

NOVA MEASURING INSTRUMENTS LTD
Form 424B5
February 03, 2010

The information in this preliminary prospectus supplement and the accompanying prospectus is not complete and may be changed. A registration statement relating to these securities has been declared effective by the Securities and Exchange Commission. This preliminary prospectus supplement and the accompanying prospectus are not an offer to sell these securities and they are not soliciting an offer to buy these securities in any state or jurisdiction where the offer or sale is not permitted.

Filed Pursuant to Rule 424(b)(5)
Registration Number 333-163561

Subject to Completion. Dated February 3, 2010

PRELIMINARY PROSPECTUS SUPPLEMENT
(to prospectus dated January 4, 2010)

Nova Measuring Instruments Ltd.
3,500,000 Ordinary Shares

This is a public offering of ordinary shares of Nova Measuring Instruments Ltd. We are offering 3,500,000 ordinary shares in this offering.

Our ordinary shares are listed on The NASDAQ Global Market and on the Tel Aviv Stock Exchange in Israel under the symbol "NVMI." On February 2, 2010, the last reported sale price of our ordinary shares on The NASDAQ Global Market was \$4.55 per share and on February 3, 2010, the last reported sale price of our ordinary shares on the Tel Aviv Stock Exchange was NIS 16.96 per share.

You should carefully read this prospectus supplement and the accompanying prospectus (including all of the information incorporated by reference therein) before you invest. Investing in our ordinary shares involves a high degree of risk. Before buying any ordinary shares, you should read the discussion of material risks of investing in our ordinary shares in the section entitled "Risk Factors" beginning on page S-6 of this prospectus supplement.

None of the U.S. Securities and Exchange Commission, the Israeli Securities Authority or any state securities commission have approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense under the laws of the United States and the laws of the State of Israel.

	Per Ordinary Share	Total
Public offering price	\$	\$
Underwriting discounts and commissions	\$	\$
Proceeds, before expenses, to us	\$	\$

We estimate the total expenses of this offering, excluding the underwriting discounts and commissions, will be approximately \$270,000. We have also granted the underwriters an option for a period of 30 days from the date of

this prospectus supplement to purchase up to 525,000 ordinary shares at the public offering price per share, less the underwriting discounts and commissions, to cover over-allotments, if any.

Delivery of the shares is expected to be made on or about February , 2010, by electronic delivery via the Depository Trust Company, subject to customary closing conditions. The underwriters are offering the ordinary shares as set forth under “Underwriting.”

Sole Book-Running Manager

Needham & Company, LLC

Co-Manager

Roth Capital Partners, LLC

The date of this prospectus supplement is February , 2010.

Table Of Contents

	Page
Prospectus Supplement	
<u>About this Prospectus Supplement</u>	S-2
<u>Prospectus Supplement Summary</u>	S-3
<u>Risk Factors</u>	S-6
<u>Cautionary Note Regarding Forward-Looking Statements</u>	S-14
<u>Use of Proceeds</u>	S-15
<u>Dilution</u>	S-16
<u>Capitalization</u>	S-17
<u>Price Range of Ordinary Shares</u>	S-17
<u>Management</u>	S-18
<u>Material Tax Considerations</u>	S-21
<u>Underwriting</u>	S-31
<u>Legal Matters</u>	S-33
<u>Experts</u>	S-33
<u>Where You Can Find More Information: Incorporation of Information by Reference</u>	S-33

	Page
Prospectus	
<u>About This Prospectus</u>	1
<u>About Nova Measuring Instruments Ltd.</u>	1
<u>Cautionary Note Regarding Forward-Looking Statements</u>	2
<u>Risk Factors</u>	3
<u>Price Range of Ordinary Shares</u>	4
<u>Capitalization</u>	5
<u>Use of Proceeds</u>	5
<u>The Securities We May Offer</u>	5
<u>Description of Ordinary Shares</u>	6
<u>Description of Debt Securities</u>	7
<u>Description of Warrants</u>	11
<u>Description of Subscription Rights</u>	12
<u>Description of Units</u>	12
<u>Plan of Distribution</u>	14
<u>Experts</u>	15
<u>Legal Matters</u>	15
<u>Where You Can Find More Information: Incorporation of Information by Reference</u>	16
<u>Enforceability of Civil Liabilities and Agent For Service of Process in The United States</u>	17
<u>Offering Expenses</u>	17

About This Prospectus Supplement

You should rely only on the information incorporated by reference or provided in this prospectus supplement and the accompanying prospectus, or to which we have referred you. We have not authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus supplement and the accompanying prospectus do not constitute an offer to sell, or a solicitation of an offer to purchase, the securities offered by this prospectus supplement and the accompanying prospectus in any jurisdiction where it is unlawful to make such offer or solicitation. You should not assume that the information contained in this prospectus supplement or the accompanying prospectus, or any document incorporated by reference in this prospectus supplement or the accompanying prospectus, is accurate as of any date other than the date on the front cover of the applicable document. Neither the delivery of this prospectus supplement nor any distribution of securities pursuant to this prospectus supplement shall, under any circumstances, create any implication that there has been no change in the information set forth or incorporated by reference into this prospectus supplement or in our affairs since the date of this prospectus supplement. Our business, financial condition, results of operations and prospects may have changed since that date.

This prospectus supplement is part of a registration statement (No. 333-163561) that we filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration process. Under the registration statement, we registered the offering by us of up to \$20,000,000 of ordinary shares, debt securities, warrants, subscription right and units for sale from time to time in one or more offerings. This prospectus supplement provides specific information about the offering by us of 3,500,000 of our ordinary shares under the shelf registration statement, in addition to information concerning the over-allotment option granted by us. This document comprises two parts. The first part is this prospectus supplement, which describes the specific terms of this offering and also adds to and updates information contained in the accompanying prospectus. The second part, the accompanying prospectus, gives more general information, some of which may not apply to this offering. If the description of the offering varies between this prospectus supplement and the accompanying prospectus or the documents incorporated herein by reference, you should rely on the information contained in this prospectus supplement. However, if any statement in one of these documents is inconsistent with a statement in another document having a later date — for example, a document incorporated by reference in the accompanying prospectus — the statement in the document having the later date modifies or supersedes the earlier statement.

Before purchasing any securities, you should carefully read both this prospectus supplement and the accompanying prospectus, together with the additional information described under the heading, “Where You Can Find More Information; Incorporation of Information by Reference,” on page S-33 of this prospectus supplement.

Unless the context requires otherwise, when used in this prospectus supplement, references to the terms “Nova,” “the Company,” “we,” “us,” “our” and similar terms, refer to Nova Measuring Instruments Ltd. and its wholly owned subsidiaries on a consolidated basis, unless we state or the context implies otherwise.

Unless otherwise indicated, all amounts herein are expressed in United States dollars (“U.S. dollars”, “dollars”, “USD”, “US\$” or “\$”).

Prospectus Supplement Summary

This summary highlights selected information about us, this offering and information contained in greater detail elsewhere in this prospectus supplement, the accompanying prospectus and in the documents incorporated by reference. This summary is not complete and does not contain all of the information that you should consider before investing in our securities. You should carefully read and consider this entire prospectus supplement, the accompanying prospectus and the documents, including financial statements and related notes, and information incorporated by reference into this prospectus supplement, including the financial statements and “Risk Factors” on page S-6 of this prospectus supplement, before making an investment decision. If you invest in our securities, you are assuming a high degree of risk.

Our Business

We are a worldwide leading designer, developer and producer of integrated and stand-alone process control metrology systems. Metrology systems measure various thin film properties and critical circuit dimensions during various steps in the semiconductor manufacturing process, allowing semiconductor manufacturers to increase quality, productivity and yields, lower their manufacturing costs and increase their profitability. We supply our metrology systems to major semiconductor manufacturers worldwide, either directly or through process equipment manufacturers. Of the 20 semiconductor manufacturers that had the highest capital equipment expenditures in 2009, 15 use our systems. Our systems were first installed in 1995 and, since that time, we have sold more than 2,000 metrology systems.

The semiconductor manufacturing process starts with a silicon wafer that has been highly polished on one side to a mirror finish, upon which circuits are constructed. To construct the circuits, a series of layers of thin films that act as conductors, semiconductors or insulators are applied to the polished side of the wafer. During the manufacturing process, these film layers are subjected to processes which remove portions of the film layers, create circuit patterns and perform other functions. The semiconductor manufacturing process requires exacting steps and strict control of equipment performance and process sequences. Tight control can be achieved through monitoring silicon wafers and measuring relevant parameters after each process step with metrology tools such as those we produce.

Prior to the introduction of our integrated metrology systems, process control was achieved through stand-alone measurement equipment. Stand-alone measurement equipment requires semiconductor manufacturers to interrupt the manufacturing process sequence, remove sample silicon wafers from the process equipment and place the silicon wafers on the stand-alone measuring or inspection tool. In contrast, our integrated metrology approach is based upon patented measuring methods that enable us to produce optical measuring systems that are small enough to be integrated directly inside many types of semiconductor process equipment. We believe that in several instances during the manufacturing process, our integrated approach offers considerable advantages over the conventional stand-alone approach to metrology control, enabling manufacturers using our integrated equipment to reduce costs and to improve production efficiency, yield and quality.

We have always emphasized our integrated metrology solutions as this continues to be an area where we have a leading position. In addition, in the past few years we developed and started manufacturing stand-alone metrology systems as well. We have leveraged our technology, methods, metrology expertise and market position in the integrated metrology field to expand our offerings of stand-alone metrology systems. Today, both stand alone and integrated metrology solutions have reached a level of maturity allowing semiconductor manufactures to choose how to use either technology and make decisions based on merit specific to the process step in question, always balancing between the amount of data attained and the use made of the data for capabilities such as automated process control. Our long-term strategy is focused on advanced metrology and process control solutions where our integrated process control products and stand alone products are compatible or complementary and used in a customized way to meet specific customer needs.

We were incorporated as a limited liability company under the laws of the State of Israel in 1993. Our principal executive offices are located at Weizmann Science Park, Einstein St., Building 22, 2nd Floor, Ness-Ziona, Israel. Our telephone number is 972-8-9387505 and our website is <http://nova.co.il>. The information available on or accessible through our website does not constitute a part of this prospectus supplement or the accompanying prospectus and should not be relied upon.

S-3

The Offering

Ordinary Shares offered by us in the offering	3,500,000 ordinary shares, par value NIS 0.01 per share (4,025,000 ordinary shares if the underwriters exercise their over-allotment option in full).
Total ordinary shares outstanding immediately after this offering	22,954,274 ordinary shares (23,479,274 ordinary shares if the underwriters exercise their over-allotment option in full).
Dividend policy	Our board of directors is authorized to declare dividends, although we anticipate that, for the foreseeable future, we will retain any earnings to support operations and to finance the growth and development of our business. Therefore, we do not expect to pay cash dividends for at least the next several years.
Over-allotment option	525,000 ordinary shares.
Timing and settlement of ordinary shares	The ordinary shares are expected to be delivered against payment on or about February , 2010.
Listing	Our ordinary shares are listed on The NASDAQ Global Market and on the Tel Aviv Stock Exchange in Israel.
The NASDAQ Global Market and Tel Aviv Stock Exchange symbol	“NVMI.”
Use of proceeds	We intend to use the net proceeds we receive from this offering for general corporate purposes. See “Use of Proceeds” for additional information.
Lock-up	Subject to certain exceptions, we and the members of our board of directors, our executive officers and one of our affiliated shareholders have agreed with the underwriters not to sell, transfer or dispose of any ordinary shares for a period of 60 days (subject to certain exceptions) after the date of this prospectus supplement. See “Underwriting.”
Risk factors	Before deciding to invest in our ordinary shares, you should carefully consider the risks related to our business, the offering and our ordinary shares, and our location in Israel. See “Risk Factors” on page S-6 of this prospectus supplement.

The number of ordinary shares to be outstanding immediately after the offering as shown above is based on 19,454,274 ordinary shares outstanding as of September 30, 2009. This number does not include, as of September 30, 2009:

- 1,453,485 ordinary shares issuable upon the exercise of outstanding warrants at an exercise price of \$3.05 per share;
- 2,658,476 ordinary shares issuable upon the exercise of outstanding options to purchase 2,350,946 ordinary shares at a weighted average exercise price of \$1.81 per share, and vesting of 307,530 restricted share units outstanding;
 - 1,321,870 ordinary shares available for grant under our 2007 Incentive Plan; and
 - 2,229 treasury shares held by us.

Unless otherwise stated, outstanding share information throughout this prospectus supplement excludes such outstanding securities. Except as otherwise indicated, all information in this prospectus supplement assumes no exercise by the underwriters of their option to purchase an additional 525,000 ordinary shares to cover over-allotments.

S-4

Summary Consolidated Financial Data

We derived the summary consolidated financial statement data for the years ended December 31, 2006, 2007 and 2008 set forth below from our audited consolidated financial statements and related notes incorporated by reference in this prospectus supplement and the accompanying prospectus. We derived the summary consolidated financial statement data as of and for the nine months ended September 30, 2008 and 2009 from our unaudited condensed consolidated financial statements and related notes incorporated by reference in this prospectus supplement and the accompanying prospectus. Our results for interim periods are not necessarily indicative of the results that may be expected for the entire year. You should read the information presented below together with our consolidated financial statements, the notes to those statements and the other financial information incorporated by reference in this prospectus supplement and the accompanying prospectus.

	Year Ended December 31,			Nine Months ended	
	2006	2007	2008	2008	2009
(U.S. Dollars, in thousands, except per share and weighted average shares data)					
Consolidated Statement of Operations Data:					
Revenues	\$48,292	\$58,077	\$38,969	\$32,741	\$24,078
Cost of revenues	27,743	33,251	25,986	21,097	13,887
Gross profit	20,549	24,826	12,983	11,644	10,191
Operating expenses:					
Research and development expenses, net	9,166	9,143	8,606	6,383	4,816
Sales and marketing expenses	8,754	10,175	7,503	6,113	3,989
General and administrative expenses	5,136	4,830	3,199	2,461	1,581
Other operating expenses	-	3,831	633	633	-
Total operating expenses	23,056	27,979	19,941	15,590	10,386
Operating loss	(2,507)	(3,153)	(6,958)	(3,946)	(195)
Financing income (expenses), net	573	(764)	1,537	96	132
Net loss for the year	\$(1,934)	\$(3,917)	\$(5,421)	\$(3,850)	\$(63)
Basic and diluted loss per share	\$(0.12)	\$(0.21)	\$(0.28)	\$(0.20)	\$(0.00)
Shares used in calculation of basic and diluted loss per share(1)					
	15,976	18,606	19,369	19,366	19,391

(1) See Note 2(P) of the notes to the financial statements incorporated by reference in this prospectus supplement and the accompanying prospectus for an explanation of the determination of the number of shares used to compute basic and dilutive per share amounts for the years ended December 31, 2006, 2007 and 2008. Due to the anti-dilutive effect, basic loss per share was equal to diluted loss per share for the nine months ended on September 30, 2009. The number of potentially dilutive securities excluded from diluted loss per share due to the anti-dilutive effect amounted to 357,563 for the nine month ended September 30, 2009.

	As of September 30, 2009	
	Actual	As Adjusted
(unaudited)		
(U.S. Dollars, in thousands)		
Consolidated Balance Sheet Data:		
Cash and cash equivalents	\$ 15,546	\$ 30,206

Edgar Filing: NOVA MEASURING INSTRUMENTS LTD - Form 424B5

Working capital	21,544	36,204
Total Assts	32,273	46,933
Capital stock (including additional paid-in capital)	84,479	99,139
Total Shareholders' equity	23,183	37,843

The as adjusted balance sheet data above reflects the application of the net proceeds from the sale of 3,500,000 ordinary shares offered by us at an assumed offering price of \$4.55 per share, after deducting estimated underwriting discounts and commissions and estimated offering expenses.

S-5

Risk Factors

You should carefully consider the risks described below and in our annual report on Form 20-F for the year ended December 31, 2008, as well as the other information included or incorporated by reference in this prospectus supplement and the accompanying prospectus, including our consolidated financial statements and the related notes, before you decide to buy our ordinary shares. The risks and uncertainties described below and incorporated by reference in this prospectus supplement are not the only risks facing us. We may face additional risks and uncertainties not currently known to us or that we currently deem to be immaterial. Any of the risks described below or incorporated by reference in this prospectus supplement, and any such additional risks, could materially adversely affect our business, financial condition or results of operations. In such case, you may lose all or part of your original investment.

Risks Related to Our Business and Our Industry

Because substantially most of our current sales are dependent on two specific product lines, factors that adversely affect the pricing and demand for these product lines could substantially reduce our sales.

We are currently dependent on two process control product lines. We expect revenues from these product lines to continue to account for the substantial portion of our revenues for at least the next year. As a result, factors adversely affecting the pricing of or demand for these product lines, such as competition and technological change, could significantly reduce our sales.

The markets we target are highly cyclical and it is difficult to predict the length and strength of any downturn or expansion period.

The semiconductor capital equipment market and industries, which are highly cyclical, experienced in 2008 and 2009 a significant decline in sales after significant increases in sales in 2006 and 2007. According to Gartner, Inc., a market research company, the forecast for year 2010 predicts a 57% increase in wafer fab equipment spending. Although we rely on market research companies, we cannot predict the length and strength of the downturns or expansions, including the current period of expansion.

Our inability to significantly reduce spending during a protracted slowdown in the semiconductor industry could reduce our prospects of achieving profitability.

Historically, we have derived all of our revenues, and we expect to continue to derive practically all of our revenues, from sales of our products and related services to the semiconductor industry. Our business depends in large part upon capital expenditures by semiconductor manufacturers, which in turn depend upon the current and anticipated demand for semiconductors. The semiconductor industry has experienced severe and protracted cyclical downturns and upturns. Specifically, during 2008 and 2009 the semiconductor industry experienced a severe downturn, as a result of the slowdown in the general economy and the industry overcapacity build-ups in years 2006 and 2007. During cyclical downturns, as those we have experienced in the past, and are likely to experience in the future, material reductions in the demand for the type of capital equipment and process technology that we offer may result in a decline in our sales. In addition, our ability to reduce expenses in response to any downturn or slowdown in the rate of capital investment by manufacturers in these industries may be limited because of:

- our continuing need to invest in research and development;
- our continuing need to market our new products to new and existing customers; and
- our extensive ongoing customer service and support requirements worldwide.

As a result, we may have difficulty achieving profitability.

If we do not respond effectively and on a timely basis to rapid technological change, our ability to attract and retain customers could be diminished, which would have an adverse affect on our sales and ability to remain competitive.

The semiconductor manufacturing industry is characterized by rapid technological change, new product introductions and enhancements and evolving industry standards. Our ability to remain competitive and generate sales revenue will depend in part upon our ability to develop new and enhanced systems at competitive prices in a timely and cost-effective manner and to accurately predict technology transitions. Because new product development commitments must be made well in advance of sales, new product decisions must anticipate the future demand for products. If we fail to correctly anticipate future demand for products, our sales and competitive position will suffer. In addition, the development of new measurement technologies, new product introductions or enhancements by our competitors could cause a decline in our sales or loss of market acceptance of our existing products.

S-6

We depend on OEM suppliers for sales of our integrated metrology systems, and the loss of our OEM suppliers as customers could harm our business.

We believe that sales of integrated metrology systems will continue to be an important source of our revenues. Sales of our integrated metrology systems depend upon the ability of OEMs (original equipment manufacturers) to sell semiconductor equipment products that include our metrology systems as components. If our OEMs are unable to sell such products, or if they choose to focus their attention on products that do not integrate our systems, our business could suffer. If we were to lose our OEMs as customers for any reason, our ability to realize sales from integrated metrology systems would be diminished, which would harm our business.

We may not be able to develop or market new products, which could slow or prevent our growth.

Our business plan requires the introduction of several new product lines. Our plans to introduce process control products for photolithography, etch, metal deposition and other processes will require development of new capabilities. Some of these projects are in the early stages of development, and we cannot be certain that we will be able to develop or bring to market these new product lines or, if we do, that these products will be well received or profitable. If we are unable to successfully introduce new product lines, our future growth could be adversely affected.

If any of our systems fail to meet or exceed our internal quality specifications, we cannot ship them until such time as they have met such specifications. If we experience significant delays or are unable to ship our products to our customers as a result of our internal processes or for any other reason, our business and reputation may be adversely affected.

