

SPIRE Corp  
Form 10-Q  
May 10, 2013

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

FORM 10-Q

Quarterly Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934  
For the quarterly period ended March 31, 2013; 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 number: 0-12742

Spire Corporation  
(Exact name of registrant as specified in its charter)

Massachusetts  
(State or other jurisdiction of incorporation or organization)

04-2457335  
(I.R.S. Employer Identification Number)

One Patriots Park, Bedford, Massachusetts  
(Address of principal executive offices)

01730-2396  
(Zip Code)

781-275-6000  
(Registrant's telephone number including area code)

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 whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes  No

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 definition 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

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(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 Exchange Act).

Yes  No

The number of shares of the registrant's common stock outstanding as of May 6, 2013 was 9,207,874.

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## PART I. FINANCIAL INFORMATION

## Item 1. Unaudited Condensed Consolidated Financial Statements

## SPIRE CORPORATION AND SUBSIDIARIES

## UNAUDITED CONDENSED CONSOLIDATED BALANCE SHEETS

(in thousands, except share amounts)

	March 31, 2013	December 31, 2012
Assets		
Current assets		
Cash and cash equivalents	\$2,162	\$3,030
Accounts receivable – trade, net	1,500	2,137
Inventories, net	5,162	5,316
Deferred cost of goods sold	131	185
Deposits on equipment for inventory	100	69
Prepaid expenses and other current assets	425	617
Current assets of discontinued operations	718	718
Total current assets	10,198	12,072
Property and equipment, net	1,144	1,197
Intangible and other assets, net	402	393
Available-for-sale investments, at quoted market value (cost of \$2,861 and \$2,741 at March 31, 2013 and December 31, 2012, respectively)	3,322	2,963
Total assets	\$15,066	\$16,625
Liabilities and Stockholders' Equity		
Current liabilities		
Current portion of capital lease obligation	\$13	\$13
Revolving line of credit	590	590
Accounts payable	1,752	1,424
Accrued liabilities	2,352	2,221
Advances on contracts in progress	937	1,037
Liabilities of discontinued operations	171	171
Total current liabilities	5,815	5,456
Long-term portion of capital lease obligation	5	8
Deferred compensation	3,322	2,963
Other long-term liabilities	741	746
Total long-term liabilities	4,068	3,717
Total liabilities	9,883	9,173
Stockholders' equity		
Common stock, \$0.01 par value; 20,000,000 shares authorized; 9,207,874 and 9,062,633 shares issued and outstanding on March 31, 2013 and December 31, 2012, respectively	92	91
Additional paid-in capital	23,203	23,084
Accumulated deficit	(18,573	) (15,945
Accumulated other comprehensive income	461	222
Total stockholders' equity	5,183	7,452
Total liabilities and stockholders' equity	\$15,066	\$16,625

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.



SPIRE CORPORATION AND SUBSIDIARIES  
 UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS  
 (in thousands, except share and per share amounts)

	Three Months Ended March 31,	
	2013	2012
Net sales and revenues		
Sales of goods	\$970	\$5,489
Contract research and service revenues	2,268	1,986
Total net sales and revenues	3,238	7,475
Cost of sales and revenues		
Cost of goods sold	1,791	4,288
Cost of contract research and services	1,222	1,234
Total cost of sales and revenues	3,013	5,522
Gross margin	225	1,953
Operating expenses		
Selling, general and administrative expenses	2,814	3,464
Internal research and development expenses	13	98
Total operating expenses	2,827	3,562
Operating loss from continuing operations	(2,602)	(1,609)
Interest expense, net	(16)	(31)
Foreign exchange gain (loss)	(8)	2
Total other expense, net	(24)	(29)
Loss from continuing operations before income tax benefit (provision)	(2,626)	(1,638)
Income tax benefit (provision) - continuing operations	(2)	1,992
Income (loss) from continuing operations	(2,628)	354
Loss from discontinued operations before sale of business unit	—	(430)
Gain on sale of business unit, net of transaction expenses	—	5,449
Income tax provision - discontinued operations	—	(2,008)
Income from discontinued operations, net of tax	—	3,011
Net income (loss)	\$(2,628)	\$3,365
Basic income (loss) per share:		
From continuing operations, net of tax	\$(0.29)	\$0.04
From discontinued operations, net of tax	—	0.35
Basic income (loss) per share	\$(0.29)	\$0.39
Diluted income (loss) per share:		
From continuing operations, net of tax	\$(0.29)	\$0.04
From discontinued operations, net of tax	—	0.35
Diluted income (loss) per share	\$(0.29)	\$0.39
Weighted average number of common and common equivalent shares outstanding – basic	9,080,385	8,562,633

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Weighted average number of common and common equivalent shares outstanding – diluted	9,080,385	8,565,487
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The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

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SPIRE CORPORATION AND SUBSIDIARIES  
 UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)  
 (in thousands)

	Three Months Ended March 31,	
	2013	2012
Comprehensive income (loss):		
Net income (loss)	\$ (2,628	) \$ 3,365
Other comprehensive income:		
Change in fair value of available for sale marketable securities, net of tax	239	332
Total comprehensive income (loss)	\$ (2,389	) \$ 3,697

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.



SPIRE CORPORATION AND SUBSIDIARIES  
 UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS  
 (in thousands)

	Three Months Ended March 31,	
	2013	2012
Cash flows from operating activities:		
Net income (loss)	\$(2,628	) \$3,365
Less: Net income from discontinued operations, net of tax	—	3,011
Income (loss) from continuing operations	(2,628	) 354
Adjustments to reconcile net income (loss) to net cash used in operating activities:		
Depreciation and amortization	119	204
Deferred tax benefit	—	(2,008
Deferred compensation	239	332
Share-based compensation	36	55
Provision for accounts receivable reserve	—	8
Provision for inventory reserve	156	56
Changes in assets and liabilities:		
Restricted cash	—	21
Accounts receivable	637	862
Inventories	(2	) 178
Deferred cost of goods sold	54	115
Deposits, prepaid expenses and other current assets	161	158
Accounts payable, accrued liabilities and other liabilities	538	(1,355
Deposit - related party	—	300
Advances on contracts in progress	(100	) (901
Net cash used in operating activities of continuing operations	(790	) (1,621
Net cash used in operating activities of discontinued operations	—	(1,562
Net cash used in operating activities	(790	) (3,183
Cash flows from investing activities:		
Purchase of property and equipment	(53	) (53
Additions to intangible and other assets	(22	) (5
Net cash used in investing activities of continuing operations	(75	) (58
Net cash provided by investing activities of discontinued operations	—	6,857
Net cash provided by (used in) investing activities	(75	) 6,799
Cash flows from financing activities:		
Principal payments on capital lease obligations	(3	) (12
Net cash used in financing activities	(3	) (12
Net increase (decrease) in cash and cash equivalents	(868	) 3,604
Cash and cash equivalents, beginning of period	3,030	4,758
Cash and cash equivalents, end of period	\$2,162	\$8,362
Supplemental disclosures of cash flow information:		
Interest paid	\$16	\$31
Income taxes paid	\$1	\$5
Supplemental disclosures of non-cash flow information:		
Liabilities settled with common stock	\$84	\$—

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

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SPIRE CORPORATION AND SUBSIDIARIES  
NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

March 31, 2013 and 2012

1. Description of the Business

Spire Corporation ("Spire" or the "Company") develops, manufactures and markets highly-engineered products and services in two principal business areas: (i) capital equipment and systems for the photovoltaic solar industry and (ii) biomedical, generally bringing to bear expertise in materials technologies, surface science and thin films across both business areas, discussed below.

In the photovoltaic solar area, the Company develops, manufactures and markets specialized equipment for the production of terrestrial photovoltaic modules from solar cells and provide photovoltaic systems for grid connected applications in the commercial markets. The Company's equipment has been installed in approximately 200 factories in 50 countries. The equipment market is very competitive with major competitors located in the U.S., Japan and Europe. The Company's flagship product is its Sun Simulator which tests module performance. The Company's other product offerings include turn-key module lines and to a lesser extent other individual equipment. To compete the Company offers other services such as training and assistance with module certification. The Company also provides turn-key services to its customers to backward integrate to solar cell manufacturing.

In the biomedical area, the Company provides value-added surface treatments to manufacturers of orthopedic and other medical devices that enhance the durability, antimicrobial characteristics or other material characteristics of their products; and performs sponsored research programs into practical applications of advanced biomedical and biophotonic technologies.

