SFAS No. 109 establishes a more likely than not standard. If it is determined that it is more likely than not that deferred tax assets will not be realized, a valuation allowance must be established against the deferred tax assets. The ultimate realization of the assets is dependent on the generation of future taxable income during the periods in which the associated temporary differences become deductible. Management considers the scheduled reversal of deferred income tax liabilities, projected future taxable income and tax planning strategies when making this assessment.

At December 31, 2008, the Company had state and foreign net operating loss carryforwards of $5,460 and $543, respectively. The net operating loss carryforwards expire on various dates through December 31, 2028. Utilization of the net operating loss carry forwards may be subject to an annual limitation in the event of a change in ownership in future years as defined by Section 382 of the Internal Revenue Code and similar state provisions. At December 31, 2008, the Company had federal and state research & development credits and foreign tax credit carryforwards of $4,054, $3,121 and $671, respectively. The federal research & development credits are set to expire at various dates through December 31, 2028. The state research & development credits are set to expire at various dates through December 21, 2023. The foreign tax credit is set to expire at various dates through December 31, 2017.

The Company adopted the provisions of FIN 48, as amended by FSP 48-1, effective January 1, 2007. As a result of the implementation of FIN 48, as amended, the Company recognized increases in the liability for unrecognized tax benefits of $2,173, non-current deferred tax assets of $1,948 and goodwill of $245. The adoption of FIN 48, as amended, resulted in a cumulative effect adjustment to retained earnings of $20 as of January 1, 2007. FIN 48 clarifies the accounting for uncertainty in tax positions. The interpretation prescribes a recognition threshold and measurement criteria for financial statement recognition of a tax position taken or expected to be taken in a tax return. FIN 48 requires the Company to recognize in its financial statements, the impact of a tax position, if that position is more likely than not of being sustained upon examination, including resolution of any related appeals or litigation processes, based on the technical merits of the position. The interpretation also provides guidance on

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derecognition, classification, interest and penalties, accounting for interim periods, disclosure and transition. The total amount of unrecognized tax benefits were as follows:

	December 31,	
	2007	2008
Unrecognized tax benefits, opening balance	$4,552	$5,875
Gross increases—tax positions in prior period	635	700
Gross increases—current-period tax positions	1,301	225
Lapse of statute of limitations	(613)	(833)
Unrecognized tax benefits, ending balance	$5,875	$5,967

Included in the balance of unrecognized tax benefits at December 31, 2007 and 2008 are unrecognized tax benefits of $5,875 and $5,967, of which $3,610 and $3,306, would be reflected as an adjustment to income tax expense if recognized, respectively. It is expected that the amount of unrecognized tax benefits will change in the next 12 months; however, we do not expect the change to have a significant impact on our results of operations or financial position.

The Company recognizes accrued interest and penalties related to unrecognized tax benefits in income tax expense. During the years ended December 31, 2007 and 2008, the Company recognized approximately $33 and $37 in interest and penalties expense associated with uncertain tax positions, respectively. As of December 31, 2007 and 2008, the Company had accrued interest and penalties expense related to unrecognized tax benefits of $129 and $143, respectively.

The Company is subject to U.S. federal income tax as well as income tax in multiple state and foreign jurisdictions. Presently, the Company has not been contacted by the Internal Revenue Service for examination of income tax returns for open periods, December 31, 2005 through December 31, 2007. The Company is currently under examination by the State of New Jersey for tax years 2005 through 2007. The Company has not been contacted by any other U.S. state, local or foreign tax authority for all open tax periods beginning after December 31, 2003.

14. Segment Reporting and Geographic Information:

The Company reports one reportable segment in accordance with the provisions of SFAS No. 131, "Disclosure about Segments of an Enterprise and Related Information."

Operating segments are business units that have separate financial information and are separately reviewed by the Company's chief decision maker. The Company's chief decision maker is the Chief Executive Officer. The Company is engaged in the design, development, and manufacture of high-performance control metrology, defect inspection and data analysis systems used by semiconductor device manufacturers. The chief operating decision maker allocates resources and assesses performance of the business and other activities at the reporting segment level.

