

Mail Stop 6010

July 25, 2006

Eitan Gertel  
Chief Executive Officer  
Optium Corporation  
500 Horizon Drive, Suite 505  
Chalfont, Pennsylvania 18914

**Re: Optium Corporation  
Registration Statement on Form S-1  
Filed June 29, 2006  
Registration No. 333-135472**

Dear Mr. Gertel:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

General

1. Please confirm that any preliminary prospectus you circulate will include all non-Rule 430A information. This includes a bona fide estimate of the range of the maximum offering price and the maximum number of securities offered. We may have further comments when you include pricing information and related disclosure.

Prospectus Front Cover Page

2. Please clarify whether you or the selling shareholders have granted to the underwriters the right to purchase additional shares to cover over-allotments. We note the disclosure in the fourth paragraph on page 83.

Graphics

3. Your graphics should not include any newly introduced product that has not generated any material amount of your historical revenues without a brief explanation alerting investors to this fact.

Table of Contents, page 2

4. We note the first sentence in the paragraph following your table of contents cautioning investors that they “should rely only on the information contained in this prospectus.” Please consider whether this statement, in its current form, is consistent with your ability to use free writing prospectuses.

Prospectus Summary, page 1

Overview

5. Please provide us with support for your statement that you are a leading supplier of high-performance optical subsystems for use in telecommunications and cable TV network systems.
6. We note your disclosure that you have recently launched a technologically innovative ROADM. Please describe the current status of this product including whether you have generated a material amount of revenue from the sale of this product. We note, in this regard, your disclosure on page F-51 that as of the date of the related financial statements, you were still developing your ROADM products and no product had yet reached market.

The Offering, page 6

7. We note that there are options outstanding under your 2000 Stock Incentive Plan for 19,954,048 shares of common stock and, from Exhibit 10.4, that there are 41,484,879 shares of common stock reserved for issuance under your 2000 Stock Incentive Plan. We also note that you have not yet determined how many shares will be reserved under your 2006 Stock Option and Incentive Plan. As such, please tell us how you have determined that there are 4,045,014 shares of

common stock reserved as of April 29, 2006 for future issuance under your stock-based compensation plans, as indicated in the second bullet point.

8. Please indicate in your second bullet point that the number of shares authorized for future issuance under your 2006 Stock Option and Incentive Plan does not include shares that will be added to the number of reserved shares available for issuance pursuant to the automatic increase provisions of such plan. Also, indicate in this bullet point how the automatic increase provisions will operate.

Summary Consolidated Financial Data, page 7  
Selected Consolidated Financial Data, page 25

9. We note that you present a non-GAAP financial measure titled “adjusted net income (loss).” Please refer to Item 10-(e) of Regulation S-K and Question 8 of the SEC Frequently Asked Questions Regarding the Use of Non-GAAP Financial Measures dated June 13, 2003 and revise your discussion of the non-GAAP financial measure to provide greater analysis of the usefulness of the non-GAAP measure. Disclose in greater detail the manner in which management uses the non-GAAP measure to conduct or evaluate the business, the economic substance behind management’s decision to use such a measure, the material limitations associated with the use of adjusted net income as compared to the use of the most directly comparable GAAP financial measure, the manner in which management compensates for these limitations when using the non-GAAP financial measure and the substantive reasons why management believes the non-GAAP financial measure provides more useful information to investors.

Dilution, page 24

10. Please disclose the dilution to be experienced by your new investors if the underwriters exercise their over-allotment option in full, including the pro forma net tangible book value per share, the increase in net tangible book value per share to your existing stockholders, and the dilution to new investors per share.
11. We note your discussion of the further dilution to be experienced by your new investors to extent your outstanding stock options and warrants are exercised. Please also explain how the “shares purchased,” “total consideration” and “average price per share” columns in your second table would change if the options and warrants are exercised.

Selected Financial Data, page 25

12. Please revise the introductory paragraph to clearly state whether the source of the statement of operations data for the years ended July 28, 2001 and August 3, 2002

and the balance sheet data as of July 28, 2001, August 3, 2002 and August 2, 2003 has been audited.

Unaudited Pro Forma Consolidated Financial Information, page 27

13. We note your disclosures in the introductory paragraph of the periods combined in this unaudited pro forma financial information. Based on these disclosures, it appears that you have excluded the Engana results for the period from July 1, 2005 to July 31, 2005 from the interim pro forma financial information. Please revise the introductory paragraph to disclose revenues and income for the one month period that has been excluded from the pro forma financial information. Refer to Article 11-02(c)(3) of Regulation S-X.
14. In light of the statements that the pro forma statements are intended to show the financials as if the acquisition of Engana had occurred at the beginning of the periods, tell us why the adjustment removing the acquired in-process research and development charges from the historical financial results of the combined entity would be appropriate. Explain how the adjustment is consistent with Article 11 of Regulation S-X.