On March 9, 2012, the Company completed the sale of its semiconductor business unit, which provided semiconductor foundry services, operated a semiconductor foundry and fabrication facility and was engaged in the business of wafer epitaxy, foundry services, and device fabrication for the defense, medical, telecommunications and consumer products markets (the "Semiconductor Business Unit"), to Masimo Corporation ("Masimo"). Accordingly, the results of operations and assets and liabilities of the Semiconductor Business Unit are being presented herein as discontinued operations. See Note 13 to the unaudited condensed consolidated financial statements.

Operating results will depend upon revenue growth or decline and product mix, as well as the timing of shipments of higher priced products from our solar equipment line and delivery of solar systems. Export sales, which amounted to 30% and 65% of net sales and revenues for the three months ended March 31, 2013 and 2012, respectively, continue to constitute a significant portion of the Company's net sales and revenues.

The Company has incurred operating losses from continuing operations. Operating loss from continuing operations was \$2.6 million and \$1.6 million for the three months ended March 31, 2013 and 2012, respectively. Net cash used in operating activities was \$790 thousand for the three months ended March 31, 2013. Net cash used in operating activities was \$3.2 million

for the three months ended March 31, 2012, which includes \$1.6 million of cash used in operating activities of discontinued operations. As of March 31, 2013, the Company had unrestricted cash and cash equivalents of \$2.2 million compared to \$3.0 million as of December 31, 2012. The maturity date of the Company's credit facilities is June 29, 2013. These factors raise substantial doubt about the Company's ability to continue as a going concern. The Company currently believes that its existing cash resources at March 31, 2013, will be sufficient to fund its operations into the second half of 2013; however, the Company cannot assure you of this.

The Company has various options on how to fund future operational losses or working capital needs, including but not limited to sales of equity, bank debt, the sale or license of assets and technology, or joint ventures involving cash infusions, as it has done in the past; however, there are no assurances that the Company will be able to sell equity, obtain or access bank debt, sell or license assets or technology or enter into such joint ventures on a timely basis and at appropriate values. The Company has developed several plans including cost reduction efforts, expanding revenue in other solar markets and potential strategic alternatives to offset a decline in business due to global economic conditions. The Company's inability to successfully implement its cost reduction strategies, expand revenue in other solar markets or to renew its credit facilities, could adversely impact the Company's ability to continue as a going concern.

Based on the forecasts and estimates underlying the Company's current operating plan, the financial statements do not include any adjustments that might be necessary if the Company is unable to continue as a going concern.

## 2. Interim Financial Statements

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The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with the rules and regulations of the Securities and Exchange Commission ("SEC") regarding interim financial reporting. Certain information and footnote disclosures normally included in consolidated financial statements prepared in accordance with accounting principles generally accepted in the United States of America have been condensed or omitted in accordance with such rules and regulations. These unaudited condensed consolidated financial statements should be read in conjunction with the annual audited consolidated financial statements and notes thereto for the year ended December 31, 2012, included in the Company's Annual Report on Form 10-K filed with the SEC.

In the opinion of management, the accompanying unaudited condensed consolidated financial statements contain all adjustments (consisting of normal recurring adjustments) necessary to fairly present the Company's financial position as of March 31, 2013 and December 31, 2012 and the results of its operations for the three months ended March 31, 2013 and 2012. The results of operations for the three months ended March 31, 2013 are not necessarily indicative of the results to be expected for the fiscal year ending December 31, 2013. The unaudited condensed consolidated balance sheet as of December 31, 2012 has been derived from audited financial statements as of that date. During the second quarter of 2009, the Company began pursuing an exclusive sales process of its Medical Products Business Unit. On December 14, 2009, the Company completed the sale of the Medical Products Business Unit to Bard. During the first quarter of 2012, the Company began pursuing an exclusive sales process of its Semiconductor Business Unit and on March 9, 2012, the Company completed the sale of the Semiconductor Business Unit to Masimo.

Accordingly, the results of operations and assets and liabilities of the Semiconductor Business Unit and the liabilities of the Medical Products Business Unit are being presented herein as discontinued operations. See Note 13 to the unaudited condensed consolidated financial statements.

#### Summary of Significant Accounting Policies

The significant accounting policies followed by the Company are set forth in Note 2 to the Company's consolidated financial statements in its Annual Report on Form 10-K for the year ended December 31, 2012, filed with the SEC.

#### New Accounting Pronouncements

In December 2011, the Financial Accounting Standards Board ("FASB") issued Accounting Standard Update ("ASU") No. 2011-11 ("ASU 2011-11"), Disclosures about Offsetting Assets and Liabilities. The update requires companies to disclose information about financial instruments that have been offset and related arrangements to enable users of their financial statements to understand the effect of those arrangements on their financial position. Companies will be required to provide both net (offset amounts) and gross information in the notes to the financial statements for relevant assets and liabilities that are offset. In January 2013, the FASB issued ASU No. 2013-01 ("ASU 2013-01"), Clarifying the Scope of Disclosures About Offsetting Assets and Liabilities. The update limits the scope of the offsetting disclosures required by ASU 2011-11. ASU 2011-11 and ASU 2013-01 is effective for interim and annual periods beginning after December 31, 2012. As the requirements of these ASUs relate only to disclosures, the application of the updates did not have a material impact on the Company's unaudited condensed consolidated financial statements.

In December 2011, the FASB issued ASU No. 2011-12 ("ASU 2011-12"), Comprehensive Income: Deferral of the Effective Date for Amendments to the Presentation of Reclassifications of Items Out of Accumulated Other Comprehensive Income in Accounting Standards Update No. 2011-05. ASU 2011-12 deferred the effective date of the specific requirement to present items that are reclassified out of accumulated other comprehensive income to net income alongside their respective components of net income and other comprehensive income. As part of this update, the FASB did not defer the requirement to report comprehensive income in either a single continuous statement or in two separate but consecutive statements. In February 2013, the FASB issued ASU No. 2013-02 ("ASU 2013-02"),

Comprehensive Income: Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income. ASU 2013-02 is effective for interim and annual periods beginning after December 31, 2012. As ASU 2013-02 relates to disclosure requirements only, the application of this update did not have a material impact on the Company's unaudited condensed consolidated financial statements.

3. Accounts Receivable/Advances on Contracts in Progress

Net accounts receivable, trade and advances on contracts in progress consists of the following:

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(in thousands)	March 31, 2013	December 31, 2012
Amounts billed	\$1,392	\$1,927
Accrued revenue	136	238
	1,528	2,165
Less: Allowance for doubtful accounts	(28	) (28
Net accounts receivable - trade	\$1,500	\$2,137
Advances on contracts in progress	\$937	\$1,037

Accrued revenue represents revenues recognized on contracts for which billings have not been presented to customers as of the balance sheet date. These amounts are billed and generally collected within one year.

The Company maintains allowances for doubtful accounts for estimated losses resulting from the inability of its customers to pay amounts due. The Company actively pursues collection of past due receivables as the circumstances warrant. Customers are contacted to determine the status of payment and senior accounting and operations management are included in these efforts as is deemed necessary. A specific reserve will be established for past due accounts when it is probable that a loss has been incurred and the Company can reasonably estimate the amount of the loss. The Company does not record an allowance for government receivables and invoices backed by letters of credit as collection is reasonably assured. Bad debts are written off against the allowance when identified. There is no dollar threshold for account balance write-offs. While rare, a write-off is only recorded when all efforts to collect the receivable have been exhausted.

Advances on contracts in progress represent billings that have been presented to the customer, as either deposits or progress payments against future shipments, but revenue has not been recognized.

#### 4. Inventories and Deferred Costs of Goods Sold

Inventories, net of \$1.0 million and \$860 thousand of reserves at March 31, 2013 and December 31, 2012, respectively, and deferred cost of goods sold consist of the following at:

(in thousands)	March 31, 2013	December 31, 2012
Raw materials	\$1,616	\$1,784
Work in process	2,080	2,103
Finished goods	1,466	1,429
Net inventory	\$5,162	\$5,316
Deferred cost of goods sold	\$131	\$185

The Company wrote-off \$29 thousand of excess and obsolete inventory for the three months ended March 31, 2012 and had no write-offs for the three months ended March 31, 2013.

Deferred cost of goods sold represents costs of equipment that has shipped to the customer and title has passed but not all revenue recognition criteria have yet been met. The Company defers these costs until the related revenue is recognized.