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The following table lists the different sources of revenue:

	Year Ended December 31,					
	2006		2007		2008	
Systems:						
Metrology	$ 68,035	34%	$ 34,738	22%	21,118	16%
Inspection	100,666	50	85,012	53	71,348	55
Parts	14,217	7	13,678	9	19,262	15
Services	11,457	6	14,121	8	14,901	11
Software licensing	6,793	3	12,580	8	4,411	3
Total revenue	$201,168	100%	$160,129	100%	$131,040	100%

For geographical reporting, revenues are attributed to the geographic location in which the customer is located. Revenue by geographic region is as follows:

	Year Ended December 31,		
	2006	2007	2008
Revenues from third parties:			
United States	$ 59,097	$ 36,710	$ 30,744
Asia	120,472	93,631	74,661
Europe	21,599	29,788	25,635
Total	$201,168	$160,129	$131,040

One customer represented 14%, 12% and 11% of revenue for the years ended December 31, 2006, 2007 and 2008, respectively. The accounts receivable of that customer totaled $7,094, $1,680 and $1,258 at December 31, 2006, 2007 and 2008, respectively. No other customer was above 10% of revenue for the years ended December 31, 2006, 2007 or 2008.

Substantially all of the Company's assets are within the United States of America.

15. Earnings (Loss) Per Share:

Basic earnings (loss) per share is computed by dividing net income (loss) by the weighted average number of common shares outstanding during the period. Diluted earnings gives effect to all potential dilutive common shares outstanding during the period. The computation of diluted earnings per share does not assume conversion, exercise or contingent exercise of securities that would have an anti-dilutive effect.

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)
(In thousands, except per share data)

The computations of basic and diluted earnings (loss) per share for the years ended December 31, 2006, 2007, and 2008 are as follows:

	Income (Numerator)	Shares (Denominator)	Per-Share Amount
For the year ended December 31, 2006			
Basic earnings per share:			
Net income	$ 12,706	27,276	$ 0.47
Effect of dilutive stock options and restricted stock units	—	298	(0.01)
Diluted earnings per share:			
Net income	$ 12,706	27,574	$ 0.46
For the year ended December 31, 2007			
Basic earnings per share:			
Net income	$ 11,859	29,168	$ 0.41
Effect of dilutive stock options and restricted stock units	—	144	(0.01)
Diluted earnings per share:			
Net income	$ 11,859	29,312	$ 0.40
For the year ended December 31, 2008			
Basic loss per share:			
Net loss	$ (249,686)	30,614	$ (8.16)
Effect of dilutive stock options and restricted stock units	—	—	—
Diluted loss per share:			
Net loss	$ (249,686)	30,614	$ (8.16)

For the year ended December 31, 2006, the weighted average number of stock options and restricted stock units excluded from the computation of diluted earnings per share were 2,008 and 12, respectively. For the year ended December 31, 2007, the weighted average number of stock options and restricted stock units excluded from the computation of diluted earnings per share were 2,185 and 129, respectively. For the year ended December 31, 2008, all outstanding stock options and restricted stock units totaling 2,307 and 729, respectively, were excluded from the computation of diluted loss per share because the effect in the period would be anti-dilutive.

16. Share Repurchase Program

In July 2008, the Board of Directors authorized a share repurchase program of up to 3 million shares of the Company's stock. The Company did not purchase any shares to date under this program.

17. Quarterly Consolidated Financial Data (unaudited):

The following tables present certain unaudited consolidated quarterly financial information for each of the eight quarters ended December 31, 2008. In the opinion of the Company's management, this quarterly information has been prepared on the same basis as the consolidated financial statements and includes all adjustments (consisting only of normal recurring adjustments) necessary to present fairly the information for the periods presented. The results of operations for any quarter are not necessarily indicative of results for the full year or for any future period.

Year-over-year quarterly comparisons of the Company's results of operations may not be as meaningful as the sequential quarterly comparisons set forth below tend to reflect the cyclical activity of the semiconductor industry as a whole. The 2007 fourth quarter reflects the PCTA acquisition effective December 18, 2007. The 2008 fourth quarter reflects a charge of $227,105 for the impairment of goodwill and identifiable intangible assets. Other

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)
(In thousands, except per share data)

quarterly fluctuations in expenses are related directly to sales activity and volume and may also reflect the timing of operating expenses incurred throughout the year and the purchase accounting effects of business combinations.