Our products are complex and require technical expertise to design and manufacture. Various problems occasionally arise during the manufacturing process that may cause delays and/or impair product quality. We actively monitor our manufacturing processes to ensure that our products meet our internal quality specifications. Any significant delays stemming from the failure of our products to meet or exceed our internal quality specifications, or for any other reasons, would delay our shipments. Shipment delays could be harmful to our business, revenues and reputation in the industry.

New product lines that we may introduce in the future may contain defects, which will require us to allocate time and financial resources to correct.

Our new product lines may contain defects when first introduced. If there are defects, we will need to divert the attention of our personnel from our product development efforts to address the detection and correction of the defects. In the past, no liability claims have been filed against us for damages related to product defects, and we have not experienced any material delays as a result of product defects. However, we cannot provide assurances that we will not incur these costs or liabilities or experience these lags or delays in the future. Moreover, the occurrence of such defects, whether caused by our products or the products of another vendor, may result in significant customer relations problems and adversely affect our reputation and may impair the market acceptance of our products.

We have historically generated losses and may incur future losses.

Since our inception in 1993, we have had several years of losses and only one profitable year. We may incur a net loss in 2010 or in future years. As of September 30, 2009, we had an accumulated deficit of approximately \$62 million. We plan to increase our aggregate operating expenses in 2010 relative to 2009. However, our ability to generate profits is dependent mainly on our ability to increase sales. In the future, our sales may not grow and we may not achieve profitability.

Our dependence on a single manufacturing facility magnifies the risk of an interruption in our production capabilities.

We have only one manufacturing facility, which is located in Ness-Ziona, Israel. Any event affecting this site, including natural disaster, labor stoppages or armed conflict, may disrupt or indefinitely discontinue our manufacturing capabilities and could significantly impair our ability to fulfill orders and generate revenues, thus negatively impacting our business.

We experience quarterly fluctuations in our operating results, which may adversely impact our stock price.

Our quarterly operating results have fluctuated significantly in the past. This trend may continue. A principal reason is that we derive a substantial portion of our revenue from the sale of a relatively small number of systems to a relatively small number of customers. As a result, our revenues and results of operations for any given quarter may decrease due to factors relating to the timing of orders, the timing of shipments of systems, and the timing of recognizing these revenues. Furthermore, our quarterly results are affected by the highly cyclical nature of the semiconductor capital equipment market and industries.

We also have a limited ability to predict revenues for future quarterly periods and, as a result, face risks of revenue shortfalls. If the number of systems we actually ship, and thus the amount of revenues we are able to record in any particular quarter, is below our expectations, the adverse effect may be magnified by our inability to adjust spending quickly enough to compensate for the revenue shortfall.

S-7

We depend on a small number of large customers, and the loss of one or more of them would lower our revenues.

Like our peers serving the semiconductor market, our customer base is highly concentrated among a limited number of large customers, primarily because the semiconductor industry is dominated by a small number of large companies. We anticipate that our revenues will continue to depend on a limited number of major customers, although the companies considered to be our major customers and the percentage of our revenue represented by each major customer may vary from period to period. The loss of any one of our major customers would adversely affect our sales and revenues. Furthermore, if any of our customers become insolvent or have difficulties meeting their financial obligations to us for any reason, we may suffer losses.

We operate in an extremely competitive market, and if we fail to compete effectively, our revenues and market share will decline.

Although the market for integrated process control systems used in semiconductor manufacturing is currently concentrated and characterized by relatively few participants, the semiconductor capital equipment industry is intensely competitive. We compete mainly with Nanometrics, Inc., Rudolph Technologies, Inc., and KLA-Tencor Corp. which manufacture and sell integrated and/or stand-alone process control systems. In addition, we compete with original semiconductor equipment manufacturers, such as Tokyo Electron Ltd., which manufacture integrated metrology products and with original semiconductor equipment manufacturers, such as Applied Materials, Inc., which develop in-situ sensors and products. Established companies, both domestic and foreign, compete with our product lines, and new competitors are entering our market. Some of our competitors have greater financial, engineering, manufacturing and marketing resources than we do. If a particular customer selects a competitor's capital equipment, we expect to experience difficulty in selling to that customer for a significant period of time. A substantial investment is required by customers to evaluate, test, select and integrate capital equipment into a production line. As a result, once a manufacturer has selected a particular vendor's capital equipment, we believe that the manufacturer generally relies upon that equipment for the specific production line application and frequently will attempt to consolidate its other capital equipment requirements with the same vendor. Accordingly, unless our systems offer performance or cost advantages that outweigh a customer's expense of switching to our systems, it will be difficult for us to achieve significant sales from that customer once it has selected another vendor's system for an application. We believe that our ability to compete successfully depends on a number of factors both within and outside of our control, including:

- the contribution of our equipment to our customers' productivity;
- our product quality and performance;
- our global technical service and support;
- the return on investment (ROI) of our equipment and its cost of ownership;
- the breadth of our product line;
- our success in developing and marketing new products; and
- the extendibility of our product.

If we fail to compete in a timely and cost-effective manner against current or future competitors, our revenues and market share will decline.

The ongoing consolidation in our industry may harm us if our competitors are able to offer a broader range of products and greater customer support than we can offer.

We believe that the semiconductor capital equipment market is undergoing consolidation. A number of capital equipment suppliers have been acquired by larger equipment manufacturers. For example, in 2005 Rudolph Technologies, Inc. acquired August Technologies, Inc., in 2006 Nanometrics, Inc. acquired Soluris, Inc. and Accent Technologies, Inc., and in 2007 KLA-Tencor Corp. acquired Therma-Wave, Inc. and Nanometrics, Inc. acquired Tevet Ltd. We believe that similar acquisitions and business combinations involving our competitors and customers may occur in the future. These acquisitions could adversely impact our competitive position by enabling our competitors and potential competitors to expand their product offerings and customer service, which could provide them an advantage in meeting customers' needs, particularly with those customers that seek to consolidate their capital equipment requirements with a smaller number of vendors. The greater resources, including financial, marketing and support resources, of competitors involved in these acquisitions could allow them to accelerate the development and commercialization of new competitive products and the marketing of existing competitive products to their larger installed bases. Accordingly, such business combinations and acquisitions by competitors or customers could jeopardize our competitive position.

S-8

We may not be successful in our efforts to identify, complete and integrate future acquisitions, which could disrupt our current business activities and adversely affect our results of operations or future growth.

Any future acquisitions may involve many risks, including the risks of:

- diverting management's attention and other resources from our ongoing business concerns;
- entering markets in which we have no direct prior experience;
- improperly evaluating new services, products and markets;
- being unable to maintain uniform standards, controls, procedures and policies;
- being unable to integrate new technologies or personnel;
- incurring the expenses of any undisclosed or potential liabilities; and
- the departure of key management and employees.

If we are unable to successfully complete future acquisitions or to effectively integrate any future acquisitions, our ability to grow our business or to operate our business effectively could be reduced, and our business, financial condition and operating results could suffer. Even if we are successful in completing acquisitions, we cannot assure you that we will be able to integrate the operations of the acquired business without encountering difficulty regarding different business strategies with respect to marketing, integration of personnel with disparate business backgrounds and corporate cultures, integration of different point-of-sale systems and other technology and managing relationships with other business partners.

One of our major customers has no cancellation fee with regard to cancellation of orders, and we have been facing difficulties to collect cancellation fees from another customer.

Our supply agreement with one of our largest customers does not include cancellation fee with regard to cancellation of this customer's orders. In addition, during the recent slowdown in the semiconductors industry, another customer cancelled his orders and we were unable to collect cancellation fees from that customer. Because of that, our ability to rely on our backlog for future forecasting and planning is impaired and harm our ability to forecast our financial results.

Because of our small size, we depend on a small number of employees who possess both executive and technical expertise, and the loss of any of these key employees would hurt our ability to implement our strategy and to compete effectively.

Because of our small size and our reliance on employees with both executive and advanced technical skills, our success depends significantly upon the continued contributions of our officers and key personnel. All of our key management and technical personnel have expertise, which is in high demand among our competitors, and the loss of any of these individuals could cause our business to suffer. We do not maintain life insurance policies for our officers and directors.

Our lengthy sales cycle increases our exposure to customer delays in orders, which may result in obsolete inventory and volatile quarterly revenues.

Sales of our systems depend, in significant part, upon our customers adding new manufacturing capacity or expanding existing manufacturing capacity, both of which involve a significant capital commitment. We may experience delays in finalizing sales following initial system qualification while a customer evaluates and approves an initial purchase of our systems. In general, for new customers or applications, our normal sales cycle takes between 12 and 24 months to complete. During this time, we may expend substantial funds and management effort, but fail to make any sales. Lengthy sales cycles subject us to a number of significant risks, including inventory obsolescence and fluctuations in operating results, over which we have limited control.

Because of the technical nature of our business, our intellectual property is extremely important to our business, and our inability to protect our intellectual property would harm our competitive position.

As of December 31, 2009, we have obtained 80 U.S. patents and have 20 U.S. patent applications pending. In addition, we have obtained more than 40 non-U.S. patents and have more than 40 non-U.S. patent applications pending including 5 PCT applications.

We cannot assure that:

• pending patent applications will be approved;

• any patents will be broad enough to protect our technology, will provide us with competitive advantages or will not be challenged or invalidated by third parties; or

• the patents of others will not have an adverse effect on our ability to do business.

S-9

We also cannot assure that others will not independently develop similar products, duplicate our products or, if patents are issued to us, design around these patents. Furthermore, because patents may afford less protection under foreign law than is available under U.S. law, we cannot assure that any foreign patents issued to us will adequately protect our proprietary rights.

In addition to patent protection, we also rely upon trade secret protection, employee and third-party nondisclosure agreements and other intellectual property protection methods to protect our confidential and proprietary information. Despite these efforts, we cannot be certain that others will not otherwise gain access to our trade secrets or disclose our technology.

Furthermore, we may be required to institute legal proceedings to protect our intellectual property. If such legal proceedings are resolved adversely to us, our competitive position and/or results of operations could be harmed.

There has been significant litigation involving intellectual property rights in the semiconductor and related industries, and similar litigation involving Nova could force us to divert resources to defend against this litigation or deter our customers from purchasing our systems.

We have been, and may in the future be, notified of allegations that we may be infringing intellectual property rights possessed by others. In addition, we may be required to commence legal proceedings against third parties, which may be infringing our intellectual property, in order to defend our intellectual property. In the future, protracted litigation and expense may be incurred to defend ourselves against alleged infringement of third party rights or to defend our intellectual property against infringement by third parties. Adverse determinations in that type of litigation could:

• result in our loss of proprietary rights;

• subject us to significant liabilities, including treble damages in some instances;

• require us to seek licenses from third parties, which licenses may not be available on reasonable terms or at all; or

• prevent us from selling our products.

Any litigation of this type, even if we are ultimately successful, could result in substantial cost and diversion of time and effort by our management, which by itself could have a negative impact on our profit margin, competitive position and ability to develop and market new and existing products.

We depend on a limited number of suppliers, and in some cases a sole supplier. Any disruption or termination of these supply channels may adversely affect our ability to manufacture our products and to deliver them to our customers.

We purchase components, subassemblies and services from a limited number of suppliers and occasionally from a single source. Disruption or termination of these sources could occur, and these disruptions could have at least a temporary adverse effect on our operations. To date, we have not experienced any material disruption or termination of our supply sources. A prolonged inability on our part to obtain components included in our systems on a cost-effective basis could adversely impact our ability to deliver products on a timely basis, which could harm our sales and customer relationships.

We are dependent on international sales, which expose us to foreign political and economic risks that could impede our plans for expansion and growth.

Our principal customers are located in the United States, Japan, Taiwan, Singapore, Europe and South Korea and we produce our products in Israel. International operations expose us to a variety of risks that could seriously impact our

financial condition and impede our growth. For instance, trade restrictions, changes in tariffs and import and export license requirements could adversely affect our ability to sell our products in the countries adopting or changing those restrictions, tariffs or requirements. This could reduce our sales by a material amount.

Because we derive a significant portion of our revenues from sales in Asia, our sales could be hurt by the instability of Asian economies.

A number of Asian countries have experienced political and economic instability. For instance, Taiwan and China have had a number of disputes, as have North and South Korea, and Japan had for a number of years experienced significant economic instability. We have a subsidiary in Taiwan and we have significant customers in Japan and South Korea as well as in China. An outbreak of hostilities or other political upheaval or economic downturns in these or other Asian countries would likely harm the operations of our customers in these countries, causing our sales to suffer.

S-10

A large number of our ordinary shares continue to be owned by a relatively small number of shareholders, whose future sales of our stock, if substantial, may depress our share price.

If our principal shareholders sell substantial amounts of our ordinary shares, including shares issued upon the exercise of outstanding options or warrants, the market price of our ordinary shares may fall. As of September 30, 2009, we had 19,454,274 ordinary shares outstanding (not including treasury shares), and based on reports filed with the SEC and on the information provided to us by our transfer agent, 10,709,150 of such shares were held by six shareholders.

Certain shareholders may control the outcome of matters submitted to a vote of our shareholders, including the election of directors.

As of September 30, 2009, based on reports filed with the SEC and on the information provided to us by our transfer agent, six of our shareholders controlled approximately 55.05% of our outstanding ordinary shares (not including warrants exercisable or exercisable within 60 days of September 30, 2009). As a result, and although we are currently not aware of any voting agreement between such shareholders, if these shareholders voted together or in the same manner, they would have the ability to control the outcome of corporate actions requiring an ordinary majority vote of shareholders as set in our amended and restated articles of association. Even if these five shareholders do not vote together, some of which have the ability to influence the outcome of corporate actions requiring the vote of shareholders as set in our amended and restated articles of association.

The market price of our ordinary shares may be affected by a limited trading volume and may fluctuate significantly.

In the past there has been a limited public market for our ordinary shares and there can be no assurance that an active trading market for our ordinary shares will continue. An absence of an active trading market could adversely affect our shareholders' ability to sell our ordinary shares in short time periods. Our ordinary shares have experienced, and are likely to experience in the future, significant price and volume fluctuations, which could adversely affect the market price of our ordinary shares without regard to our operating performance.

We manage our available cash through various bank institutions and invest portions of our cash reserves in bank deposits. Recently, following the global financial crisis, a few bank institutions announced bankruptcy or were on the verge of bankruptcy. A bankruptcy of one of the banks in which or through which we hold or invest our cash reserves, might prevent us to access that cash for an uncertain period of time.

We manage our available cash through various bank institutions and invest portions of our cash reserves in bank deposits. Recently, following the global financial crisis, few bank institutions announced bankruptcy or were on the verge of bankruptcy. As of September 30, 2009, approximately 3% of our cash reserves were invested in or through U.S. based bank institutions, and approximately 93% of our cash was invested in or through Israeli based bank institutions. A bankruptcy of one of the banks in which we hold our cash reserves or through which we invest our cash reserves, might prevent us to access that cash for an uncertain period of time.

We may fail to maintain effective internal control over financial reporting in accordance with Section 404 of the Sarbanes-Oxley Act of 2002.

The Sarbanes-Oxley Act of 2002 imposes certain duties on us and our executives and directors. Our efforts to comply with the requirements of Section 404, which started in connection with our Annual Report on Form 20-F for the fiscal year ended December 31, 2007, have resulted in increased general and administrative expense and a diversion of management time and attention, and we expect these efforts to require the continued commitment of resources. Section 404 of the Sarbanes-Oxley Act of 2002 requires (i) management's annual review and evaluation of our internal control over financial reporting and (ii) an attestation report issued by an independent registered public accounting firm on our internal control over financial reporting, in connection with the filing of our Annual Report on Form 20-F

for each fiscal year (such requirement is currently expected to be applicable to us starting with our Annual Report on Form 20-F for the fiscal year ending December 31, 2010). We have documented and tested our internal control systems and procedures in order for us to comply with the requirements of Section 404. While our assessment of our internal control over financial reporting resulted in our conclusion that as of December 31, 2008, our internal control over financial reporting was effective, we cannot predict the outcome of our testing in future periods. If we fail to maintain the adequacy of our internal controls, we may not be able to ensure that we can conclude on an ongoing basis that we have effective internal controls over financial reporting. Failure to maintain effective internal control over financial reporting could result in investigation or sanctions by regulatory authorities, and could have a material adverse effect on our operating results, investor confidence in our reported financial information, and the market price of our ordinary shares.

S-11

Risks Related to Operations in Israel

Potential political, economic and military instability in Israel may adversely affect our growth and revenues.

Our principal offices and manufacturing facilities and many of our suppliers are located in Israel. Although most of our sales are currently being made outside Israel, political, economic and military conditions in Israel directly affect our operations. Following the recession and the instability that characterized the Israeli economy during the years 2001 and 2003, the Israeli economy showed signs of improvement and stability during the years thereafter. However, in 2008 and 2009, the global economic recession, instability and uncertainty affected the economic conditions in Israel, and as a result, our ability to obtain financing from Israeli banks was affected.

In addition, since the establishment of the State of Israel in 1948, a number of armed conflicts have occurred between Israel and its Arab neighbors. In July 2006, there have been extensive hostilities along Israel's northern border with Lebanon and to a lesser extent in the Gaza Strip. Since June 2007, the Hamas militant group has taken over the Gaza Strip from the Palestinian Authority, and the hostilities along Israel's border with the Gaza Strip have increased, escalating to a wide scale attack by Israel in December 2008, in retaliation to rocket attacks into southern Israel. The resumption of hostilities in the region, and the on-going tension in the region, have a negative effect on the stability of the region which might have a negative effect on our business and harm our growth and revenues.

Our operations may be disrupted by the obligation of key personnel to perform military service.

Some of our executive officers and employees in Israel are obligated to perform up to 84 days of military reserve service on a three year basis until the age of 40 for soldiers and until the age of 45 for officers. This time-period may be extended by the Military Chief of the General Staff and the approval of the Minister of Defense or by a directive of the Minister of Defense in the event of a declared national emergency. Our operations could be disrupted by the absence for a significant period of one or more of our executive officers or key employees due to military service. To date, our operations have not been materially disrupted as a result of these military service obligations. Any disruption in our operations due to such obligations would adversely affect our ability to produce and market our existing products and to develop and market future products.

Provisions of our amended and restated articles of association and Israeli law may delay, prevent or make difficult an acquisition of Nova, which could prevent a change of control and negatively affect the price of our ordinary shares.

Israeli corporate law regulates mergers, requires tender offers for acquisitions of shares above specified thresholds, requires special approvals for transactions involving directors, officers or significant shareholders and regulates other matters that may be relevant to these types of transactions. Furthermore, Israeli tax considerations may make potential transactions unappealing to us or to some of our shareholders.

These provisions of Israeli law may delay, prevent or make difficult an acquisition of Nova, which could prevent a change of control and therefore depress the price of our shares.

The rights and responsibilities of our shareholders are governed by Israeli law and differ in some respects from the rights and responsibilities of shareholders under U.S. law.

We are incorporated under Israeli law. The rights and responsibilities of holders of our ordinary shares are governed by our amended and restated articles of association and by the Israeli Companies Law, 5759-1999, or the "Companies Law". These rights and responsibilities differ in some respects from the rights and responsibilities of shareholders in typical U.S. corporations. In particular, pursuant to the Companies Law each shareholder of an Israeli company has to act in good faith in exercising his or her rights and fulfilling his or her obligations toward the company and other shareholders and to refrain from abusing his power in the company, including, among other things, in voting at the

general meeting of shareholders and class meetings, on amendments to a company's articles of association, increases in a company's authorized share capital, mergers, and transactions requiring shareholders' approval under the Companies Law. In addition, a controlling shareholder of an Israeli company or a shareholder who knows that it possesses the power to determine the outcome of a shareholder vote or who has the power to appoint or prevent the appointment of a director or officer in the company, or has other powers toward the company has a duty of fairness toward the company. However, Israeli law does not define the substance of this duty of fairness. Because Israeli corporate law has undergone extensive revision in recent years, there is little case law available to assist in understanding the implications of these provisions that govern shareholder behavior.

Because most of our revenues are generated in U.S. dollars, but a significant portion of our expenses is incurred in currencies other than U.S. dollars, and mainly New Israeli Shekels, our profit margin may be seriously harmed by currency fluctuations.