#### 5. Income (Loss) Per Share

The following table provides a reconciliation of the denominators of the Company's reported basic and diluted income (loss) per share computations for the periods ended:





	Three Months Ended March 31,	
	2013	2012
Weighted average number of common and common equivalent shares outstanding – basic	9,080,385	8,562,633
Add: Net additional common shares upon assumed exercise of common stock options	—	2,854
Adjusted weighted average number of common and common equivalent shares outstanding – diluted	9,080,385	8,565,487

For the three months ended March 31, 2013, 4,610 shares of common stock, issuable relative to stock options were excluded from the calculation of diluted shares because their inclusion would have been anti-dilutive, due to the Company's net loss position.

In addition, for the three months ended March 31, 2013, 642,446 shares of common stock issuable relative to stock options were excluded from the calculation of diluted shares because their inclusion would have been anti-dilutive, due to the Company's net loss position and their exercise prices exceeding the average market price of the stock for the period. For the three months ended March 31, 2012, 740,482 shares of common stock issuable relative to stock options were excluded from the calculation of diluted shares because their inclusion would have been anti-dilutive, due to their exercise prices exceeding the average market price of the stock for the period.

#### 6. Operating Segments and Related Information

The Company's operations are focused on two primary business areas: Spire Solar (comprised of solar equipment, solar systems and solar research) and Spire Biomedical (comprised of biomedical surface treatments and biophotonics research). Spire Solar and Spire Biomedical operate out of the Company's facility in Bedford, Massachusetts. Each business area is independently managed and has separate financial results that are reviewed by the Board of Directors and Chief Executive Officer and the chief executive officers of each operating division.

During the first quarter of 2012, the Company began pursuing an exclusive sales process of our semiconductor business and on March 9, 2012, the Company completed the sale of the Semiconductor Business Unit to Masimo Corporation. The Company reported the Semiconductor Business Unit as discontinued operations beginning with our financial results presented in our Quarterly Report on Form 10-Q for the first quarter of fiscal 2012. The Semiconductor Business Unit was previously reported as our optoelectronics segment. Accordingly, the results of operations and assets and liabilities of the Semiconductor Business Unit are being presented herein as discontinued operations and are not included in the table below. See Note 13 to the unaudited condensed consolidated financial statements.

The following table presents certain continuing operating division information in accordance with the provisions of ASC 280, Segments Reporting.

(in thousands)	Solar	Biomedical	Total Company
For the three months ended March 31, 2013			
Net sales and revenues	\$1,446	\$1,792	\$3,238
Operating income (loss) from continuing operations	\$(2,792)	) \$190	\$(2,602)
For the three months ended March 31, 2012			
Net sales and revenues	\$5,853	\$1,622	\$7,475
Operating loss from continuing operations	\$(1,544)	) \$(65)	) \$(1,609)

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Operating income (loss) from continuing operations is net sales less cost of sales, selling, general and administrative expenses, but is not affected by non-operating income (expense), by income taxes or by net income (loss) from discontinued operations. In calculating operating income (loss) from continuing operations for individual business units, substantial administrative expenses incurred at the operating level that are common to more than one segment are allocated on a net sales basis. Certain corporate expenses of an operational nature are also allocated to the divisions based on factors including occupancy, employment, and purchasing volume. All intercompany transactions have been eliminated.

The following table shows net sales and revenues by geographic area (based on customer location):

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(in thousands)	Three Months Ended March 31,				
	2013	%	2012	%	
United States	\$2,273	70	% \$2,598	35	%
Europe/Africa	336	10	2,241	30	
Asia	609	19	2,583	34	
Rest of the world	20	1	53	1	
	\$3,238	100	% \$7,475	100	%

Revenues from contracts with United States government agencies for the three months ended March 31, 2013 and 2012 were approximately \$446 thousand and \$424 thousand or 14% and 6% of total net sales and revenues, respectively.

Revenues from the delivery of biomedical services to two customers accounted for 23% and 16% of total net sales and revenues for the three month period ended March 31, 2013.

Revenues from the delivery of solar equipment to three customers account for 23%, 19% and 13% of total net sales and revenues for the three month period ended March 31, 2012.

Two customers represented approximately 25% and 16% , respectively, of net accounts receivable, trade at March 31, 2013 and one customer represented approximately 24% of net accounts receivable, trade at December 31, 2012.

#### 7. Intangible and Other Assets

Patents amounted to \$99 thousand and \$111 thousand, net of accumulated amortization of \$834 thousand and \$822 thousand, at March 31, 2013 and December 31, 2012, respectively. Licenses amounted to \$59 thousand and \$60 thousand, net of accumulated amortization of \$16 thousand and \$15 thousand, at March 31, 2013 and December 31, 2012, respectively. Patent cost is primarily composed of cost associated with securing and registering patents that the Company has been awarded or that have been submitted to, and the Company believes will be approved by the government. License cost is composed of the cost to acquire rights to the underlying technology or know-how. These costs are capitalized and amortized over their useful lives or terms, ordinarily five years using the straight-line method. There are no expected residual values related to these patents. Amortization expense from continuing operations, relating to patents and licenses, was approximately \$13 thousand and \$13 thousand for the three months ended March 31, 2013 and 2012, respectively.

For disclosure purposes, the table below includes future amortization expense for patents and licenses owned by the Company as well as estimated amortization expense related to patents that remain pending at March 31, 2013 of \$90 thousand. This estimated expense for patents pending assumes that the patents are issued immediately, and therefore are being amortized over five years on a straight-line basis. Estimated amortization expense for the periods ending December 31, is as follows:

(in thousands)	Amortization Expense
2013 remaining 9 months	\$56
2014	64
2015	41
2016	27
2017	23
2018	10
Thereafter	27
	\$248

Also included in other assets are refundable deposits made by the Company of approximately \$154 thousand and \$154 thousand at March 31, 2013 and December 31, 2012, respectively.

#### 8. Available-for-Sale Investments

Available-for-sale investments consist of assets held as part of the Spire Corporation Non-Qualified Deferred Compensation Plan. These investments have been classified as available-for-sale investments and are reported at fair value, with unrealized gains and losses included in accumulated other comprehensive income. The unrealized gain on these marketable securities was \$461 thousand and \$222 thousand as of March 31, 2013 and December 31, 2012, respectively. Additionally, the Company settled \$84

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thousand of accrued liabilities through issuance of common stock to available-for-sale investments during the three month period ended March 31, 2013.

#### 9. Fair Value Measurements

The hierarchy established under ASC 820-10, Fair Value Measures and Disclosures ("ASC 820-10") gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). As required by ASC 820-10, the Company's available-for-sale investments are classified within the fair value hierarchy based on the lowest level of input that is significant to the fair value measurement. The three levels of the fair value hierarchy under ASC 820-10, and its applicability to the Company's available-for-sale investments, are described below:

Level 1 - Pricing inputs are quoted prices available in active markets for identical investments as of the reporting date. As required by ASC 820-10, the Company does not adjust the quoted price for these investments, even in situations where the Company holds a large position and a sale could reasonably impact the quoted price.

Level 2 - Pricing inputs are quoted prices for similar investments, or inputs that are observable, either directly or indirectly, for substantially the full term through corroboration with observable market data. Level 2 includes investments valued at quoted prices adjusted for legal or contractual restrictions specific to these investments.

Level 3 - Pricing inputs are unobservable for the investment, that is, inputs that reflect the reporting entity's own assumptions about the assumptions market participants would use in pricing the asset or liability. Level 3 includes investments that are supported by little or no market activity.

#### Valuation Techniques

Fair value is a market-based measure considered from the perspective of a market participant who would buy the asset or assume the liability rather than the Company's own specific measure. All of the Company's fixed income securities are priced using a variety of daily data sources, largely readily-available market data and broker quotes. To validate these prices, the Company compares the fair market values of the Company's fixed income investments using market data from observable and corroborated sources. The Company also performs the fair value calculations for its common stock and mutual fund securities using market data from observable and corroborated sources. In periods of market inactivity, the observability of prices and inputs may be reduced for certain instruments. This condition could cause an instrument to be reclassified from Level 1 to Level 2 or from Level 2 to Level 3. During the three months ended March 31, 2013, none of the Company's instruments were reclassified between Level 1, Level 2, Level 3 and there have been no changes in valuation techniques.

The following table presents the financial instruments related to the Company's available-for-sale investment carried at fair value on a recurring basis as of March 31, 2013 and December 31, 2012 by ASC 820-10 valuation hierarchy (as defined above).