	Quarters Ended				
	March 31, 2007	June 30, 2007	September 30, 2007	December 31, 2007	Total
Revenues	$ 48,356	$47,730	$ 31,461	$ 32,582	$160,129
Gross profit	26,250	24,850	15,540	14,600	81,240
Income (loss) before income taxes	8,705	7,749	1,203	(952)	16,705
Net income (loss)	5,564	5,451	1,388	(544)	11,859
Earnings (loss) per share:					
Basic	$ 0.19	$ 0.19	$ 0.05	$ (0.02)	$ 0.41
Diluted	$ 0.19	$ 0.19	$ 0.05	$ (0.02)	$ 0.40
Weighted average number of shares outstanding:					
Basic	29,031	29,108	29,152	29,371	29,168
Diluted	29,224	29,312	29,250	29,371	29,312

	Quarters Ended				
	March 31, 2008	June 30, 2008	September 30, 2008	December 31, 2008	Total
Revenues	$ 37,210	$38,416	$ 38,986	$ 16,428	$ 131,040
Gross profit	15,115	17,721	16,806	(5,990)	43,652
Loss before income taxes	(3,063)	(2,814)	(878)	(247,046)	(253,801)
Net loss	(1,646)	(1,985)	(448)	(245,607)	(249,686)
Loss per share:					
Basic	$ (0.05)	$ (0.06)	$ (0.01)	$ (7.96)	$ (8.16)
Diluted	$ (0.05)	$ (0.06)	$ (0.01)	$ (7.96)	$ (8.16)
Weighted average number of shares outstanding:					
Basic	30,533	30,669	30,781	30,842	30,614
Diluted	30,533	30,669	30,781	30,842	30,614

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RUDOLPH TECHNOLOGIES, INC. AND SUBSIDIARIES

SCHEDULE OF VALUATION AND QUALIFYING ACCOUNTS
(In thousands)

Column A	Column B	Column C		Column D	Column E
Description	Balance at Beginning of Period	Charged to (Recover of) Costs and Expenses	Charged to Other Accounts (net)	Deductions	Balance at End of Period
Year 2006:					
Allowance for doubtful accounts	$ 230	$ 69	$ —	$ —	$ 299
Inventory valuation	1,787	3,585	—	2,567	2,805
Warranty	1,234	2,298	1,244	2,605	2,171
Deferred tax valuation allowance	524	964	—	524	964
Year 2007:					
Allowance for doubtful accounts	$ 299	$ (85)	$ —	$ —	$ 214
Inventory valuation	2,805	661	—	72	3,394
Warranty	2,171	2,669	532	3,007	2,365
Deferred tax valuation allowance	964	331	—	—	1,295
Year 2008:					
Allowance for doubtful accounts	$ 214	$ 445	$ —	$ —	$ 659
Inventory valuation	3,394	14,124	—	5,887	11,631
Warranty	2,365	1,868	215	2,635	1,813
Deferred tax valuation allowance	1,295	35,196	—	—	36,491

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SIGNATURES

PURSUANT TO THE REQUIREMENTS OF SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934, THE REGISTRANT HAS DULY CAUSED THIS REPORT TO BE SIGNED ON ITS BEHALF BY THE UNDERSIGNED, THEREUNTO DULY AUTHORIZED.

RUDOLPH TECHNOLOGIES, INC.

By: /s/ PAUL F. MCLAUGHLIN
Paul F. McLaughlin
Chairman and Chief Executive Officer

Date: March 5, 2009

PURSUANT TO THE REQUIREMENTS OF THE SECURITIES EXCHANGE ACT OF 1934, THIS REPORT HAS BEEN SIGNED BELOW BY THE FOLLOWING PERSONS ON BEHALF OF THE REGISTRANT AND IN THE CAPACITIES AND ON THE DATES INDICATED.

Signature	Title	Date
/s/ PAUL F. MCLAUGHLIN **Paul F. McLaughlin**	Chairman and Chief Executive Officer	March 5, 2009
/s/ STEVEN R. ROTH **Steven R. Roth**	Senior Vice President, Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	March 5, 2009
/s/ LEO BERLINGHIERI **Leo Berlinghieri**	Director	March 5, 2009
/s/ DANIEL H. BERRY **Daniel H. Berry**	Director	March 5, 2009
/s/ THOMAS G. GREIG **Thomas G. Greig**	Director	March 5, 2009
/s/ RICHARD F. SPANIER **Richard F. Spanier**	Director	March 5, 2009
/s/ AUBREY C. TOBEY **Aubrey C. Tobey**	Director	March 5, 2009
/s/ JOHN R. WHITTEN **John R. Whitten**	Director	March 5, 2009