We generate most of our revenues in U.S. dollars, but incur a significant portion of our expenses in currencies other than U.S. dollars, and mainly New Israeli Shekels, commonly referred to as NIS. As a result, we are exposed to risk of devaluation of the U.S. dollar in relation to the NIS and other currencies. In that event, the dollar cost of our operations in countries other than the U.S. will increase and our dollar measured results of operations will be adversely affected. During 2009, the U.S. dollar depreciated against the NIS by 0.7%, after revaluating approximately 1% in 2008 and devaluating approximately 9% in 2007. We cannot predict the future trends in the rate of devaluation or revaluation of the U.S. dollar against the NIS, and our operations also could be adversely affected if we are unable to hedge against currency fluctuations in the future.

We participate in government programs under which we receive tax and other benefits. These programs impose restrictions on our ability to use the technologies developed under these programs. In addition, the reduction or termination of these programs would increase our costs.

We receive grants from the Office of the Chief Scientist of the Israeli Ministry of Industry, Trade and Labor for research and development programs that meet specified criteria. We are also eligible to receive tax benefits under Israeli law for capital investments that are designated as “approved enterprises”. To maintain our eligibility for these programs and tax benefits, we must continue to meet certain conditions, including paying royalties related to grants received and making specified investments in fixed assets. Some of these programs also restrict our ability to manufacture particular products and transfer particular technology, which was developed as part of the “approved enterprises” outside of Israel, by requiring approval of the research and development committee nominated by the Office of the Chief Scientist of the Israeli Ministry of Industry, Trade and Labor under applicable law. Such approval may be given only if the recipient abides by all the provisions of the law and related regulations. Approval to manufacture products outside of Israel or consent to the transfer of technology, if requested, might not be granted.

If we fail to comply with these conditions in the future, the benefits received could be cancelled. We could also be required to pay increased taxes or refund any benefits previously received, adjusted for inflation and interest. In 2007 and in 2006, we recorded an aggregate of \$2.4 million and \$1.9 million, respectively, in grants under Israeli government programs, and in 2008 we recorded \$1.9 million in grants under Israeli government programs. As of September 30, 2009, our contingent liability to the Office of the Chief Scientist for grants received was approximately \$9.9 million. From time to time, we submit requests for new grants from the Office of the Chief Scientist and for expansion of our approved enterprise programs. These requests might not be approved. Also, the Israeli government may reduce or eliminate these benefits in the future. The termination or reduction of these grants or tax benefits could harm our business, financial condition and results of operations. In addition, if we increase our activities outside Israel due to, for example, future acquisitions, our increased activities generally will not be eligible for inclusion in Israeli tax benefit programs. Accordingly, our effective corporate tax rate could increase significantly in the future.

Any shareholder with a cause of action against us as a result of buying, selling or holding our ordinary shares may have difficulty asserting a claim under U.S. securities laws or enforcing a U.S. judgment against us or our officers, directors or Israeli auditors.

We are organized under the laws of the State of Israel, and we maintain most of our operations in Israel. Most of our officers and directors as well as our Israeli auditors reside outside of the United States and a substantial portion of our assets and the assets of these persons are located outside the United States. Therefore, if you wish to enforce a judgment obtained in the United States against us, or our officers, directors and auditors, you will probably have to file a claim in an Israeli court. Additionally, you might not be able to bring civil actions under U.S. securities laws if you file a lawsuit in Israel. We have been advised by our Israeli counsel that Israeli courts generally enforce a final executory judgment of a U.S. court for liquidated amounts in civil matters after a hearing in Israel. If a foreign judgment is enforced by an Israeli court, it will be payable in Israeli currency. However, payment in the local currency of the country where the foreign judgment was given shall be acceptable, subject to applicable foreign currency restrictions.

Our shares are listed for trade on more than one stock exchange, and this may result in price variations.

Our ordinary shares are listed for trading on The NASDAQ Global Market and on the Tel Aviv Stock Exchange. This may result in price variations. Our ordinary shares are traded on these markets in different currencies, U.S. dollars on The NASDAQ Global Market and New Israeli Shekels on the Tel Aviv Stock Exchange. These markets have different opening times and close on different days. Different trading times and differences in exchange rates, among other factors, may result in our shares being traded at a price differential on these two markets. In addition, market influences in one market may influence the price at which our shares are traded on the other.

We may be classified as a passive foreign investment company and, as a result, our U.S. shareholders may suffer adverse tax consequences.

Generally, if for any taxable year 75% or more of our gross income is passive income, or at least 50% of our assets are held for the production of, or produce, passive income, we may be characterized as a passive foreign investment company for U.S. federal income tax purposes. Our passive income would not include income derived from the sale of our products, but would include amounts derived by reason of a temporary investment of any cash amounts. Characterization as a passive foreign investment company could result in adverse U.S. tax consequences to our shareholders, including having gain realized on the sale of our shares being treated as ordinary income, as opposed to capital gain income, and having potentially punitive interest charges applied to such sales proceeds. U.S. shareholders should consult with their own U.S. tax advisors with respect to the U.S. tax consequences of investing in our ordinary shares.

Passive foreign investment company status is determined as of the end of a full tax year and is dependent on a number of factors, including the value of a corporation's assets, the trading price of our ordinary shares and the amount and type of its gross income. Therefore, there can be no assurances that we will not become a passive foreign investment company for the current fiscal year ending on December 31, 2010, or any future year.

S-13

Risks Related to This Offering

Investors will incur an immediate dilution from the public offering price.

Because the price per share of our ordinary shares being offered is substantially higher than the book value per share of our ordinary shares, you will suffer substantial dilution in the net tangible book value of the ordinary shares you purchase in this offering. Based on the assumed public offering price of \$4.55 per share, the closing price of our ordinary shares on The NASDAQ Global Market on February 2, 2010, if you purchase ordinary shares in this offering, you will suffer immediate and substantial dilution of \$2.90 per ordinary share in the net tangible book value of the ordinary shares, as of September 30, 2009. See “Dilution” for a more detailed discussion of the dilution you will incur in this offering.

A substantial percentage of our outstanding shares may be sold in this offering, which could cause the price of our ordinary shares to decline.

Pursuant to this offering, we will sell 3,500,000 ordinary shares, or approximately 18.0%, of our outstanding ordinary shares as of September 30, 2009. This sale and any future sales of a substantial number of ordinary shares in the public market, or the perception that such sales may occur, could adversely affect the price of our ordinary shares. We cannot predict the effect, if any, that market sales of those ordinary shares or the availability of those ordinary shares for sale will have on the market price of our ordinary shares.

Our management has broad discretion over the use of proceeds from this offering.

Our management and board of directors have significant flexibility in applying, and retain significant discretion with respect to the use of, the proceeds that we receive from this offering. The proceeds of this offering may be used in a manner that does not generate favorable returns. We could use such net proceeds for purposes other than those contemplated at the time of this offering.

We may need additional funds in the future. We may be unable to obtain additional funds or if we obtain financing it may not be on terms favorable to us. You may lose your entire investment.

Based on our current plans, we believe our existing cash and cash equivalents along with cash generated from operations will be sufficient to fund our operating expenses and capital requirements through December 31, 2010, although there is no assurance of this result, and we may need funds in the future. If our capital resources are insufficient to meet future capital requirements, we will have to raise additional funds. If we are unable to obtain additional funds on terms favorable to us, we may be required to cease or reduce our operating activities.

We do not anticipate paying any dividends.

No dividends have been paid on our ordinary shares. We do not intend to pay cash dividends on our ordinary shares in the foreseeable future, and anticipate that profits, if any, received from operations will be devoted to our future operations. Any decision to pay dividends will depend upon our profitability at the time, cash available and other relevant factors.

Cautionary Note Regarding Forward-Looking Statements

This prospectus supplement, the accompanying prospectus, and the information incorporated by reference herein and therein contain forward-looking statements which involve known and unknown risks and uncertainties. We include this notice for the express purpose of permitting us to obtain the protections of the safe harbor provided by the Private Securities Litigation Reform Act of 1995 with respect to all such forward-looking statements. Examples of

forward-looking statements include: projections of capital expenditures, competitive pressures, revenues, growth prospects, product development, financial resources and other financial matters. You can identify these and other forward-looking statements by the use of words such as “may,” “plans,” “anticipates,” “believes,” “estimates,” “predicts,” “in” “potential” or the negative of such terms, or other comparable terminology.

Our ability to predict our operating results or the effects of various events on our operating results is inherently uncertain. Therefore, we caution you to consider carefully the matters described under the caption “Risk Factors” on page S-6 of this prospectus supplement, and certain other matters discussed in this prospectus supplement, the accompanying prospectus, and the information incorporated by reference herein and therein, and other publicly available sources. Such factors and many other factors beyond the control of our management could cause our actual results, performance or achievements to be materially different from any future results, performance or achievements that may be expressed or implied by the forward-looking statements.

S-14

Use Of Proceeds

We estimate that the net proceeds from the sale of 3,500,000 of our ordinary shares in this offering will be approximately \$14.7 million at an assumed offering price of \$4.55 per ordinary share, the closing price of our ordinary shares on The NASDAQ Global Market on February 2, 2010, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us. If the underwriters' over-allotment option is exercised in full, we estimate that we will receive net proceeds of approximately \$16.9 million, after deducting underwriter discounts and commissions and estimated offering expenses payable by us.

We currently intend to use the net proceeds we receive from this offering for general corporate purposes.

The amounts and timing of our use of proceeds will vary depending on a number of factors, including the amount of cash generated or used by our operations, and the rate of growth, if any, of our business. As a result, our management will have broad discretion in the allocation of the net proceeds of this offering for any purpose, and investors will be relying on the judgment of our management with regard to the use of these net proceeds. In addition, while we have not entered into any agreements, commitments or understandings relating to any significant transaction as of the date of this prospectus supplement, we may use a portion of the net proceeds to pursue acquisitions, joint ventures and other strategic transactions.

Pending the final application of the net proceeds of this offering, we intend to invest the net proceeds of this offering in interest-bearing and investment-grade securities.

S-15

Dilution

If you purchase our ordinary shares in this offering, your interest will be diluted to the extent of the difference between the public offering price per share and the net tangible book value per share of our ordinary shares after this offering. Our net tangible book value as of September 30, 2009, was approximately \$23.2 million, or approximately \$1.20 per ordinary share. Net tangible book value per share is equal to total assets minus the sum of total liabilities and intangible assets divided by the total number of shares outstanding. Unless otherwise noted, all information contained in this dilution section assumes that the underwriters do not exercise their over-allotment option.

Dilution in net tangible book value per share to new investors represents the difference between the amount per share paid by purchasers of shares of ordinary shares in this offering and the net tangible book value per ordinary share immediately after completion of this offering. After giving effect to the sale of 3,500,000 ordinary shares in this offering at an assumed public offering price of \$4.55 per share, the closing price of our ordinary shares on The NASDAQ Global Market on February 2, 2010, and after deducting the underwriting discounts and commissions and estimated offering expenses, our net tangible book value as of September 30, 2009, would have been \$37.8 million, or \$1.65 per share. This amount represents an immediate increase in net tangible book value to existing shareholders of \$3.35 per share and an immediate dilution in net tangible book value of \$2.90 per share to purchasers of shares of ordinary shares in this offering, as illustrated in the following table (without giving effect to the over-allotment option granted to the underwriters):

Assumed public offering price per ordinary share	\$4.55
Net tangible book value per share as of September 30, 2009	\$1.20
Increase in net tangible book value per share after giving effect to this offering	\$0.45
Pro forma net tangible book value per share as of September 30, 2009	\$1.65
Dilution in net tangible book value per share to new investors	\$2.90

This table assumes no exercise of outstanding options or warrants or vesting or outstanding restricted share units. To the extent that options or warrants are exercised, there will be further dilution to new investors.

If the underwriters' over-allotment option is exercised in full, our pro forma net tangible book value per share after giving effect to this offering would be \$1.71 per share, and the dilution in pro forma net tangible book value per share to investors in this offering would be \$2.84 per share.

The as adjusted information discussed above is illustrative only. Our net tangible book value following the completion of the offering is subject to adjustment based on the actual offering price of our ordinary shares and other terms of this offering determined at pricing.

Capitalization

The following table sets forth our consolidated capitalization as of September 30, 2009:

- on an actual basis; and
- on an as adjusted basis to give effect to our sale of 3,500,000 ordinary shares at an assumed public offering price of \$4.55 per share, the closing price for our ordinary shares on The NASDAQ Global Market on February 2, 2010), after deducting an assumed underwriting discount and estimated offering expenses payable by us (assuming no exercise of the underwriters' option to purchase an additional 525,000 ordinary shares).

The information set forth in the following table should be read in conjunction with and is qualified in its entirety by reference to the audited and unaudited financial statements and notes thereto incorporated by reference in this prospectus supplement and the accompanying prospectus.

(In thousands, except share data)	As of September 30, 2009	
	Actual	As Adjusted (unaudited)
Shareholders' equity:		
Ordinary shares, par value NIS 0.01 per share: 40,000,000 shares authorized; 19,456,503 actual shares issued and 19,454,274 actual shares outstanding; and 22,956,503 shares issued and 22,954,274 shares outstanding(1), on an as adjusted basis	\$55	\$64
Additional paid-in capital	84,447	99,098
Deferred equity-based compensation	-	-
Accumulated other comprehensive income	236	236
Accumulated deficit	(61,555)	(61,555)
Total shareholders' equity	\$23,183	\$37,843

(1) Based on 19,454,274 ordinary shares outstanding as of September 30, 2009. This number does not include, as of September 30, 2009:

- 1,453,485 ordinary shares issuable upon the exercise of outstanding warrants at an exercise price of \$3.05 per share;
- 2,658,476 ordinary shares issuable upon the exercise of outstanding options to purchase 2,350,946 ordinary shares at a weighted average exercise price of \$1.81 per share, and vesting of 307,530 restricted share units outstanding; and
- 1,321,870 ordinary shares available for grant under our 2007 Incentive Plan.

Price Range Of Ordinary Shares

Our ordinary shares are listed and traded on The NASDAQ Global Market and on the Tel Aviv Stock Exchange under the symbol "NVMI".

For the month of December, 2009, the daily reported sale prices of our ordinary shares on The NASDAQ Global Market ranged from a high of \$6.55 to a low of \$3.77 per ordinary share, and, on the Tel Aviv Stock Exchange, from

a high of 25.00 NIS to a low of 14.41 NIS per ordinary share.

For the fourth quarter of 2009, the daily reported sale prices of our ordinary shares on the The NASDAQ Global Market ranged from a high of \$6.55 to a low of \$2.60 per ordinary share, and, on the Tel Aviv Stock Exchange, from a high of 25.00 NIS to a low of 9.71 NIS per ordinary share.

For the month of January, 2010, the daily reported sale prices of our ordinary shares on The NASDAQ Global Market ranged from a high of \$6.72 to a low of \$4.40 per ordinary share, and, on the Tel Aviv Stock Exchange, from a high of 25.94 NIS to a low of 16.50 NIS per ordinary share.

For the partial month of February 1 through February 2, 2010, the daily reported sale prices of our ordinary shares on The NASDAQ Global Market ranged from a high of \$4.62 to a low of \$4.31 per ordinary share, and, on the Tel Aviv Stock Exchange, from a high of 17.05 NIS to a low of 15.89 NIS per ordinary share from February 1 through February 3, 2010.

S-17

Management

The following is the list of our senior management and directors:

Name	Age	Position
Micha Brunstein	66	Chairman of the board of directors
Giora Dishon	65	Director and co-founder
Avi Kerbs	63	Director
Alon Dumanis	59	Director
Dan Falk	65	External Director
Nana Zeldis	46	External Director
Avi Cohen	56	Director
Gabi Seligsohn	43	President and Chief Executive Officer
Dror David	40	Chief Financial Officer
Avi Magid	48	Executive Vice President Global Business Management Group
Gabi Sharon	47	Vice President Operations
Boaz Brill	45	Vice President Technology Development
Hila Mukevisius	35	Vice President Human Resources

Our directors (other than the external directors) serve as such until the next annual general meeting of our shareholders. Our external directors, in accordance with Israeli law, serve for a three-year term, which may be renewed for one additional three-year term and thereafter for additional three-year terms, if both the audit committee and the board of directors confirm that in light of the expertise and contribution of the external director, the extension of such external director's term would be in the interest of our company. Mr. Dan Falk was elected in 2005 to serve for a three-year term that expired in 2008 and was re-elected in 2008 for an additional three-year term. Ms. Zeldis was elected in 2006 to serve for a three-year term that expired in 2009 and was re-elected in 2009 for an additional three-year term.

Dr. Micha Brunstein was named chairman of our board of directors in June 2006, after serving as member of our board of directors from November 2003. During the years 1990 and 1999, Dr. Brunstein served as Managing Director of Applied Materials Israel Ltd. Prior to that, Dr. Brunstein served as President of Opal Inc., and as a Director of New Business Development in Optrotech Ltd. At present, Dr. Brunstein serves as a board member of Ham-let Ltd., a company listed on the Tel Aviv Stock Exchange and Valor Computerized Systems Ltd., a company listed on the Frankfurt Stock Exchange. He is a chairman and serves on boards of directors of several privately owned companies. Dr. Brunstein holds a B.Sc. in Mathematics and Physics from the Hebrew University, Jerusalem, and a M.Sc. and a Ph.D. in Physics from Tel Aviv University.

Dr. Giora Dishon is a co-founder of Nova and served as President and Chief Executive Officer since Nova's formation in 1993 until August 2006. From 1989 to 1993 he served as Thin Film and Flat Panel Display Product Line Manager at Orbot Systems and Orbotech Ltd., a manufacturer of automated optical inspection equipment. From 1986 to 1988 he was a Visiting Scientist at the Microelectronics Center of North Carolina, and from 1982 to 1986 he served as Managing Director at AVX Israel Ltd., a manufacturer of electronic devices. Dr. Dishon is a founder of several private companies, and also serves on the boards of several privately owned companies, as chairman and director. Dr. Dishon holds a B.Sc. in Chemistry, a M.Sc. and a Ph.D. in Materials Science from the Hebrew University, Jerusalem, Israel.

Mr. Avi Kerbs has served as a director of Nova since 1993. He serves as the President and Chief Executive Officer of Teuza Management & Development Ltd., the management company of Teuza-A Fairchild Technology Venture Ltd., a venture capital company and has served in this capacity since 1991. Teuza-A Fairchild Technology Venture Ltd. is a major shareholder of Nova. He serves as a director of most of the companies comprising the investment portfolio of the Teuza Fund. Mr. Kerbs holds a B.Sc. in Industrial Engineering and Management and a M.Sc. in Industrial Management from the Technion - Israel Institute of Technology. Mr. Kerbs serves as a member of the Technion's Board of Governors and the Haifa University Board of Governors. Mr. Kerbs is also a member of the Board of CPI – Cerebral Palsy International Foundation in the U.S. and a member of the board & executive committee of Amit (Alfred Mann Institute) in the Technion. Mr. Kerbs was originally appointed to our board of directors by Teuza.

S-18

Dr. Alon Dumanis, has served as a director of Nova from 2002. He is the Chief Executive Officer of Docor International Management, a Dutch investment company, subsidiary of The Van-Leer Group Foundation. Dr. Dumanis is currently a chairman of XSight System, Softlib, DNR Imaging, and a member of the board of directors of Spectronix (TASE-SPCT) and other Hi Tech companies in Docor's investment portfolio. Dr. Dumanis is a former member of the board of directors of Tadiran Communications (TASE-TDCM), a former member of the board of directors of El Al Israel Airlines (TASE-LY), and a former member of the board of directors of Inventech Investments Co. Ltd. (TASE-IVTC). Previously, Dr. Dumanis was the Head of the Material Command in the Israel Air Force at the rank of Brigadier General. Dr. Dumanis currently serves as chairman and member of several national steering committees and is the author of many papers published in a number of subject areas, including technology and management. Dr. Dumanis holds a Ph.D. in Aerospace Engineering from Purdue University, West Lafayette, Indiana, USA.

Mr. Dan Falk was elected as the Company's external director in accordance with the provisions of the Companies Law in 2005, and was re-elected for an additional term on September 25, 2008. Mr. Falk is a business consultant to public and private companies. During 1999 to 2000, Mr. Falk served as Chief Executive Officer and Chief Operating Officer of Sapiens International NV. Prior to that, Mr. Falk served as Executive Vice President and Chief Financial Officer of Orbotech Ltd. Mr. Falk serves as a member of various companies' boards of directors such as Orbotech Ltd., Nice Systems Ltd., Ormat Technologies, Inc., Attunity Ltd., Jacada Ltd., (all of which are companies publicly traded in the United States). Mr. Falk also serves as the chairman of the board of directors of Orad Hi-tech Systems Ltd., AVT Ltd., Amiad Filtration Systems, Oridion Medical Ltd. (all of which are companies publicly traded in Europe) and Plastopil Ltd. (traded on Tel Aviv Stock Exchange). Mr. Falk's son-in-law is a partner at Gross, Kleinhendler, Hodak, Halevy, Greenberg & Co., our outside counsel.