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(in thousands)	Balance as of March 31, 2013	Level 1	Level 2	Level 3
Cash and short term investments	\$34	\$34	\$—	\$—
Common stock				
Basic Materials	24	24	—	—
Consumer Goods	98	98	—	—
Energy	100	100	—	—
Financial	89	89	—	—
Healthcare	116	116	—	—
Industrial Goods	123	123	—	—
Services	43	43	—	—
Technology	708	708	—	—
Transportation	8	8	—	—
Utilities	13	13	—	—
Total Common Stock	1,322	1,322	—	—
Mutual Fund				
Diversified Emerging Markets	228	—	228	—
Precious Metals Fund	52	—	52	—
Foreign Large Blend	243	—	243	—
Foreign Large Growth	238	—	238	—
Large Growth	336	—	336	—
Small Blend	255	255	—	—
Global High Yield Income Fund	53	—	53	—
Total Mutual Fund	1,405	255	1,150	—
Fixed Income				
Domestic	518	—	518	—
International	43	—	43	—
Total Fixed Income	561	—	561	—
Total available-for-sale investments <sup>(1)</sup>	\$3,322	\$1,611	\$1,711	\$—
Percent of total	100	% 48	% 52	% —

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(in thousands)	Balance as of December 31, 2012	Level 1	Level 2	Level 3
Cash and short term investments	\$32	\$32	\$—	\$—
Common Stock				
Basic Materials	15	15	—	—
Consumer Goods	58	58	—	—
Energy	29	29	—	—
Financial	61	61	—	—
Healthcare	52	52	—	—
Industrial Goods	51	51	—	—
Services	32	32	—	—
Technology	376	376	—	—
Transportation	8	8	—	—
Utilities	26	26	—	—
Total Common Stock	708	708	—	—
Mutual Fund				
Diversified Emerging Markets	187	—	187	—
Precious Metals Fund	49	—	49	—
Foreign Large Blend	244	—	244	—
Foreign Large Growth	250	—	250	—
Large Growth	220	—	220	—
Small Blend Total	525	525	—	—
Global High Yield Income Fund	52	—	52	—
Total Mutual Funds	1,527	525	1,002	—
Fixed Income				
Domestic	678	—	678	—
International	18	—	18	—
Total Fixed Income	696	—	696	—
Total available for-sale-investments <sup>(1)</sup>	\$2,963	\$1,265	\$1,698	\$—
Percent of total	100	% 43	% 57	% —

(1) Changes in the fair value of available-for-sale investments are recorded in accumulated other comprehensive income, a component of stockholders' equity, in the Company's unaudited condensed consolidated balance sheets.

The carrying amounts reflected in the Company's unaudited condensed consolidated balance sheets for cash, accounts receivable, prepaid expenses and other current assets, accounts payable, accrued expenses, and capital lease obligations approximate fair value due to their short-term maturities. The fair value of the Company's revolving line of credit has been estimated by management based on the terms that it believes it could obtain in the current market for debt of the same terms and similar remaining maturities. Due to the short-term nature of the remaining maturities, frequency of amendments to its terms and the variable interest rates, the carrying value of the revolving line of credit approximates fair value at March 31, 2013 and December 31, 2012.

#### 10. Notes Payable and Credit Arrangements

The Company has two separate credit facilities with Silicon Valley Bank (the "Bank" or "SVB"): (i) a Second Amended and Restated Loan and Security Agreement and (ii) an Amended and Restated Export-Import Bank Loan and Security Agreement pursuant to which outstanding amounts under this facility are guaranteed by the Export-Import Bank of the

United States (the “EXIM Bank”).

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On December 20, 2012, the Company and the Bank entered into (i) the Fourth Loan Modification Agreement amending certain terms of the Second Amended and Restated Loan and Security Agreement dated as of November 16, 2009 (as amended, the “Revolving Credit Facility”) and (ii) the Fourth Loan Modification Agreement amending certain terms of the Amended and Restated Export-Import Bank Loan and Security Agreement dated as of November 16, 2009 (as amended, the “Ex-Im Facility”). Pursuant to the terms of the Fourth Loan Modification Agreements, the Company and the Bank agreed to (i) extend the maturity date of the Revolving Credit Facility and the Ex-Im Facility from December 29, 2012 to June 29, 2013 and (ii) decrease the aggregate amount of the Revolving Credit Facility and the Ex-Im Facility from \$6 million to \$1.5 million, with up to \$1 million available under the Revolving Credit Facility and up to \$1.5 million available under the Ex-Im Facility. In addition, the guidance line has been extended to support letters of credit in an aggregate amount of up to \$1.5 million through June 29, 2013. If the Company achieves certain levels of liquidity, based on cash on hand and availability under the credit facility, the Company will not be required to cash collateralize letters of credit issued under this guidance line.

The Company's obligations under these two credit facilities, as well as the guidance line, are secured by substantially all of the assets of the Company. Advances under the Revolving Credit Facility are limited to 80% of eligible receivables. Advances under the Ex-Im Facility are limited to (i) 90% of eligible receivables subject to a suitable foreign currency hedge agreement if applicable, plus (ii) 75% of all other eligible receivables billed in foreign currency, plus (iii) 50% of the value of eligible inventory, as defined. Under the Revolving Credit Facility and the Ex-Im Facility, as long as any commitment remains outstanding under the facilities, the Company must comply with a financial covenant by maintaining a minimum cash balance of \$1.0 million. In addition, until all amounts under the credit facilities with the Bank are repaid, covenants under the credit facilities impose restrictions on the Company's ability to, among other things, incur additional indebtedness, create or permit liens on the Company's assets, merge, consolidate or dispose of assets (other than in the ordinary course of business), make dividend and other restricted payments, make certain debt or equity investments, make certain acquisitions, engage in certain transactions with affiliates or change the business conducted by the Company. Any failure by the Company to comply with the covenants and obligations under the credit facilities could result in an event of default, in which case the Bank may be entitled to declare all amounts owed to be due and payable immediately.

Under the credit facilities, interest on outstanding borrowings accrues at a rate per annum equal to the greater of (i) the prime rate plus 2.5% or (ii) 7.0%. In addition, if the Company achieves certain levels of liquidity, based on cash on hand and availability under the credit facility, the Company will have a 0.5% lower interest rate.

Advances outstanding under the Revolving Credit Facility were \$449 thousand and \$449 thousand at March 31, 2013 and December 31, 2012, respectively. Advances outstanding under the Ex-Im Facility were \$141 thousand and \$141 thousand at March 31, 2013 and December 31, 2012, respectively. As of March 31, 2013, the interest rate per annum on the Revolving Credit Facility and Ex-Im Facility was 6.0% and 6.0%, respectively. The Company has utilized \$675 thousand and \$675 thousand of the guidance line at March 31, 2013 and December 31, 2012, respectively. Combined availability under the Revolving Credit Facility and the Ex-Im Facility was \$59 thousand as of March 31, 2013.

## 11. Share-Based Compensation

The Company has recognized share-based compensation expense from continuing operations of approximately \$36 thousand and \$55 thousand for the three months ended March 31, 2013 and 2012, respectively. The total non-cash, share-based compensation expense from continuing operations included in the unaudited condensed consolidated statements of operations for the periods presented is included in the following expense categories:

(in thousands)	Three Months Ended March 31,	
	2013	2012
Cost of contract research, services	\$5	\$4

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Cost of goods sold	3	15
Administrative and selling	28	36
Total share-based compensation	\$36	\$55

Share-based compensation expense from discontinued operations was zero and \$(7) thousand for the three months ended March 31, 2013 and 2012, respectively. No share-based compensation expense was capitalized during the three months ended March 31, 2013 and 2012. Compensation expense related to stock options to be charged in future periods amounts to approximately \$78 thousand at March 31, 2013 and will be recognized over a weighted-average period of 1.18 years as follows:

For the years ended December 31,	Expected Compensation Expense (in thousands)
2013	\$62
2014	16
	\$78

The Company estimates forfeitures at the time of grant and revises, if necessary, in subsequent periods if actual forfeitures differ from those estimates in order to derive the Company's best estimate of awards ultimately expected to vest. Forfeitures represent only the unvested portion of a surrendered option and are typically estimated based on historical experience.

At March 31, 2013, the Company had outstanding options under two option plans: the 1996 Equity Incentive Plan (the "1996 Plan") and the 2007 Stock Equity Plan (the "2007 Plan", together the "Plans"). Both Plans were approved by stockholders and provided that the Board of Directors may grant options to purchase the Company's common stock to key employees and directors of the Company. Incentive and non-qualified options must be granted at least at the fair market value of the common stock or, in the case of certain optionees, at 110% of such fair market value at the time of grant. The options may be exercised, subject to certain vesting requirements, for periods up to ten years from the date of issue. The 1996 Plan expired with respect to the issuance of new grants as of December 10, 2006. Accordingly, future grants may be made only under the 2007 Plan.