Management's Discussion and Analysis..., page 30

Research and development expenses, page 31; Selling, general and administrative expenses, page 31

15. Please discuss how your recent acquisition of Engana will affect your research and development and your selling, general and administrative expenditures.

Current Trends Affecting Our Results of Operations, page 32

16. We note from industry reports that the demand for 10Gb/s transceivers appears to be transitioning to the XFP form factor. We also note from your disclosure that a significant portion of your historical revenues and growth have been derived from the sale of 300 pin transceivers. Please provide management's perspective on industry trends and describe how those trends will affect your sources of revenue and operating results. Include risk factor disclosure as appropriate.
17. We note your disclosure in the second paragraph that "network systems vendors are increasing their focus on providing software applications and other value-added services to their carrier customers." Please clarify how your products support these applications and services and explain what competitive advantages or disadvantages your products have in these regards versus the products of your competitors.

Recent Acquisition, page 32

18. Please indicate the basis for your statement that Optium Australia Pty Limited is a leading innovator of ROADM technology.
19. File as exhibits all documents pursuant to which you acquired Engana.

Critical Accounting Policies and Estimates, page 33

Stock-based Compensation, page 34

20. You state that the determination of the fair value of your common stock has involved significant judgments, assumptions, estimates and complexities that impact the amount of deferred stock-based compensation recorded and the resulting amortization in future periods. Revise the section to provide a discussion of the significant judgments, assumptions, estimates and complexities to which you refer. Supplement your disclosure with references to the actual estimates assumptions you used, such as discount rates and probability weighting to the different scenarios, and how your results would have differed if you had used different estimates and assumptions.
21. We note your disclosure that in June 2006, you offered certain stock option holders the ability to amend the terms of their options to increase their per share exercise price and that all of such stock option holders chose to amend their stock options. Please tell us and revise the filing to disclose any additional incentives offered to the employees in exchange for amending their stock options.

Accounting for Acquired In-Process Research and Development, page 37

22. Please revise to disclose the specific assumptions used in projecting future cash flows of each project and discounting the net cash flows back to present values. For example, disclose the number of periods of cash flows you considered, the growth rates assumed, any terminal value amounts, and the discount rate used. Supplement your disclosure with a sensitivity analysis of the key assumptions.

Comparison of Nine Months Ended April 30, 2005 and April 29, 2006, page 38

Revenue, page 38

23. You state that the increase in revenue between the periods is primarily attributable to an increase in sales of your 300 pin transceivers, as well as a substantial increase in sales of hybrid fiber coaxial and fiber to the home products. Please

revise to quantify the increase in revenue in each of these products. Please note this comment also applies to your discussion of revenues for the years ended July 31, 2004 and July 30, 2005.

Comparison of Fiscal Years Ended July 31, 2004 and July 30, 2005, page 39

Selling, General and Administrative, page 40

24. We note you attribute the decrease in selling, general and administrative expenses to multiple items. Please revise to quantify the effects of each of the referenced items.
25. We note the disclosure in the second sentence of this section. Please clarify what expenditures were decreased and how the discontinued functions better served your customers from a technical standpoint.

Liquidity and Capital Resources, page 42

26. Please revise to also provide a discussion of your cash flows for each of the fiscal years ended August 2, 2003, July 31, 2004 and July 30, 2005. Refer to Item 303(a) of Regulation S-K.

Contractual Obligations and Commitments, page 44

27. We note your disclosure on page F-23 that you had employment agreements with certain officers and key employees that expired at varying dates through June 2006. However, we do not see amounts reflected in this table relating to these agreements. We also note your disclosure here that there were no material changes in your contractual obligations since July 30, 2005. However, we note your disclosure on page 64 that you have entered into new employment agreements with certain officers and key employees that are for two and three year terms. Please revise this table to disclose your contractual commitments relating to these employment agreements or tell us why you believe disclosure is not required. Please refer to Item 303(a)(5) of Regulation S-K.

Business, page 46

28. Please explain how your products differ from the optical subsystems based on multi-service agreements. For example, what additional or different functionalities do your customized products offer versus the standardized products offered by your competitors that are based on the MSAs. Clarify whether you are able to obtain premium pricing for your customized products. In addition, please provide management's view of the trends in using customized

optical subsystems versus standardized products based on the MSAs and clarify how those trends will affect your business and results of operations. Expand your risk factor disclosure as appropriate.

