NOVA MEASURING INSTRUMENTS LTD
Form 20-F
June 29, 2004

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 20-F

o REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) or (g) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2003

OR

o TRANSITION REPORT PURSUANT TO SECTION 13 or 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
for the transition period from _____ to _____

Commission File Number 0-030668

NOVA MEASURING INSTRUMENTS LTD.

(Exact name of Registrant as specified in its charter)

Nova Measuring Instruments Ltd.
(Translation of Registrant s name into English)

Israel
(Jurisdiction of incorporation or organization)

Weizmann Science Park, Building 22, 2nd Floor, Ness-Ziona 76100, Israel
(Address of principal executive offices)

Securities registered or to be registered pursuant to Section 12(b) of the Act.

Title of each class	**Name of each exchange on which registered**
None	None

Securities registered or to be registered pursuant to Section 12(g) of the Act:
Ordinary Shares, nominal value NIS 0.01 per share

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:
None

Indicate the number of outstanding shares of each of the issuer s classes of capital or common stock as of the close of the period covered by the annual report:

15,117,538 Ordinary Shares, NIS 0.01 nominal (par) value per share, as of December 31, 2003

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes x No o

Indicate by check mark which financial statement item the registrant has elected to follow:

Item 17 o Item 18 x

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Introduction

In this Annual Report, the Company, Nova or we refers to Nova Measuring Instruments Ltd. and its consolidated subsidiaries, when the context requires.

The consolidated financial statements and selected consolidated financial data as of December 31, 1999, 2000, 2001, 2002 and 2003 and for each of the years in the five-year period ended December 31, 2003 (the Consolidated Financial Statements), included in this Annual Report have been prepared in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP).

Our Functional Currency

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

The currency of the primary economic environment in which we operate is the U.S. dollar, since substantially all our revenues to date have been denominated in U.S. dollars and over 50% of our expenses are in dollars or in New Israeli Shekels linked to the dollar. Transactions and balances denominated in dollars are presented at their original amounts. Non-dollar transactions and balances have been re-measured into dollars as required by the principles in Statement No. 52 of the Financial Accounting Standards Board (FASB) of the United States of America. All exchange gains and losses from such re-measurement are included in the net financial income when they arise.

Cautionary Statement Regarding Forward-Looking Statements

Certain information contained herein, which does not relate to historical financial information, may be deemed to constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. The words or phrases will likely result, are expected to, will continue, is anticipated, estimate, project, believe, plan , or similar expressions identify forward looking statement statements are subject to certain risks and uncertainties that could cause actual results to differ materially from historical results and those presently anticipated or projected. We wish to caution readers not to place undue reliance on any such forward-looking statements, which speak only as of the date made. We undertake no obligation to release publicly any revisions to these forward looking statements to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events. Among the factors that could cause our actual results in the future to differ materially from any opinions or statements expressed with respect to future periods are competitive industry conditions and the ability to forecast the needs of our semiconductor industry with respect to the extreme cyclically and very fast technology evolutions. Various other factors set forth in Item 3 Key Information and elsewhere herein.

PART I

Item 1. Identity of Directors, Senior Management and Advisors

Not applicable.

Item 2. Offer Statistics and Expected Timetable

Not applicable.

Item 3. Key Information

Selected Financial Data

The following selected consolidated financial data as of December 31, 2002 and 2003 and for the years ended December 31, 2001, 2002 and 2003 have been derived from our audited Consolidated Financial Statements. These financial statements have been prepared in accordance with U.S. GAAP, and audited by Brightman Almagor & Co., a member of Deloitte Touche Tohmatsu. The consolidated selected financial data as of December 31, 1999, 2000 and 2001 and for the years ended December 31, 1999 and 2000 have been derived from other consolidated financial statements not included in this Form 20-F and have also been prepared in accordance with U.S. GAAP and audited by Brightman Almagor & Co., a member of Deloitte Touche Tohmatsu. The selected consolidated financial data set forth below should be read in conjunction with and are qualified by reference to Item 5, Operating and Financial Review and Prospects and the Consolidated Financial Statements and notes thereto and other financial information included elsewhere in this Form 20-F.

Summary of Consolidated Financial Data

	Year ended December 31,				
	1999	2000	2001	2002	2003
	(in thousands, except per share data)				
Consolidated Statement of Operations Data:					
Revenues	$ 27,581	$ 48,463	$ 21,171	$ 20,371	$ 26,688
Cost of revenues	14,668	23,478	16,470	13,353	16,535
Gross profit	12,913	24,985	4,701	7,018	10,153
Operating expenses:					
Research and development expenses, net	8,569	13,878	13,253	9,894	8,561
Sales and marketing expenses	4,280	7,998	6,852	6,950	6,534
General and administrative expenses	1,458	3,186	3,032	1,797	1,898
Other operating expenses (income)	4,000		1,025	1,478	(2,203)
Total operating expenses	18,307	25,062	24,162	20,119	14,790
Operating loss	(5,394)	(77)	(19,461)	(13,101)	(4,637)
Financing income, net	509	2,858	2,587	144	425
Other expenses	(150)				
Net income (loss)	$ (5,035)	$ 2,781	$ (16,874)	$ (12,957)	$ (4,212)
Earnings (loss) per share:					
Basic earnings (loss) per share	$ (0.49)	$ 0.20	$ (1.16)	$ (0.88)	$ (0.28)
Diluted earnings (loss) per share		$ 0.19			
Shares used in calculation of basic earnings (loss) per share	10,332	13,580	14,578	14,786	14,994
Shares used in calculation of diluted earnings per share		14,691			

	December 31,				
	1999	2000	2001	2002	2003
	(in thousands)				
Consolidated Balance Sheet Data:					
Working capital	$ 7,168	$ 61,270	$ 45,529	$ 34,725	$ 30,350

Total assets	20,772	81,825	59,564	49,247	47,918
Shareholders equity	8,276	62,619	47,006	35,677	32,336
Dividends declared					

Risk Factors

Risks Related to Our Business and Our Industry

Because substantially all our current sales are dependent on a single product line, factors that adversely affect the pricing and demand for this product line could substantially reduce our sales.

Although we have expanded our product offering, we are currently dependent on a single integrated process control product line targeting the chemical mechanical polishing market. We expect revenues from this product line to continue to account for a substantial portion of our revenues for at least the next year. As a result, factors adversely affecting the pricing of or demand for integrated process controls for the chemical mechanical polishing equipment field, such as competition and technological change, could substantially reduce our sales.

The main markets we target are highly cyclical and are currently expanding after experiencing a prolonged and severe downturn; it is difficult to predict the length and strength of this period of expansion or when the next downturn will occur.

The semiconductor capital equipment market and industries are highly cyclical and are currently expanding after experiencing a prolonged and severe downturn, during which the overall rate of capital spending and purchase of manufacturing equipment had been sharply cut and sales of our products had declined. As a result of this recovery, we are beginning to see an increase in capital spending. However, although we rely on market research companies, we cannot predict the length and strength of this recovery. Should another downturn occur, we have only a limited ability to reduce expenses because of the need for significant ongoing expenditures related to engineering, research and development and worldwide customer service and support operations. Accordingly, we may incur losses during future downturns.

Our inability to 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 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, and is currently experiencing, severe and protracted cyclical downturns, characterized by slowing product demand, inventory surpluses, accelerated erosion of average selling prices and production overcapacity. These downturns, including the current one, have materially reduced demand for the type of capital equipment and process technology that we offer and our sales and revenues have declined. 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 capital equipment requirements, and

our extensive ongoing customer service and support requirements worldwide.

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 hurt 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 could suffer. In addition, the development of new measurement technologies, new product introductions or enhancements by our competitors could cause a decline in sales or loss of market acceptance of our existing products.

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 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.

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 assure you 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 injury to our reputation and may impair the market acceptance of our products.

We have had a history of losses and may incur future losses.

Since our inception in 1993, we have incurred net losses in every year other than in 1998 and 2000, and our losses may continue. As of December 31, 2003, we had an accumulated deficit of $40.4 million. We plan to continue the level of our aggregate product development, sales and marketing and administrative expenses over the next 12 months. Accordingly, to achieve profitability, we will need to increase our revenues. In the future, our revenues may not grow and we may not achieve profitability in the future.

Because we have a limited operating history with one product line, our historical results may not be indicative of our future results, and it is difficult to evaluate our business and prospects.

Our first system for chemical mechanical polishing applications was developed and introduced to the market in October 1995. Because this is the only product line with which we have significant manufacturing and marketing experience and because of our focus on the development and introduction of new products, our past operating results may not be indicative of our future results. Companies in an early stage of product development frequently have higher risks and encounter unexpected expenses and difficulties. These risks, expenses and difficulties apply particularly to us because the semiconductor manufacturing business is a rapidly evolving market characterized by technological advances. The uncertainty of our future performance increases the risk that the value of your investment will decline.

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, and we expect this trend to 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 by, and shipments of systems to, significant customers.

We also have a limited ability to predict revenues for future quarterly periods and face risks of revenue shortfalls due to our limited sales backlog in current periods. 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.

We may not be able to expand our manufacturing capacity or marketing efforts quickly enough to support our future growth.

Because of our small size and our business strategy to aggressively increase our sales, we anticipate an increased demand on all of our resources. If we do not accurately estimate our need for personnel, manufacturing capacity or marketing and customer support, we may not be

able to support our future growth.

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

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. The following table indicates the percentage of our total revenues derived from sales to our five largest customers and the percentage range of these revenues from these customers for the periods indicated:

	Year ended December 31,			
	2000	2001	2002	2003
Total revenues from five largest customers	66%	81%	86%	85%
Range of revenues from five largest customers	6%-21%	2%-33%	4%-30%	2%-36%

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. Furthermore, if any of our customers become insolvent or have difficulties meeting their financial obligations to us as a result of the current protracted slowdown in the semiconductor industry or as a result of any other 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 with Nanometrics Inc., Therma-Wave Inc. and Rudolph Technologies Inc., which manufacture and sell integrated process control systems. In addition, we compete with established manufacturers of conventional stand-alone measurement equipment, such as KLA-Tencor Corp., and original equipment manufacturers of semiconductor equipment, such as Tokyo Electron Ltd. Established companies, both domestic and foreign, compete with our product line, and new competitors are entering our market. Many 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. 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; and
- our success in developing and marketing new products.

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 suppliers have been acquired by larger equipment manufacturers. For example, in 2001 Therma-Wave Inc. acquired Sensys Instruments Corp., in 2002 Rudolph Technologies

Inc. acquired ISOA Inc. and in 2003 Applied Materials acquired Boxer Cross Inc. 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 permit 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.

Because we are small, 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 cancellations or 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 sales cycle takes between 3 and 24 months to complete. During this time, we may expend substantial funds and management effort. Lengthy sales cycles subject us to a number of significant risks, including inventory obsolescence and fluctuations in operating results, over which we have little or no 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, 2003, we had obtained 29 U.S. patents and had 24 U.S. patent applications pending. In addition, we had obtained 16 foreign patents and had more than 70 foreign patent applications pending.

We cannot assure you 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.

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

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 have become aware of a United States patent held by a competitor, which may be interpreted to cover some aspects of the products we sell in the United States. Nonetheless, we have not received any indications of intention to enforce this patent or any notice from the competitor with respect to this patent. In addition, the patent is being reexamined by the United States Patent and Trademark Office (USPTO), is unenforceable at this time, and may or may not survive the reexamination. If the USPTO decides to allow the patent to stand in some reexamined form, it is possible that the competitor could seek to enforce the patent rights against certain of our products sold in the United States, seeking damages, an injunction, or requiring us to pay royalties for a license. While we believe that we would be successful in any litigation seeking to enforce those patent rights, the ultimate outcome of any litigation or other legal proceedings cannot be predicted.