A summary of options outstanding under the Plans as of March 31, 2013 and changes during the three month period ended March 31, 2013 is as follows:

	Number of Shares	Weighted-Average Exercise Price	Average Remaining Contractual Life (Years)	Aggregate Intrinsic Value (in thousands)
Options Outstanding at December 31, 2012	644,446	\$ 6.21		
Granted	—	\$ —		
Exercised	—	\$ —		
Cancelled/expired	(2,000 )	\$ 4.32		
Options outstanding at March 31, 2013	642,446	\$ 6.21	5.58	\$3
Options vested and exercisable at March 31, 2013	575,571	\$ 6.35	5.44	\$3
Option vested and expected to vest at March 31, 2013	638,346	\$ 6.36	5.43	\$—
Options available for future grant at March 31, 2013	409,059			

The aggregate intrinsic value in the table above represents the total intrinsic value, based on the Company's closing stock price of \$0.69 as of March 31, 2013, which would have been received by the option holders had all option holders exercised their options as of that date. The total intrinsic value of options exercised was approximately zero and zero for the three months ended March 31, 2013 and 2012, respectively. The total intrinsic value of options expected to vest at March 31, 2013 was approximately zero, and the weighted average remaining contractual life of outstanding options that are expected to vest is 5.33 years.

## 12. Accumulated Other Comprehensive Income

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Changes in accumulated other comprehensive income balances by component for the three months ended March 31, 2013 consist of the following:

(in thousands)	Unrealized Gains (Losses) on Available for Sale Securities
Balance, December 31, 2012	\$ 222
Other comprehensive income before reclassification	272
Amounts reclassified from accumulated other comprehensive income	(33 )
Net current-period other comprehensive income	239
Balance, March 31, 2013	\$ 461

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Reporting reclassifications out of accumulated other comprehensive income for the three months ended March 31, 2013 consist of the following:

Details about Accumulated Other Comprehensive Income Components	Amount Reclassified from Accumulated Other Comprehensive Income (in thousands)	Affected Line Item in the Statement Where Net Income is Resented
Unrealized gains (losses) on available-for-sale investments	\$(33	) Selling, general and administrative expenses

### 13. Discontinued Operations and Assets Held for Sale

The accompanying unaudited condensed consolidated balance sheets, statements of operations and cash flows present the results of operations and assets and liabilities of the Semiconductor Business Unit and the liabilities of the Medical Products Business Unit as discontinued operations.

#### Sales of Medical Products Business Unit

On December 14, 2009, the Company completed the sale of its medical products business unit, which developed and marketed coated and uncoated hemodialysis catheters and related devices for the treatment of chronic kidney disease (the "Medical Products Business Unit"), to Bard Access Systems, Inc. ("Bard"). Accordingly, the liabilities of the Medical Products Business Unit are being presented herein as discontinued operations.

#### Sale of Semiconductor Business Unit

During the first quarter of 2012, the Company began pursuing an exclusive sales process of the Company's Semiconductor Business Unit. The Company (i) determined that the Semiconductor Business Unit was a separate component of the Company's business as, historically, management reviewed separately the Semiconductor Business Unit's financial results apart from the Company's ongoing continuing operations, (ii) eliminated the Semiconductor Business Unit's financial results from ongoing operations and (iii) determined that the Company will have no further continuing involvement in the operations of the Semiconductor Business Unit or cash flows from the Semiconductor Business Unit after the sale.

On March 9, 2012, the Company completed the sale of the Semiconductor Business Unit to Masimo. The asset purchase agreement provided that the aggregate purchase price for the Semiconductor Business Unit was \$8.0 million plus the assumption of \$500 thousand in liabilities, with the cash portion of the purchase price being reduced by retained cash, accounts receivable and liabilities assumed by Masimo in excess of the agreed upon assumed liabilities. As a result, in the first quarter of 2012 the Company received approximately \$7.3 million in cash (less the escrow described below) and incurred legal and transaction related fees of \$425 thousand and Masimo assumed approximately \$1.2 million in liabilities. Of the purchase price, approximately \$718 thousand was deposited into an indemnity escrow account for fifteen months (or until June 2013) to partially secure the Company's obligations for any indemnity claims under the asset purchase agreement. In connection with this transaction, the lease for the premises in Hudson, New Hampshire where the Semiconductor Business Unit was located, was terminated on March 9, 2012, and the Company was released from all future obligations under the lease as of such date.

The Company recorded a loss from discontinued operations before the sale of the Semiconductor Business Unit of zero and \$430 thousand for the three months ended March 31, 2013 and 2012, respectively.

#### Summarized Financial Information of the Discontinued Operations

The assets and liabilities of the Semiconductor Business Unit and the liabilities of the Medical Products Business Unit as of March 31, 2013 and December 31, 2012 are as follows:

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(in thousands)	March 31, 2013	December 31, 2012
Assets		
Current Assets		
Restricted cash	\$718	\$718
Total current assets of discontinued operations	718	718
Total assets of discontinued operations	\$718	\$718
Liabilities of Discontinued Operations		
Current liabilities of discontinued operations		
Accrued liabilities	\$171	\$171
Total current liabilities of discontinued operations	171	171
Total liabilities of discontinued operations	\$171	\$171

Condensed results of operations relating to the Semiconductor Business Unit for the three months ended March 31, 2013 and 2012 are as follows:

(in thousands)	Three Months Ended March 31,	
	2013	2012
Net sales and revenues	\$—	\$425
Gross margin	\$—	\$(296)
Loss from discontinued operations before sale of business unit	\$—	\$(430)
Gain on sale of business unit, net of transaction expenses	—	5,449
Income tax provision	—	(2,008)
Net income from discontinued operations, net of tax	\$—	\$3,011

#### 14. Subsequent Events

The Company evaluated subsequent events through the date of this filing and had no subsequent events to report.

## Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

This Management's Discussion and Analysis of Financial Condition and Results of Operations section and other parts of this Report contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), which statements involve risks and uncertainties. These statements relate to our future plans, objectives, expectations and intentions. These statements may be identified by the use of words such as "may", "could", "would", "should", "will", "expects", "anticipates", "intends", "plans", "believes", "estimates", and similar expressions. Our actual results and the timing of certain events may differ significantly from the results and timing described in the forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those factors discussed or referred to in the Annual Report on Form 10-K for the year ended December 31, 2012 and in subsequent period reports filed with the Securities and Exchange Commission, including this report. The following discussion and analysis of our financial condition and results of operations should be read in light of those factors and in conjunction with our accompanying Consolidated Financial Statements, including the Notes thereto.

### Overview

We develop, manufacture and market highly-engineered products and services in two principal business areas: (i) capital equipment and systems for the photovoltaic solar industry and (ii) biomedical, generally bringing to bear expertise in materials technologies, surface science and thin films across both business areas, discussed below.

In the photovoltaic solar area, we develop, manufacture and market specialized equipment for the production of terrestrial photovoltaic modules from solar cells and provides photovoltaic systems for grid connected applications in the commercial markets. Our equipment has been installed in approximately 200 factories in 50 countries. The equipment market is very competitive with major competitors located in Japan and Europe. Our flagship product is our Sun Simulator which tests module performance. Our other product offerings include turn-key module lines and to a lesser extent other individual equipment. To compete we offer other services such as training and assistance with module certification. We also provide turn-key services to our customers to backward integrate to solar cell manufacturing. At times, we supply materials such as solar cells to certain customers.

In the biomedical area, we provide value-added surface treatments to manufacturers of orthopedic and other medical devices that enhance the durability, antimicrobial characteristics or other material characteristics of their products; and perform sponsored research programs into practical applications of advanced biomedical and biophotonic technologies.

On March 9, 2012, we completed the sale of our semiconductor business unit, which provides semiconductor foundry services, operates a semiconductor foundry and fabrication facility and is engaged in the business of wafer epitaxy, foundry services, and device fabrication for the defense, medical, telecommunications and consumer products markets (the "Semiconductor Business Unit"), to Masimo Corporation ("Masimo"). Accordingly, the results of operations and assets and liabilities of the Semiconductor Business Unit are being presented herein as discontinued operations. See Note 12 to the unaudited condensed consolidated financial statements.

Operating results will depend upon revenue growth and product mix, as well as the timing of shipments of higher priced products from our solar equipment line and delivery of solar systems. Export sales, which amounted to 30% and 65% of net sales and revenues for the three months ended March 31, 2013 and 2012, respectively, continue to constitute a significant portion of our net sales and revenues.