Ms. Naama Zeldis was elected as the Company's external director in accordance with the provisions of the Companies Law in 2006, and was re-elected for an additional term in 2009. Ms. Zeldis has been serving as Chief Financial Officer of Netafim Ltd. since December 2005. Prior to that, she served as Chief Financial Officer of EDS Israel, Radguard, and Director of Finance of RAD Data Communications. Ms. Zeldis is a former member of the board of directors and of the audit committee of Metalink. Ms. Zeldis holds a B.A. in Economics and an M.A. in Business Administration, majoring in Financing, from the Hebrew University of Jerusalem and a B.A. in Accounting from Tel-Aviv University.

Mr. Avi Cohen was elected to serve as a director of Nova by its board of directors on February 18, 2008. Mr. Cohen serves as President and Chief Executive Officer at Orbit Technologies, a public company traded on the Tel Aviv Stock Exchange. Orbit is a leading designer, developer, and manufacturer of a wide range of advanced communication systems for the commercial and defense markets. Prior to joining Orbit in December 2008, Mr. Cohen served as Chief Operating Officer and Deputy to the CEO at ECI Telecom Ltd. a leading supplier of best-in-class networking infrastructure equipment for carrier and service provider networks worldwide. Prior to joining ECI in September 2006, Mr. Cohen served in a variety of management positions at KLA-Tencor. From 2003 he was a Group Vice President, Corporate Officer and Member of the Executive Management Committee based at the corporate headquarters in the U.S. During his tenure, he successfully led the creation of KLA-Tencor's global Metrology Group. From 1995 he was the President of KLA-Tencor Israel responsible for the Optical Metrology Division. Before joining KLA-Tencor, Mr. Cohen also spent three years as Managing Director of Octel Communications, Israel, after serving as Chief Executive Officer of Allegro Intelligent Systems, which he founded and which was acquired by Octel. Mr. Cohen holds B.Sc. and M.Sc. degrees in electrical engineering and applied physics from Case Western Reserve University, USA.

Mr. Gabi Seligsohn has served as the President and Chief Executive Officer since August 2006. Having joined Nova in 1998, Mr. Seligsohn has served in several key positions in the Company including as the Executive Vice President, Global Business Management Group from August 2005 to August 2006. From August 2002 until August 2005 he was President of Nova's U.S. Subsidiary, Nova Measuring Instruments Inc. Prior to that he was Vice President

Strategic Business Development at Nova Measuring Instruments Inc. where he established Nova's OEM group managing the Applied Materials and Lam Research accounts between the year 2000 to 2002. From 1998 to 2000 he served as Global Strategic Account Manager for the Company's five leading customers. Mr. Seligsohn joined Nova after two years service as Sales Manager for key financial accounts at Digital Equipment Corporation. Mr. Seligsohn holds an LL.B. from the University of Reading, Reading, England.

Mr. Dror David has served as the Chief Financial Officer since November 2005. Mr. David joined Nova in April 1998, as the Company's Controller, and since then served in various financial and operational positions, including the position of Vice President of Resources, in which he was responsible for the finance, operations, information systems and human resources functions of the Company. Mr. David was also a leading member in the Company's initial public offering on NASDAQ in 2000 and the Company's private placement in 2007. Prior to joining Nova, Mr. David spent five years in public accounting with Deloitte Touch in Tel Aviv, specializing in industrial high-tech companies. Mr. David is a Certified Public Accountant in Israel, holds a B.A. in Accounting and Economics from Bar Ilan University, and an M.B.A. from Derby University of Britain.

Mr. Avi Magid has served as Executive Vice President Global Business Management since November 2006. From 2001 to 2006, Mr. Magid served as Managing Director and Vice President at Kulicke & Soffa, a leading supplier of semiconductor assembly equipment. From 2000 to 2001, Mr. Magid served as Deputy Managing Director for Business Development at K&S Micro Swiss LTD. Prior to that, Mr. Magid served as Managing Director and Deputy Managing Director for Sales & Marketing at Semitec, Santa Clara, CA. Mr. Magid holds a B.A. in Industrial Engineering from Polytechnic University-Pomona, Pomona, California.

Mr. Gabi Sharon is serving as Vice President of Operations since September 2006. Having joined Nova in 1995, Mr. Sharon served in several key positions in the Company including as Global Customer Support Manager from September 1995 to September 2004. From September 2004 until September 2006 Mr. Sharon managed the Product Development Division, and spearheaded the NovaScan 3090 product line and its successful market launch. For a period of 2 years, from 2004 to 2006, he also served as the Product Marketing Manager and led the initial penetration of the Copper CMP market. Prior to joining Nova Mr. Sharon served as Project Manager in ECI Israel. Mr. Sharon holds a B.Sc. in Computer Science from Northeastern University, Boston, Massachusetts, and a M.Sc. in Technology Management from Polytechnic University, New York.

Dr. Boaz Brill is serving as Vice President Technology Development since September 2006. Dr. Brill has been with Nova since 1999 and was the lead scientist who managed Nova's entry into the Optical CD market and developed the NovaScan 3090 platform. A well-known technologist, he headed Nova's Physics department. From 1995 until 1999, Dr. Brill served as System Engineer and Project Manager at El-Op Ltd. Dr. Brill holds a B.Sc. in Physics and Mathematics from the Hebrew University, Jerusalem, M.Sc and Ph.D in Physics from the Weizmann Institute of Science, Rehovot, Israel and MBA from Bradford University, UK. He has published over 10 patents and patent applications, mostly in the field of Optical CD.

Ms. Hila Mukevisius is serving as Vice President Human Resources since May 2008. Ms. Mukevisius joined Nova after 8 years at Amdocs, a market leader in customer experience systems innovations, where she held several positions as HR Director of large scale global groups. Ms. Mukevisius holds a B.A. in Behavioral Science from the College of Management, Academic Studies, Tel Aviv, Israel, specializing in organization development.

S-20

Material Tax Considerations

Israeli Taxation

The following is a summary of the principal Israeli tax laws applicable to us, and of the Israeli government programs benefiting us. This summary does not discuss all the acts of Israeli tax law that may be relevant to a particular investor in light of his or her personal investment circumstances or to some types of investors subject to special treatment under Israeli law. Examples of this kind of investor include residents of Israel, traders in securities or persons that own, directly or indirectly, 10% or more of our outstanding voting capital, all of whom are subject to special tax regimes not covered in this discussion. Some parts of this discussion are based on new tax legislation which has not been subject to judicial or administrative interpretation. The discussion should not be construed as legal or professional tax advice and does not cover all possible tax consequences.

SHAREHOLDERS ARE URGED TO CONSULT THEIR OWN TAX ADVISORS AS TO THE ISRAELI OR OTHER TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR ORDINARY SHARES, INCLUDING, IN PARTICULAR, THE EFFECT OF ANY FOREIGN, STATE OR LOCAL TAXES.

General Corporate Tax Structure in Israel

The corporate tax rate applicable in 2009 was 26%. This rate was reduced to 25% in 2010 and is scheduled to be reduced to 18% by 2016.

However, as discussed below, the rate is effectively reduced for income derived from an Approved Enterprise/Privileged Enterprise.

Law for the Encouragement of Capital Investments, 1959

General. The Law for the Encouragement of Capital Investments, 1959, or the “Investment Law”, provides that a capital investment in eligible facilities may, upon application to the Investment Center of the Ministry of Industry Trade, and Labor of the State of Israel, or the “Investment Center”, be designated as an Approved Enterprise. Each certificate of approval for an Approved Enterprise relates to a specific investment program delineated both by its financial scope, including its capital sources, and by its physical characteristics, e.g., the equipment to be purchased and utilized pursuant to the program. The tax benefits derived from any such certificate of approval relate only to taxable income attributable to the specific Approved Enterprise.

Subject to certain provisions concerning income and subject to the Alternative Benefits (see below), any distributed dividends are deemed attributable to the entire enterprise, and the effective tax rate and the effective withholding tax rates represent the weighted combination of the various applicable tax rates.

Tax Benefits. Taxable income of a company derived from an Approved Enterprise is subject to corporate tax at the rate of up to 25%, instead of the tax rates under the “General Corporate Tax Structure in Israel” above, for a certain period of time. The benefit period is a period of seven years commencing in the year in which the Approved Enterprise first generates taxable income. The benefits may be shorter as it is limited to 12 years from the commencement of production of the Approved Enterprise or 14 years from the date of approval, whichever is earlier. Under certain circumstances (as further detailed below), the benefit period may extend to a maximum of ten years from the commencement of the benefit period. A company which operates under more than one approval or that has capital investments which are only partly approved (such a company being designated as a Mixed Enterprise), may have an effective company tax rate that is the result of a weighted combination of the various applicable rates.

A company owning an Approved Enterprise which was approved after April 1, 1986 may elect to forego the entitlement to grants or state guarantees and apply for an alternative package of tax benefits. These benefits provide that undistributed income from the Approved Enterprise is fully tax exempt from corporate tax for a defined period, which ranges between two and ten years from the first year of taxable income, subject to the limitations described above, depending principally upon the geographic location within Israel and the type of the Approved Enterprise. Upon expiration of such period, the Approved Enterprise is subject to tax at the rate of 25% (or a lower rate in the case of an FIC, as described below), for the remainder of the otherwise applicable period of benefits, as described above.

S-21

Should the percentage of share capital of the companies having Approved Enterprises held by foreign shareholders exceed 25%, future Approved Enterprises of such companies would qualify for reduced tax rates for an additional three years, after the seven years mentioned above. The company tax rate applicable to income earned from Approved Enterprise programs in the benefit period by a company meeting these qualifications is as follows:

% of Foreign Ownership	Tax Rate
Over 25% but less than 49%	25 %
49% or more but less than 74%	20 %
74% or more but less than 90%	15 %
90% or more	10 %

Entitlement to these tax benefits for enterprises to which Investment Center granted an Approved Enterprise status prior to December 31, 2004 is subject to the final ratification of the Investment Center, and is conditioned upon fulfillment of all terms of the approved program. However, there can be no assurance that our company, which currently enjoys Approved Enterprise benefits, will obtain approval for additional Approved Enterprises, or that the provisions of the Investment Law will not change with respect to future approvals, or that the above-mentioned shareholding portion will be reached for each subsequent year. In the event of our failure to comply with these conditions, the tax and other benefits could be canceled, in whole or in part, and we might be required to refund the amount of the canceled benefits, together with the addition of Israeli CPI linkage difference and interest. We believe that our Approved Enterprise substantially complies with all such conditions at present, but there can be no assurance that it will continue to do so.

A company that pays a dividend out of income derived from the Approved Enterprise(s) during the tax exemption period will be subject to deferred corporate tax in respect of the amount distributed (including the recipient's tax thereon) at the rate which would have been applicable had such company not elected the Alternative Package. This rate is generally 10% to 25%, depending, as described above, on the extent to which non-Israeli shareholders hold such company's shares.

The dividend recipient is taxed at the reduced rate applicable to dividends from Approved Enterprises (generally 15% as compared to 20%/25% for individuals or an exemption for Israeli resident companies), if the dividend is distributed during the tax benefit period or within 12 years after this period. However, the limitation does not apply if the company qualifies as a foreign investors' company. This tax must be withheld by such company at source, regardless of whether the dividend is converted into foreign currency.

Subject to certain provisions concerning income subject to Mixed Enterprises, all dividends are considered to be attributable to the entire enterprise and the effective tax rate on the dividend is the result of a weighted combination of the various applicable tax rates. However, such company is not obliged to distribute exempt retained profits under the Alternative Package, and such company may generally decide from which year's profits to declare dividends.

Each application to the Investment Center is reviewed separately, and a decision as to whether or not to approve such application is based, among other things, on the then prevailing criteria set forth in the Investment Law, on the specific objectives of the applicant company set forth in such application and on certain financial criteria of the applicant company. Accordingly, there can be no assurance that any such application by our company will be approved. In addition, the benefits available to an Approved Enterprise are conditional upon the fulfillment of certain conditions stipulated in the Investment Law and its regulations and the criteria set forth in the certificate of approval, as described above. In the event that these conditions are violated, in whole or in part, a company with an Approved Enterprise would be required to refund the amount of tax benefits, with the addition of the Israeli CPI linkage differences and interest.

A company which qualifies as a foreign investment company, or "FIC", is a company in which more than 25% of the share capital (in terms of shares, rights to profit, voting rights and appointment of directors) and of the combined share and loan capital is owned, directly or indirectly, by non-residents of Israel and is therefore entitled to further tax benefits relating to its approved enterprises. Such a company will be eligible for an extension of the period of tax benefits for its approved enterprises (up to ten years) and further tax benefits, should the level of foreign ownership in it increase above 49%.

S-22

From time to time, the government of Israel has discussed reducing the benefits available to companies under the Investment Law and currently such proposal is pending.

Amendment no. 60. Notwithstanding the foregoing, an amendment to the Investments Law, which effective as of April 1, 2005, has changed certain provisions of the Investments Law. The amendment includes revisions to the criteria for investments qualified to receive tax benefits as a "Privileged Enterprise". This amendment applies to new investment programs and investment programs commencing after 2004, and does not apply to investment programs approved prior to December 31, 2004. However, a company that was granted benefits according to section 51 of the Investments Law prior to the amendment would not be allowed to apply for benefits under the new amendment for a period of three years from the date of commencement of the beginning of the year the privileged enterprise was operated (reduced to a period of two years under certain conditions). According to the amendment, only Approved Enterprises receiving cash grants require the prior approval of the Investment Center.

The Amendment does not apply to benefits included in any certificate of approval that was granted before the amendment came into effect, which will remain subject to the provisions of the Investments Law as they were on the date of such approval.

The basic condition for receiving the benefits for a "Privileged Enterprise" under this track is that the enterprise contributes to the country's economic independence and is a competitive factor for the Gross Domestic Product (a "Competitive Enterprise"). In order to comply with this condition, the Investment Law prescribes various requirements regarding industrial enterprises. In each tax year during the benefit period, one of the following conditions must be met:

1. The enterprise's main activity is in the area of biotechnology or nanotechnology as approved by the Head of the Administration of Industrial Research and Development, prior to the approval of the aforementioned plan.
2. The enterprise's revenues during the tax year from the plant's sales in a certain market do not exceed 75% of total revenues from the plant's total sales during that tax year. A "market" is defined as a distinct country or customs territory.
3. 25% or more of the enterprise's total revenues from the plant's sales during the tax year are from sales to a certain market that numbers at least 12 million residents.

An industrial enterprise that sells a specific product that constitutes a component in another product manufactured by another industrial enterprise (which is, or was, a beneficiary enterprise or an approved enterprise), the enterprise must meet the conditions stipulated in the relevant regulations regarding the encouragement of capital investments.

In order to receive the tax benefits, the amendment states that a company must make an investment in the Privileged Enterprise exceeding a certain percentage or a minimum amount specified in the Investments Law. Such investment may be made over a period of no more than three years, ending at the end of the year in which the company requested to have the tax benefits apply to the Privileged Enterprise (the "Year of Election"). Where the company requests to have the tax benefits apply to an expansion of existing facilities, then only the expansion will be considered a Privileged Enterprise and the company's effective tax rate will be the result of a weighted combination of the applicable rates. In this case, the minimum investment required in order to qualify as a Privileged Enterprise is required to exceed a certain percentage or a minimum amount of the company's production assets before the expansion.

The duration of these tax benefits is limited to the earlier of seven to ten years from the Commencement Year or 12 years from the first day of the Year of Election. Commencement Year is defined as the later of the first tax year in which a company had derived liable income for tax purposes from the Privileged Enterprise, or the year of election which is the year in which a company requested to have the tax benefits apply to the Privileged Enterprise. The tax benefits granted to a Privileged Enterprise are determined, depending on the geographic location of the Privileged Enterprise within Israel, inter alia, according to one of the following:

1. Similar to the currently available Alternative Track, exemption from corporate tax may be available on undistributed income for a period of two to ten years, depending on the geographic location of the Privileged Enterprise within Israel, and a reduced corporate tax rate of 10% to 25% for the remainder of the benefit period, depending on the level of foreign investment in each year. Benefits may be granted for a term of seven to ten years, depending on the level of foreign investment in the company. If the company pays a dividend out of income derived from the Privileged Enterprise during the tax exemption period, such income will be subject to corporate tax at the applicable rate (10%-25%) with respect to the gross amount of the dividend that we may distribute. The company is required to withhold tax on such distribution at a rate of 15%; or
2. A special track which enables companies owning facilities in certain geographical locations in Israel to pay corporate tax at the flat rate of 11.5% on income of the Privileged Enterprise (the "Ireland Track"). The benefit period is for ten years. Upon payment of dividends, the company is required to withhold tax on such dividend at a rate of 15% for Israeli residents and at a rate of 4% for foreign residents.

Generally, a company that is abundant in foreign investment (owned by at least 74% foreign shareholders and has undertaken to invest a minimum sum of \$20 million in the Privileged Enterprise) is entitled to an extension of the benefit period by an additional five years, depending on the rate of its income that is derived in foreign currency.

The amendment changes the definition of "Foreign Investment" in the Investments Law so that the new definition requires a minimal investment of NIS 5 million by foreign investors. Furthermore, the new definition also includes the purchase of shares of a company from another shareholder, provided that the company's outstanding and paid-up share capital exceeds NIS 5 million. Such changes to the aforementioned definition will take effect retroactively from 2003.

Law for the Encouragement of Industry (Taxes), 1969

Pursuant to the Law for the Encouragement of Industry (Taxes), 1969, a company qualifies as an "Industrial Company" if it is a resident of Israel and at least 90% of its gross income in any tax year (exclusive of income from certain defense loans, capital gains, interest and dividends) is derived from an "industrial enterprise" it owns. An "industrial enterprise" is defined as an enterprise whose major activity, in a given tax year, is industrial manufacturing.

Industrial Company is entitled to certain tax benefits, including a deduction of 12.5% per annum on the cost of purchase of patents or certain other intangible property rights (other than goodwill) used for the development or promotion of the industrial enterprise over a period of eight years beginning with the year in which such rights were first used.

The tax laws and regulations dealing with the adjustment of taxable income for local inflation provide that an industrial enterprise is eligible for special rates of depreciation deductions. These rates vary in the case of plant and machinery according to the number of shifts in which the equipment is being operated and range from 20% to 40% on a straight-line basis, or 30% to 50% on a declining balance basis (instead of the regular rates which are applied on a straight-line basis).

Moreover, industrial enterprises which are Approved Enterprises/Privileged Enterprise (see above) can choose between (a) the special rates referred to above and (b) accelerated regular rates of depreciation applied on a

straight-line basis with respect to property and equipment, generally ranging from 200% (with respect to equipment) to 400% (with respect to buildings) of the ordinary depreciation rates during the first five years of service of these assets, provided that the depreciation on a building may not exceed 20% per annum. In no event may the total depreciation exceed 100% of the cost of the asset.

In addition, Industrial Companies may (i) elect to file consolidated tax returns with additional related Israeli Industrial Companies and (ii) deduct expenses related to public offerings in equal amounts over a period of three-years.

Eligibility for benefits under the Encouragement of Industry Law is not contingent upon the approval of any governmental authority.

S-24

Taxation of Shareholders

Capital Gains

Capital gain tax is imposed on the disposal of capital assets by an Israeli resident, and on the disposal of such assets by a non- Israel resident if those assets are either (i) located in Israel; (ii) are shares or a right to a share in an Israeli resident corporation, or (iii) represent, directly or indirectly, rights to assets located in Israel. The Israeli Income Tax Ordinance distinguishes between “Real Gain” and the “Inflationary Surplus”. Real Gain is the excess of the total capital gain over Inflationary Surplus computed generally on the basis of the increase in the Israeli CPI between the date of purchase and the date of disposal.