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 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 recently experienced political and economic instability. For instance, Taiwan and China have had a number of disputes, as have North and South Korea, and Japan has 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. 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.

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, the market price of our ordinary shares may fall. As of December 31, 2003 we had 15,117,538 ordinary shares outstanding, of which 10,659,326 shares were held by eight shareholders.

Because four of our shareholders control approximately 51% of our ordinary shares, they can control the outcome of matters submitted to a vote of our shareholders, including the election of directors.

As of April 30, 2004, four of our shareholders controlled approximately 7.7 million, or 51%, of our ordinary shares. 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 shareholder approval. Even if these four shareholders do not vote together, each has the ability to influence the outcome of corporate actions requiring shareholder approval. For additional information on our major shareholders, see Major shareholders on page 46 of this report.

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. Since the establishment of the State of Israel in 1948, a number of armed conflicts have taken place between Israel and its Arab neighbors. Conflicts between Israel and Palestinian militant groups have been ongoing. A state of hostility, varying in degree and intensity, has led to security and economic problems for Israel. The resumption of hostilities in the region, which have occurred after the failure of Camp David peace talks, as well as the events of September 11, 2001, and the on-going tension in the region, have a negative effect on the stability of the region which might have negative effect on our business and harm our growth and revenues. For further detail see Item 5, paragraph Political and economic conditions in Israel .

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 36 days of military reserve duty annually. This time-period may be extended by the Minister of Defense or 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, and no executive officer or key employee was recruited for any significant time period. 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.

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

We generate most of our revenues in U.S. dollars, but incur a significant portion of our expenses in New Israeli Shekels, commonly referred to as NIS. As a result, we are exposed to risk to the extent that the rate of inflation in Israel exceeds the rate of devaluation of the NIS in relation to the dollar or if the timing of this devaluation lags behind inflation in Israel with respect to such expenses that might increase as a result of inflation in Israel. In that event, the dollar cost of our operations in Israel will increase and our dollar measured results of operations will be adversely affected. Our operations also could be adversely affected if we are unable to hedge against currency fluctuations in the future. Accordingly, we may enter into currency hedging transactions to decrease the risk of financial exposure from fluctuations in the exchange rate of the dollar against the NIS. These measures, however, may not adequately protect us from material adverse effects due to the impact of inflation in Israel.

We participate in government programs under which we receive tax and other benefits. The reduction or termination of these programs would increase our costs.

We receive conditional grants from the Office of the Chief Scientist of the Israeli Ministry of Industry and Trade 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 conditions, including paying royalties related to grants received and making specified investments in fixed assets. In addition, some of these programs restrict our ability to manufacture particular products and transfer particular technology outside of Israel. 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 2002 and 2003, we recorded an aggregate of $1.7 million and $1.4 million, respectively, in conditional grants under Israeli government programs. As of December 31, 2002, our contingent liability to the Office of the Chief Scientist for grants received was approximately $ 0.7 million. As of December 31, 2003, our contingent liability to the Office of the Chief Scientist for grants received was approximately $3.6 million. See also Note 7A to our consolidated financial statements contained elsewhere in this report. 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. The Israeli government has reduced the benefits available under these programs in recent years and has indicated that it may reduce or eliminate these benefits in the future. The termination or reduction of these grants and tax benefits could harm our business, financial condition and results of operations. In addition, if we increase our activities outside the State of 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 purchasing our ordinary shares, or 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 significant 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.

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 National 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 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. While our ordinary shares are listed for trading on the Tel Aviv Stock Exchange, there has been no trading of our shares on that exchange since the fourth quarter of 2002. We believe that there has not been any trading on the Tel Aviv Stock Exchange since fourth quarter of 2002 as a result of the belief of buyers and sellers that the Nasdaq market offers greater liquidity and, generally, more favorable prices. We are unable to predict whether there will be trading on the Tel Aviv exchange in the future.

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. This characterization could result in adverse U.S. tax consequences to our shareholders, including having gain realized on the sale of our shares be treated as ordinary income, as opposed to capital gain income, and having potentially punitive interest charges applied to such sales proceed. 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.

We believe that in 2003 we were not a passive foreign investment company and currently we expect that we will not be a passive foreign investment company in 2004. However, passive foreign income company status is determined as of the end of the full tax year and is dependent on a number of factors, including the value of a corporation s assets in 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, 2004 or any future year. For a discussion on how we might be characterized as a passive foreign investment company and related tax consequences, please see the section of this annual report entitled U.S. Taxation Passive Foreign Investment Companies.

Item 4. Information on the Company

History and Development of the Company

Nova Measuring Instruments Ltd. was incorporated in May 1993 under the laws of the State of Israel. We commenced operations in October 1993 to design, develop and produce integrated process control systems for use in the manufacture of semiconductors, also known as integrated circuits or chips. In October 1995, we began manufacturing and marketing systems for chemical mechanical polishing. We have since

expanded our product offering to include systems designed for chemical vapor deposition, lithography and etch, and are continuing to develop new products and additional applications for our current products.

In April 2000, we conducted an initial public offering pursuant to which we sold 3,000,000 ordinary shares for consideration of $54 million and net proceeds of $49.2 million. In connection with the public offering, our shares were listed for trading on the Nasdaq National Market.

In June 2002, we listed our shares in the Tel-Aviv Stock Exchange in Israel, pursuant to legislation which enables Israeli companies whose shares are traded on certain stock exchanges outside of Israel, to be registered on the Tel Aviv Stock Exchange, while reporting, in substance, according to the provision of the relevant foreign securities law applicable to the company. The Israeli securities laws prescribe that as condition precedent of a company being eligible to register its shares for trade on the Tel Aviv Stock Exchange, the company s capital should consist of a single class of shares with equal voting rights with respect their par value. Accordingly, all of our series E shares were converted into ordinary shares in May 2002. This conversion was approved by the Tel Aviv District Court on May 2002 and our articles of association were amended accordingly.

We have four wholly owned subsidiaries in the U.S., Japan, Taiwan and Netherlands. These subsidiaries are engaged in marketing activities and provide technical support to our customers.

Our main office, research and development and production facilities are located in Israel at the Weizmann Science Park, Building 22, 2nd Floor, Ness-Ziona. Our telephone number at our main office is +1-972-8-938-7505. Our agent for service of process in the U.S. is David Gitlin, of Wolf, Block, Schorr and Solis-Cohen LLP, 1650 Arch Street, 22nd Floor, Philadelphia, PA 19103.

Overview

We are a worldwide leading designer, developer and producer of integrated process control metrology systems used in the manufacture of semiconductors and a leading designer, manufacturer and producer of stand-alone process control metrology systems. Metrology systems measure various thin film properties, critical circuit dimensions and layer-to-layer circuit alignment, known as overlay, 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 2003, 18 use our systems, including Intel, Samsung, TSMC, UMC, IBM, AMD and Micron Technology. Process equipment manufacturers that purchase our metrology systems include Applied Materials, Ebara, Novellus and Lam Research. Our systems were first installed in 1995 and, since that time, we have sold more than 1,100 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 or 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. Our integrated approach offers considerable advantages over the conventional stand-alone approach to metrology control, enabling manufacturers using our equipment to reduce costs and to improve production efficiency, yield and quality.

We have emphasized our integrated metrology solutions in the past and intend to continue to do so. However, we also produce stand-alone metrology systems. We plan to leverage our technology, methods, metrology expertise and market position in the integrated metrology field to expand our offerings of stand-alone metrology systems. 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.

Demand for metrology systems, whether integrated or stand-alone, is driven by capital equipment purchases by semiconductor manufacturers, which in turn are driven by worldwide demand for semiconductors. Industry data indicates that the worldwide demand for

semiconductors is growing. We believe that this growth in demand will drive demand for process control equipment, including metrology systems, as semiconductor manufacturers add capacity. Demand for metrology systems will also be driven by the increasing cost to manufacture semiconductors, which are becoming larger and more complex, and the demands of semiconductor manufacturers for process equipment that provides better film uniformity, increased dimensional control, tool-to-tool matching and within-tool uniformity.

Our Market

Growth of the Semiconductor Industry and the Metrology Market

The use of semiconductor devices continues to increase. Semiconductors are no longer used solely in personal computers and computer systems, but also in wireless communications, Internet infrastructure, Internet access devices, automobiles, portable electronic devices and other advanced consumer electronics. As a result of the increasing demand for semiconductors, the semiconductor industry has experienced significant growth over the past eight to 10 years, despite a severe downturn between 2000 and 2003. According to the Semiconductor Industry Association, worldwide sales of semiconductors increased from $151 billion in 1995 to $224 billion in 2000, before decreasing to $167 billion in 2003. Over the past decade, the increased use of semiconductors has driven demand for additional semiconductor manufacturing capacity. In turn, the addition of semiconductor manufacturing capacity, whether through new construction or refurbishment of existing manufacturing facilities, has been a driver of demand for metrology systems such as those we produce.

The increased use of semiconductors has been accompanied by in increase in their complexity. Due to the creation of new applications and markets for semiconductors, suppliers and manufacturers are faced with an increasing demand for new products that provide greater functionality and higher performance at lower prices. As a result, many new complex materials, structures and processes are being introduced to semiconductor manufacturing. New materials include copper, low- and high-k dielectrics, silicon-on-insulator, silicon-germanium, strained silicon, raised source/drain. New processes include chemical mechanical polishing (CMP), electro chemical plating (ECP) and atomic layer deposition (ALD). Manufacturers are also increasingly moving toward 300 mm silicon wafers from 200 mm silicon wafers. While 300 mm wafers can yield up to twice as many integrated circuits as 200 mm wafers, larger wafers increase manufacturing challenges. For example, because 300 mm wafers can bend or bow more than twice as much as 200 mm wafers, they are more susceptible to damage. The larger area of 300 mm wafers also makes it more difficult to maintain film uniformity across the entire wafer. Semiconductors also continue to move toward smaller feature sizes and more complex multi-level circuitry. The increase in complexity of semiconductors and the resulting increase in the complexity and cost of the semiconductor manufacturing process has also been a driver of demand for metrology systems.

The ever-increasing level of complexity and the decrease in feature sizes has also significantly increased the cost and performance requirements of semiconductor fabrication equipment. The cost of wafer fabrication equipment is also increased due to the higher levels of automation being utilized by manufacturers. Thus, semiconductor manufacturers must increase their investment in capital equipment in order to sustain technological leadership, to expand manufacturing capacity and maintain profitability. According to published reports by an industry market research firm, the cost of building a state-of-the-art semiconductor manufacturing facility has grown from approximately $200 million in 1983 to over $3 billion today. Capital equipment, which includes metrology systems, accounts for 65% to 75% of this sum, according to industry data. We believe that the process control equipment market, which includes the metrology segment, in the future will grow at a rate greater than the overall process equipment market since process control equipment is expected to consume a larger portion of the overall costs of semiconductor manufacturing equipment.

While we expect that the demand for semiconductors will increase and the market for semiconductor process control equipment will expand, we cannot assure you that either will occur, that we will benefit from any increase in demand or expansion of the process control market, or that our products will be accepted in the market place. Our industry is intensively competitive and if we fail to compete effectively our revenues and market share will decline.