## Results of Operations

The following table sets forth certain items as a percentage of net sales and revenues for the periods presented:

	Three Months Ended March 31,			
	2013		2012	
Net sales and revenues	100	%	100	%
Cost of sales and revenues	(93	)	(74	)
Gross margin	7		26	
Selling, general and administrative expenses	(87	)	(47	)
Internal research and development expenses	—		(1	)
Operating loss from continuing operations	(80	)	(22	)
Other expense, net	(1	)	—	
Loss from continuing operations before income tax benefit	(81	)	(22	)
Income tax benefit - continuing operations	—		27	
Income (loss) from continuing operations	(81	)	5	
Income from discontinued operations, net of tax	—		40	
Net income (loss)	(81	)%	45	%

## Overall

Our total net sales and revenues for the three months ended March 31, 2013 were \$3.2 million as compared to \$7.5 million for the three months ended March 31, 2012, which represents a decrease of \$4.3 million or 57%. The decrease was primarily attributable to a \$4.4 million decrease in solar revenue, partially offset by a slight increase in biomedical revenue.

## Solar Business Unit

Sales in our solar business unit decreased 75% during the three months ended March 31, 2013 to \$1.4 million as compared to \$5.9 million for the three months ended March 31, 2012. The decrease in solar business unit revenue is primarily the result of a decrease in solar module equipment revenue in 2013 of \$4.5 million, partially offset by an increase in equipment research and development revenue of \$196 thousand in 2013. Lower government incentives in the photovoltaic market and the world-wide oversupply of photovoltaic modules relative to market demand has led to precipitously declining prices in the photovoltaic market. The oversupply has also resulted in reduced demand for photovoltaic manufacturing equipment that will not improve until the module supply/demand imbalance is rectified via the growing photovoltaic systems market. Our Solar Business Unit has been negatively impacted by this reduction in demand which is contributing to decreased revenue in our solar business unit.

## Biomedical Business Unit

Revenues on our biomedical business unit increased 10% during the three months ended March 31, 2013 to \$1.8 million as compared to \$1.6 million for the three months ended March 31, 2012. The increase was primarily attributable to an increase in revenue from our orthopedics coating services, partially offset by a decrease in revenue from our research and development contracts.

## Three Months Ended March 31, 2013 Compared to Three Months Ended March 31, 2012

## Net Sales and Revenues

The following table categorizes our net sales and revenues for the periods presented:



(in thousands)	Three Months Ended March 31,		Increase (Decrease)		
	2013	2012	\$	%	
Sales of goods	\$970	\$5,489	\$(4,519)	(82)	)%
Contract research and services revenues	2,268	1,986	282	14	)%
Net sales and revenues	\$3,238	\$7,475	\$(4,237)	(57)	)%

The 82% decrease in sales of goods for the three months ended March 31, 2013 as compared to the three months ended March 31, 2012 was primarily due to a decrease of \$4.5 million in solar module manufacturing equipment revenues. The decrease in solar module equipment sales of 83% in 2013 as compared to 2012 was primarily due to a decrease in individual module equipment units delivered in 2013. Lower government incentives in the photovoltaic market and the world-wide oversupply of photovoltaic modules relative to market demand has led to precipitously declining prices in the photovoltaic market. The oversupply has also resulted in reduced demand for photovoltaic manufacturing equipment that will not improve until the module supply/demand imbalance is rectified via the growing photovoltaic systems market. Our Solar Business Unit has been negatively impacted by this reduction in demand which is contributing to decreased sales of goods.

The 14% increase in contract research and services revenues for the three months ended March 31, 2013 as compared to the three months ended March 31, 2012 is primarily attributable to an increase of \$283 thousand in biomedical service revenue and an increase of \$196 thousand in equipment research and development revenue, partially offset by a decrease of \$113 thousand in biomedical research and development revenue and a decrease of \$85 thousand in solar research and development revenue. Revenues from our biomedical services increased 19% in 2013 compared to 2012 as a result of an increase in revenue from two large customers in 2013. The increase in equipment research and development revenue in 2013 as compared to 2012 was primarily due to new research and development projects started in the third quarter of 2012. The decrease in solar and biomedical research and development revenue of 39% in 2013 as compared to 2012 was primarily due to the completion of three research and development projects in 2012.

#### Cost of Sales and Revenues

The following table categorizes our cost of sales and revenues for the periods presented, stated in dollars and as a percentage of related sales and revenues:

(in thousands)	Three Months Ended March 31,				Decrease	
	2013	%	2012	%	\$	%
Cost of goods sold	\$1,791	185	\$4,288	78	\$(2,497)	(58)
Cost of contract research and services	1,222	54	1,234	62	(12)	(1)
Net cost of sales and revenues	\$3,013	93	\$5,522	74	\$(2,509)	(45)

Cost of goods sold decreased 58% for the three months ended March 31, 2013 as compared to the three months ended March 31, 2012, primarily as a result of decreased costs related to solar module equipment. The decrease in solar module equipment costs of 59% in 2013 as compared to 2012 was primarily due to a decrease in associated revenue. As a percentage of sales, cost of goods sold was 185% of sales of goods in 2013 as compared to 78% of sales of goods in 2012. This increase in the percentage of sales in 2013 is due primarily to a decline in sales of higher margin equipment in 2013 and to a lesser extent, lower indirect costs not sufficient to offset the amount of overhead absorbed due to the reduction in sales volume.

Cost of contract research and services decreased 1% for the three months ended March 31, 2013 as compared to the three months ended March 31, 2012, primarily as a result of decreased costs related to biomedical services, partially offset by increased costs related to biomedical and equipment research and development services. The decrease in biomedical services costs of 11% in 2013 as compared to 2012 was primarily due to reductions in indirect costs. The increase in biomedical and equipment research and development services costs of 139% in 2013 as compared to 2012

was primarily due to a new equipment research and development project started in the third quarter of 2012. Cost of contract research and services as a percentage of related revenue decreased to 54% of related revenues in 2013 from 62% in 2012. This decrease in the percentage of sales in 2013 is primarily due to higher margin from a new equipment research and development project started in the third quarter of 2012.

Cost of sales and revenues also includes approximately \$8 thousand and \$19 thousand of share-based compensation for the three months ended March 31, 2013 and 2012, respectively.

#### Operating Expenses

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The following table categorizes our operating expenses for the periods presented, stated in dollars and as a percentage of total sales and revenues:

(in thousands)	Three Months Ended March 31,				Decrease	
	2013	%	2012	%	\$	%
Selling, general and administrative	\$2,814	87	\$3,464	46	\$(650)	(19)%
Internal research and development	13	—	98	1	(85)	(87)%
Operating expenses	\$2,827	87	\$3,562	48	\$(735)	(21)%

#### Selling, General and Administrative Expenses

Selling, general and administrative expense decreased 19% in the three months ended March 31, 2013 as compared to the three months ended March 31, 2012, primarily as a result of a decrease in marketing, insurance and employee related expenses and a decrease in agent commissions in the solar business unit. In addition, there were fewer gains realized related to the change in value of the deferred compensation plan. Selling, general and administrative expense increased to 87% of sales and revenues in 2013 as compared to 46% in 2012. The increase was primarily due to the decrease in sales and revenues.

Selling, general and administrative expenses include approximately \$28 thousand and \$36 thousand of share-based compensation for the three months ended March 31, 2013 and 2012, respectively.

#### Internal Research and Development

Internal research and development expense decreased 87% in the three months ended March 31, 2013 as compared to the three months ended March 31, 2012, primarily as a result of lower levels of research and development spent in the solar group. As a percentage of sales and revenue, internal research and development expenses decreased slightly in 2013 when compared to 2012.

#### Other Expense, Net

We incurred interest expense of \$16 thousand and \$31 thousand for the three months ended March 31, 2013 and 2012, respectively. The decrease in interest expense is due to lower interest payments due to reduced amounts outstanding under the credit facilities with Silicon Valley Bank in 2013 compared with 2012. We had currency exchange losses of approximately \$8 thousand and currency exchange gains of approximately \$2 thousand during the three months ended March 31, 2013 and 2012, respectively.

#### Income Taxes

We recorded a state income tax provision from continuing operations of \$2 thousand during the three months ended March 31, 2013. We recorded an income tax benefit on our loss from continuing operations of \$2.0 million during the three months ended March 31, 2012, which was offset by a provision on our income from discontinued operations of \$2.0 million during the three months ended March 31, 2012. Gross federal net operating loss carryforwards were approximately \$13.9 million as of December 31, 2012 and expire at various times through 2032. We have a full valuation allowance recorded against the net deferred tax assets at March 31, 2013 due to uncertainty regarding realization of these assets in the future.