The capital gain accrued by individuals on the sale of an asset purchased on or after January 1, 2003 will be taxed at the rate of 20%. However, if the individual shareholder is a “Controlling Shareholder” (i.e., a person who holds, directly or indirectly, alone or together with other, 10% or more of one of the Israeli resident company’s means of control) at the time of sale or at any time during the preceding 12 months period such gain will be taxed at the rate of 25%. In addition, capital gain derived by an individual claiming deduction of financing expenses in respect of such gain will be taxed at the rate of 25%. The real capital gain derived by corporation will be generally subject to a 25% tax rate (corporate tax rate in 2010 and onwards). However, the real capital gain derived from sale of securities, as defined in Section 6 of the Inflationary Adjustment Law, by a corporation, which was subject on August 10, 2005 to the provisions of Section 6 of the Inflationary Adjustment Law, will be taxed at the corporate tax rate (26% in 2009 and 25% in 2010). The capital gain accrued on the sale of an asset purchased prior to January 1, 2003 will be subject to tax at a blended rate. The marginal tax rate for individuals (up to 46% in 2009 and 45% in 2010) and the regular corporate tax rate for corporations (26% in 2009 and 25% in 2010) will be applied to the portion of the gain amount which bears the same ratio to the total gain realized as the ratio which the holding period commencing at the acquisition date and terminating on January 1, 2003 bears to the total holding period. The remainder of the gain realized will be subject to capital gains tax at the rates applicable to an asset purchased after January 1, 2003 (see aforementioned).

Individual and corporate shareholder dealing in securities in Israel are taxed at the tax rates applicable to business income (26% in 2009 and 25% in 2010 tax rate for a corporation and a marginal tax rate of up to 46% in 2009 and 45% in 2010 for individual). Notwithstanding the foregoing, capital gain derived from the sale of securities by a non-Israeli shareholder may be exempt under the Israeli Income Tax Ordinance from Israeli taxation provided the following cumulative conditions are met: (i) the securities were purchased upon or after the registration of the securities on the stock exchange (this condition shall not apply to shares purchased on or after 1.1.2009), (ii) the seller doesn’t have a permanent establishment in Israel to which the derived capital gain is attributed, and (iii) if the seller is a corporation, less than 25% of its means of control are held, directly and indirectly, by Israeli resident shareholders. In addition, the sale of the securities may be exempt from Israeli capital gain tax under the provisions of an applicable tax treaty. Thus, the U.S.-Israel Double Tax Treaty exempts U.S. resident from Israeli capital gain tax in connection with such sale, provided (i) the U.S. resident owned, directly or indirectly, less than 10% of an Israeli resident company’s voting power at any time within the 12 – month period preceding such sale; (ii) the seller, being an individual, is present in Israel for a period or periods of less than 183 days at the taxable year; and (iii) the capital gain from the sale was not derived through a permanent establishment of the U.S. resident in Israel.

Either the seller, the Israeli stockbrokers or financial institution through which the sold securities are held are obliged, subject to the above mentioned exemptions, to withhold tax upon the sale of securities from the real capital gain at the rate of 25% in respect of a corporation and 20% in respect of an individual.

At the sale of traded securities a detailed return, including a computation of the tax due, should be filed and an advanced payment should be paid on January 31 and June 31 of every tax year in respect of sales of securities made within the previous six months. However, if all tax due was withheld at source according to applicable provisions of

the Israeli Income Tax Ordinance and regulations promulgated thereunder the aforementioned return should not be filed and no advance payment should be paid. Capital gain is also reportable on the annual income tax return.

Dividends

A distribution of dividend from income attributed to an Approved Enterprise/Privileged Enterprise (either to individual or corporation) will be subject to tax in Israel at the rate of 15%, subject to a reduced rate under the provisions of any applicable double tax treaty. A distribution of dividend from income, which is not attributed to an Approved Enterprise/Privileged Enterprise to an Israeli resident individual, will generally be subject to income tax at a rate of 20%. However, a 25% tax rate will apply if the dividend recipient is a "Controlling Shareholder" at the time of distribution or at any time during the preceding 12 months period. If the recipient of the dividend is an Israeli resident corporation, such dividend will be exempt from income tax provided the income from which such dividend is distributed was derived or accrued within Israel.

S-25

Under the Israeli Income Tax Ordinance, a non-Israeli resident (either individual or corporation) is generally subject to an Israeli income tax on the receipt of dividends at the rate of 20% (25% if the dividends recipient is a “Controlling Shareholder” (as defined above), at the time of distribution or at any time during the preceding 12 months period); those rates are subject to a reduced tax rate under the provisions of an applicable double tax treaty. Thus, under the U.S.-Israel Double Tax Treaty the following rates will apply in respect of dividends distributed by an Israeli resident company to a U.S. resident: (i) if the U.S. resident is a corporation which holds during that portion of the taxable year which precedes the date of payment of the dividend and during the whole of its prior taxable year (if any), at least 10% of the outstanding shares of the voting stock of the Israeli resident paying corporation and not more than 25% of the gross income of the Israeli resident paying corporation for such prior taxable year (if any) consists of certain type of interest or dividends – the tax rate is 12.5%, (ii) if both the conditions mentioned in section (i) above are met and the dividend is paid from an Israeli resident company’s income which was entitled to a reduced tax rate applicable to an Approved Enterprise/Privileged Enterprise – the tax rate is 15%, and (iii) in all other cases, the tax rate is 25%. The aforementioned rates under the Israel U.S. Double Tax Treaty will not apply if the dividend income was derived through a permanent establishment of the U.S. resident in Israel.

An Israeli resident company whose shares are listed in a stock exchange is obligated to withhold tax, upon the distribution of a dividend attributed to an Approved Enterprise’s/Privileged Enterprise income, from the amount distributed, at the following rates: (i) Israeli resident corporation – 15%, (ii) Israeli resident individual – 15%, and (iii) non-Israeli resident – 15% (4% under the Ireland Track), subject to a reduced tax rate under the provisions of an applicable double tax treaty. If the dividend is distributed from an income not attributed to the Approved Enterprise/Privileged Enterprise, the following withholding tax rates will apply: (i) Israeli resident corporation – 0%, (ii) Israeli resident individual – 20% (iii) non-Israeli resident - 20%, subject to a reduced tax rate under the provisions of an applicable double tax treaty.

Estate and Gift Tax

The Israeli law presently does not impose estate or gift tax.

U.S. Federal Income Tax Considerations

U.S. Taxation

The following discussion describes the material U.S. federal income tax consequences of the purchase, ownership and disposition of our ordinary shares to a U.S. holder.

For purposes of this discussion, a “U.S. holder” is:

- a natural person who is a citizen or resident of the United States;
- a corporation or another entity taxable as a corporation created or organized under the laws of the United States or any political subdivision of the United States;
- an estate, the income of which is includable in gross income for U.S. federal income tax purposes regardless of its source; or
- a trust, if (a) a U.S. court is able to exercise primary supervision over its administration and (b) one or more U.S. persons have the authority to control all of its substantial decisions, or if the trust has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a U.S. person.

This summary is for general information purposes only and does not purport to be a comprehensive description of all of the U.S. federal income tax considerations that may be relevant to a decision to purchase, hold or dispose of the Company's ordinary shares. This summary generally considers only U.S. holders that will own the ordinary shares as capital assets and does not consider the U.S. tax consequences to a person that is not a U.S. holder or the tax treatment of persons who hold the ordinary shares through a partnership or other pass-through entity. In addition, the possible application of U.S. federal estate or gift taxes or any aspect of state, local or non-U.S. tax laws is not considered. This discussion is based on current provisions of the Internal Revenue Code of 1986, as amended (the "Code"), current and proposed Treasury Regulations promulgated under the Code, and administrative and judicial interpretations of the Code, all as in effect today and all of which may change, possibly with a retroactive effect.

S-26

This discussion does not address all aspects of U.S. federal income taxation that may be relevant to any particular U.S. holder based on the holder's particular circumstances, such as,

- persons who own, directly, indirectly or constructively, 10% or more (by voting power or value) of our outstanding voting shares;
 - persons who hold the ordinary shares as part of a hedging, straddle or conversion transaction;
 - persons whose functional currency is not the U.S. dollar;
 - persons who acquire their ordinary shares in a compensatory transaction;
 - broker-dealers;
 - insurance companies;
 - regulated investment companies;
 - real estate investment companies;
 - traders who elect to mark-to-market their securities;
 - tax-exempt organizations;
 - banks or other financial institutions;
 - U.S. expatriates; and
 - persons subject to the alternative minimum tax.

EACH U.S. SHAREHOLDER SHOULD CONSULT HIS OR HER TAX ADVISOR AS TO THE PARTICULAR TAX CONSEQUENCES TO HIM OR HER OF AN INVESTMENT IN THE ORDINARY SHARES, INCLUDING THE EFFECTS OF APPLICABLE STATE, LOCAL OR NON-U.S. TAX LAWS AND POSSIBLE CHANGES IN THE TAX LAWS.

Distributions on the Ordinary Shares

We currently do not intend to pay dividends for at least the next several years. However, if we make any distributions of cash or other property to a U.S. holder of our ordinary shares, the amount of the distribution for U.S. federal income tax purposes will equal the amount of cash and the fair market value of any property distributed and will also include the amount of Israeli taxes withheld, if any, as described above under "Dividends". In general (and subject to the PFIC rules discussed below), any distribution paid by us on the ordinary shares to a U.S. holder will be treated as dividend income if the distribution does not exceed our current or accumulated earnings and profits, as determined for U.S. federal income tax purposes. If holding period and other requirements are met, dividends paid to non-corporate U.S. holders in taxable years beginning no later than December 31, 2010 should generally qualify for the reduced maximum tax rate of 15% as long as our common shares remain "readily tradable on an established securities market in the United States," provided that we are not considered a PFIC (as discussed below) in the taxable year in which the dividend is paid or in the preceding taxable year. Dividends paid to non-corporate U.S. holders in taxable years beginning after December 31, 2010 (and earlier dividends if we are a PFIC (as discussed below)) will be taxable at regular ordinary income rates. The amount of any distribution which exceeds these earnings and profits will be

treated first as a non-taxable return of capital, reducing the U.S. holder's tax basis in its ordinary shares to the extent thereof, and then as capital gain, and as long-term capital gain if the U.S. holder's holding period exceeds one year, from the deemed disposition of the ordinary shares (subject to the PFIC rules discussed below). Corporate holders generally will not be allowed a deduction for dividends received on the ordinary shares.

S-27

A dividend paid by us in NIS will be included in the income of U.S. holders at the U.S. dollar value of the dividend, based upon the spot rate of exchange in effect on the date of the distribution. U.S. holders will have a tax basis in NIS for U.S. federal income tax purposes equal to that U.S. dollar value. Any subsequent gain or loss resulting from exchange rate fluctuations between the day the dividend was included in the income of U.S. holders and the day the NIS are converted into U.S. dollars or are otherwise disposed of, will be taxable as ordinary income, gain or loss from U.S. sources.

Dividends paid by us generally will be foreign source “passive income” for U.S. foreign tax credit purposes or, in the case of a U.S. holder that is a financial services entity, “financial services income.” U.S. holders may elect to claim as a foreign tax credit against their U.S. federal income tax liability the Israeli income tax withheld from dividends received on the ordinary shares. The Code provides limitations on the amount of foreign tax credits that a U.S. holder may claim. U.S. holders that do not elect to claim a foreign tax credit may instead claim a deduction for Israeli income tax withheld, but only for a year in which these U.S. holders elect to do so for all foreign income taxes. The rules relating to foreign tax credits are complex (and may also be impacted by the tax treaty between the United States and Israel), and you should consult your tax advisor to determine whether and if you would be entitled to this credit.

Sale or Exchange of the Ordinary Shares

Upon the sale or exchange of the ordinary shares (subject to the PFIC rules discussed below), a U.S. holder generally will recognize capital gain or loss in an amount equal to the difference between the amount realized on the sale or exchange and the U.S. holder’s tax basis in the ordinary shares. The gain or loss recognized on the sale or exchange of the ordinary shares generally will be long-term capital gain or loss if the U.S. holder’s holding period of the ordinary shares is more than one year at the time of the disposition.

Gain or loss recognized by a U.S. holder on a sale or exchange of ordinary shares generally will be treated as U.S. source income or loss for U.S. foreign tax credit purposes. Under the tax treaty between the United States and Israel, gain derived from the sale, exchange or other disposition of ordinary shares by a holder who is a resident of the U.S. for purposes of the treaty and who sells the ordinary shares within Israel may be treated as foreign source income for U.S. foreign tax credit purposes.

Passive Foreign Investment Company Status

In general, a foreign (i.e., non-U.S.) corporation will be a passive foreign investment company (a “PFIC”) for any taxable year in which, after applying the relevant look-through rules with respect to the income and assets of its subsidiaries, either (1) 75% or more of its gross income in the taxable year is “passive income,” or (2) assets held for the production of, or that produce, passive income comprise 50% or more of the average of its total asset value in the taxable year. For purpose of the income test, passive income includes dividends, interest, royalties, rents, annuities and net gains from the disposition of assets, which produce passive income. For purposes of the assets test, assets held for the production of passive income includes assets held for the production of, or that produce dividends, interest, royalties, rents, annuities, and other income included in the income test. In determining whether we meet the assets test, cash is considered a passive asset and the total value of our assets generally will be treated as equal to the sum of the aggregate fair market value of our outstanding stock plus our liabilities. If we own at least 25% (by value) of the stock of another corporation, we will be treated, for purposes of the PFIC tests, as owning our proportionate share of the other corporation’s assets and receiving our proportionate share of the other corporation’s income. The income test is conducted at the taxable year-end. The asset test is conducted on a quarterly basis and the quarterly results are then averaged together.

If a corporation is treated as a PFIC for any year during a U.S. holder’s holding period and the U.S. holder does not timely elect to treat the corporation as a “qualified electing fund” under Section 1295 of the Code or elect to mark its ordinary shares to market (both as described below), any gain on the disposition of the shares will be treated as

ordinary income, rather than capital gain, and the holder will be required to compute its tax liability on that gain, as well as on dividends and other distributions, as if the income had been earned ratably over each day in the U.S. holder's holding period for the shares. The portion of the gain and distributions allocated to prior taxable years in which a corporation was a PFIC will be ineligible for any preferential tax rate otherwise applicable to any "qualified dividend income" or capital gains, and will be taxed at the highest ordinary income tax rate in effect for each taxable year to which this portion is allocated. An interest charge will be imposed on the amount of the tax allocated to these taxable years. A U.S. holder may elect to treat a corporation as a qualified electing fund only if the corporation complies with requirements imposed by the IRS to enable the shareholder and the IRS to determine the corporation's ordinary income and net capital gain. Additionally, if a corporation is a PFIC, a U.S. holder who acquires shares in the corporation from a decedent will be denied the normally available step-up in tax basis to fair market value for the shares at the date of death and instead will have a tax basis equal to the decedent's tax basis if lower than fair market value. These adverse tax consequences associated with PFIC status could result in a material increase in the amount of tax that a U.S. holder would owe and an imposition of tax earlier than would otherwise be imposed and additional tax form filing requirements.

Status of Nova as a PFIC. Under the income test, less than 75% of our gross income was passive income in 2009. For 2009, while we continued to have substantial amounts of cash and short-term deposits and the market value of our ordinary shares continued to be volatile and decreased, a determination of the value of our assets by reference to the average market value of our ordinary shares and our liabilities results in a conclusion that the average value of our passive assets did not exceed 50% of the average value of our gross assets in 2009. Nonetheless, there is a risk that we were a PFIC in 2009 or we will be a PFIC in 2010 or subsequent years. For example, taking into account our existing cash balances, if the value of our stock were to decline materially, it is possible that we could become a PFIC in 2010 or a subsequent year. Additionally, due to the complexity of the PFIC provisions and the limited authority available to interpret such provisions, there can be no assurance that our determination regarding our PFIC status could not be successfully challenged by the IRS.

S-28

Available Elections. If we become a PFIC for any taxable year, U.S. holders should consider whether or not to elect to treat us as a “qualified electing fund” or to elect to “mark-to-market” their ordinary shares in order to mitigate the adverse tax consequences of PFIC status.

If a U.S. holder makes a qualified electing fund election (a “QEF election”) for its ordinary shares that is effective from the first taxable year that the U.S. holder holds our ordinary shares and during which we are a PFIC, the electing U.S. holder will avoid the adverse consequences of our being classified as a PFIC but will instead be required to include in income a pro rata share of our net capital gain, if any, and other earnings and profits (“ordinary earnings”) as long-term capital gains and ordinary income, respectively, on a current basis, in each case whether or not distributed, in the taxable year of the U.S. holder in which or with which our taxable year ends. A subsequent distribution of amounts that were previously included in the gross income of U.S. holders should not be taxable as a dividend to those U.S. holders who made a QEF Election. In the event we incur a net loss for a taxable year, such loss will not be available as a deduction to an electing U.S. holder, and may not be carried forward or back in computing our net capital gain or ordinary earnings in other taxable years. The tax basis of the shares of an electing U.S. holder generally will be increased by amounts that are included in income, and decreased by amounts distributed but not taxed as dividends, under the QEF rules described above. In order to make (or maintain) a QEF election, the U.S. holder must annually complete and file IRS Form 8621. In addition, we must make certain information regarding our net capital gains and ordinary earnings available to the U.S. holder and permit our books and records to be examined to verify such information. Therefore, we will monitor our PFIC status and make a disclosure to our shareholders if we determine that we have become a PFIC. If we are a PFIC for any year and you make a request to us in writing at the address on the cover of our latest Annual Report on Form 20-F, Attention Chief Financial Officer, for the information required to make a QEF election, we will promptly make the information available to you and comply with any other applicable requirements of the Code.

A QEF election, once made with respect to us, applies to the tax year for which it was made and to all subsequent tax years, unless the election is invalidated or the IRS consents to revocation of the election. If you make a QEF election and we cease to be classified as a PFIC in a subsequent tax year, the QEF election will remain in effect, although it will not be applicable during those tax years in which we are not classified as a PFIC. Therefore, if we – after ceasing to be classified as a PFIC – again are classified as a PFIC in a subsequent tax year, the QEF election will be effective and you will again be subject to the rules described above for U.S. holders making QEF elections in such tax year and any subsequent tax years in which we are classified as a PFIC. A QEF election also remains in effect even after you dispose of all of your direct and indirect interest in our ordinary shares. As a result, if you subsequently acquire any of our ordinary shares or an interest in any of our ordinary shares, you will again be subject to the rules described above for U.S. holders making a QEF election for each tax year in which we are classified as a PFIC.

Alternatively, if a U.S. holder elects to “mark-to-market” its ordinary shares, the U.S. holder will generally include in its income any excess of the fair market value of our ordinary shares at the close of each taxable year over the holder’s adjusted basis in such ordinary shares. If a U.S. holder makes a valid mark-to-market election with respect to our ordinary shares for the first taxable year of the U.S. holder in which the U.S. holder holds (or is deemed to hold) our ordinary shares and for which we are determined to be a PFIC, such holder generally will not be subject to the PFIC rules described above in respect to its common shares. A U.S. holder generally will be allowed an ordinary deduction for the excess, if any, of the adjusted tax basis of the ordinary shares over the fair market value of the ordinary shares as of the close of the taxable year, or the amount of any net mark-to-market gains recognized for prior taxable years, whichever is less. A U.S. holder’s adjusted tax basis in the ordinary shares will generally be adjusted to reflect the amounts included or deducted under the mark-to-market election. Additionally, any gain on the actual sale or other disposition of the ordinary shares generally will be treated as ordinary income. Ordinary loss treatment also will apply to any loss recognized on the actual sale or other disposition of ordinary shares to the extent that the amount of such loss does not exceed the net mark-to-market gains previously included with respect to such ordinary shares. A mark-to-market election applies to the tax year for which the election is made and to each subsequent year, unless our ordinary shares cease to be marketable, as specifically defined, or the IRS consents to revocation of the election. No

view is expressed regarding whether our ordinary shares are marketable for these purposes or whether the election will be available.

If a U.S. holder makes either the QEF election or the mark-to-market election, distributions and gain will not be recognized ratably over the U.S. holder's holding period or be subject to an interest charge as described above. Further, the denial of basis step-up at death described above will not apply. If a U.S. holder elects to treat us as a "qualified electing fund," gain on the sale of the ordinary shares will be characterized as capital gain. However, U.S. holders making one of these two elections may experience current income recognition, even if we do not distribute any cash. The elections must be made with the U.S. holder's federal income tax return for the year of election, filed by the due date of the return (as it may be extended) or, under certain circumstances provided in applicable Treasury Regulations, subsequent to that date.