The Semiconductor Manufacturing Process

Semiconductors typically consist of transistors or other components connected by an intricate system of circuitry on flat silicon discs known as wafers. Integrated circuit manufacturing involves hundreds of individual steps, some of which are repeated several times, through which numerous copies of an integrated circuit are formed on a single silicon wafer. Typically, up to 30 very thin patterned layers are created on each wafer during the manufacturing process. At the end of the manufacturing process, the wafer is cut into individual chips or die. Because semiconductor specifications are extremely exacting, and integrated circuits are becoming more complex, requiring ever more sophisticated manufacturing processes, the process steps are constantly monitored, and critical parameters are measured at each step using metrology equipment.

Many of the manufacturing steps involve the controlled application or removal of layers of materials to or from the wafer. The application of materials to the wafer, known as deposition, involves the layering of extremely thin films of electrically insulating, conducting or semi-conducting materials. These layers can range from one-thousandth to less than one-hundred-thousandth of a millimeter in thickness and create electrically active regions on the wafer and its surface. A wide range of materials and deposition processes are used to build up thin film layers on wafers to achieve specific performance characteristics. One of the principal methods of thin film layer deposition is chemical vapor deposition (CVD). In CVD, a chemical is introduced into the chamber where the wafer is being processed and is deposited using heat and a chemical reaction to form a layer of solid material on the surface of the silicon wafer. Metrology systems monitor the thickness and uniformity of thin film layers during the deposition process.

Once the thin film has been deposited on the wafer to form a solid material, circuit patterns are created using a process known as photolithography. During this process, a light-sensitive coating called photoresist is applied to the wafer, which is then exposed to intense light through a patterned, opaque piece of glass. For the photolithography process to work properly, the thickness of the photoresist must be precise and uniform. In addition, to control the photolithography process, the film thickness, reflectivity, overlay registration and critical dimensions are all measured and verified. The exposed photoresist is developed when it is subjected to a chemical solution. The developed wafer is then exposed to another chemical solution, or plasma, that etches away any areas not covered by the photoresist to create the structure of the integrated circuit. Semiconductor manufacturers use metrology systems to verify the removal of material through the etch process and the critical dimensions of the structures created.

To meet the processing challenges posed by ever smaller feature sizes and because of the use of new materials such as copper in the manufacture of integrated circuits, manufacturers are increasingly using a process technology known as chemical mechanical polishing. Chemical mechanical polishing, or CMP, removes uneven film material deposited on the surface of the wafer from processes such as CVD and photolithography by carefully sanding the wafer with abrasives and chemicals, creating an extremely flat and even surface for the patterning of subsequent film layers. Metrology systems are used to control and verify the results of the CMP process by measuring the thin film layer to determine when the correct thickness has been achieved.

The processes described above are repeated in sequence until the last layer of structures on the wafer has been completed. Each integrated circuit on the wafer is then inspected and its functionality tested before shipment. Measurements taken by metrology systems during the manufacturing process help insure process uniformity and help semiconductor manufacturers avoid costly rework and mis-processing, thereby increasing efficiency and profitability.

The Need for Greater Overall Equipment Efficiency

According to SEMATECH, the industry consortium for semiconductor manufacturers, one of the major challenges to achieving improvements in cost productivity is the ability to maintain continuous improvements in equipment productivity. Overall equipment efficiency, that is, the percentage of time that processing equipment is utilized to produce wafers, is used as a metric to quantify the productivity of a processing tool. The major factors affecting productivity are equipment downtime, qualification time, misprocessing and operator skills. We believe it is imperative that semiconductor manufacturers find ways to improve overall equipment efficiency in order to improve cost productivity and earn an acceptable return on their investment in capital equipment and to meet the demand for improved semiconductor device performance.

Process Control. The steps used to form semiconductors are an exacting processes that require strict control of equipment performance and process sequences for the resulting semiconductors to function properly. Tight control is achieved through monitoring of the in-process wafers and by measuring relevant parameters after each process step. These procedures are usually carried out on a small sample of the wafers. The monitoring may include measurement of several parameters, such as the thickness of the layers of thin film deposited, the sizes of the features that are patterned through the photolithography process, as well as the registration or alignment between two consecutive layers, known as overlay. Monitoring also includes inspection of the wafer for irregularities, defects or scratches. If parameters are out of specification or if defects or contamination are present, the manufacturer adjusts the process and measures another sample of wafers thereby allowing manufacturers to reduce costs and improve device performance.

Traditional Stand-Alone Process Control and Its Limitations. In the standard approach to semiconductor manufacturing, process control is a stand-alone operation. Stand-alone process control systems, however, impose a number of limitations on the semiconductor manufacturer. The semiconductor manufacturer must interrupt the process sequence and add extra steps in order to remove sample wafers from the fabrication process equipment and put them on a stand-alone measuring or inspection tool. The conventional stand-alone approach necessitates redundant robotic wafer handling hardware and software in both the process equipment and the stand-alone process monitoring tools, as well as additional wafer transferring automation systems between the two pieces of equipment, resulting in decreased factory efficiency and reduced productivity. In addition, removing the wafer samples from the process equipment to the metrology tool increases the risk of contamination or damage. As this removal significantly detracts from useable process time, it is not practical to make a large number of measurements, thereby compromising

the accuracy of the measurement of process deviations and trends. If a measurement indicates that the process has been out of specification, the wafers made since the sample wafers were removed for inspection may have to be discarded or re-worked, actions that are increasingly costly for the manufacturer.

The Need for More Effective Process Control Tools. In addition to the inherent limitations of stand-alone process control systems, a number of technical and operational trends within the semiconductor manufacturing industry are strengthening the need for more effective process control solutions. These trends include:

Development of smaller semiconductor features. The development of smaller features, now as small as 90 nm in production, enables semiconductor manufacturers to produce larger numbers of circuits per wafer and to achieve higher circuit performance. As feature geometries decrease, manufacturing yields become increasingly sensitive to processing deviations and defects, as more integrated circuits are lost with every discarded wafer. In addition, the increased complexity and number of layers of the integrated circuits increase the chance of error during the manufacture of the wafer.

Shortening of technology life cycles. The technology life cycle of integrated circuits continues to shorten as semiconductor manufacturers strive to adopt new processes that allow a faster transition to smaller, faster and more complex devices. In the past, the technology life cycle was approximately three years; it is now only two years. The accelerating rate of obsolescence of technology makes early achievement of enhanced productivity and high manufacturing yields an even more critical component of a semiconductor manufacturer s profitability.

Transition to copper and other new materials. Copper metal layers and other new materials such as low and high k-dielectrics and silicon on insulator are increasingly replacing aluminum for advanced integrated circuits in order to increase performance and reduce the cost of integrated circuits. Copper and low-K materials make it possible to build higher speed devices using fewer layers. The use of copper and other new materials, requires new processing and metrology equipment and thus represents challenging developments for the semiconductor manufacturing industry.

Change to 300-millimeter wafers. The transition in wafer size from 200-millimeter diameter to 300-millimeter diameter that began in 1999more than doubles the number of integrated circuits per wafer. Maintaining process uniformity across these larger wafers is more difficult. Processing larger wafers also increases the cost of mistakes caused by both the larger number of integrated circuits per wafer and the greater complexity (and, therefore, cost) of processing larger wafers. Thus, with 300 mm wafers, the need for effective metrology to quickly detect and correct errors in the manufacturing process has increased. In addition, new metrology equipment is needed to accommodate the larger wafer size.

Increase in foundry manufacturing. As a result of the rising investment for semiconductor production and the proliferation of different types of semiconductors, semiconductor manufacturing is increasingly being outsourced to large semiconductor contract manufacturers, or foundries. A foundry typically runs several different processes and makes hundreds to thousands of different semiconductor product types in one facility, making the maintenance of a constant high production yield and overall equipment efficiency more difficult to achieve.

Increase in Automation. In an effort to achieve greater operating efficiencies, semiconductor manufacturers are increasingly relying upon automation. Automation represents the fastest growing segment of the semiconductor manufacturing industry.

In order to address the increasing costs associated with these trends, we believe semiconductor manufacturers must enhance manufacturing productivity. One way to enhance productivity is through improvements in process control, with a greater emphasis on metrology as part of process control. As part of this emphasis on metrology, manufacturers are taking more measurements to characterize each step of the semiconductor manufacturing process, new and enhanced measurement techniques are being used to provide meaningful data and the data provided is being used in new ways to enhance the manufacturing process. Furthermore, as circuits and materials become more complex, measurement techniques must become more sophisticated, requiring a deeper understanding of the interaction of the various components of the metrology process. Complex automation in the manufacturing process also makes measurement more expensive.

Conventional stand-alone process control systems limit productivity and overall equipment efficiency. As the cost of capital equipment continues to increase as semiconductor manufacturing becomes more complex, manufacturers demand greater productivity and efficiency, which integrated metrology systems can provide. We believe that the demand for advanced process control systems that address the evolving needs of semiconductor manufacturers will continue to drive the growth in the market for integrated process control systems.

We believe integrated metrology systems provide semiconductor manufacturers with the greatest opportunity to increase the productivity and yields of their equipment, thereby increasing their profitability. Therefore, we anticipate that we will continue to focus on the integrated metrology market. However, recognizing that a significant number of semiconductor manufacturers will continue to rely upon stand-alone equipment, we intend to leverage our market leading position in the integrated metrology market and our metrology expertise to deepen our penetration of the stand-alone metrology market. Furthermore, the technological and operational trends within the semiconductor manufacturing industry that are strengthening the need for more effective process control solutions can also be addressed through the use of stand-alone metrology equipment, although, we believe, that greater efficiency can be achieved through the use of integrated metrology systems.

The Nova Approach

Integrated Metrology

Our integrated metrology systems provide semiconductor manufacturers with more effective and efficient process control by measuring wafers and their properties without removing the wafer from the process equipment. Our products use our patented measuring methods that enable us to produce optical measuring systems that are small enough to be incorporated directly inside many types of equipment used in semiconductor processing. Integrated systems measure the wafer within the actual process environment, reducing labor and wafer handling as well as the risk of contamination of or damage to the wafer. In addition, we believe that our systems deliver significant increases in overall equipment efficiency through advanced process control, along with improving wafer-to-wafer uniformity, all with minimal operator intervention.

We provide our customers with flexible integrated process control solutions by offering systems that meet thin film measurement needs in critical applications in the fabrication process. Our integrated process control platform can be deployed to multiple processes and applications of semiconductor manufacturing.

Our systems can be installed directly in new equipment or used to upgrade existing equipment with minimal integration costs, extending the useful life of existing process equipment and saving significant capital costs. To our knowledge, only our metrology systems can be used to retrofit older 200 mm semiconductor manufacturing equipment, giving us a unique opportunity as manufacturers seek to increase production quickly to meet the increasing demand for semiconductors. Our pioneering approach, centered around our NovaReady integration package, later adopted by the process equipment manufacturers, allows process equipment manufacturers to prepare their equipment to accept our measurement and inspection systems, which can then be integrated with a simple plug-and-play installation.

We believe our integrated process control systems provide several important advantages to semiconductor manufacturers, enabling manufacturers to:

utilize the process equipment wafer handling system to allow measurement of the sample wafers while processing other wafers;

perform the measurements without removing the wafer from the process equipment, increasing the efficiency of the process and decreasing the risk of contamination;

reduce capital costs of the fabrication facility by increasing overall equipment efficiency and reducing labor costs and necessary clean room area;

reduce the amount of time required to qualify process equipment that is usually idle during qualification steps, thus, minimizing costly equipment down-time;

reduce the number of test wafers; and

detect processing errors more quickly.