Our Company, page 46

29. We note your disclosure in the second paragraph. Please provide examples of the “functionalities” that your products provide that were “previously unavailable in the marketplace.”
30. Please clarify which of your products have experienced an increase in demand. For example, it does not appear that on a historical basis you have experienced any sales of your ROADM products.
31. Please revise your disclosure in the second paragraph to clarify how your products enable your customers to shorten product development cycles and readily add product features. Include in your disclosure what product features your customers are able to add as a result of using your subsystems. Explain what competitive advantages or disadvantages your products have in these regards versus the products of your competitors.

Industry Background, page 47

32. Please provide us with copies of the industry reports you cite in your prospectus. Clearly mark the relevant sections that support the data you have included in your prospectus and the page number of your prospectus where such data has been used. Also tell us whether the sources of the cited data have consented to your use of their names and data and whether any of the reports were commissioned by you or prepared specifically for your use.

Board Composition, page 58

33. Please disclose how you plan to fill the vacancy on your board of directors.

Director Compensation, page 59

34. Please tell us in your response letter the circumstances surrounding Mr. Johnson’s cancellation of his April 2006 option to purchase 450,000 shares of your common stock.

2000 Stock Incentive Plan, page 62

35. Please indicate the number of shares reserved for issuance under your 2000 Stock Incentive Plan. Indicate whether further options will be granted under this plan after your offering.
36. Please file all the amendments to the 2000 Stock Incentive Plan referred to in the first sentence of this section and in the Exhibit Index.

Principal and Selling Stockholders, page 71

37. Please identify the natural person(s) with voting or investment control over the shares held by TL Ventures.
38. Once you have identified your selling stockholders, please tell us whether any such selling stockholder is a broker-dealer or an affiliate of a broker-dealer. If a selling stockholder is a broker-dealer, it must be identified as an underwriter with respect to the shares that it is offering for resale unless those shares were received as compensation for underwriting activities. In addition, each selling shareholder who is an affiliate of a broker-dealer must be identified in the prospectus as an underwriter unless that selling shareholder is able to make the following representations in the prospectus:
  - The selling shareholder purchased the shares being registered for resale in the ordinary course of business, and
  - At the time of the purchase, the selling shareholder had no agreements or understandings, directly or indirectly, with any person to distribute the securities.

Description of Capital Stock, page 74

Registration Rights, page 74

39. Please confirm that holders of shares of your common stock issued upon conversion of your series 2 non-voting common stock are not entitled to registration rights or supplement your disclosure to state otherwise.

Consolidated Financial Statements, page F-1

General

40. Please provide a currently dated and signed consent from your independent accountants in your amendment.



41. In the event of a delay of effectiveness, revise to provide updated financial information, as required by Rule 3-12 of Regulation S-X.

Report of Independent Registered Public Accounting Firm, page F-3

42. Please have your prior auditor, Deloitte & Touche, update its opinion on your financial statements to reflect the city and state where issued. Refer to Rule 2-02(a) of Regulation S-X.

Statements of Cash Flows, page F-8

43. We note you present “net borrowings under equipment line of credit.” Please revise to present borrowings and payments on your equipment line of credit on a gross basis, or tell us why you believe your current presentation is appropriate. Refer to paragraphs 11-13 of SFAS 95.

Note 2. Summary of Significant Accounting Policies, page F-9

Cash and Cash Equivalents and Restricted Cash, page F-9

44. We note on page F-30 that the restricted cash of \$540,000, which you present as a current asset, relates to a certificate of deposit that is renewed on a monthly basis. However, it appears you are required to maintain certificates of deposit for specified amounts through April 30, 2008, the expiration of the operating lease term. Please explain to us how the classification of the restricted cash as a current asset is consistent with the guidance in paragraph 6 of ARB 43, or revise the filing to comply.

Revenue Recognition, page F-12

45. We note your disclosure on page 13 that you offer certain customers limited numbers of evaluation units. On page 34 you disclose that some payment terms may occasionally be extended. Please revise your revenue recognition disclosures to address the following:
- Disclose your accounting policy for these evaluation units, including how the evaluation periods for the units impact the timing of your revenue recognition.
  - Expand your disclosure, both in this note and on page 34, to discuss how extended payment terms impact your revenue recognition.
  - Revise to disclose any additional post-shipment obligations, including return rights.

Warranties, page F-12

46. Please revise to address the following:

- Provide a rollforward of your warranty liability for each period for which a balance sheet is presented. Refer to paragraph 14 of FIN 45.
- Disclose the point-in-time at which you accrue for warranty obligations.
- Disclose the basis used in determining the appropriate warranty obligation to accrue.

Segment Information, page F-15

47. Based on your discussion in MD&A, it appears that you have multiple product lines. Please revise the filing to provide disclosure of revenues by product lines as required by paragraph 37 of SFAS 131.