The foregoing discussion relating to the QEF election and mark-to-market elections assumes that a U.S. holder makes the applicable election with respect to the first year in which Nova qualifies as a PFIC. If the election is not made for the first year in which Nova qualifies as a PFIC, the procedures for making the election and the consequences of election will be different.

A NUMBER OF SPECIFIC RULES AND REQUIREMENTS APPLY TO BOTH THE QEF ELECTION AND THE MARK-TO-MARKET ELECTION, AND YOU ARE URGED TO CONSULT YOUR TAX ADVISOR CONCERNING OUR PFIC STATUS AND THE VARIOUS ELECTIONS YOU CAN MAKE.

S-29

United States Information Reporting and Backup Withholding

Dividend payments and proceeds from the sale or disposal of ordinary shares may be subject to information reporting to the Internal Revenue Service and possible U.S. federal backup withholding at the rate of 28%. Certain holders (including, among others, corporations) are generally not subject to information reporting and backup withholding. A U.S. holder generally will be subject to backup withholding if such holder is not otherwise exempt and such holder:

- fails to furnish its taxpayer identification number, or TIN, which, for an individual, is ordinarily his or her social security number,
- furnishes an incorrect TIN,
- is notified by the IRS that it is subject to backup withholding because it has previously failed to properly report payments of interest or dividends, or
- fails to certify, under penalties of perjury, that it has furnished a correct TIN and that the IRS has not notified the U.S. holder that it is subject to backup withholding.

Any U.S. holder who is required to establish exempt status generally must file Internal Revenue Service Form W-9 (“Request for Taxpayer Identification Number and Certification”).

Amounts withheld as backup withholding may be credited against a U.S. holder’s federal income tax liability. A U.S. holder may obtain a refund of any excess amounts withheld under the backup withholding rules by filing the appropriate claim for refund with the Internal Revenue Service and furnishing any required information.

Underwriting

Under the terms and subject to the conditions in an underwriting agreement dated the date of this prospectus supplement, the underwriters named below, for whom Needham & Company, LLC is acting as representative, have agreed to purchase, and we have agreed to sell to them, the number of shares of our ordinary shares at the public offering price, less the underwriting discounts and commissions, as set forth on the cover page of this prospectus supplement as indicated below:

Underwriter	Number of Ordinary Shares
Needham & Company, LLC	
Roth Capital Partners, LLC	
Total:	

The underwriters are offering our ordinary shares subject to their acceptance of the shares from us and subject to prior sale. The underwriting agreement provides that the obligations of the underwriters to pay for and accept delivery of our ordinary shares offered by this prospectus supplement are subject to the approval of certain legal matters by their counsel and to other conditions. The underwriters are obligated to take and pay for all of the ordinary shares offered by this prospectus supplement if any such shares are taken.

The underwriters have an option to buy up to 525,000 additional ordinary shares from us to cover sales of shares by the underwriters which exceed the number of shares specified in the table above. The underwriters may exercise this option at any time and from time to time during the 30-day period from the date of this prospectus supplement. If any additional ordinary shares are purchased, the underwriters will offer the additional shares on the same terms as those on which the shares are being offered.

The underwriters initially propose to offer the ordinary shares directly to the public at the public offering price listed on the cover page of this prospectus supplement. After the initial offering of the ordinary shares, the offering price and other selling terms may from time to time be varied by the underwriters.

The underwriting agreement provides that the obligations of the underwriters are subject to certain conditions precedent, including the absence of any material adverse change in our business and the receipt of customary legal opinions, letters and certificates.

Commissions and Discounts

The following table shows the public offering price, underwriting discount and proceeds before expenses to us.

	Per Unit	Without Over-Allotment	Total With Over-Allotment
Public offering price	\$	\$	\$
Underwriting discount	\$	\$	\$
Proceeds, before expenses, to us	\$	\$	\$

The expenses of the offering, not including the underwriting discounts and commissions, payable by us are estimated to be \$270,000, which includes up to \$125,000 of legal fees and up to \$25,000 of other out-of-pocket expenses incurred that we have agreed to reimburse the underwriters in connection with this offering.

Quotation on The NASDAQ Global Market, Listing on Tel Aviv Stock Exchange and Transfer Agent

Our ordinary shares are listed on the The NASDAQ Global Market and Tel Aviv Stock Exchange under the symbol “NVMI.”

The transfer agent and registrar for our ordinary shares is BNY Mellon Shareowner Services, P.O. Box 358016, Pittsburgh, PA 15252-8016.

No Sales of Similar Securities

We, each of our executive officers and directors and one of our affiliated shareholder, subject to certain exceptions, have agreed with Needham & Company, LLC to enter into a lock-up agreement pursuant to which they will not to dispose of or hedge any of our ordinary shares for 60 days after the date of this prospectus without first obtaining the written consent of Needham & Company, LLC. Clal Electronics Industries Ltd. (“Clal”), an existing shareholder of the company, has also agreed to enter into a 60 day lock-up agreement, however, it may sell up to one million ordinary shares of the company previously held by Clal. The 60-day “lock-up” period during which we and our executive officers and directors and Clal, are restricted from engaging in transactions in our ordinary shares is subject to extension such that, in the event that either (i) during the last 17 days of the “lock-up” period, we issue an earnings or financial results release or material news or a material event relating to us occurs, or (ii) prior to the expiration of the “lock-up” period, we announce that we will release earnings or financial results during the 16-day period beginning on the last day of the “lock-up” period, then in either case the expiration of the “lock-up” period will be extended until the expiration of the 18-day period beginning on the issuance of the earnings or financial results release or the occurrence of the material news or material event, as applicable, unless Needham & Company, LLC waives, in writing, such an extension.

S-31

Price Stabilization, Short Positions

In order to facilitate the offering of the ordinary shares, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the ordinary shares. Specifically, the underwriters may sell more shares than they are obligated to purchase under the underwriting agreement, creating a short position. The underwriters must close out any short position by purchasing shares in the open market. A short position may be created if any of the underwriters is concerned that there may be downward pressure on the price of the ordinary shares in the open market after pricing that could adversely affect investors who purchased in this offering. As an additional means of facilitating this offering, each underwriter may bid for, and purchase, shares of our ordinary shares in the open market to stabilize the price of the ordinary shares. These activities may raise or maintain the market price of our ordinary shares above independent market levels or prevent or slow a decline in the market price of our ordinary shares. The underwriter are not required to engage in these activities, and may end any of these activities at any time.

We and the underwriters have agreed to indemnify each other against certain liabilities, including liabilities under the Securities Act or to contribute to payments the underwriters may be required to make in respect of those liabilities.

A prospectus in electronic format may be made available on websites maintained by the underwriters. The underwriters may agree to allocate a number of our ordinary shares to each of the underwriters for sale to such underwriter's online brokerage account holders. Internet distributions will be allocated by the underwriters on the same basis as other allocations.

Israel

To the extent that the offer of the ordinary shares is made in the State of Israel, the offer is only addressed to persons who qualify as one of the types of investors listed in the First Schedule to the Securities Law, 5728-1968, of the State of Israel, who are purchasing the ordinary shares for their own account, or for the account of other persons who so qualify, and not for purposes of distribution.

United Kingdom

This document is only being distributed to and is only directed at (i) persons who are outside the United Kingdom or (ii) to investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order") or (iii) high net worth entities, and other persons to whom it may lawfully be communicated, falling within Article 49(2)(a) to (e) of the Order (all such persons together being referred to as "relevant persons"). The ordinary shares are only available to, and any invitation, offer or agreement to subscribe, purchase or otherwise acquire such ordinary shares will be engaged in only with, relevant persons. Any person who is not a relevant person should not act or rely on this document or any of its contents.

Each underwriter has represented and agreed that:

(a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000 or FSMA) received by it in connection with the issue or sale of the shares in circumstances in which Section 21(1) of the FSMA does not apply to us, and

(b) it has complied with, and will comply with all applicable provisions of FSMA with respect to anything done by it in relation to the shares in, from or otherwise involving the United Kingdom.

European Economic Area

To the extent that the offer of the ordinary shares is made in any Member State of the European Economic Area that has implemented the Prospectus Directive before the date of publication of a prospectus in relation to the ordinary shares which has been approved by the competent authority in the Member State in accordance with the Prospectus Directive (or, where appropriate, published in accordance with the Prospectus Directive and notified to the competent authority in the Member State in accordance with the Prospectus Directive), the offer (including any offer pursuant to this document) is only addressed to qualified investors in that Member State within the meaning of the Prospectus Directive or has been or will be made otherwise in circumstances that do not require us to publish a prospectus pursuant to the Prospectus Directive.

S-32

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a “Relevant Member State”), each of the underwriters has represented and agreed that with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the “Relevant Implementation Date”) it has not made and will not make an offer of shares to the public in that Relevant Member State prior to the publication of a prospectus in relation to the shares which has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the competent authority in that Relevant Member State, all in accordance with the Prospectus Directive, except that it may, with effect from and including the Relevant Implementation Date, make an offer of shares to the public in that Relevant Member State at any time:

(a) to legal entities which are authorized or regulated to operate in the financial markets or, if not so authorized or regulated, whose corporate purpose is solely to invest in securities,

(b) to any legal entity which has two or more of (1) an average of at least 250 employees during the last financial year; (2) a total balance sheet of more than ^43,000,000 and (3) an annual net turnover of more than ^50,000,000, as shown in its last annual or consolidated accounts, or

(c) in any other circumstances which do not require the publication by us of a prospectus pursuant to Article 3 of the Prospectus Directive. For the purposes of this provision, the expression an “offer of shares to the public” in relation to any shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase or subscribe the shares, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State and the expression “Prospectus Directive” means Directive 2003/71/EC and includes any relevant implementing measure in each Relevant Member State.

The EEA selling restriction is in addition to any other selling restrictions set out below. In relation to each Relevant Member State, each purchaser of our ordinary shares (other than the underwriters) will be deemed to have represented, acknowledged and agreed that it will not make an offer of our ordinary shares to the public in any Relevant Member State, except that it may, with effect from and including the date on which the Prospectus Directive is implemented in the Relevant Member State, make an offer of ordinary shares to the public in that Relevant Member State at any time in any circumstances which do not require the publication by us of a prospectus pursuant to Article 3 of the Prospectus Directive, provided that such purchaser agrees that it has not and will not make an offer of any ordinary shares in reliance or purported reliance on Article 3(2)(b) of the Prospectus Directive. For the purposes of this provision, the expression an “offer of Shares to the public” in relation to any ordinary shares in any Relevant Member State has the same meaning as in the preceding paragraph.

Legal Matters

Certain matters of United States federal securities law and Israeli law relating to this offering will be passed upon for us by Gross, Kleinhandler, Hodak, Halevy, Greenberg & Co., Tel Aviv, Israel. Certain matters of United States federal securities law relating to this offering will be passed upon for the underwriters by Proskauer Rose LLP. The validity of the securities offered in this prospectus will be passed upon for us by Gross, Kleinhandler, Hodak, Halevy, Greenberg & Co., Tel Aviv, Israel. Certain matters of Israeli law relating to this offering will be passed upon for the underwriters by Meitar Liquornik Geva & Leshem Brandwein Law Offices.

Experts

The financial statements as of December 31, 2008 and 2007, and for each of the three years in the period ended December 31, 2008, incorporated by reference in this prospectus supplement have been audited by Brightman Almagor Zohar & Co. a member of Deloitte Touche Tohmatsu, an independent registered public accounting firm, as

stated in their reports, which are incorporated by reference herein, and have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

Where you can find more information; Incorporation of Information by Reference

We have filed a registration statement on Form F-3 with the SEC in connection with this offering. In addition, we file reports with, and furnish information to, the SEC. You may read and copy the registration statement and any other documents we have filed at the SEC, including any exhibits and schedules, at the SEC's public reference room at 100 F Street N.E., Washington, D.C. 20549. You may call the SEC at 1-800-SEC-0330 for further information on this public reference room. In addition, the SEC maintains a web site that contains reports and other information regarding issuers that file electronically with the SEC. You may access the SEC's website at <http://www.sec.gov>. These SEC filings are also available to the public on the Israel Securities Authority's Magna website at www.magna.isa.gov.il and from commercial document retrieval services.

S-33

This prospectus supplement is part of the registration statement and does not contain all of the information included in the registration statement. Whenever a reference is made in this prospectus supplement to any of our contracts or other documents, the reference may not be complete and, for a copy of the contract or document, you should refer to the exhibits that are a part of the registration statement.

The SEC allows us to “incorporate by reference” into this prospectus supplement the information we file with it, which means that we can disclose important information to you by referring you to those documents. Information incorporated by reference is part of this prospectus supplement and the accompanying prospectus. The following documents filed with or furnished to the SEC by our company are incorporated by reference in the registration statement:

- our Annual Report on Form 20-F for the year ended December 31, 2008, as filed with the SEC on March 30, 2009, to the extent the information in that report has not been updated or superseded by this prospectus supplement and the accompanying prospectus;
- our Report on Form 6-K, furnished to the SEC on May 6, 2009;
- our Report on Form 6-K, furnished to the SEC on May 7, 2009;
- our Report on Form 6-K, furnished to the SEC on August 4, 2009;
- our Report on Form 6-K, furnished to the SEC on August 5, 2009;
- our Report on Form 6-K, furnished to the SEC on December 8, 2009; and
- the description of our ordinary shares which is contained in our registration statement on Form 8-A filed with the SEC on March 22, 2000.

All subsequent annual reports filed by our company pursuant to the Securities Exchange Act of 1934, as amended (the “Exchange Act”) on Form 20-F prior to the termination of the offering shall be deemed to be incorporated by reference in this prospectus supplement and to be a part hereof from the date of filing of such documents. We may also incorporate any Form 6-K subsequently submitted by us to the SEC prior to the termination of the offering by identifying in such Forms 6-K that they are being incorporated by reference herein, and any Forms 6-K so identified shall be deemed to be incorporated by reference in this prospectus supplement and to be a part hereof from the date of submission of such documents. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus supplement to the extent that a statement contained herein or in any other subsequently filed document which also is incorporated or deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement.

We will provide to each person, including any beneficial owner, to whom this prospectus supplement is delivered, a copy of these filings, at no cost, upon written or oral request to us at: Weizmann Science Park, Einstein St., Building 22, 2nd Floor, Ness-Ziona, Israel, Attn: Corporate Secretary, telephone number: 972-8-9387505.

A copy of this prospectus supplement and the accompanying prospectus, our amended and restated articles of association, are available for inspection at our offices at Weizmann Science Park, Einstein St., Building 22, 2nd Floor, Ness-Ziona, Israel, and on the Israel Securities Authority’s Magna website, www.magna.isa.gov.il.

As a foreign private issuer, we are exempt from the rules under Section 14 of the Exchange Act prescribing the furnishing and content of proxy statements and our officers, directors and principal shareholders are exempt from the reporting and other provisions in Section 16 of the Exchange Act.

S-34

PROSPECTUS

\$20,000,000
Ordinary Shares
Debt Securities
Warrants
Subscription Rights
Units

From time to time, we may offer and sell up to \$20,000,000 of any combination of the securities described in this prospectus, either individually or in units. We will provide specific terms of these offerings and securities in one or more supplements to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement and any related free writing prospectus may also add, update or change information contained in this prospectus. You should read this prospectus, the applicable prospectus supplement and any related free writing prospectus carefully before buying any of the securities being offered.

This prospectus may not be used to consummate a sale of any securities unless accompanied by a prospectus supplement.

Our ordinary shares are listed on The NASDAQ Global Market and on the Tel Aviv Stock Exchange in Israel under the symbol "NVML." On December 28, 2009, the last reported sale price of our ordinary shares on The NASDAQ Global Market was \$6.19 per share and on the Tel Aviv Stock Exchange was NIS 24.00 per share. We have not yet determined whether any of the other securities that may be offered by this prospectus will be listed on any exchange, inter-dealer quotation system or over-the-counter market. If we decide to seek listing of any such securities, a prospectus supplement relating to those securities will disclose the exchange, quotation system or market on which the securities will be listed.

On December 1, 2009, the aggregate market value of our outstanding ordinary shares held by non-affiliates was \$44,894,948. We have not previously offered securities pursuant to General Instruction I.B.5. of Form F-3 during the prior twelve calendar month period that ends on, and includes, the date of this prospectus.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "Risk Factors" contained on page 3 herein and in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus.

The securities may be sold directly by us to investors, through agents designated from time to time or to or through underwriters or dealers, on a continuous or delayed basis. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution" in this prospectus. If any agents or underwriters are involved in the sale of any securities with respect to which this prospectus is being delivered, the names of such agents or underwriters and any applicable fees, commissions, discounts and over-allotment options will be set forth in a prospectus supplement. The price to the public of such securities and the net proceeds that we expect to receive from such sale will also be set forth in a prospectus supplement.

None of the U.S. Securities and Exchange Commission, the Israeli Securities Authority or any state securities commission have approved or disapproved of these securities or passed upon the adequacy, completeness or accuracy of this prospectus. Any representation to the contrary is a criminal offense under the laws of the United States and the laws of the State of Israel.

The date of this prospectus is January 4, 2010

Table of Contents

<u>About This Prospectus</u>	1
<u>About Nova Measuring Instruments Ltd.</u>	1
<u>Cautionary Note Regarding Forward-Looking Statements</u>	2
<u>Risk Factors</u>	3
<u>Price Range of Ordinary Shares</u>	4
<u>Capitalization</u>	5
<u>Use of Proceeds</u>	5
<u>The Securities We May Offer</u>	5
<u>Description of Ordinary Shares</u>	6
<u>Description of Debt Securities</u>	7
<u>Description of Warrants</u>	11
<u>Description of Subscription Rights</u>	12
<u>Description of Units</u>	13
<u>Plan of Distribution</u>	14
<u>Experts</u>	15
<u>Legal Matters</u>	15
<u>Where You Can Find More Information: Incorporation of Information by Reference</u>	16
<u>Enforceability of Civil Liabilities and Agent For Service of Process in The United States</u>	17
<u>Offering Expenses</u>	17

About This Prospectus

This prospectus is part of a registration statement on Form F-3 that we filed with the Securities and Exchange Commission, or SEC, utilizing a “shelf” registration process. Under this shelf registration process, we may from time to time offer and sell ordinary shares, debt securities, warrants, subscription rights or units, or any combination of these securities, in one or more offerings up to a total dollar amount of \$20,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we offer any securities under this prospectus, we will provide a prospectus supplement that will contain more specific information about the terms of those securities. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. This prospectus, together with applicable prospectus supplements and any related free writing prospectuses, includes all material information relating to these offerings. We may also add, update or change in the prospectus supplement (and in any related free writing prospectus that we may authorize to be provided to you) any of the information contained in this prospectus or in the documents that we have incorporated by reference into this prospectus. We urge you to read carefully this prospectus, any applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the heading “Where You Can Find Additional Information,” before buying any of the securities being offered.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

You should rely only on the information we have provided or incorporated by reference in this prospectus, any applicable prospectus supplement and any related free writing prospectus that we may authorize to be provided to you. We have not authorized anyone to provide you with different information. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus that we may authorize to be provided to you. You must not rely on any unauthorized information or representation. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of a security.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed with or furnished to the SEC, will be filed with or furnished to the SEC or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under “Where You Can Find Additional Information.”

In this prospectus, references to the terms “Nova,” “the Company,” “we,” “us,” “our” and similar terms, refer to Nova Measuring Instruments Ltd. and its wholly owned subsidiaries on a consolidated basis, unless we state or the context implies otherwise.

About Nova Measuring Instruments Ltd.

We are a worldwide leading designer, developer and producer of integrated and stand-alone process control metrology systems. Metrology systems measure various thin film properties and critical circuit dimensions during various steps in the semiconductor manufacturing process, allowing semiconductor manufacturers to increase quality, productivity and yields, lower their manufacturing costs and increase their profitability. We supply our metrology systems to major semiconductor manufacturers worldwide, either directly or through process equipment manufacturers. Of the 20 semiconductor manufacturers that had the highest capital equipment expenditures in 2008, 17 use our systems. Our

systems were first installed in 1995 and, since that time, we have sold more than 1,900 metrology systems.