We believe that as semiconductor manufacturers demand greater efficiency from their manufacturing equipment, process equipment manufacturers will increasingly seek to offer their customers integrated metrology in their tools to lower costs and increase overall efficiency. In addition, as semiconductor manufacturers seek to increase production, we believe they will seek to increase the efficiency of older equipment by retrofitting older equipment with new metrology systems. We believe the drive toward more efficient manufacturing operations in the face of increasing complexity will accelerate the adoption of integrated metrology solutions such as those we offer.

Stand-alone Metrology

We believe that our integrated metrology systems offer significant advantages over traditional stand-along systems. We do, however, believe that a significant number of semiconductor manufacturers will continue to use stand-alone metrology equipment for all or a portion of their manufacturing equipment. In order to be able to serve all the metrology needs of our customers, whether integrated or stand-alone, we plan to leverage our position in integrated metrology to increase our offerings and market penetration for stand-alone systems.

As a result of the ever changing semiconductor manufacturing process and accompanying process control needs, we have begun to develop a new process control equipment concept. Under this concept, the same basic metrology will be used in different configurations, depending upon customer demands. For example, the same metrology module could be used as an integrated system inside the process equipment, as stand-alone systems or in metrology cluster tools. This would allow for easy customization of metrology solutions for any given process and would allow multiple metrology solutions to be combined in a single platform to answer all process needs. As we envision it, this new concept will allow semiconductor manufacturers unparalleled flexibility, upgradeability and affordability in both stand-alone and integrated forms. As technology life cycles continue to decrease, flexibility and upgradeability will become even more important. While we have not yet fully developed our new process equipment concept, we anticipate that we will begin offering new products based on the concept within the next 12 months. We cannot assure you, however, that we will be able to meet this anticipated schedule or that, if introduced, these products will be accepted by the market and purchased by customers in amounts sufficient to generate significant revenues or any profits.

Our Strategy

Our strategy is to continually strengthen our leading position in the semiconductor process control market by providing innovative and superior products and solutions that generate sustainable growth and profitability. The key elements of our strategy are:

Technological leadership in metrology. We intend to continue our aggressive investment in research and development to allow us to continue to provide superior leading-edge technology and metrology solutions to the semiconductor manufacturing industry on a timely basis. We believe that our proprietary and patented technology and our extensive expertise in integrated metrology, optics, software, and systems integration provide us with significant advantages over our competitors. We intend to leverage our existing intellectual property and experience and expertise to maintain technological leadership.

Maintain our open architecture policy that enables us to provide process control solutions that are integrate-able into many different brands of process equipment. Our open architecture policy enables us to integrate our systems into many different brands of process equipment, thereby offering our end user and process equipment manufacturer customers maximum flexibility. In addition, this policy allows our products to be installed directly in new equipment, whether by the process equipment manufacturer or the end user, or retrofitted in older equipment in order to extend the productive and technological life of older equipment. Through our open architecture policy, we have established original equipment manufacturer partnerships with the major CMP tool manufacturers. Under our NovaReady concept, equipment manufacturers can prepare their equipment to accept our integrated metrology systems with relative ease by finding on-tool space and providing wafer handling access and

minimal wiring for our integrated metrology systems, which are a little larger than a wafer, with a small optical head that scans the wafers. Most CMP equipment manufacturers such as Applied Materials, Ebara, Nikon, Novellus, Strasbaugh, and others are using our NovaScan systems. We are strongly committed to our multi-vendor policy and are establishing relationships with different process equipment manufacturers for our new developments.

Focus on customer needs. Process equipment manufacturers and end users are our customers and we will continue to focus on them as we develop the next generation of metrology products, including products based on our new process equipment concept. In addition, we plan to continue to strengthen our relationships with our process equipment and end user customers by seeking opportunities for collaborative development of products and new service opportunities. We also intend to focus on increasing our penetration with respect to existing customers by continuing to seek opportunities to offer our metrology solutions across their entire manufacturing facility and to continue to provide excellent service and the highest quality products to our customers.

Continue to market our pioneering NovaReady concept. Under our NovaReady concept, we work with process equipment manufacturers so that they can prepare their equipment to accept our integrated metrology systems with a simple plug-and-play installation. We also work directly with semiconductor manufacturers to understand their needs, provide solutions to meet those needs and metrology systems that can be easily integrated into their new or existing manufacturing equipment. By working directly with both process equipment manufacturers and semiconductor manufacturers, we believe our NovaReady concept allows us to create a long-term, three-way relationship among the process equipment manufacturer, the semiconductor manufacturer that is the end-user customer and Nova, encompassing sales, training and on-going support. We plan to continue to market and promote our NovaReady concept, which we believe is unique and allows us to establish strong and long-term relationships with our customers.

Continue to expand our worldwide sales and marketing efforts and provide worldwide support. We plan to focus our marketing efforts on acquiring new key customers around the world. To further these efforts, we continue to expand our global presence with sales and service centers in Europe, Israel, Japan, Korea, Singapore, Taiwan and the U.S. Our global presence allows us to provide the end users with direct service and application support, thereby decreasing tool downtime and providing us opportunities to promote additional uses of our products throughout the fabrication process. We plan to expand into additional territories as customer needs dictate.

Further penetrate the installed base of process equipment that can be upgraded with our integrated process control products. We plan to continue to market to the large installed base of existing process equipment that can be retrofitted with our integrated process control products. We believe this represents a large and under-penetrated market segment for our integrated process control products. This opportunity is especially attractive because we believe that we are the only integrated metrology solution provider that can retrofit older systems.

Establish and maintain strategic relationships with key technology and market partners. We have established strategic relationships with Applied Materials relating to the development of integrated metrology solutions for copper CMP processing and with Lucent Technologies Inc. and Agere Systems Guardian Corporation to gain access to certain technology we hope will allow us to develop new metrology products and technologies for the semiconductor industry. Going forward, we plan to continue to seek strategic partners that can provide us with access to technologies or markets that will allow us to accelerate our creation of new metrology products and to further penetrate the metrology market.

Develop and mature the architecture and platform of the new metrology systems, which will offer significant improvements in metrology performance together with the flexibility of fast incorporation of different metrology modules. We have established a development program that we anticipate will allow us to introduce to the market our first product based upon our new process control equipment concept, the next generation (NG), in early 2005. Our intention is that the NG and subsequent related products will allow relatively fast and cost effective introduction of new metrology modules.

Our Technology

We believe that our technological and engineering expertise and research and development capabilities allow us to develop and offer new products and technologies to meet the ever-changing demands of the semiconductor industry. We have applied our technological and engineering expertise to develop a wide range of integrated and stand-alone products for the CMP, copper CMP, etch and lithography processes. Because of our open architecture policy, our integrated metrology solutions can work with all models of CMP and etch tools made by the major process equipment manufacturers, for both 200 and 300 mm applications. In addition, to our knowledge, only our integrated metrology systems can be used to retrofit existing 200 mm process equipment, giving us a significant advantage over our competitors.

Our suite of technological capabilities includes:

Laser ellipsometry. Ellipsometry is a non-contact, non-destructive optical measuring technique used to measure very accurately the thickness and other properties of transparent thin films. When a surface is exposed to a polarized light laser, ellipsometeres measure the change in the reflected light s polarization. By using multiple light angles and multiple wavelengths, ellipsometry can provide accurate and reliable measurement of a wide range of film thicknesses, film materials and film stacks.

Broadband spectrophotometry. Our broadband spectrophotometry capabilities range from deep ultraviolet to near infrared. This technology enables fast, accurate and small spot size film thickness measurement in large range of applications on a very cost effective basis, both as an integrated system and as a stand-alone system.

Scatterometry. Our scatterometry systems are based on our broadband Spectrophotometry. These systems use fully polarized deep ultraviolet to near-infrared spectral light source. This technology enables fast and cost effective system development. Scatterometry provides two and three dimensional characterization of very fine geometries on patterned product wafers. These profiling and critical dimension capabilities are key enablers of advanced process control, allowing almost real time metrology of the most advanced design rule, down to 65 nm and below.

Imaging and image processing. This technology has three different applications: 1) navigating on product wafers to perform measurement on selected very small sites; 2) detecting defects on product wafers after critical process steps, such as lithography and etch; and 3) measurement of the accuracy of registration between two layers (overlay measurement), mostly used in lithography.

Mass spectrometry. This technology, which we acquired from Lucent Technologies Inc. and Agere Systems Guardian Corporation, will be developed to help minimize particle contamination on product wafers during processing. We anticipate that the system will allow to identify contaminating events as soon as they happen. Currently particle detection is performed in an off-line mode, at least after a whole lot has been processed.

Generally, we develop our own technologies. However, we also directly acquire technology from others and seek strategic partners that can provide us access to new technologies. In February 2002, we signed a joint development agreement with Applied Materials relating to

integrated metrology for copper chemical mechanical polishing processing. Pursuant to this agreement, we developed copper chemical mechanical polishing monitoring capabilities using the NovaScan 2020/3030 Cu, which could be sold exclusively to Applied Materials and its customers. At the end of 2003, this exclusivity agreement expired and was not extended. Consequently, we sell our copper chemical mechanical polishing products to and through all equipment manufacturers, yet the majority are still sold through and with Applied Materials. In February 2002, we also signed a licensing agreement with Lucent Technologies Inc. according to which we were licensed the rights to certain of Lucent s patents, software and technical information. In connection with the agreement entered into with Lucent, we also signed an agreement with Agere Systems Guardian Corporation according to which we were granted a license to a patent owned by Agere. Pursuant to this agreement, as well as the agreement entered into with Lucent, we hope to develop new metrology products and technologies for the semiconductor industry. Going forward, we plan to continue to seek strategic partners that can provide us with access to technologies or markets that will allow us to accelerate our creation of new metrology products and to further penetrate the metrology market.

The measurement channels that we use in our metrology products are unique and protected by patented intellectual property. Our measurement channels include: polarized normal incidence spectral reflectometer/ellipsometer; multi-angle oblique incidence spectral ellipsometer; and multi-focal image overlay microscope. In addition, we are developing additional measurement channels including: multi-angle, multi-wavelength, null ellipsometer; eddy current micro-probe and phase imaging profilometer. In addition to these proprietary measurement channels, we are also seeking to acquire new measurement channels from third parties, including: black beam scanning imaging; x-ray fluorescence spectrometer; macroinspection; and other technologies.

Throughout our history, we have been a technological leader in the integrated metrology field. We were the first to offer integrated metrology solutions for semiconductor manufacturers and are the only provider of integrated metrology solutions that can measure wafers in water, which allows for more efficient and accurate metrology. Furthermore, because our systems are small enough to fit inside wafer fabrication equipment, to our knowledge, only our metrology solutions can be used to retrofit older 200 mm systems. Our systems have also been recognized by the industry. In 2004, we received the prestigious Editors Choice Best Product Award from Semiconductor International magazine for our NovaScan 2020Cu 3030Cu Copper CMP process monitoring.

Products

Our products include metrology systems for thin film measurement in chemical mechanical polishing and chemical vapor deposition applications; optical topography systems for use in post-copper chemical mechanical polishing applications; optical critical dimension systems for lithography and etch; and overlay systems for lithography and etch applications. Our integrated thickness monitoring system for chemical mechanical polishing processing control enables wafer-to-wafer closed loop control. We offer several models of this integrated thickness monitoring systems, depending on polisher type and end-user requirements. These metrology systems address a broad range of metrology requirements of our end-user and process equipment manufacturer customers. Both our integrated and stand-alone systems incorporate patented optical scanning, dynamic auto-focus, unique pattern recognition for arbitrarily oriented wafers and proprietary algorithms for in-water measuring of two layers simultaneously. We offer several different product models that are tailored to both conventional chemical mechanical polishing equipment as well as to newer, high throughput polishers. Following is a summary of our products.