#### Income from Discontinued Operations

During the first quarter of 2012, we began pursuing an exclusive sales process of our Semiconductor Business Unit. On March 9, 2012, we completed the sale of the Semiconductor Business Unit to Masimo. Accordingly, the results of operations and assets and liabilities of the Semiconductor Business Unit are being presented herein as discontinued operations.

We recorded net income from discontinued operations of \$3.0 million for the three months ended March 31, 2012. Included in discontinued operations for the three months ended March 31, 2012 is a gain on sale of business unit to Masimo of \$5.4 million and an income tax provision of \$2.0 million. Included in the gain of \$5.4 million is proceeds received from Masimo of \$8.0 million, less assets and liabilities assumed by Masimo of \$2.1 million and legal and professional fees related to complete the sale of \$425 thousand. See Note 13 to the unaudited condensed consolidated financial statements.

Net Income (Loss)

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We reported net loss of \$2.6 million and net income of \$3.4 million for the three months ended March 31, 2013 and 2012, respectively. Net income decreased approximately \$6.0 million, primarily due to a \$5.0 million decline from discontinued operations before tax and a \$2.0 million decline in solar business unit margin, partially offset by a \$734 thousand decline in operating expenses and improved margin in the biomedical services business unit of \$242 thousand.

#### Liquidity and Capital Resources

	March 31,	December 31,	Decrease		
(in thousands)	2013	2012	\$	%	
Cash and cash equivalents	\$2,162	\$3,030	\$(868	) (29	)%
Working capital	\$4,383	\$6,616	\$(2,233	) (34	)%

Cash and cash equivalents decreased due to cash used in operating activities and to a lesser extent investing activities. The overall decrease in working capital is due to a decrease in current assets, primarily cash, accounts receivable, inventories and prepaid expenses and other current assets along with an increase in accounts payable and accrued liabilities. We have historically funded our operating cash requirements using operating cash flow, proceeds from the sale and licensing of technology and assets and proceeds from the sale of equity securities.

There are no material commitments by us for capital expenditures. At March 31, 2013, our accumulated deficit was approximately \$18.6 million, compared to accumulated deficit of approximately \$15.9 million as of December 31, 2012.

We currently believe that our existing cash resources at March 31, 2013, will be sufficient to fund our operations into the second half of 2013; however, we cannot assure you of this. The maturity date of our credit facilities is June 29, 2013. As a result, in our Annual Report on Form 10-K for the year ended December 31, 2012, our independent registered public accounting firm expressed a substantial doubt about our ability to continue as a going concern in their report on our consolidated financial statements dated March 28, 2013.

We have various options on how to fund future operational losses or working capital needs, including but not limited to sales of equity, bank debt, the sale or license of assets and technology, or joint ventures involving cash infusions, as we have done in the past; however, there are no assurances that we will be able to sell equity, obtain or access bank debt, sell or license assets or technology or enter into such joint ventures on a timely basis and at appropriate values. We have developed several plans including cost reduction efforts, expand revenue in other solar markets and potential strategic alternatives to offset a decline in business due to global economic conditions. Our inability to successfully implement our cost reduction strategies, expand revenue in other solar markets or to renew our credit facilities, could adversely impact our ability to continue as a going concern.

Based on the forecasts and estimates underlying our current operating plan, the financial statements do not include any adjustments that might be necessary if we are unable to continue as a going concern.

#### Loan Agreements

We have two separate credit facilities with Silicon Valley Bank (the "Bank" or "SVB"): (i) a Second Amended and Restated Loan and Security Agreement and (ii) an Amended and Restated Export-Import Bank Loan and Security Agreement pursuant to which outstanding amounts under this facility are guaranteed by the Export-Import Bank of the United States (the "EXIM Bank").



On December 20, 2012, we entered into with the Bank (i) the Fourth Loan Modification Agreement amending certain terms of the Second Amended and Restated Loan and Security Agreement dated as of November 16, 2009 (as amended, the “Revolving Credit Facility”) and (ii) the Fourth Loan Modification Agreement amending certain terms of the Amended and Restated Export-Import Bank Loan and Security Agreement dated as of November 16, 2009 (as amended, the “Ex-Im Facility”). Pursuant to the terms of the Fourth Loan Modification Agreements, we agreed with the Bank to (i) extend the maturity date of the Revolving Credit Facility and the Ex-Im Facility from December 29, 2012 to June 29, 2013 and (ii) decrease the aggregate amount of the Revolving Credit Facility and the Ex-Im Facility from \$6 million to \$1.5 million, with up to \$1 million available under the Revolving Credit Facility and up to \$1.5 million available under the Ex-Im Facility. In addition, the guidance line has been extended to support letters of credit in an aggregate amount of up to \$1.5 million through June 29, 2013. If we achieve certain levels of liquidity, based on cash on hand and availability under the credit facility, we will not be required to cash collateralize letters of credit issued under this guidance line.

Our obligations under these two credit facilities, as well as the guidance line, are secured by substantially all of our assets. Advances under the Revolving Credit Facility are limited to 80% of eligible receivables. Advances under the Ex-Im Facility are limited to (i) 90% of eligible receivables subject to a suitable foreign currency hedge agreement if applicable, plus (ii) 75% of all other eligible receivables billed in foreign currency, plus (iii) 50% of the value of eligible inventory, as defined. Under the Revolving Credit Facility and the Ex-Im Facility, as long as any commitment remains outstanding under the facilities, we must comply with a financial covenant by maintaining a minimum cash balance of \$1.0 million. In addition, until all amounts under the credit facilities with the Bank are repaid, covenants under the credit facilities impose restrictions on our ability to, among other things, incur additional indebtedness, create or permit liens on our assets, merge, consolidate or dispose of assets (other than in the ordinary course of business), make dividend and other restricted payments, make certain debt or equity investments, make certain acquisitions, engage in certain transactions with affiliates or change the business conducted by us. Any failure by the us to comply with the covenants and obligations under the credit facilities could result in an event of default, in which case the Bank may be entitled to declare all amounts owed to be due and payable immediately.

Under the credit facilities, interest on outstanding borrowings accrues at a rate per annum equal to the greater of (i) the prime rate plus 2.5% or (ii) 7.0%. In addition, if we achieve certain levels of liquidity, based on cash on hand and availability under the credit facility, we will have a 0.5% lower interest rate.

Advances outstanding under the Revolving Credit Facility were \$449 thousand and \$449 thousand at March 31, 2013 and December 31, 2012, respectively. Advances outstanding under the Ex-Im Facility were \$141 thousand and \$141 thousand at March 31, 2013 and December 31, 2012, respectively. As of March 31, 2013, the interest rate per annum on the Revolving Credit Facility and the Ex-Im Facility was 6.0% and 6.0%, respectively. We have utilized \$675 thousand and \$675 thousand of the guidance line at March 31, 2013 and December 31, 2012, respectively. Combined availability under the Revolving Credit Facility and the Ex-Im Facility was \$59 thousand as of March 31, 2013.

#### Net Cash Used in Operating Activities

Net cash used in operating activities was \$790 thousand in the three months ended March 31, 2013. Net cash used in operating activities was \$3.2 million in the three months ended March 31, 2012, which includes \$1.6 million of cash used in operating activities of discontinued operations. See Note 13 to the unaudited condensed consolidated financial statements. As of March 31, 2013, we had unrestricted cash and cash equivalents of \$2.2 million compared to \$3.0 million as of December 31, 2012.

#### Foreign Currency Fluctuation

We sell almost exclusively in U.S. dollars, generally against an irrevocable non-transferable confirmed letter of credit through a major United States bank. Accordingly, we are not directly affected by foreign exchange fluctuations on our current sales orders. However, fluctuations in foreign exchange rates do have an effect on our customers' access to U.S. dollars and on the pricing competition on certain pieces of equipment that we sell in selected markets. We bear the risk of any currency fluctuations that may be associated with these commitments. We attempt to hedge known transactions when possible to minimize foreign exchange risk. We had no hedging activity during the first three months of 2013 and 2012. Foreign exchange gain (loss) included in other expense, net, was a loss of approximately \$8 thousand and a gain of \$2 thousand during the three months ended March 31, 2013 and 2012, respectively.

