



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

DIVISION OF  
CORPORATION FINANCE

May 15, 2013

Via E-mail

Mr. Paul F. McLaughlin  
Chief Executive Officer  
Rudolph Technologies, Inc.  
One Rudolph Road  
P.O. Box 1000  
Flanders, New Jersey 07836

**Re: Rudolph Technologies, Inc.  
Form 10-K for the Year Ended December 31, 2012  
Filed March 1, 2013  
File No.: 000-27965**

Dear Mr. McLaughlin:

We have reviewed your filings and have the following comment. We have limited our review to only your financial statements and related disclosures and do not intend to expand our review to other portions of your documents. In our comment, 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 providing the requested information or by advising us when you will provide the requested response. If you do not believe our comment applies to your facts and circumstances, please tell us why in your response.

After reviewing the information you provide in response to this comment, we may have additional comments.

Form 10-K for the Year Ended December 31, 2012

Index to Consolidated Financial Statements and Financial Statement Schedule, page F-1

Notes to the Consolidated Financial Statements, page F-9

Note 8. Debt Obligations, page F-21

1. We note your disclosures related to the issuance of your \$60 million of senior convertible notes in July 2011. We see you indicate the conversion value of each note will be paid in cash equal to the principal amount of the notes to be converted, and to the extent the conversion value exceeds the aggregate principal amount of the notes being converted,

your common stock in respect of the remainder. We also see concurrently with the issuance of the notes, you purchased a convertible note hedge and sold a warrant. Please tell us the specific U.S. GAAP you considered when accounting for and presenting the convertible note, hedge and warrants. Please address your consideration of the guidance in 470-20 and 815-40 of the FASB Accounting Standards Codification in your response.

Note 9. Commitments and Contingencies, page F-23

-Legal Matters, page F-23

2. We note your disclosures regarding legal matters outstanding with Integrated Technology Corporation for patent infringement and the significance of the related patent judgment damages against the company. We further note that you did not accrue a loss in this matter related to products sold after August of 2007 as of December 31, 2012 but did provide range of loss disclosures since you believe it is reasonably possible that the company could realize a loss related to the referenced products. Please explain to us in detail the significant factors you considered in determining that no accrual was necessary for products sold after August of 2007 under the circumstances. Refer to the guidance in 450-20 of the FASB Accounting Standards Codification.
3. In a related matter, we see that with regard to products sold before August of 2007 you disclosed "...it is probable that the company could realize a loss in this matter for which the company has estimated and recorded a liability of approximately \$4,293." Please tell us why you did not provide range of loss disclosures related to the Integrated Technology Corporation contingency for products sold before August of 2007. Revise future filings as necessary to comply with the guidance at paragraphs 3 and 4 in 450-20-50 of the FASB Accounting Standards Codification.

Form 10-Q For the Quarterly Period Ended March 31, 2013

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 17

Results of Operations for the Three Month Periods Ended March 31, 2013 and 2012, page 18

4. We see you indicated that "the year-over-year decrease in systems revenue for the three month period ended March 31, 2013 is primarily due to decreased customer demand for metrology systems during the first quarter of 2013". When individual line items disclosed in your income statements significantly fluctuate in comparison to the comparable prior period, management should quantify and disclose the nature of each item that caused the significant change. Please revise future filings to specifically quantify each material factor, i.e. such as price changes and / or volume changes, causing the aggregate change in your revenues between quarterly periods and disclose the nature of or reason for each factor causing the aggregate change. Your revised future

Mr. Paul F. McLaughlin  
Rudolph Technologies, Inc.  
May 15, 2013  
Page 3

disclosures should discuss the underlying material causes of the factors described as well as the known or expected future impact of any referenced factors on operating results. For further guidance, please refer to Item 303 and the related instructions in Regulation S-K as well as SEC Interpretive Release No. 34-48960.

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 Tara Harkins, Staff Accountant, at (202) 551-3639 or Jay Webb, Reviewing Accountant, at (202) 551-3603 if you have questions regarding these comments. In this regard, do not hesitate to contact me at (202) 551-3643.

Sincerely,

/s/ Jay Webb "for"

Kevin L. Vaughn  
Accounting Branch Chief