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EXHIBIT INDEX

Exhibit No.	Description
2.1	Agreement and Plan of Merger, dated as of June 27, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation (incorporated by reference to Exhibit 99.2 to the Company's Schedule 13D filed with the SEC on July 7, 2005).
2.2	Amendment No. 1, dated as of December 8, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation, to the Agreement and Plan of Merger, dated as of June 27, 2005, by and among the Registrant, NS Merger Sub, Inc. and August Technology Corporation. (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 9, 2005).
2.3	Asset Purchase Agreement dated as of December 18, 2007, by and among the Registrant, Mariner Acquisition Company LLC, Applied Precision Holding, LLC and Applied Precision, LLC (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 21, 2007).
3.1	Restated Certificate of Incorporation of Registrant (incorporated herein by reference to Exhibit (3.1(b)) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871 filed on September 9, 1999).
3.2	Amended and Restated Bylaws of Registrant (incorporated herein by reference to Exhibit (3.2(b) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999.
3.3	Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on February 15, 2006, No. 000-27965).
3.4	Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on August 1, 2007, No. 000-27965).
3.5	Amendment to Restated Bylaws of Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the Commission on February 2, 2009, No. 000-27965).
4.1	Rights Agreement (incorporated by reference to Exhibit 4.1 of the Registrant's Registration Statement on Form 8-A, filed with the Commission on June 28, 2005, No 000-27965).
4.2	August Technology Corporation 1997 Stock Incentive Plan (incorporated by reference to the Appendix to August Technology Corporation's Proxy Statement for its 2004 Annual Shareholders Meeting, filed with the Commission on March 11, 2004, No. 000-30637).
10.1+	License Agreement, dated June 28, 1995, between the Registrant and Brown University Research Foundation (incorporated herein by reference to Exhibit (10.1) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.2	Form of Indemnification Agreement (incorporated herein by reference to Exhibit (10.3) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.3	Amended 1996 Non-Qualified Stock Option Plan (incorporated herein by reference to Exhibit 10.15 to Registrant's quarterly report on Form 10-Q, filed on November 14, 2001).
10.4	Form of 1999 Stock Plan (incorporated herein by reference to Exhibit (10.4) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.5	Form of 1999 Employee Stock Purchase Plan (incorporated herein by reference to Exhibit (10.5) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.6	Management Agreement, dated as of July 24, 2000, by and between Rudolph Technologies, Inc. and Paul F. McLaughlin (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000).
10.7	Management Agreement, dated as of July 24, 2000 by and between Rudolph Technologies, Inc. and Steven R. Roth (incorporated herein by reference to Exhibit 10.14 to Registrant's quarterly report on Form 10-Q, filed on November 3, 2000).

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Exhibit No.	Description
10.8	Registration Agreement, dated June 14, 1996 by and among the Registrant, 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul F. McLaughlin (incorporated herein by reference to Exhibit (10.9) to the Registrant's Registration Statement on Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.9	Stockholders Agreement, dated June 14, 1996 by and among the Registrant, Administration of Florida, Liberty Partners Holdings 11, L.L.C., Riverside Rudolph, L.L.C., Dr. Richard F. Spanier, Paul McLaughlin, Dale Moorman, Thomas Cooper and (incorporated herein by reference to Exhibit (10.10) to the Registrant's Form S-1, as amended (SEC File No. 333-86871), filed on September 9, 1999).
10.10	Form of option agreement under 1999 Stock Plan (incorporated herein by reference to Exhibit 10.12 to Registrant's quarterly report on Form 10-Q, filed on November 5, 2004).
10.11	Form of Restricted Stock Award pursuant to the Rudolph Technologies, Inc. 1999 Stock Plan (filed with Rudolph Technologies, Inc.'s Current Report on Form 8-K filed on June 21, 2005 and incorporated herein by reference).
10.12	Form of Company Shareholder Voting Agreement (incorporated by reference to Exhibit 99.2 to the Company's Schedule 13D filed with the SEC on July 7, 2005).
14.1	Rudolph Technologies Code of Business Conduct and Ethics (incorporated herein by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006).
14.2	Rudolph Technologies Financial Code of Ethics (incorporated herein by reference to Exhibit 14.1 to Registrant's annual report on Form 10-K, filed on March 16, 2006).
21.1	Subsidiaries.
23.1	Consent of KPMG LLP, Independent Registered Public Accounting Firm.
23.2	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm.
31.1	Certification of Paul F. McLaughlin, Chief Executive Officer, pursuant to Securities Exchange Act Rule 13a-14(a).
31.2	Certification of Steven R. Roth, Chief Financial Officer, pursuant to Securities Exchange Act Rule 13a-14(a).
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Paul F. McLaughlin, Chief Executive Officer of Rudolph Technologies, Inc.
32.2	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, signed by Steven R. Roth, Chief Financial Officer of Rudolph Technologies, Inc.

