



DIVISION OF
CORPORATION FINANCE

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

October 31, 2011

Kenneth R. Aubrey
President and Chief Executive Officer
Image Sensing Systems, Inc.
500 Spruce Tree Centre
1600 University Avenue West,
St. Paul, MN 55104

Re: Image Sensing Systems, Inc.
Form 10-K
Filed March 24, 2011
Form 10-Q
Filed August 12, 2011
File No. 000-26056

Dear Mr. Aubrey:

We have reviewed your filing and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by amending your filing, by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

Form 10-K for the fiscal year ended December 31, 2010

Item 15. Exhibits and Financial Statement Schedules, page 45

1. We note the disclosure that portions of Exhibit 2.1 are treated as confidential pursuant to a request you filed. Please tell us when you filed that request. Please also provide us with a copy of the order granting confidential treatment for the portions redacted from that Exhibit.

Form 10-Q for the period ended June 30, 2011

Results of Operations, page 13

2. Please tell us and revise future filings to explain the underlying drivers to the changes in the line items you mention. For example, you mention “lower sales” and “weakness” in Asia as offsetting revenue increases, but it is unclear what material factors drove that weakness and lower sales. Similarly, you note that your RTMS segment had “an unusually difficult first quarter,” but your disclosure in your Form 10-Q for the first quarter indicates that reduced revenue in that segment merely reflected “the variable nature of [your] product sales . . . in [your] seasonally slowest quarter.”

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. 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.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

You may contact Kevin Kuhar, staff accountant, at (202) 551-3662 or Jeffrey Jaramillo, Accounting Branch Chief, at (202) 551-3212 if you have questions on the financial statements and related matters. Please contact Gabriel Eckstein at (202) 551-3286 or Geoff Kruczek, reviewing attorney, at (202) 551-3641 with any other questions.

Sincerely,

/s/ Geoffrey Kruczek

for Amanda Ravitz
Assistant Director