Thin Film Process Control

The NovaScan 840 combines high-speed measurement and effective handling, enabling measurement of wafers both before and after polishing. While we no longer market this system, this system and prior generations were our main revenue source in 2001 and prior years.

The NovaScan 2020 and 2040 are the second generation of integrated thickness monitoring systems with enhanced spectral range, responding to the needs of the industry for emerging chemical mechanical polishing high-end applications of thin films and complex layer stacks. The 2020 model was introduced to the market in the end of 2000, and since then has replaced the NovaScan 840 and accounted for the major portion of our sales for 200mm production lines. The NovaScan 2040 was introduced in 2002 and is the fastest integrated film thickness 200mm measurement system in the market today.

The NovaScan 3030 and 3060 are the second generation of the 300mm measuring system, with improved optics and motion system enabling high speed measurement, and with broad spectral rage (Ultra Violet to Infra Red) allowing accurate measurements on complex structures and thin film layers. The 3030 model was introduced to the market in 2001 and since then has replaced the NovaScan 3000 and accounts for the major portion of our sales for 300mm production lines. The NovaScan 3060 was introduced in 2002 and is the fastest integrated film thickness 300mm measurement system in the market today.

The NovaScan 2020Cu has the same basic platform as the NovaScan 2040, with additional hardware and software improvements, enabling the system to answer the unique requirements of copper CMP monitoring. The system went through several beta tests during 2001 and 2002 and was released for sale in the beginning of 2003.

The NovaScan 3030Cu has same basic platform as the NovaScan 3030, with additional hardware and software improvements, enabling the system to answer the unique requirements of 300mm copper CMP monitoring. The system went through field-testing during 2002 and was released for sale in the beginning of 2003.

A closed loop control option for the NovaScan systems delivers reliable, highly automated wafer-to-wafer uniformity over chemical mechanical polishing manufacturing processes. The thickness data of every processed wafer is obtained and process parameters are fed back to adjust the next wafer polish.

NovaNet is a highly sophisticated computer network, connecting all NovaScan systems on a factory floor. The network is managed by a dedicated server, running with proprietary software developed by Nova, and insuring safe recipe distribution and recipe integrity across the factory. The NovaNet also includes a report generator (NSA) that allows the creation of reports from all the systems connected and allows programmable cross sections.

The NovaScan 840CVD system is a 200 mm integrated metrology vacuum chemical vapor deposition measurement system, measuring different layers in the chemical vapor deposition process. Data can be fed forward to the CMP process tool. Integration solutions were developed for different process equipment. The system was introduced to the market in the end of 2000 and several units have been sold. However, we do not expect to sell a significant number of these systems in the future.

The NovaScan 3060CD system is a Scatterometry-based system for measuring the critical dimensions (CD) and profiling lines and trenches on 200 mm and 300 mm wafers. The system went through field-testing during 2002 and was released for sale in 2003. The systems are sold as integrated metrology systems on Lam Research Inc. etch systems and as stand-alone systems with automation modules acquired from different suppliers, such as PRI Automation (now part of Brooks Automation) and Integrated Dynamics Engineering.

Photolithography Process Control

The NovaTrack 2020 and 3030 systems are a dual-purpose integrated metrology and stand-alone systems for overlay registration measurement and macro defect inspection in the photolithography process. The systems are designed for integration on a photoresist track and as a stand-alone system. Both stand-alone and integrated models of the NovaTrack 2020 finished beta testing in 2003 and have been released for sale. Currently the need for these integrated overlay solutions is very limited. These products are currently not being promoted in the market due to this low market potential. We believe that our next generation of systems currently under development will meet 65 nm and below technology nodes and will have a rather high integrated metrology potential.

While we continue to emphasize our integrated metrology solutions, we also offer our products as stand-alone equipment as well, thereby significantly expanding our potential customer base.

Research and Development

We have assembled a core team of experienced scientists and engineers who are highly skilled in their particular field or discipline. Our research and development core competencies, technologies and disciplines are comprised of thin film measurement, image acquisition, pattern recognition, inspection and automatic defect classification. Our management and research and development staff consists of 72 highly skilled members, including independent contractors. Our staff includes 24 scientists holding Ph.D. degrees and 24 persons holding M.S. degrees. In June 2003, our research and development operations received the ISO9001/2000 quality mark from an international certification institution.

The process control market is characterized by continuous technological development and product innovations. We believe that the rapid and ongoing development of new products and enhancements to our existing product line is critical to our success. Accordingly, we devote a significant portion of our technical, management and financial resources to developing new applications and emerging technologies. In 2001, 2002 and 2003, our research and development expenses, net of participation by the Office of the Chief Scientist, were $13.3 million, $9.9 million and $8.6 million, respectively, representing 63%, 49%, and 32% of our respective total revenues for those years. We anticipate that our research and development expenses, net, will be $9.0 million in 2004, representing an increase of 5% over 2003.

Our research and development policy is based on a structured process of initiating new projects and on-going review of existing development projects. Our vision is to continue to be a market leader in the semiconductor process control market and our research and development policies and activities are designed to support this vision. Our launch of new development projects is based on market requirement

specifications, generated through our marketing activities and research on customer needs, followed by a proposed detailed business plan, a detailed development plan with milestones, risk analysis, profit and loss model goals and required budget. Each development project is monitored through a structured process, including design reviews and project management reviews.

Intellectual Property

Our success depends in part upon our ability to protect our intellectual property. We, therefore, have an extensive program devoted to seeking patent protection for our inventions and discoveries that we believe will provide us with competitive advantages. We have been granted 29 U.S. patents and 16 non-U.S. patents and hold an exclusive licenses to one U. S. patent. The U.S. patents we hold have expiration dates ranging from 2013 to 2021. We also have 24 U.S. patent applications pending and more than 70 applications pending in other countries. Our patents and applications principally cover various aspects of optical methods, optomechanical and mechanical algorithms, and integrated process control implementation concepts.

To protect our proprietary rights, we also rely on a combination of copyrights, trademarks, trade secret laws, contractual provisions and licenses. Our copyrights include software copyrights. We also enter into confidentiality agreements with our employees and some of our consultants and customers, and seek to control access to and distribution of our proprietary information, such as our proprietary algorithms.

While we attempt to protect our intellectual property through patents, copyrights and non-disclosure and confidentiality agreements, we may not be able to adequately protect our technology. Competitors may be able to develop similar technology independently or design around our patents and, despite our efforts, our trade secrets may be disclosed to others. Furthermore, the laws of countries other than the U.S. may not protect our intellectual property to the same extent as the laws in the U.S. We also cannot assure that: (i) our pending patent applications will be approved; (ii) any patents granted will be broad enough to protect our technology or provide us with competitive advantages or will not be successfully challenged or invalidated by third parties; or (iii) that the patents of others will not have an adverse effect on our ability to do business.

From time to time, we receive communications for others asserting that our products infringe or may infringe their intellectual property rights. Typically, our in-house patent counsel investigates these matters and, where appropriate, retains outside counsel to provide assistance. Presently, we are not involved in any material legal proceeds in which a third party has asserted that we have violated their intellectual property rights.However, as discussed under Risk Factors at page 7, we have become aware of a U. S. patent held by a competitor, which may be interpreted to cover some aspects of the products we sell in the U.S.

Our Customers, Sales and Marketing

Our two pronged, integrated sales and marketing strategy involves marketing our products directly to semiconductor manufacturers in addition to process equipment manufacturers in order to create demand for our products. We believe that the pricing structure of our NovaReady integration package enables process equipment manufacturers to increase their margins, and that the quality of our systems can improve equipment yields, creating an incentive for process equipment manufacturers to promote our products to semiconductor manufacturers. At the same time, we believe that semiconductor manufacturers, eager to improve their own margins through increased factory throughput and yield improvements, will demand that the equipment they employ incorporate or use our metrology systems. We believe that by marketing directly to end users as well as to process equipment manufacturers, we are able to ensure that both parties are aware of the wide range of benefits that our products can deliver.

We have a diverse customer base in terms of both geographic location and types of integrated circuits manufactured. Our end user and process equipment manufacturer customers are located in different countries, including Japan, Korea, Singapore, Taiwan, the U.S. and various European countries. While our overall customer base is diverse, our sales are highly concentrated among a relatively small number of customers. In 2003, our top five customers accounted for 87% of our total revenues, with each top of our five customers accounting for 3% to 47%.

The table below lists some of the largest semiconductor manufacturers who have multiple installations of our systems in one or more sites. These users purchase our products either directly from us or from process equipment manufacturers.

Elpida	IBM
Infineon	Intel
Micron	Motorola
Phillips	STMicroelectronics
Texas Instruments	Samsung

To further enhance our marketing efforts, we have established a system of integrated sales and support activities with key process equipment manufacturers, including Applied Materials, Ebara and Lam Research. This allows us to provide comprehensive and long-term application support directly to semiconductor manufacturers. We expect to continue to add new process equipment manufacturers to our roster as we introduce new integrated process control systems that can be integrated with different types of equipment.

We seek to establish and maintain close and mutually beneficial relationships with our customers by consistently providing them with a high level of service, support and new capabilities. We have established a global network of direct sales and marketing, customer service and applications support offices. We maintain sales, service or applications offices in Europe, Israel, Japan, Korea, Singapore, Taiwan, and the U.S., with a total staff of 70 people. These offices provide highly qualified application support specialists, training to process equipment manufacturer customers and end users, marketing, demonstrations and evaluations, spare parts hubs and sales and support engineers.

All of the large semiconductor manufacturers using our systems have placed repeat orders for our systems, which we attribute to the productivity improvements experienced by the semiconductor manufacturers using our equipment, our on-site support of our equipment and the advantages to semiconductor manufacturers of using equipment supplied by the same vendor.

The table below describes the distribution of our total revenues, from systems and services, according to the geographic location of the actual installation of our systems in end-user sites:

	Year ended December 31,		
	2001	2002	2003
	(in thousands)		
U.S.	$ 13,797	$ 11,057	$ 9,422
Europe	3,773	4,678	5,360
Japan	977	1,131	5,953
Other	2,624	3,505	5,953
Total	$ 21,171	$ 20,371	$ 26,688

The semiconductor industry is dominated by a small number of large companies. As a result, our customer base is highly concentrated. The following table indicates the percentage of our total revenues derived from sales to our five largest customers and the range of these revenues from these customers for the periods indicated.

	Year ended December 31,			
	2000	2001	2002	2003
Total revenues from five largest customers	66%	81%	86%	87%
Range of revenues from five largest customers	6%-21%	2%-33%	4%-30%	3%-47%

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 year to year. As our customer base is highly concentrated, if any of our customers becomes insolvent or has difficulties meeting its financial obligations to us, we may suffer losses that may be material in amount.

Our Competition

The market for semiconductor capital equipment is highly competitive. Significant competitive factors in the market for integrated process control systems include technological leadership, system performance, ease of use, reliability, cost of ownership, technical support and customer relationships along with an adequate business model, internal organization and unique process equipment manufacturer agreements and partnerships. We believe we compete favorably on the basis of these factors in the markets we serve.