+ Confidential treatment has been granted with respect to portions of this exhibit.

EX-21.1 2 y74650exv21w1.htm EX-21.1: SUBSIDIARIES

Exhibit 21.1

SUBSIDIARIES

Name	Jurisdiction
Rudolph Technologies Europe, B.V.	Netherlands
Rudolph Technologies Japan KK	Japan
August Technology Corporation	Minnesota
Robin Hood Acquisition Company, LLC	Delaware

EX-23.1 3 y74650exv23w1.htm EX-23.1: CONSENT OF KPMG LLP

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Rudolph Technologies, Inc.:

We consent to the incorporation by reference in the registration statement (No. 333-132283) on Form S-8 and the registration statement (No. 333-149704) on Form S-3 of Rudolph Technologies, Inc. of our report dated March 3, 2008, with respect to the consolidated balance sheet of Rudolph Technologies, Inc. and subsidiaries as of December 31, 2007 and the related consolidated statements of operations, stockholders' equity and comprehensive income (loss), and cash flows for each of the years in the two-year period ended December 31, 2007, and the related consolidated financial statement schedule.

Our report with respect to the consolidated balance sheet of Rudolph Technologies, Inc. and subsidiaries as of December 31, 2007 and the related consolidated statements of operations, stockholders' equity and comprehensive income (loss), and cash flows for each of the years in the two-year period ended December 31, 2007, and the related consolidated financial statement schedule, dated March 3, 2008 refers to Rudolph Technologies, Inc.'s adoption of Financial Accounting Standards Board Interpretation No. 48, "Accounting for Uncertainties in Income Taxes", effective January 1, 2007, and Statement of Financial Accounting Standards No. 123(R), "Share-Based Payment", effective January 1, 2006.

/s/ KPMG LLP

Short Hills, New Jersey
March 5, 2009

EX-23.2 4 y74650exv23w2.htm EX-23.2: CONSENT OF ERNST & YOUNG LLP

Exhibit 23.2

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8 No. 333-132283) pertaining to the August Technology Corporate 1997 Stock Incentive Plan and Registration Statement (Form S-3 No. 333-149704) and Prospectus of Rudolph Technologies, Inc. for the registration of 3,500,000 shares of its common stock, of Rudolph Technologies, Inc. of our report dated March 5, 2009, with respect to the consolidated financial statements and schedule of Rudolph Technologies, Inc., and the effectiveness of internal control over financial reporting of Rudolph Technologies, Inc., included in this Annual Report (Form 10-K) for the year ended December 31, 2008.

/s/ Ernst & Young

Metropark, New Jersey
March 5, 2009

EX-31.1 5 y74650exv31w1.htm EX-31.1: CERTIFICATION

Exhibit 31.1

Certification of Chief Executive Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Paul F. McLaughlin, certify that:

1. I have reviewed this annual report on Form 10-K of Rudolph Technologies, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 5, 2009

By: /s/ PAUL F. MCLAUGHLIN
Paul F. McLaughlin
Chairman and Chief Executive Officer

EX-31.2 6 y74650exv31w2.htm EX-31.2: CERTIFICATION

Exhibit 31.2

Certification of Chief Financial Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Steven R. Roth, certify that:

1. I have reviewed this annual report on Form 10-K of Rudolph Technologies, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 5, 2009

By: /s/ STEVEN R. ROTH
Steven R. Roth
Senior Vice President and Chief Financial Officer

EX-32.1 7 y74650exv32w1.htm EX-32.1: CERTIFICATION

Exhibit 32.1

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

I, Paul F. McLaughlin, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Rudolph Technologies, Inc. on Form 10-K for the year ended December 31, 2008 fully complies with the requirements of Section 13 (a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of Rudolph Technologies, Inc.

Date: March 5, 2009

By: /s/ PAUL F. MCLAUGHLIN

Paul F. McLaughlin
Chairman and Chief Executive Officer

EX-32.2 8 y74650exv32w2.htm EX-32.2: CERTIFICATION

Exhibit 32.2

**CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

I, Steven R. Roth, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Rudolph Technologies, Inc. on Form 10-K for the year ended December 31, 2008 fully complies with the requirements of Section 13 (a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of Rudolph Technologies, Inc.

Date: March 5, 2009

By: /s/ STEVEN R. ROTH

Steven R. Roth
Senior Vice President and Chief Financial Officer