The semiconductor manufacturing process starts with a silicon wafer that has been highly polished on one side to a mirror finish, upon which circuits are constructed. To construct the circuits, a series of layers of thin films that act as conductors, semiconductors or insulators are applied to the polished side of the wafer. During the manufacturing process, these film layers are subjected to processes which remove portions of the film layers, create circuit patterns and perform other functions. The semiconductor manufacturing process requires exacting steps and strict control of equipment performance and process sequences. Tight control can be achieved through monitoring silicon wafers and measuring relevant parameters after each process step with metrology tools such as those we produce.

Prior to the introduction of our integrated metrology systems, process control was achieved through stand-alone measurement equipment. Stand-alone measurement equipment requires semiconductor manufacturers to interrupt the manufacturing process sequence, remove sample silicon wafers from the process equipment and place the silicon wafers on the stand-alone measuring or inspection tool. In contrast, our integrated metrology approach is based upon patented measuring methods that enable us to produce optical measuring systems that are small enough to be integrated directly inside many types of semiconductor process equipment. We believe that in several instances during the manufacturing process, our integrated approach offers considerable advantages over the conventional stand-alone approach to metrology control, enabling manufacturers using our integrated equipment to reduce costs and to improve production efficiency, yield and quality.

We have always emphasized our integrated metrology solutions as this continues to be an area where we have a leading position. In addition, in the past few years we developed and started manufacturing stand-alone metrology systems as well. We have leveraged our technology, methods, metrology expertise and market position in the integrated metrology field to expand our offerings of stand-alone metrology systems. Today, both stand alone and integrated metrology solutions have reached a level of maturity allowing semiconductor manufactures to choose how to use either technology and make decisions based on merit specific to the process step in question, always balancing between the amount of data attained and the use made of the data for capabilities such as automated process control. Our long-term strategy is focused on advanced metrology and process control solutions where our integrated process control products and stand alone products are compatible or complementary and used in a customized way to meet specific customer needs.

Cautionary Note Regarding Forward-Looking Statements

This prospectus, including the information incorporated by reference into this prospectus, contains, and any prospectus supplement may contain, statements that are forward-looking statements within the meaning of the federal securities laws. We caution you that any forward-looking statements presented in this prospectus, or which management may make orally or in writing from time to time, are based on management's beliefs and assumptions made by, and information currently available to, management. When we use the words "believe," "expect," "anticipate," "plan," "intend," "estimate," "project," "may," "will," "should," "continue," "assume" and other similar expressions, they are forward-looking statements. These statements include, among other things, statements regarding our intent, belief or expectations with respect to:

- our strategic plans;

- our business outlook; and

- our future business and financial performance.

These statements are not guarantees of future performance and are subject to certain risks, uncertainties, and other factors, some of which are beyond our control, are difficult to predict, and could cause actual results to differ materially from those expressed or forecasted in the forward-looking statements. The risks and uncertainties to which these statements are subject include, but are not limited to, those risks and uncertainties described in "Risk Factors" and elsewhere in this prospectus, the accompanying prospectus supplement, and the documents incorporated by reference herein and therein, and include the following:

- unanticipated consequences of the global economic crisis;

- our dependency on a single integrated process control product line;

- the highly cyclical nature of the markets we target;
- our inability to reduce spending during a slowdown in the semiconductor industry;
- our ability to respond effectively on a timely basis to rapid technological changes;
- risks associated with our dependence on a single manufacturing facility;
- our ability to expand our manufacturing capacity or marketing efforts to support our future growth;
- our dependency on a small number of large customers and small number of suppliers;
 - risks related to our intellectual property;
 - changes in customer demands for our products;
 - new product offerings from our competitors;
 - changes in or an inability to execute our business strategy;
 - unanticipated manufacturing or supply problems;

- changes in tax requirements;
- changes in customer demand for our products;
- risks related to currency fluctuations;
- risks related to our operations in Israel; and
- various other factors beyond our control.

We caution you to carefully consider these risks and not to place undue reliance on our forward-looking statements. Except as required by law, we assume no responsibility for updating any forward-looking statements.

Risk Factors

Investing in our securities involves significant risks. Please see the risk factors under the heading “Risk Factors” in our most recent Annual Report on Form 20-F on file with the SEC, as revised or supplemented by our reports filed with or furnished to the SEC since the filing of our most recent Annual Report on Form 20-F and incorporated by reference in this prospectus. Before making an investment decision, you should carefully consider these risks as well as other information we include or incorporate by reference in this prospectus and any prospectus supplement. The risks and uncertainties we have described are not the only ones facing our company. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business operations. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities. The discussion of risks includes or refers to forward-looking statements; you should read the explanation of the qualifications and limitations on such forward-looking statements discussed elsewhere in this prospectus.

Price Range of Ordinary Shares

Our ordinary shares are listed and traded on The NASDAQ Global Market and on the Tel Aviv Stock Exchange under the symbol “NVMI”.

The following table sets forth, for the periods indicated, the high and low reported sales prices of the ordinary shares on The NASDAQ Global Market and Tel Aviv Stock Exchange:

PERIOD	NASDAQ GLOBAL MARKET		TEL AVIV STOCK EXCHANGE	
	HIGH (\$)	LOW (\$)	HIGH (NIS)	LOW (NIS)
Last Six Months and December 2009:				
June 2009	1.21	0.68	8.69	2.80
July 2009	1.40	0.89	4.95	3.60
August 2009	1.74	1.15	5.99	4.54
September 2009	2.75	1.55	10.00	5.70
October 2009	3.25	2.60	12.22	9.71
November 2009	3.97	2.69	14.86	10.54
December 2009 (Until December 28, 2009).	6.25	3.77	24.75	14.41
Last Eleven Quarters:				
First Quarter 2007	3.10	2.17	13.50	10.36
Second Quarter 2007	3.09	2.54	12.74	10.02
Third Quarter 2007	3.05	2.21	13.75	9.25
Fourth Quarter 2007	2.99	2.10	13.20	8.50
First Quarter 2008	2.55	1.70	9.79	6.67
Second Quarter 2008	2.17	1.25	8.50	4.80
Third Quarter 2008	1.60	1.11	5.36	4.28
Fourth Quarter 2008	1.27	0.41	4.50	1.85
First Quarter 2009	1.00	0.34	3.80	1.89
Second Quarter 2009	1.21	0.55	8.69	2.80
Third Quarter 2009	2.75	0.89	10.00	3.60
Last Five Years:				
2004	8.21	3.00	*	*
2005	3.91	1.94	14.89	9.56
2006	2.90	1.45	12.79	8.08
2007	3.10	2.10	13.75	8.50
2008	2.55	0.41	9.79	1.85

On December 28, 2009, the last reported sale price of the ordinary shares was \$6.19 on The NASDAQ Global Market and NIS 24.00 on the Tel Aviv Stock Exchange.

* During 2004 there was no market activity on the Tel Aviv Stock Exchange

Capitalization

The following table sets forth our consolidated unaudited capitalization as of September 30, 2009, on an actual basis. The financial date in the following table should be read in conjunction with our consolidated financial data and notes thereto incorporated by reference herein.

	As of September 30, 2009 (unaudited, in thousands)
Shareholders' equity:	
Ordinary shares, par value NIS 0.01 per share: 40,000,000 shares authorized; 19,456,503 shares issued and outstanding (1)	\$55
Additional paid-in capital	84,447
Deferred equity-based compensation	-
Accumulated other comprehensive income	236
Accumulated deficit	(61,555)
Total shareholders' equity	\$23,183

(1) Does not include 1,453,485 ordinary shares issuable upon the exercise of warrants outstanding as of September 30, 2009, at an exercise price of \$3.05 per share and 2,658,476 ordinary shares issuable upon the exercise of 2,350,946 options, at a weighted average exercise price of \$1.81 per share, and vesting of 307,530 restricted share units outstanding as of September 30, 2009.

Use of Proceeds

We currently intend to use the net proceeds from the sale of any securities under this prospectus for general corporate purposes, which may include the following:

- working capital;
- capital expenditures;
- the acquisition of other companies or businesses; and
- other purposes as mentioned in any prospectus supplement.

We have not yet determined the amount of net proceeds to be used specifically for any of the foregoing purposes. Accordingly, our management will have significant discretion and flexibility in applying the net proceeds from the sale of these securities. Pending such uses, we may temporarily invest the net proceeds. The precise amounts and timing of the application of proceeds will depend upon our funding requirements and the availability of other funds.

Based upon our financial needs, we may engage in additional financings of a character and amount that we determine as the need arises.

The Securities We May Offer

The descriptions of the securities contained in this prospectus, together with the applicable prospectus supplements, summarize the material terms and provisions of the various types of securities that we may offer. We will describe in the applicable prospectus supplement relating to any securities the particular terms of the securities offered by that prospectus supplement. If we indicate in the applicable prospectus supplement, the terms of the securities may differ from the terms we have summarized below. We will also include in the prospectus supplement information, where applicable, about material Israeli and U.S. federal income tax considerations relating to the securities, and the securities exchange, if any, on which the securities will be listed.

We may sell from time to time, in one or more offerings:

- ordinary shares;
- debt securities;
- warrants;
- subscription rights;
- units; and
- any combination of the foregoing securities.

In this prospectus, we will refer to the ordinary shares, debt securities, warrants, subscription rights and units collectively as “securities.” The total dollar amount of all securities that we may issue under this prospectus will not exceed \$20,000,000.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

Description of Ordinary Shares

Our authorized share capital consists of 40,000,000 (forty million) ordinary shares, par value NIS 0.01 per share. We may from time to time, by approval of a majority of our shareholders, increase our authorized share capital. All ordinary shares are registered shares, rather than bearer shares.

The ownership or voting rights of our ordinary shares by non-residents of Israel is not restricted in any way by our memorandum of association or amended and restated articles of association. The State of Israel does not restrict in any way the ownership or voting rights of ordinary shares of Israeli entities by non-residents of the State of Israel, except with respect to subjects of countries that are in a state of war with the State of Israel. Our ordinary shares do not have cumulative voting rights for the election of directors. The affirmative vote of the shareholders present in person or by proxy that represent more than 50% of the voting power present in person or by proxy have the power to elect all nominees up for election to our board of directors.

In the event of our liquidation, after satisfaction of liabilities to creditors, our assets will be distributed to the holders of our ordinary shares in proportion to the nominal value of their respective holdings. This liquidation right may be affected by the grant of a preferential dividend or distribution right to the holder of a class of shares with preferential rights that may be authorized in the future. Dividends may be paid only out of profits, as defined in the Israeli Companies Law, 1999, or Companies Law. Our board of directors is authorized to declare dividends, although we anticipate that, for the foreseeable future, we will retain any earnings to support operations and to finance the growth and development of our business. Therefore, we do not expect to pay cash dividends for at least the next several years.

Holders of ordinary shares have one vote for each ordinary share held on all matters submitted to a vote of shareholders. Subject to the provisions set forth in Section 46B of the Israeli Securities Law, 1968, these voting rights may be affected by the grant of any special voting rights to the holders of a class of shares with preferential rights that may be authorized in the future. Our major shareholders do not have different voting rights from each other or other shareholders.

Resolutions of shareholders (e.g. resolutions amending our articles of association, electing or removing directors, appointing an independent registered public accounting firm, authorizing changes in capitalization or the rights attached to our shares or approving a wind-up or merger) require the affirmative vote (at a meeting convened upon advance notice of no less than twenty one days) of shareholders present in person or by proxy and holding shares conferring, in the aggregate, at least a majority of the votes actually cast on such resolutions.

The quorum required for a meeting of shareholders is at least two shareholders present, in person or by proxy, within half an hour of the time fixed for the meeting's commencement that together hold shares conferring in the aggregate more than 33% of the total voting power of our shares. A meeting adjourned for lack of a quorum is adjourned to the following day at the same time and place. At the reconvened meeting, in the event a quorum is not present within half an hour of the time fixed for the meetings commencement, the persons present shall constitute a quorum.

Our registration number at the Israeli Registrar of Companies is 51-181246-3.

The objectives stated in our amended and restated articles of association are:

- to invent, design, plan, develop, manufacture, market and trade in the field of measuring instruments in electronics, micro-electronics, medicine, chemistry, metallurgy, ceramics, and any other field;
- to initiate, participate, manage, execute, import and export any kind of project within the borders of the State of Israel and/or outside Israel;

to register patents, trademarks, trade names, intellectual property rights marketing rights and any other right of any kind whatsoever, both in Israel and abroad; and

to engage in any legal activity, both in Israel and abroad.

Modification or abrogation of the rights of any existing class of shares requires either the written consent of all of the holders of the issued shares of such class or the adoption of a resolution by an ordinary majority of a general meeting of holders of such class.

We had 19,716,045 ordinary shares issued as of December 1, 2009. The above number of issued ordinary shares includes 2,229 treasury shares held by us through a trustee.

The transfer agent and registrar for our ordinary shares is BNY Mellon Shareowner Services, P.O. Box 358016, Pittsburgh, PA 15252-8016.

Description of Debt Securities

This prospectus describes the general terms and provisions of the debt securities we may offer and sell by this prospectus. When we offer to sell a particular series of debt securities, we will describe the specific terms of the series in a prospectus supplement. We will also indicate in the prospectus supplement whether the general terms and provisions described in this prospectus apply to a particular series of debt securities.

We may offer under this prospectus up to \$20,000,000 in aggregate principal amount of debt securities, or if debt securities are issued at a discount, or in a foreign currency or composite currency, such principal amount as may be sold for an initial offering price of up to \$20,000,000. We may offer debt securities in the form of either senior debt securities or subordinated debt securities. The senior debt securities and the subordinated debt securities are together referred to in this prospectus as the “debt securities.” Unless otherwise specified in a prospectus supplement, the senior debt securities will be our direct, unsecured obligations and will rank equally with all of our other unsecured and unsubordinated indebtedness. The subordinated debt securities generally will be entitled to payment only after payment of our senior debt.

The debt securities will be issued under an indenture between us and a trustee, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part. We have summarized the general features of the debt securities to be governed by the indenture. The summary is not complete. The executed indenture will be incorporated by reference from a report on Form 6-K. We encourage you to read the indenture, because the indenture, and not this summary, will govern your rights as a holder of debt securities. Capitalized terms used in this summary will have the meanings specified in the indenture.

Additional Information

The terms of each series of debt securities will be established by or pursuant to a resolution of our board of directors, and set forth or determined in the manner provided in an officers’ certificate or by a supplemental indenture. The particular terms of each series of debt securities will be described in a prospectus supplement relating to such series, including any pricing supplement.

We may issue an unlimited amount of debt securities under the indenture, and the debt securities may be in one or more series with the same or various maturities, at par, at a premium or at a discount. Except as set forth in any prospectus supplement, we will also have the right to “reopen” a previous series of debt securities by issuing additional debt securities of such series without the consent of the holders of debt securities of the series being reopened or any

other series. Any additional debt securities of the series being reopened will have the same ranking, interest rate, maturity and other terms as the previously issued debt securities of that series. These additional debt securities, together with the previously issued debt securities of that series, will constitute a single series of debt securities under the terms of the applicable indenture.

We will set forth in a prospectus supplement, including any pricing supplement, relating to any series of debt securities being offered, the aggregate principal amount and other terms of the debt securities, which will include some or all of the following:

· the title;

· any limit on the amount that may be issued;

· whether or not we will issue the series of debt securities in global form, and, if so, the terms and the name of the depository;

· the maturity date;

- the interest rate, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;
 - whether or not the debt securities will be secured or unsecured, and the terms of any securities;
 - classification as senior or subordinated debt securities;
- in the case of subordinated debt securities, the degree, if any, to which the subordinated debt securities of the series will be senior to or be subordinated to other indebtedness of our in right of payment, whether the other indebtedness is outstanding or not;
- the terms on which any series of debt securities may be convertible into or exchangeable for our ordinary shares or other of our securities, including (a) provisions as to whether conversion or exchange is mandatory, at the option of the holder or at our option and (b) provisions pursuant to which the number of ordinary shares or other securities of ours that the holders of the series of debt securities receive would be subject to adjustment;
 - the place where payments will be payable;
- our right, if any, to defer payment of interest and the maximum length of any such deferral period;
- the date, if any, after which, and the price at which, we may, at our option, redeem the series of debt securities pursuant to any optional redemption provisions;
- the date, if any, on which, and the price at which we are obligated, pursuant to any mandatory sinking fund provisions or otherwise, to redeem, or at the holder's option to purchase, the series of debt securities;
- whether the indenture will restrict our ability to pay dividends, or will require us to maintain any asset ratios or reserves;
 - whether we will be restricted from incurring any additional indebtedness;
 - any listing of a series of debt securities on a securities exchange or market;
- the denominations in which we will issue the series of debt securities, if other than denominations of \$1,000 and any integral multiple thereof; and
 - any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities.

We will provide information on the applicable United States and Israeli income tax considerations and other special considerations applicable to any of these debt securities in the applicable prospectus supplement.

If we denominate the purchase price of any of the debt securities in a foreign currency or currencies or a foreign currency unit or units, or if the principal of, and premium and interest on, any series of debt securities is payable in a foreign currency or currencies or a foreign currency unit or units, we will provide you with information on the restrictions, elections, general tax considerations, specific terms and other information with respect to that issue of debt securities and such foreign currency or currencies or foreign currency unit or units in the applicable prospectus supplement.

Transfer and Exchange

Each debt security will be represented by either one or more global securities registered in the name of The Depository Trust Company, as Depository, or a nominee (we will refer to any debt security represented by a global debt security as a “book-entry debt security”), or a certificate issued in definitive registered form (we will refer to any debt security represented by a certificated security as a “certificated debt security”) as set forth in the applicable prospectus supplement.

You may transfer or exchange certificated debt securities at any office we maintain for this purpose in accordance with the terms of the indenture. No service charge will be made for any transfer or exchange of certificated debt securities, but we may require payment of a sum sufficient to cover any tax or other governmental charge payable in connection with a transfer or exchange.

You may effect the transfer of certificated debt securities and the right to receive the principal of, and any premium and interest on, certificated debt securities only by surrendering the certificate representing those certificated debt securities and either reissuance by us or the trustee of the certificate to the new holder or the issuance by us or the trustee of a new certificate to the new holder.

No Protection in the Event of a Change of Control

Unless we state otherwise in the applicable prospectus supplement, the debt securities will not contain any provisions which may afford holders of the debt securities protection in the event we undergo a change in control or in the event of a highly leveraged transaction (whether or not such transaction results in a change in control) which could adversely affect holders of debt securities.

Covenants

We will set forth in the applicable prospectus supplement any restrictive covenants applicable to any issue of debt securities.

Consolidation, Merger and Sale of Assets

We may not consolidate with or merge with or into, or convey, transfer or lease all or substantially all of our properties and assets to, any person, which we refer to as a successor person, unless:

- we are the surviving corporation or the successor person (if other than us) expressly assumes our obligations on the debt securities and under the indenture;
- immediately after giving effect to the transaction, no event of default, and no event which, after notice or lapse of time, or both, would become an event of default, shall have occurred and be continuing under the indenture; and
- certain other conditions are met, including any additional conditions described in the applicable prospectus supplement.

Events of Default

Event of default means, with respect to any series of debt securities, any of the following:

- default in the payment of any interest upon any debt security of that series when it becomes due and payable, and continuance of that default for a period of 30 days (unless the entire amount of the payment is deposited by us with the trustee or with a paying agent prior to the expiration of the 30-day period);
- default in the payment of principal of or premium on any debt security of that series when due and payable;
- default in the performance or breach of any other covenant or warranty by us in the indenture (other than a covenant or warranty that has been included in the indenture solely for the benefit of a series of debt securities other than that series), which default continues uncured for a period of 90 days after we receive written notice from the trustee or we and the trustee receive written notice from the holders of not less than a majority in principal amount of the outstanding debt securities of that series as provided in the indenture;
- certain events of bankruptcy, insolvency or reorganization of our company; and
- any other event of default provided with respect to debt securities of that series that is described in the applicable prospectus supplement.

No event of default with respect to a particular series of debt securities (except as to certain events of bankruptcy, insolvency or reorganization) necessarily constitutes an event of default with respect to any other series of debt securities. The occurrence of an event of default may constitute an event of default under our bank credit agreements as may be in existence from time to time. In addition, the occurrence of certain events of default or an acceleration under the indenture may constitute an event of default under certain of our other indebtedness outstanding from time to time.