#### Related Party Transactions

On November 30, 2007, we entered into a new Lease Agreement (the "Bedford Lease") with SPI-Trust, a Trust of which Roger G. Little, Chairman of the Board, Chief Executive Officer and President of the Company, is the sole trustee and principal beneficiary, with respect to 144,230 square feet of space comprising the entire building in which we have

occupied space since December 1, 1985. The term of the Bedford Lease commenced on December 1, 2007 and was originally set to expire on November 30, 2012. The annual rental rate for the first year of the Bedford Lease was \$12.50 per square foot on a triple net basis, whereby the tenant is responsible for operating expenses, taxes and maintenance of the building. The annual rental rate increased on each anniversary by \$0.75 per square foot.

On September 17, 2010, we entered into the First Amendment to Lease Agreement with SPI-Trust to amend the Bedford Lease. The term of the Bedford Lease was extended for an additional five (5) years to expire on November 30, 2017. The annual rental rate for the first year of the extended term (December 1, 2012 through November 30, 2013) is \$16.00 per square foot on a triple net basis, whereby the tenant is responsible for operating expenses, taxes and maintenance of the building. After the first year of the extended term of the Bedford Lease, the annual rental rate increases on each anniversary by \$0.50 per square foot. We have the right to further extend the term of the Bedford Lease for an additional five (5) year period. If we exercise this right to

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further extend the term of the Bedford Lease, the annual rental rate for the first year of the further extended term will be the greater of: (a) the rental rate in effect immediately preceding the commencement of the extended term; or (b) the market rate at such time, and on each anniversary of the commencement of the extended term the rental rate will increase by \$0.50 per square foot. Additionally, SPI-Trust agreed to reimburse us up to \$50 thousand for all costs incurred by us in connection with any alterations or improvements to the premises or repairs or replacements to the heating and air conditioning systems. We believe that the terms of the Bedford Lease, as amended, are commercially reasonable. Rent expense under the Bedford Lease was \$578 thousand for each of the three months ended March 31, 2013 and 2012, respectively.

On August 29, 2008, we entered into a new Lease Agreement (the "Hudson Lease") with SPI-Trust, with respect to 90 thousand square feet of space comprising the entire building in which Spire Semiconductor has occupied space since June 1, 2003. The term of the Hudson Lease commenced on September 1, 2008, and was to continue for seven (7) years until August 31, 2015. The annual rental rate for the first year of the Hudson Lease was \$12.50 per square foot on a triple-net basis, whereby the tenant was responsible for operating expenses, taxes and maintenance of the building. The annual rental rate increases on each anniversary by \$0.75 per square foot. In addition, we were required to deposit with SPI-Trust \$300 thousand as security for performance by us for our covenants and obligations under the Hudson Lease. SPI-Trust is responsible, at its sole expense, to make certain defined tenant improvements to the building. We believe that the terms of the Hudson Lease was commercially reasonable and reflective of market rates. The Hudson Lease was classified as a related party operating lease. Rent expense from continuing operations under the Hudson Lease was zero and \$119 thousand for the three months ended March 31, 2013 and 2012, respectively. Rent expense from discontinued operations under the Hudson Lease was zero and \$134 thousand for the three months ended March 31, 2013 and 2012, respectively. In connection with sale of the Semiconductor Business Unit, the lease was terminated on March 9, 2012 and we were released from all future obligations under the lease as of such date. The security deposit of \$300 thousand was used to off-set rent payments in the first quarter of 2012. See Note 13 to the unaudited condensed consolidated financial statements.

#### Critical Accounting Policies

The preparation of financial statements in accordance with accounting principles generally accepted in the United States requires us 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. Among the significant estimates affecting our consolidated financial statements are those relating to revenue recognition, reserves for doubtful accounts, reserve for excess and obsolete inventory, impairment of long-lived assets, share-based compensation and warranty reserves. We regularly evaluate our estimates and assumptions based upon historical experience and various other factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. To the extent actual results differ from those estimates, our future results of operations may be affected. We believe the critical accounting policies affect our more significant judgments and estimates used in the preparation of our consolidated financial statements. A summary of significant accounting policies and a description of accounting policies that are considered critical may be found in our Annual Report on Form 10-K for the year ended December 31, 2012, in Note 2 of the notes to consolidated financial statements and the Critical Accounting Policies section of Management's Discussion and Analysis of Financial Condition and Results of Operations.

#### Contractual Obligations, Commercial Commitments and Off-Balance Sheet Arrangements

The following table summarizes our gross contractual obligations at March 31, 2013 and the maturity periods and the effect that such obligations are expected to have on our liquidity and cash flows in future periods:

##### Payments Due by Period

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Contractual Obligations	Total	Less than 1 Year	2 - 3 Years	4 - 5 Years	More Than 5 Years
(in thousands)					
Revolving Credit Facility (SVB)	\$449	\$449	\$—	\$—	\$—
Ex-Im Facility (SVB)	\$141	\$141	\$—	\$—	\$—
Purchase obligations	\$904	\$886	\$17	\$1	\$—
Unrelated party capital leases	\$19	\$14	\$5	\$—	\$—
Operating leases:					
Unrelated party operating leases	\$167	\$117	\$50	\$—	\$—
Related party operating leases	\$11,490	\$2,331	\$4,880	\$4,279	\$—

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Purchase obligations include all open purchase orders outstanding regardless of whether they are cancelable or not. Included in purchase obligations are raw material, equipment and services needed to fulfill customer orders.

The Revolving Credit Facility and Ex-Im Facility do not include an interest component to the contractual obligation.

Outstanding letters of credit totaled \$675 thousand and \$675 thousand at March 31, 2013 and December 31, 2012, respectively. The letters of credit secure performance obligations and purchase commitments, and allow holders to draw funds up to the face amount of the letter of credit if we do not perform as contractually required. The outstanding letters of credit at March 31, 2013 and December 31, 2012 were secured by the Revolving Credit Facility and Ex-Im Facility.

### Item 3. Quantitative and Qualitative Disclosures about Market Risk

Not required as we are a smaller reporting company.

### Item 4. Controls and Procedures

#### Evaluation of Disclosure Controls and Procedures

As of the end of the period covered by this report, an evaluation of the effectiveness of the design and operation of the our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) was performed under the supervision and with the participation of management, including our Chief Executive Officer and Chief Financial Officer. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of March 31, 2013 to ensure that information required to be disclosed in the reports it files and submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and that information required to be disclosed under the Exchange Act is accumulated and communicated to management, including our Chief Executive Officer and our Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

#### Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the quarter ended March 31, 2013 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

## PART II. OTHER INFORMATION

### Item 1. Legal Proceedings

There have been no material changes to the legal proceedings disclosure included in Part I, Item 3 ("Legal Proceedings") of our Annual Report on Form 10-K for the year ended December 31, 2012.

### Item 1A. Risk Factors

There have been no material changes in the Risk Factors described in Part I, Item 1A ("Risk Factors") of our Annual Report on Form 10-K for the year ended December 31, 2012.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

None.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

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Item 5. Other Information

None.

Item 6. Exhibits

- 31.1 Certification of the Chairman of the Board, Chief Executive Officer and President pursuant to §302 of the Sarbanes-Oxley Act of 2002.
- 31.2 Certification of the Chief Financial Officer and Treasurer pursuant to §302 of the Sarbanes-Oxley Act of 2002.
- 32.1 Certification of the Chairman of the Board, Chief Executive Officer and President pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002.
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- 101.INS\* XBRL Instance Document
- 101.SCH\* XBRL Taxonomy Extension Schema Document
- 101.CAL\* XBRL Taxonomy Extension Calculation Linkbase Document
- 101.DEF\* XBRL Taxonomy Extension Definition Linkbase Document
- 101.LAB\* XBRL Taxonomy Extension Label Linkbase Document
- 101.PRE\* XBRL Taxonomy Extension Presentation Linkbase Document

Pursuant to Rule 406T of Regulation S-T, the Interactive Data Files on Exhibit 101 hereto are deemed not filed or part of a registration statement or prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933, as amended, are deemed not filed for purposes of Section 18 of the Securities and Exchange Act of 1934, as amended, and otherwise are not subject to liability under those sections.



SIGNATURES

Pursuant to the requirements 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.

Spire Corporation

Dated: May 10, 2013

By: /s/ Roger G. Little  
Roger G. Little  
Chairman of the Board, Chief Executive Officer and President  
(Principal Executive Officer)

Dated: May 10, 2013

By: /s/ Robert S. Lieberman  
Robert S. Lieberman  
Chief Financial Officer and Treasurer  
(Principal Financial Officer and Principal Accounting Officer)

EXHIBIT INDEX

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