Note 8. Redeemable Convertible Preferred Stock, page F-17

48. We note that you have issued redeemable convertible preferred stock with related registration right agreements. Please address the following:

- Revise the note to describe the events or circumstances that would result in adjustments to the conversion ratios of the redeemable convertible preferred stock. Likewise, please clearly describe the material terms of all related agreements, such as registration rights agreements and guarantee agreements.
- Tell us how you have considered the guidance provided in EITF 05-4 The Effect of a Liquidated Damages Clause on a Freestanding Financial Instrument Subject to Issue No. 00-19 in concluding how to account for these instruments. While we note that the EITF has not reached a consensus on this issue and has deferred deliberation until the FASB addresses certain questions which could impact a conclusion on this issue, please tell us how you considered the guidance in EITF 05-4 and the different views on this issue as outlined in Issue Summary No. 1 to EITF 05-4 in analyzing the registration rights agreement and redeemable convertible preferred stock.
- Tell us how you have applied the guidance in SFAS 133 and EITF Issue 00-19 in evaluating whether the conversion feature of the redeemable convertible preferred stock is an embedded derivative that you should separate from the host and account for at fair value under SFAS 133.
- Provide a reasonably detailed discussion of your consideration of paragraphs 60 and 61 of SFAS 133.
- We note that the conversion price is subject to adjustment upon the occurrence of certain events. If you conclude that the preferred stock more akin to debt, please also discuss how you evaluated whether the agreement meets the

definition of “conventional convertible” in paragraph 4 of EITF Issue 00-19. As applicable, you should analyze the conversion feature under paragraphs 12-32 of EITF 00-19.

Unaudited Consolidated Balance Sheet, page F-26

Note 8. Acquisition, page F-37

49. Please revise to disclose the basis for determining the value of the 24,475,897 shares of Series D-1 Senior Convertible Preferred Stock and 8,752,399 shares of series 2 non-voting common stock issued in the acquisition of Engana.
50. We note that in connection with the acquisition of Engana, you recorded a charge for in-process research and development (IPR&D) of \$11,187,000. Please revise the notes to your financial statements to address the following related to IPR&D:
- Disclose the appraisal method used to value IPR&D costs acquired;
  - Discuss all significant assumptions made and estimates used in determining the assigned values to each significant IPR&D project such as the risk adjusted discount rate applied to the project’s cash flows and period in which material net cash inflows from significant projects are expected to commence;
  - Describe each significant IPR&D project acquired; and
  - Present in tabular format the fair value assigned to each project acquired and projected costs to complete by project.

For each project, disclose in MD&A the status of the development, stage of completion at acquisition date, the nature and timing of the remaining efforts for completion, anticipated completion date and the date you will begin benefiting from the projects, the risks and uncertainties associated with completing development within a reasonable period of time, and the risks involved if the IPR&D projects are not completed on a timely basis.

Additionally, in your MD&A and in subsequent filings as appropriate, provide a detailed discussion of the current status of your efforts for completion of the R&D projects and the impact from any delays. Also, provide an explanation of material variations between projected results and actual results and how failure to achieve projected results impacted (or will impact) expected return on investment, future results, and financial condition.

Note 12. Commitments and Contingencies, page F-44

51. Please refer to the discussion of supplier commitments in Note 6 of the Optium Australia Pty Limited financial statements, which state that the Australian

Government may require Optium to repay all or some of the Commercial Ready Grant if a change in control occurs whereby Optium Australia's ownership falls below fifty percent of Australian ownership. Please revise the filing to discuss the impact of this contingency on your financial statements as it appears that there has been a qualifying change in control.

Part II

Item 13. Other Expenses of Issuance and Distribution, page II-1

52. Please include as a separate item any premium paid on any policy obtained in connection with your offering which insures or indemnifies directors or officers against any liabilities they may incur in connection with the registration, offering or sale of your securities. Refer to Instruction to Item 511 of Regulation S-K.

Item 17. Undertakings, page II-4

53. Please revise your filing to include the undertakings included in Item 512(a)(5)(ii) and 512(a)(6) of Regulation S-K.

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As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that they have provided all information required for an informed investment decision. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event the company requests acceleration of the effective date of the pending registration statement, it should furnish a letter, at the time of such request, acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;

- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in connection with our review of your filing or in response to our comments on your filing.

We will consider a written request for acceleration of the effective date of the registration statement as a confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. We will act on the request and, pursuant to delegated authority, grant acceleration of the effective date.

We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any registration statement for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

You may contact Kevin Vaughn at (202) 551-3643 or Martin James at (202) 551-3671 if you have questions regarding comments on the financial statements and related matters. Please contact Tim Buchmiller at (202) 551-3635 or me at (202) 551-3444 with any other questions.

Sincerely,

Perry J. Hindin  
Special Counsel

cc (via fax): John J. Egan III, Esq.  
Christopher E. Brown, Esq.