If an event of default with respect to debt securities of any series at the time outstanding occurs and is continuing, then the trustee or the holders of not less than a majority in principal amount of the outstanding debt securities of that series

may, by a notice in writing to us (and to the trustee if given by the holders), declare to be due and payable immediately the principal (or, if the debt securities of that series are discount securities, that portion of the principal amount as may be specified in the terms of that series) of, and accrued and unpaid interest, if any, on all debt securities of that series. In the case of an event of default resulting from certain events of bankruptcy, insolvency or reorganization, the principal (or such specified amount) of and accrued and unpaid interest, if any, on all outstanding debt securities will become and be immediately due and payable without any declaration or other act on the part of the trustee or any holder of outstanding debt securities. At any time after a declaration of acceleration with respect to debt securities of any series has been made, but before a judgment or decree for payment of the money due has been obtained by the trustee, the holders of a majority in principal amount of the outstanding debt securities of that series may rescind and annul the acceleration if all events of default, other than the non-payment of accelerated principal and interest, if any, with respect to debt securities of that series, have been cured or waived as provided in the indenture. We refer you to the prospectus supplement relating to any series of debt securities that are discount securities for the particular provisions relating to acceleration of a portion of the principal amount of such discount securities upon the occurrence of an event of default.

The indenture provides that the trustee will be under no obligation to exercise any of its rights or powers under the indenture at the request of any holder of outstanding debt securities, unless the trustee receives indemnity satisfactory to it against any loss, liability or expense. Subject to certain rights of the trustee, the holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee with respect to the debt securities of that series.

No holder of any debt security of any series will have any right to institute any proceeding, judicial or otherwise, with respect to the indenture or for the appointment of a receiver or trustee, or for any remedy under the indenture, unless:

- that holder has previously given to the trustee written notice of a continuing event of default with respect to debt securities of that series; and
- the holders of at least a majority in principal amount of the outstanding debt securities of that series have made written request, and offered reasonable indemnity, to the trustee to institute the proceeding as trustee, and the trustee has not received from the holders of a majority in principal amount of the outstanding debt securities of that series a direction inconsistent with that request and has failed to institute the proceeding within 60 days.

Notwithstanding the foregoing, the holder of any debt security will have an absolute and unconditional right to receive payment of the principal of, and any premium and interest on, that debt security on or after the due dates expressed in that debt security and to institute suit for the enforcement of payment.

If any securities are outstanding under the indenture, the indenture requires us, within 120 days after the end of our fiscal year, to furnish to the trustee a statement as to compliance with the indenture. The indenture provides that the trustee may withhold notice to the holders of debt securities of any series of any default or event of default (except in payment on any debt securities of that series) with respect to debt securities of that series if it in good faith determines that withholding notice is in the interest of the holders of those debt securities.

Modification and Waiver

We may modify and amend the indenture with the consent of the holders of at least a majority in principal amount of the outstanding debt securities of each series affected by the modifications or amendments. We may not make any modification or amendment without the consent of the holders of each affected debt security then outstanding if that amendment will:

- reduce the amount of debt securities whose holders must consent to an amendment or waiver;
- reduce the rate of or extend the time for payment of interest (including default interest) on any debt security;
- reduce the principal of, or premium on, or change the fixed maturity of, any debt security or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund or analogous obligation with respect to any series of debt securities;
- reduce the principal amount of discount securities payable upon acceleration of maturity;
- waive a default in the payment of the principal of, or premium or interest on, any debt security (except a rescission of acceleration of the debt securities of any series by the holders of at least a majority in aggregate principal amount of the then outstanding debt securities of that series and a waiver of the payment default that resulted from such acceleration);

- make the principal of, or premium or interest on, any debt security payable in currency other than that stated in the debt security;
- make any change to certain provisions of the indenture relating to, among other things, the right of holders of debt securities to receive payment of the principal of, and premium and interest on, those debt securities and to institute suit for the enforcement of any such payment and to waivers or amendments; or
- waive a redemption payment with respect to any debt security.

Except for certain specified provisions, the holders of at least a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all debt securities of that series waive our compliance with provisions of the indenture. The holders of a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all the debt securities of such series waive any past default under the indenture with respect to that series and its consequences, except a default in the payment of the principal of, or any premium or interest on, any debt security of that series or in respect of a covenant or provision, which cannot be modified or amended without the consent of the holder of each outstanding debt security of the series affected; provided, however, that the holders of a majority in principal amount of the outstanding debt securities of any series may rescind an acceleration of the debt securities of such series and its consequences, including any related payment default that resulted from the acceleration.

Discharging Our Obligations

We may choose to either discharge our obligations on the debt securities of any series in a legal defeasance, or to release ourselves from our covenant restrictions on the debt securities of any series in a covenant defeasance. We may do so at any time after we deposit with the trustee sufficient cash or government securities to pay the principal, interest, any premium and any other sums due to the stated maturity date or a redemption date of the debt securities of the series. If we choose the legal defeasance option, the holders of the debt securities of the series will not be entitled to the benefits of the indenture except for registration of transfer and exchange of debt securities, replacement of lost, stolen, destroyed or mutilated debt securities, conversion or exchange of debt securities, sinking fund payments and receipt of principal and interest on the original stated due dates or specified redemption dates.

We may discharge our obligations under the indenture or release ourselves from covenant restrictions only if, in addition to making the deposit with the trustee, we meet some specific requirements. Among other things:

- we must deliver an opinion of our legal counsel that the discharge will not result in holders having to recognize taxable income or loss or subject them to different tax treatment. In the case of legal defeasance, this opinion must be based on either an IRS letter ruling or change in federal tax law;
- we may not have a default on the debt securities discharged on the date of deposit;
- the discharge may not violate any of our agreements; and
- the discharge may not result in our becoming an investment company in violation of the Investment Company Act of 1940.

Governing Law

The indenture and the debt securities will be governed by, and construed in accordance with, the internal laws of the State of New York, without regard to conflict of law principles that would result in the application of any law other than the laws of the State of New York.

Description of Warrants

We may issue warrants to purchase ordinary shares and/or debt securities in one or more series together with other securities or separately, as described in the applicable prospectus supplement. Below is a description of certain general terms and provisions of the warrants that we may offer. Particular terms of the warrants will be described in the warrant agreements and the prospectus supplement to the warrants.

The prospectus supplement relating to any warrants we offer, if any, will, to the extent applicable, include specific terms relating to the offering, including some or all of the following:

- the specific designation and aggregate number of, and the price at which we will issue, the warrants;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- the designation, amount and terms of the securities purchasable upon exercise of the warrants;
- if applicable, the exercise price for our ordinary shares and the number of ordinary shares to be received upon exercise of the warrants;

- if applicable, the exercise price for our debt securities, the amount of debt securities to be received upon exercise, and a description of that series of debt securities;
- the date on which the right to exercise the warrants will begin and the date on which that right will expire or, if you may not continuously exercise the warrants throughout that period, the specific date or dates on which you may exercise the warrants;
 - if applicable, provisions for changes to or adjustments in the exercise price of the warrants;
- whether the warrants will be issued in fully registered form or bearer form, in definitive or global form or in any combination of these forms, although, in any case, the form of a warrant included in a unit will correspond to the form of the unit and of any security included in that unit;
- the identity of the warrant agent for the warrants and of any other depositaries, execution or paying agents, transfer agents, registrars or other agents;

- the proposed listing, if any, of the warrants or any securities purchasable upon exercise of the warrants on any securities exchange;
- if applicable, the date from and after which the warrants and the ordinary shares and/or debt securities will be separately transferable;
 - if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
 - information with respect to book-entry procedures, if any;
 - the anti-dilution provisions of the warrants, if any;
 - any redemption or call provisions;
 - whether the warrants are to be sold separately or with other securities as parts of units; and
- any additional material terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants.

The description in the applicable prospectus supplement of any warrants we offer will not necessarily be complete and will be qualified in its entirety by reference to the applicable warrant agreement, which will be filed with the SEC if we offer warrants. For more information on how you can obtain copies of the applicable warrant agreement if we offer warrants, see “Where You Can Find More Information; Incorporation of Information by Reference” beginning on page 16. We urge you to read the applicable warrant agreement and any applicable prospectus supplement in their entirety.

Description of Subscription Rights

We may issue subscription rights to purchase our ordinary shares. These subscription rights may be issued independently or together with any other security offered hereby and may or may not be transferable by the shareholder receiving the subscription rights in such offering. In connection with any offering of subscription rights, we may enter into a standby arrangement with one or more underwriters or other purchasers pursuant to which the underwriters or other purchasers may be required to purchase any securities remaining unsubscribed for after such offering.

The prospectus supplement relating to any subscription rights we offer, if any, will, to the extent applicable, include specific terms relating to the offering, including some or all of the following:

- the price, if any, for the subscription rights;
- the exercise price payable for each ordinary share upon the exercise of the subscription rights;
- the number of subscription rights to be issued to each shareholder;
- the number and terms of the shares ordinary shares which may be purchased per each subscription right;
- the extent to which the subscription rights are transferable;

any other terms of the subscription rights, including the terms, procedures and limitations relating to the exchange and exercise of the subscription rights;

- the date on which the right to exercise the subscription rights shall commence, and the date on which the subscription rights shall expire;
- the extent to which the subscription rights may include an over-subscription privilege with respect to unsubscribed securities; and
- if applicable, the material terms of any standby underwriting or purchase arrangement which may be entered into by us in connection with the offering of subscription rights.

The description in the applicable prospectus supplement of any subscription rights we offer will not necessarily be complete and will be qualified in its entirety by reference to the applicable subscription right agreement, which will be filed with the SEC if we offer subscription rights. For more information on how you can obtain copies of the applicable subscription right agreement if we offer subscription rights, see “Where You Can Find More Information; Incorporation of Information by Reference” beginning on page 16. We urge you to read the applicable subscription right agreement and any applicable prospectus supplement in their entirety.

Description of Units

We may issue units comprised of one or more of the other securities that may be offered under this prospectus, in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately at any time, or at any time before a specified date.

The prospectus supplement relating to any units we offer, if any, will, to the extent applicable, include specific terms relating to the offering, including some or all of the following:

- the material terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any material provisions relating to the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units; and
 - any material provisions of the governing unit agreement that differ from those described above.

The description in the applicable prospectus supplement of any units we offer will not necessarily be complete and will be qualified in its entirety by reference to the applicable unit agreement, which will be filed with the SEC if we offer units. For more information on how you can obtain copies of the applicable unit agreement if we offer units, see “Where You Can Find More Information; Incorporation of Information by Reference” beginning on page 16. We urge you to read the applicable unit agreement and any applicable prospectus supplement in their entirety.

Plan of Distribution

We may sell the securities being offered hereby in one or more of the following methods from time to time:

- a block trade (which may involve crosses) in which the broker or dealer so engaged will attempt to sell the securities as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker or dealer as principal and resale by such broker or dealer for its own account pursuant to this prospectus;
 - exchange distributions and/or secondary distributions;
 - ordinary brokerage transactions and transactions in which the broker solicits purchasers;
 - to one or more underwriters for resale to the public or to investors;
- in “at the market offerings,” within the meaning of Rule 415(a)(4) of the Securities Act of 1933, as amended (the “Securities Act”), to or through a market maker or into an existing trading market, on an exchange or otherwise;
- transactions not involving market makers or established trading markets, including direct sales or privately negotiated transactions;
 - transactions in options, swaps or other derivatives that may or may not be listed on an exchange; or
 - through a combination of these methods of sale.

The securities that we distribute by any of these methods may be sold, in one or more transactions, at:

- a fixed price or prices, which may be changed;
- market prices prevailing at the time of sale;
- prices related to prevailing market prices; or
- negotiated prices.

We will set forth in a prospectus supplement the terms of the offering of securities, including:

- the name or names of any agents or underwriters;
- the purchase price of the securities being offered and the proceeds we will receive from the sale;
- any over-allotment options under which underwriters may purchase additional securities from us;
- any agency fees or underwriting discounts and other items constituting agents’ or underwriters’ compensation;
 - the public offering price;
 - any discounts or concessions allowed or reallocated or paid to dealers; and

any securities exchanges or markets on which such securities may be listed.

If underwriters are used in the sale, they will acquire the securities for their own account and may resell the securities from time to time in one or more transactions at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. We may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Subject to certain conditions, the underwriters will be obligated to purchase all of the securities offered by the prospectus supplement, other than securities covered by any over-allotment option. Any public offering price and any discounts or concessions allowed or reallocated or paid to dealers may change from time to time. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement, naming the underwriter, the nature of any such relationship.

We may sell securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities and we will describe any commissions we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best-efforts basis for the period of its appointment.

We may also sell securities directly to one or more purchasers without using underwriters or agents.

Underwriters, dealers and agents that participate in the distribution of the securities may be underwriters as defined in the Securities Act and any discounts or commissions they receive from us and any profit on their resale of the securities may be treated as underwriting discounts and commissions under the Securities Act. We will identify in the applicable prospectus supplement any underwriters, dealers or agents and will describe their compensation. We may have agreements with the underwriters, dealers and agents to indemnify them against specified civil liabilities, including liabilities under the Securities Act. Underwriters, dealers and agents may engage in transactions with or perform services for us in the ordinary course of their businesses.

The debt securities, warrants and the units that we may offer will be new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities.

Unless otherwise specified in the applicable prospectus supplement, each class or series of securities will be a new issue with no established trading market, other than our ordinary shares, which are listed on The NASDAQ Global Market. We may elect to list any other class or series of securities on any exchange, but we are not obligated to do so. It is possible that one or more underwriters may make a market in a class or series of securities, but the underwriters will not be obligated to do so and may discontinue any market making at any time without notice. We cannot give any assurance as to the liquidity of the trading market for any of the securities.

In connection with an offering, an underwriter may purchase and sell securities in the open market. These transactions may include short sales, stabilizing transactions and purchases to cover positions created by short sales. Short sales involve the sale by the underwriters of a greater number of securities than they are required to purchase in the offering. "Covered" short sales are sales made in an amount not greater than the underwriters' option to purchase additional securities, if any, from us in the offering. If the underwriters have an over-allotment option to purchase additional securities from us, the underwriters may close out any covered short position by either exercising their over-allotment option or purchasing securities in the open market. In determining the source of securities to close out the covered short position, the underwriters may consider, among other things, the price of securities available for purchase in the open market as compared to the price at which they may purchase securities through the over-allotment option. "Naked" short sales are any sales in excess of such option or where the underwriters do not have an over-allotment option. The underwriters must close out any naked short position by purchasing securities in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the securities in the open market after pricing that could adversely affect investors who purchase in the offering.

Accordingly, to cover these short sales positions or to otherwise stabilize or maintain the price of the securities, the underwriters may bid for or purchase securities in the open market and may impose penalty bids. If penalty bids are imposed, selling concessions allowed to syndicate members or other broker-dealers participating in the offering are reclaimed if securities previously distributed in the offering are repurchased, whether in connection with stabilization transactions or otherwise. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. The impositions of a penalty bid may also affect the price of the securities to the extent that it discourages resale of the securities. The magnitude or effect of any stabilization or other transactions is uncertain. These transactions may be effected on The NASDAQ Global Market or otherwise and, if commenced, may be discontinued at any time.

In compliance with guidelines of the Financial Industry Regulatory Authority, or FINRA, the maximum consideration or discount to be received by any FINRA member may not exceed 8% of the aggregate proceeds of the securities offered pursuant to this prospectus and any applicable prospectus supplement.

Experts

The financial statements as of December 31, 2008 and 2007, and for each of the three years in the period ended December 31, 2008, incorporated by reference in this prospectus have been audited by Brightman Almagor Zohar & Co. a member of Deloitte Touche Tohmatsu, an independent registered public accounting firm, as stated in their reports, which are incorporated by reference herein, and have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

Legal Matters

The validity of the securities offered in this prospectus will be passed upon for us by Gross, Kleinhendler, Hodak, Halevy, Greenberg & Co., Tel Aviv, Israel. Any underwriters will be advised with respect to other issues relating to any offering by their own legal counsel.

Where You Can Find More Information; Incorporation of Information by Reference

We have filed a registration statement on Form F-3 with the SEC in connection with this offering. In addition, we file reports with, and furnish information to, the SEC. You may read and copy the registration statement and any other documents we have filed at the SEC, including any exhibits and schedules, at the SEC's public reference room at 100 F Street N.E., Washington, D.C. 20549. You may call the SEC at 1-800-SEC-0330 for further information on this public reference room. In addition, the SEC maintains a web site that contains reports and other information regarding issuers that file electronically with the SEC. You may access the SEC's website at <http://www.sec.gov>. These SEC filings are also available to the public on the Israel Securities Authority's Magna website at www.magna.isa.gov.il and from commercial document retrieval services.

This prospectus is part of the registration statement and does not contain all of the information included in the registration statement. Whenever a reference is made in this prospectus to any of our contracts or other documents, the reference may not be complete and, for a copy of the contract or document, you should refer to the exhibits that are a part of the registration statement.

The SEC allows us to "incorporate by reference" into this prospectus the information we file with it, which means that we can disclose important information to you by referring you to those documents. Information incorporated by reference is part of this prospectus. The following documents filed with or furnished to the SEC by our company are incorporated by reference in this registration statement:

- our Annual Report on Form 20-F for the year ended December 31, 2008, as filed with the SEC on March 30, 2009, to the extent the information in that report has not been updated or superseded by this prospectus;
- our Report on Form 6-K, furnished to the SEC on May 6, 2009;
- our Report on Form 6-K, furnished to the SEC on May 7, 2009;
- our Report on Form 6-K, furnished to the SEC on August 4, 2009;
- our Report on Form 6-K, furnished to the SEC on August 5, 2009;
- our Report on Form 6-K, furnished to the SEC on December 8, 2009; and
- the description of our ordinary shares which is contained in our registration statement on Form 8-A filed with the SEC on March 22, 2000.

All subsequent annual reports filed by our company pursuant to the Securities Exchange Act of 1934, as amended (the "Exchange Act") on Form 20-F prior to the termination of the offering shall be deemed to be incorporated by reference in this prospectus and to be a part hereof from the date of filing of such documents. We may also incorporate any Form 6-K subsequently submitted by us to the SEC prior to the termination of the offering by identifying in such Forms 6-K that they are being incorporated by reference herein, and any Forms 6-K so identified shall be deemed to be incorporated by reference in this prospectus and to be a part hereof from the date of submission of such documents. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained herein or in any other subsequently filed document which also is incorporated or deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

We will provide to each person, including any beneficial owner, to whom this prospectus is delivered, a copy of these filings, at no cost, upon written or oral request to us at: Weizmann Science Park, Einstein St., Building 22, 2nd Floor, Ness-Ziona, Israel, Attn: Corporate Secretary, telephone number: 972-8-9387505.

A copy of this prospectus, our amended and restated articles of association, are available for inspection at our offices at Weizmann Science Park, Einstein St., Building 22, 2nd Floor, Ness-Ziona, Israel, and on the Israel Securities Authority's Magna website, www.magna.isa.gov.il.

As a foreign private issuer, we are exempt from the rules under Section 14 of the Exchange Act prescribing the furnishing and content of proxy statements and our officers, directors and principal shareholders are exempt from the reporting and other provisions in Section 16 of the Exchange Act.

Enforceability of Civil Liabilities and
Agent For Service of Process in The United States

We are incorporated in Israel, most of our executive officers and directors and the Israeli experts named herein are nonresidents of the United States, and a substantial portion of our assets and of such persons' assets are located outside the United States. For further information regarding enforceability of civil liabilities against us and other persons, see the risk factor "Any shareholder with a cause of action against us as a result of buying, selling or holding our ordinary shares may have difficulty asserting a claim under U.S. securities laws or enforcing a U.S. judgment against us or our officers, directors or Israeli auditors." under the heading "Risk Factors" in our Annual Report on Form 20-F for the year ended December 31, 2008, which is incorporated by reference herein.

Offering Expenses

The following is a statement of expenses in connection with the distribution of the securities registered. All amounts shown are estimates except the SEC registration fee. The estimates do not include expenses related to offerings of particular securities. Each prospectus supplement describing an offering of securities will reflect the estimated expenses related to the offering of securities under that prospectus supplement.

SEC registration fees	\$1,116
Legal fees and expenses	\$15,000
Accountants fees and expenses	\$5,000
Miscellaneous	\$2,000
TOTAL	\$23,116

3,500,000 Ordinary Shares

PRELIMINARY PROSPECTUS SUPPLEMENT

NEEDHAM & COMPANY, LLC
ROTH CAPITAL PARTNERS, LLC

February , 2010