Our current integrated products principally compete with products manufactured by Nanometrics. We believe that Dai Nippon Screen has ceased its activities in integrated metrology and Sensys, which had been acquired by Therma Wave in 2002, has reduced its integrated metrology activity to a minimum (selling a small number of optical critical dimension systems to Tokyo Electron). Nanometrics had and an exclusive agreement with Applied Materials, which we believe prevented Nanometrics from selling to other customers. We believe this exclusive agreement expired in 2002. We currently sell more systems to Applied Materials than Nanometrics. However, we believe that since the expiration of its exclusive agreement with Applied Materials, Nanometrics has started to work with other CMP equipment manufacturers, such as Ebara. In the last year, we have lost significant sales to our competitors with respect to three major customers. We believe we lost these sales mainly due to delays in introducing our deep ultraviolet capabilities. We plan to introduce our deep ultraviolet system in the third quarter of 2004. We expect to face intense competition in the coming years.

In the scatterometry field, which is a new application field in the semiconductor industry, we have intensive competition in both integrated and stand-alone metrology. Our primary competitors in this area are KLA-Tencor, Therma Wave, Nanometrics and Accent. Nanometrics is our main competitor in this area as well because it provides optical critical dimension systems which have characteristics similar to our systems. In the software aspects of scatterometry, which is a significant portion of the optical critical dimension business, Timbre (a Tokyo Electron subsidiary), which provides optical critical dimension software only, is a significant competitor that may also become a customer for our critical dimension hardware.

Since we have decided to put on hold our development and marketing efforts for overlay measurement and macro inspection products, the competitive environment in the photolithography metrology market is less important to us. The principal competitors in this market include KLA-Tencor and Rudolph Technologies. Although we have not yet entered this market, we believe our overlay system being developed for the sub-65 nm technology node will be competitive. We anticipate introducing this system in 2006.

Manufacturing

In order to leverage the relatively high volume of integrated systems we manufacture and to decrease production costs, we continue to focus our internal manufacturing activities on processes that add significant value or require unique technology or specialized knowledge and outsource others.

Our principal manufacturing activities include assembly, integration, final testing and calibration. Our production activities are conducted in our manufacturing and service facility in Israel. We rely and expect to continue to rely on subcontractors and turnkey suppliers to fabricate components, build assemblies and perform other non-core activities in a cost-effective manner. While we use standard components and subassemblies wherever possible, most mechanical parts, metal fabrications and critical components used in our products are engineered and manufactured to our specifications. A small portion of these components and subassemblies are obtained from a limited group of suppliers, and occasionally from a single source supplier. Our manufacturing operations received the ISO 9002 quality mark by an international certification institute in October 1999. We have upgrade our quality systems to conform to ISO 9001/2000 requirements.

We have the capacity to produce up to 80 systems per quarter in our current facilities. Currently, we are operating at approximately 50% of that capacity.

We have only one manufacturing facility, which is located in Ness-Ziona, Israel. Any event affecting this facility, 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.

Our Subsidiaries

Our subsidiaries and the countries of their incorporation are as follows:

Name of subsidiary	Country of incorporation
Nova Measuring Instruments Inc.	Delaware, USA
Nova Measuring Instruments K.K.	Japan
Nova Measuring Instruments Taiwan Ltd.	Taiwan
Nova Measuring Instruments Netherlands B.V.	Netherlands

Capital Expenditures

For information on our capital expenditures, see Liquidity and Capital Resources on page 35 of this report.

Our Properties and Equipment

In January 2002, we relocated our main office, research and development and production facilities. These facilities, located in Ness-Ziona, Israel, occupy approximately 5,000 square meters, including: approximately 800 square meters of production facilities, approximately 3,000 square meters of research and development offices (including approximately 300 square meters of laboratories) and approximately 1,200 square meters of headquarters, sales and marketing, service and support and administration facilities. Originally, the new facilities were planned to be approximately 8,000 square meters, however, due to the change in market conditions, we reduced this office space. Due to the breach of part of our lease commitments associated with the move to the new building, we incurred costs of approximately $1 million, charged to operations. Our current lease commitment relating to the new building is until the end of 2007.

Our U.S. subsidiary leases approximately 300 square meters in Arizona for use as a pre sale and support facility. Our Japanese subsidiary leases approximately 100 square meters for use as a service and pre sale facility. In anticipation of future growth, we intend shortly to enter into a six year lease for a space of 4,000 to 7,000 square meters near our current location in Israel.

Our capital expenditures are primarily for network infrastructure, computer hardware and software, leasehold improvements of our facilities and system demonstration tools. None of these assets are held as collateral or guarantee other obligations. We believe that our facilities and equipment are in good operating condition and adequate for their present usage.

Item 5. Operating and Financial Review and Prospects

Information in this Operating Review and Financial Prospects Section should be read in conjunction with our Consolidated Financial Statements and notes thereto which are included elsewhere in this report.

Executive Overview

We are the worldwide leading designer, developer and producer of integrated metrology systems for the semiconductor manufacturing industry and a leading designer, developer and producer of stand-alone metrology systems for the semiconductor industry. Our metrology systems are used to take precise measurements of semiconductors during the manufacturing process to control the manufacturing process and increase the productivity of the manufacturing equipment. We market and sell our metrology systems to semiconductor process equipment manufacturers, such as Applied Materials and Ebara, and directly to semiconductor manufacturers, such as Intel, Samsung and AMD.

Our business is greatly affected by the level of spending on capital equipment by semiconductor manufacturers. Capital expenditures by semiconductor manufacturers tend to be cyclical in nature and depend on numerous factors, many of which are beyond our control. Factors affecting the semiconductor industry, which are beyond our control, include general economic conditions throughout the world and the demand and perceived demand for semiconductors. In addition, demand for our products and services is affected by the timing of new product announcements and releases by us and our competitors, market acceptance of our new or enhanced products and changes or advances in semiconductor design or manufacturing processes.

Starting in 2001, the semiconductor industry went through a severe downturn and manufacturers greatly reduced their spending on capital equipment. Our results for 2001 and 2002 reflect that downturn. In 2003, however, demand for semiconductors started to increase and, as a result, demand for capital equipment by semiconductor manufacturers also increased. Accordingly, our financial results for 2003 improved when compared to 2002. We anticipate that the recovery of the semiconductor equipment industry that began in 2003 will continue and accelerate in 2004 and 2005. We cannot, however, predict with certainty whether the industry upturn will continue in 2004 and 2005. In addition, if we are unable to manage our resources effectively during an industry upturn, we could suffer a material adverse affect.

We derive our revenues principally from sales of our metrology systems and services relating to our systems. In 2003, product sales produced 79.3% of our total revenues and services produced 20.7%. Presently, we have no long-term debt and continue to finance our operations, which have produced losses in each year since 1999 other than 2000, from the proceeds of our initial public offering in 2000 and our cash flows from operations. As of the end of 2003, we had $30.4 million in working capital assets, including cash and cash equivalents of $26.6 million, and no long-term debt.

From quarter to quarter and from year to year, our revenues can vary significantly for a number of reasons. Importantly, we do not have long-term or multi-unit purchase contracts with our customers. Therefore, while most of our customers have purchased multiple systems from us and we anticipate that customers will continue to do so, our customers can determine at any time to stop doing business with us. In addition, primarily because the semiconductor industry is dominated by a small number of large companies, our customer base is concentrated among a limited number of customers. A loss of any single customer could cause our revenues to decrease by a material amount. In addition, because our systems range in price from $100,000 to over $600,000, the loss of relatively few sales could also cause our revenue to decrease by a material amount. Our service revenues, which tend to be more predictable and less subject to wide fluctuations, tend to help decrease volatility in our earnings.

Our service organization is operated on a profit and loss basis and is measured as a cost center in each territory and on a global basis. The objectives of our service organization are defined and measured by: customer satisfaction; quality parameters, such as time to repair and mean time between failures; and by profit and loss criteria. The service organization provides support to all products we sell, during both the warranty period and the post warranty period.

When evaluating the performance of the Company, our management tends to focus on several financial metrics and several qualitative areas such as: warranty cost per system and warranty costs as a percentage of sale price; costs of production and costs of production as a percentage of sales; inventory as a percentage of yearly sales; days sold out; and the mixture of our sales and geographical distribution of installations of our systems at end users sites compared to industry capital equipment trends. In 2003 and 2002, warranty costs ranged from 8% to 14% of sale price. Factors that affect warranty cost include the number of systems installed in a specific site or territory and the maturity of the products. Costs of production include materials, labor, write-off per product during product life time, and ranged from 32% to 40% of the sale price in 2003, depending upon the system. Factors that affect cost of production include sales volume, product configuration, product maturity, and actual sale price. In 2003, our costs of production as percent of sales decreased by 3.2% as a result of the increase in volume of sales. Our average inventory levels in 2003 and 2002 were approximately 15% of yearly sales. As of December 31, 2003, average days sold out for total revenues were 79, and ranged between 65 and 100 days over the four quarters in 2003. Geographical distribution analysis of installation at end users sites reveals increase of Nova installation in Japan from 6% of sales in 2002 to 22% in 2003 and in Asia pacific including Japan from 17% of sales in 2002 to 23% in 2003. This trend is in line with the industry capital equipment trend of higher investments in Japan and in the Asia Pacific region in 2003 and 2004 compare to 2001 and 2002. In 2004, the Company intends to continue to focus on these metrics and seek to improve them

Significant Events in 2003 and Outlook for 2004

For Nova, the most significant event in 2003 was the start of a recovery of the semiconductor industry after two years of deep slowdown. The start of this recovery is reflected in our financial results, which improved from 2002. In addition, in 2003, we made the first sales of our Optical-CD systems, both integrated and stand-alone, and established our relationship and integration with a major equipment manufacturer for the etch process.

In the first half of 2004, we have seen significant growth in the semiconductor equipment industry and industry projections indicate the industry will continue to enjoy significant growth for the remainder for 2004. This growth is reflected in our revenues for the first quarter of 2004, which increased 13% compared to the fourth quarter of 2003. We believe the recovery in the semiconductor equipment industry is being driven by improving economic conditions worldwide, especially in the U.S. and Japan, and the resulting increase in consumer spending, particularly on electronic devices. As the semiconductor industry continues its turnaround, we anticipate that semiconductor manufacturers will seek to add capacity and accelerate production, resulting in increased demand for capital equipment, including metrology systems such as those we sell.

Other trends in the industry include the move toward more complex semiconductor devices and the adoption of more sophisticated manufacturing techniques. We believe these trends are positive developments for the semiconductor metrology market because, as semiconductors and their manufacture become more complex and sophisticated, manufacturers will increasingly look to make their operations more efficient. Metrology systems can help deliver that efficiency. For additional information on industry trends, see Information on the Company staring on page 11 of this report.

Nova will focus in 2004 on continuing development of its current CMP, copper CMP and optical critical dimension systems as well as investing in the products and technologies included in its long-term strategy. Over the next three years, Nova anticipates introducing future generations of its current products and new product to address the advancing technology trends toward feature sizes of 65 nm and below and new processes and materials. We believe that in 2004, our opportunities will most likely come from the increased need for monitoring and control resulting from decreasing feature sizes, and the accelerating move to 300 mm equipment and new process materials. The main challenges and risks we see are to be on time with the right process control solutions to meet the needs of our existing customers and new customers. In order to address these risk and challenges, we are working closely with leading customers development process groups and with

the leading process equipment manufacturers. The purpose of working closely with customers and process equipment manufacturers is to receive from them as early as possible information and feedback on the metrology and process needs of the upcoming new manufacturing processes and materials. We believe receiving this information as early as possible will assist us in developing metrology solutions to meet the new needs of the semiconductor industry. In tandem with this type of long term development, our ongoing marketing activity supports our current products with short term improvements to answer the customers ongoing needs and to make required changes.

Currently, our main revenue generator is our oxide CMP product line and sales of our oxide CMP product line are affected by the total number of process tools sold in this segment. In years prior to 2003, the oxide CMP represented more than 50% of the entire CMP equipment market. In 2003 and 2004, this percentage is decreasing and copper CMP equipment is expected to come to dominate the CMP equipment market in the coming years. It is not yet clear what the process control needs of the industry will be and what will be the level of use of Nova solutions and products. The trend of using integrated process control is accelerating in the industry, but the rate might be slower than we anticipate and depends primarily on the adoption of 300 mm processing. Currently, 300 mm processing is being adopted mainly in Japan and Taiwan.

Critical Accounting Policies

Our discussion and analysis of our financial condition and results of operations are based upon our Consolidated Financial Statements, which have been prepared in accordance with accounting principals generally accepted in the United States of America. We believe the following critical accounting policies, among others, affect our more significant judgments and estimates used the preparation of our Consolidated Financial Statements.

Use of estimates - General

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Revenue recognition

We recognize revenues upon the shipment of our products to the customer or the provision of support services, provided that persuasive evidence of an arrangement exists, title has transferred, the price is fixed, collection of resulting receivables is probable and there are no remaining significant obligations.

Adequate provision is made, upon shipment, for estimated product returns and warranties. When transactions involve newly introduced products or when customers specify acceptance criteria that cannot be demonstrated prior to the shipment, we defer the relevant revenues. We currently anticipate introducing several new systems in fiscal 2004. Delays in introducing a product or delays in our ability to obtain customer acceptance, will delay the recognition of revenue and gross profit by us.

Allowances for doubtful accounts

We review on an on-going basis the need for allowances for doubtful accounts for estimated losses resulting from the inability or unwillingness of our customers to make required payments. When determining what allowance, if any, to make for doubtful accounts, we review many factors, including our history of relatively few write-offs, customer relationships and customers creditworthiness. Based on this review, we estimate the amount of accounts receivable, if any, we may be unable to collect and allowances for doubtful accounts may be required. To date, based upon management s review, no allowance for doubtful accounts was deemed necessary. If the financial condition of our customers were to deteriorate, their ability to make payments could be impaired and our estimates could prove to be inaccurate. If significant, allowances for doubtful accounts could have a material adverse effect on our financial results.

Warranty provisions

We provide for the estimated cost of product warranties at the time revenue is recognized. While we are engaged in extensive product quality programs and processes, including actively monitoring and evaluating the quality of our component suppliers, our warranty obligations are affected by product failure rates, material usage and service delivery costs incurred in correcting product failures at our locations or at customer sites. Should actual product failure rates, material usage or service delivery costs differ from our estimates, revisions to the estimated warranty liability may be required.

Inventories write-down

We value our inventory at the lower of the actual cost or the current estimated market value of the inventory. We regularly review inventory quantities on hand and record a provision for excess and obsolete inventory based primarily on our estimated forecast of product demand and production requirements for the next twelve months. As demonstrated during 2000 and 2001, demand for our products can fluctuate significantly. A significant increase in the demand for our products could result in a short-term increase in inventory purchases while a significant decrease in demand could result in an increase in the amount of excess inventory quantities on hand, which could lead to losses. In addition, our industry is characterized by rapid technological change, frequent new product developments, and rapid product obsolescence that could result in an increase in the amount of obsolete inventory quantities on hand. Additionally, our estimates of future product demand may prove to be inaccurate, in which case we may have understated or overstated the provision required for excess and obsolete inventory. In the future, if our inventory is determined to be overvalued, we would be required to recognize such costs in our cost of goods sold at the time of such determination. Likewise, if our inventory is determined to be undervalued, we may have over-reported our costs of goods sold in previous periods and would be required to recognize such additional operating income at the time of sale. Therefore, although we make every effort to ensure the accuracy of our forecasts of future product demand, any significant unanticipated changes in demand or technological developments could have a significant impact on the value of our inventory and our reported operating results.

For a discussion of other significant accounting policies used in the preparation of our financial statements and recent accounting pronouncements, see Note 2 to our Consolidated Financial Statements contained elsewhere in this report.

Operating results

Overview

A significant portion of our revenues historically has been derived from customers in the United States of America, and we expect that this trend will continue, although we expect that U.S. sales as a percentage of total sales may decrease as our total sales and sales to other geographic areas, particularly Asia, increase. In 1999, 71% of our revenues were derived from U.S. customers, 12% were from European customers, including 5% from Italian customers, 2% were from Japanese customers and 15% were from Singaporean customers. In 2000, 71% of our revenues were derived from U.S. customers, 12% were from European customers, 2% were from Japanese customers and 15% were from Asian customers, including 5% from South Korean customers. In 2001, 72% of our revenues were derived from U.S. customers, 13% were from European customers, 8% were from Japanese customers, and 7% were from Asian (other than Japanese) customers. In 2002, 61% of our revenues were derived from U.S. customers, 16% were from European customers, 20% were from Japanese customers, and 3% were from Asian (other than Japanese) customers. In 2003, 62% of our revenues were derived from U.S. customers, 10% were from European customers, 21% were from Japanese customers, and 7% were from Asian (other than Japanese) customers. The table set forth below sets forth the information on our distribution of revenues by geographic areas according to the geographic location of the actual installation of our systems in end-user sites.

The table below describes the distribution of our total revenues, from systems and services, by geographic areas of our product installations at semiconductor manufacturing facilities. As our customers include both semiconductor manufacturers and process equipment manufactures, this distribution is different from the distribution of our revenues by customer location discussed in the immediately preceding paragraph.

	2001	**2002**	**2003**
USA	65%	54%	36%
Europe	18%	23%	20%
Japan	5%	6%	22%
Other	12%	17%	22%
Total	100%	100%	100%

Historically, a substantial portion of our revenues has come from a small number of customers. In 2001, 2002 and 2003, our five largest customers accounted for 81%, 86% and 87% of our revenues, respectively. In 2001, 2002 and 2003, our single largest customer accounted for 33%, 30% and 47% of our revenues, respectively. We anticipate that our revenues will continue to depend on a limited number of major customers, although the companies considered to be major customers and the percentage of our revenue represented by each major customer may vary from period to period. Therefore, the loss of any one of our major customers could materially and adversely affect us.

The sale cycle for our systems typically ranges from three to 24 months and depends upon the status of our system s integration with a particular model of process equipment of a process equipment manufacturer, the evaluation criteria of our customers, and the technology or application of the process. Additionally, the rate and timing of customer orders may vary significantly from month to month as a function of the

introduction of a new type of system to a production line. We have a relatively low backlog. Accordingly, if sales of our products do not occur when we expect or we are unable to adjust our estimates on a timely basis, our expenses and inventory levels may fluctuate relative to revenues and total assets. In 2003, our inventory levels at the end of each quarter ranged from $2.8 million to $4.2 million. We planned our inventory for 2003 for sales of 200mm systems and 300mm systems according to our expectation that approximately 50% of equipment sales would be for 300 mm equipment. At the end of 2003, the actual distribution of Nova sales was similar to our expectations and therefore did not have material affect on our inventory levels or write-off. In the future, if our actual sales are significantly different from our expectations, we may have to write-off some of our inventory.

We schedule production of our systems based upon order backlog and customer forecasts. We include in backlog only those orders to which the customer has assigned a purchase order number and for which delivery has been specified within 12 months. As of December 31, 2003 we had a backlog of five systems, representing $980,000. Because shipment dates may be changed and customers may cancel or delay orders with little or no penalty, our backlog as of any particular date may not be a reliable indicator of actual sales for any succeeding period. We do not maintain any reserves for cancellations or variations in our customers orders because historically cancellations and variations have been insignificant. In addition, if a cancellation occurs, we may be able to sell the equipment to other customers.

Our revenues increased 31% in 2003, following a 4% decline in 2002 and a 56% decline in 2001. In comparison, overall, according to DataQuest December 2003 published research, the semiconductor wafer front-end equipment industry increased 5% in 2003 over 2002, following 32% decline in 2002, and 29% decline in 2001.

The following table shows the relationship, expressed as a percentage, of the listed items from our consolidated statements of operations to our total revenues for the periods indicated:

	Percentage of Total Revenues Year ended December 31,		
	2001	**2002**	**2003**
Revenues from products sale	69.6%	71.2%	79.3%
Revenues from services	30.4%	28.8%	20.7%
Total revenues	100.0%	100.0%	100.0%
Cost of products sale	43.3%	33.1%	38.5%
Cost of services	34.5%	32.4%	23.5%
Total cost of revenues	77.8%	65.5%	62.0%
Gross profit	22.2%	34.5%	38.0%
Operating expenses:			
Research and development expenses, net	62.6%	48.6%	32.1%
Technology for use in research and development	--	7.3%	--
Sales and marketing expenses	32.4%	34.1%	24.5%
General and administrative expenses	14.3%	8.8%	7.1%
Other operating expenses (income)	4.8%	--	(8.3)%
Total operating expenses	114.1%	98.8%	55.4%
Operating loss	91.9%	64.3%	17.4%
Financing income, net	12.2%	0.7%	1.6%
Net loss	79.7%	63.6%	15.8%

Comparison of Years Ended December 31, 2003 and 2002

Revenues. Our revenues in 2003 increased by $6.3 million, or 31.0%, compared to 2002, with revenues attributable to product sales accounting for $21.2 million, an increase of $6.6 million, or 45.8%, compared to 2002, and services accounting for $5.5 million, a decrease of $0.3 million, or 5.6%, compared to 2002. We believe the increase in product sales revenue was due to the beginning of a recovery in the semiconductor industry in the first half of 2003 which resulted in semiconductor manufacturers adding manufacturing capacity, leading to increased sales of our metrology products. We believe the semiconductor industry recovery in 2003 was driven by increased demand for semiconductors as a result of improving economic conditions worldwide, especially in the U.S. and Japan and the resulting increase in consumer spending, particularly for electronic devices. Revenues from services accounted for 20.7% of total revenues in 2003, as compared to 28.8% of total revenues in 2002. The decrease in service revenues as a percentage of total revenues was attributed mainly to the increase in 2003 total revenues by 31.0% over total 2002 revenues.

We expect that sales from our main integrated process control product line targeting the chemical mechanical polishing market, including dielectric and copper, will continue to account for a substantial portion of our revenues for at least the next year, and that the new product lines sales (process control systems for lithography and etch) will gradually become more significant as we introduce our next generation of metrology systems for lithography and etch. As our revenues are largely dependent upon the sale of systems for CMP processing, any decrease in demand for our CMP products would have a material adverse affect on us. We expect service revenue to grow gradually in the following years as a result of expanding the number systems sold to the industry and served by our customer support organization.

Cost of Revenues and Gross Profit. Cost of revenues consists of the labor, material and overhead costs of manufacturing our systems, and the costs associated with our worldwide service and support infrastructure. It also consists of inventory write-offs and provision for estimated future warranty costs for systems we have sold. Our cost of revenues attributable to product sales in 2003 was $10.3 million, an increase of $3.5 million, or 52.1%, compared to 2002. This increase is attributable mainly to the increased volume of systems sold. As a percentage of total revenues, our cost of revenues attributable to product sales in 2003 increased to 38.5% from 33.1% in 2002. This increase is attributable to the volume of sales and mixture of products sold. Our cost of revenues attributable to services in 2003 was $6.3 million, a decrease of $0.3 million, or 5.1%, compared to 2002. This decrease is the result of a decrease in our service-related revenues and the implementation of a cost-reduction plan in 2002.

Our gross profit increased by 45.7% to $10.2 million in 2003 from $7.0 million in 2002. Our gross profit represented 38.0% and 34.5% of our total revenues in 2003 and 2002, respectively. Our gross profits increase from 2002 to 2003 is attributable to the higher volume of systems sold and cost reduction measures and adjustments to our manufacturing and service and support operations to make them more compatible with current sales levels.

Research and Development expenses, Net. Research and development expenses, net, consist primarily of salaries and related expenses and also include consulting fees, subcontracting costs, related materials and overhead expenses, after offsetting conditional grants received or receivable from the Office of the Chief Scientist. Our research and development expenses, net, decreased 13.5% from $9.9 million in 2002 to $8.6 million in 2003, after offsetting conditional grants received or receivable from the Office of the Chief Scientist of $2.3 million and $1.7 million in 2003 and 2002, respectively. The decrease in research and development expenses, net, is attributed mainly to cost reduction steps that we took in 2001 and 2002, mainly significant workforce reductions. We do not expect the workforce reductions to adversely impact our major development plans and the introduction of new products. Research and development expenses, net, represented 32.1% and 48.6% of our revenues in 2003 and 2002, respectively. This decrease is the result of a decrease in net research and development expenses, as well as an increase in our revenues in 2003.

Approximately $5 million of our research and development expenses, net, in 2003, resulted from our research and development efforts relating to the introduction of new products and new models of the NovaScan systems for the next manufacturing technology nodes. We believe that meeting the needs of semiconductor manufacturers with respect to the manufacture of semiconductors with features ranging from 90 nm to below 65 nm will allow us to maintain our position as a market leader in integrated process control equipment. (According to the International Technology Roadmap for Semiconductors, ITRS, published in December 2003, semiconductor manufacturers are expected to begin high volume manufacturing of semiconductors with 90 nm features in 2004 and high volume manufacturing of semiconductors with 65 nm features in 2006.) The balance of the research and development expenses, net, were related to current products activities, such as engineering improvements, new versions of software and application support and developments.

Sales and Marketing. Sales and marketing expenses are comprised of salaries and related costs for sales and marketing personnel, related travel expenses, and overhead. They also include commissions to our representatives and sales personnel and royalties. Our sales and marketing expenses decreased 7.1% from $7.0 million in 2002 to $6.5 million in 2003. Sales and marketing expenses represented 34.1% and 24.5%,

respectively, of our revenues in 2002 and 2003. This decrease is related to cost saving measures in our sales and marketing operations.

General and Administrative. General and administrative expenses are comprised of salaries and related expenses and other non-personnel related expenses. Our general and administrative expenses increased 5.5% from $1.8 million in 2002 to $1.9 million in 2003. This increase is attributed mainly to the increased operating overhead, employee benefits and investor relations activity. General and administrative expenses represented 8.8% and 7.1% of our revenues in 2002 and 2003, respectively. The decrease in general and administrative expenses as a percentage of revenues from 2002 to 2003 is a result of an increase in our revenues in 2003.

Other Operating Income. During the fourth quarter of 2003, the Office of the Chief Scientist approved the Company s request to allocate $2.2 million from the grants provided by the Office of the Chief Scientist to a specific lithography project, to be repaid as royalties only from sales of specific lithography products. As a result, the Company has canceled in 2003 a royalty provision, made mainly in prior years, in the total amount of $2.2 million. The other income in the year 2003 represents this cancellation.

In 2002, the Company purchased technology for use in one of the Company s specific research and development programs, which had no alternative use, for $1.5 million. This amount has been charged to the statement of operations for the year ended December 31, 2002 in accordance with the principals set force in SFAS 2.

Comparison of Years Ended December 31, 2002 and 2001

Revenues. Our revenues in 2002 decreased $0.8 million, or 3.8%, compared to 2001. This decrease resulted from our sale of fewer systems as a result of the continuing deep slowdown in the semiconductor industry in 2002. Revenues from services in 2002 accounted for 28.8% of total sales, as compared to 30.4% in 2001. The decrease in revenues was attributed mainly to a decrease in the quantity of systems sold.

Cost of Revenues and Gross Profit. Cost of revenues consists of the labor, material and overhead costs of manufacturing our systems, and the costs associated with our worldwide service and support infrastructure. It also consists of inventory write-offs and the provision for estimated future warranty costs for systems we have sold. Our gross profit increased 49.3% from $4.7 million in 2001 to $7.0 million in 2002. Our gross profit represented 22.2% and 34.5% of our revenues in 2001 and 2002, respectively. Our gross profits increase from 2001 to 2002 is attributed to cost reduction measures and adjustments to our manufacturing and service and support operations to make them more compatible with current sales levels. The cost reduction measures taken during 2002 were related to the deep slowdown of the semiconductor industry.

Costs related to 2002 services decreased $0.7 million, or 9.5%, as compared to 2001 following the implementation of a cost-reduction plan. Revenues related to services decrease $0.6 million in 2002 compared to 2001. Due to the cost reduction plan, the loss related to services decreased by $0.2 million and we recorded a gross loss related to services of $0.7 million in 2002, as compared to a gross loss of $0.9 million in 2001.

Research and Development Expenses, Net. Research and development expenses, net, consist primarily of salaries and related expenses and also include consulting fees, subcontracting, related materials and overhead expenses, after offsetting conditional grants received or receivable from the Office of the Chief Scientist. Our research and development expenses, net, decreased 25.3% from $13.3 million in 2001 to $9.9 million in 2002, after offsetting conditional grants received or receivable from the Office of the Chief Scientist of $1.8 million and $1.7 million in 2001 and 2002, respectively. This decrease is attributed mainly to the cost reduction steps that had been taken in 2001 and 2002, including significant workforce reductions. We do not expect the workforce reductions to adversely impact our major development plans and the introduction of new products. Research and development expenses, net, represented 48.6% and 62.6%, respectively, of our revenues in 2002 and 2001. Approximately $5 million of our research and development expenses, net, in 2002, resulted from our research and development efforts relating to the introduction of new product lines in order to maintain our position as a market leader in integrated process control equipment.

Sales and Marketing. Sales and marketing expenses are comprised of salaries and related costs for sales and marketing personnel, related travel expenses, and overhead. They also include commissions to our representatives and sales personnel and royalties. Our sales and marketing expenses increased 1.4% from $6.9 million in 2001 to $7.0 million in 2002. Sales and marketing expenses represented 32.4% and 34.1%, respectively, of our revenues in 2001 and 2002.

General and Administrative. General and administrative expenses are comprised of salaries and related expenses and other non-personnel related expenses. Our general and administrative expenses decreased 40.7% from $3.0 million in 2001 to $1.8 million in 2002. This decrease is attributed mainly to the cost reduction actions taken during 2001 and 2002, which included a reduction in workforce. General and administrative expenses represented 14.3% and 8.8%, respectively, of our revenues in 2001 and 2002.

Other Operating Expenses. In 2002 the company purchased technology for use in one of the Company s specific research and development programs, which had no alternative use, for $1.5 million. Such amount has been charged to the statement of operations in the year ended December 31, 2002 in accordance with the principals set force in SFAS 2. Other operating expenses in 2001 of $1.0 million are comprised of non-recurring expenses related to the breach of part of our operating lease commitments associated with the move to the new building.

Our operating results have historically experienced significant quarterly and annual fluctuations. We anticipate that factors affecting our future operation results, many of which are beyond our control, will include the timing of significant orders, the timing of new products announcements and releases by us or by our competitors, patterns of capital spending by customers, market acceptance of new and enhanced versions of our products and changes in pricing by us or in our industry or the markets served by our customers. In addition, the timing of our research and development expenses could cause quarterly results to fluctuate. Accordingly, period-to-period comparisons of our statements of operations may not be meaningful, and you should not rely upon them as indications of our future performance.

Liquidity and Capital Resources

As of December 31, 2003, we had working capital of $30.3 million compared to working capital of $34.7 million as of December 31, 2002. This decrease is attributed primarily to our operating losses incurred during 2003. Cash and cash equivalents, short-term deposits and securities held to maturity as of December 31, 2003 were $31.6 million compared to cash and cash equivalents, short-term deposits and securities held to maturity of $38.6 million as of December 31, 2002.

Trade accounts receivables increased from $2.9 million as of December 31, 2002 to $5.8 million as of December 31, 2003. This increase is attributable mainly to the increase in our sales during the fourth quarter of 2003 (2003 fourth quarter revenues were $8.1 million compared to $5.6 million in the fourth quarter of 2002). Inventories increased from $3.2 million as of December 31, 2002 to $4.2 million as of December 31, 2003. Typically, during periods of revenue growth, our accounts receivable and inventories increase and represent a use of cash as we expend cash to build inventory and produce and sell systems to customers in advance of receiving cash payment from them. While we cannot be certain, we expect that in 2004, trade accounts receivable and inventories will increase as the semiconductor industry continues to recover.

Operating activities in 2003 used cash of $5.5 million compared to cash of $7.9 million used in 2002. Operating activities in 2003 used less cash relative to 2002 mainly due to the decrease of our net losses in 2003. Financing activities generated $0.3 million of cash in 2003, compared to $0.03 million in 2002. The increase in cash provided by financing activities in 2003 is attributable to changes in market interest rates and the use of effective financial management, including our cash management policy.

The following table describes our investments in capital expenditures during the last three years:

	2003		2002		2001	
	Home	Abroad	Home	Abroad	Home	Abroad
			(in dollar thousands)			
Electronic equipment	397	32	300	30	310	22
Office furniture and equipment	14	69	5	0	6	9
Leasehold improvements	564	65	220	46	6	11
Total	975	166	525	76	322	42

The decrease in capital expenditures for leasehold improvements in 2003 was due to our completion of our 2001 and 2002 investments in new facilities in Israel. Although we currently have no significant capital commitments, we expect to spend approximately $1.1 million on capital expenditures in the next 12 months, mainly for information systems improvements (software and hardware), electronic equipment used in our research and development labs and systems for our demonstration centers and application development.

We currently have contractual obligations as described in the following table:

	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
			(in dollar thousands)		
Operating Lease Obligations	4,865	1,630	2,430	805	--

Purchase Obligations	2,328	2,328	--	--	--
Other Long Term Liabilities	175	58	117	--	--
Total	7,368	4,016	2,547	805	--

Our principal liquidity requirements are expected to be for working capital, research and development, capital expenditures and lease payments for our worldwide facilities. We believe that our current cash reserves and expected cash flow will be adequate to fund our activities for at least the next 12 months.

Our long-term capital requirements will be affected by many factors, including the success of our current products, our ability to enhance our current products and our ability to develop and introduce new products that will be accepted by the semiconductor industry. We plan to finance our long-term capital needs with the remaining net proceeds of our initial public offering, together with cash flow from operations, if any. If these funds are insufficient to finance our activities, we will have to raise additional funds through the issuance of additional equity or debt securities, through borrowing or through other means. We cannot assure you that additional financing will be available on acceptable terms.

Presently, we have no long-term debt, nor any readily available source of long-term debt financing such as a line of credit.

With regard to usage of hedging financial instruments and the impact of inflation and currency fluctuations, see Quantitative and Qualitative Disclosures About Market Risk on page 62 of this report.

Off-balance sheet arrangements

We do not have and are not party to any off-balance sheet arrangements.

Research and Development

For information regarding our research and development activities, see Research and Development starting on page 23 of this report.

Conditional Grants from the Office of the Chief Scientist

Under the Law for the Encouragement of Industrial Research and Development, 1984, a qualifying research and development program is eligible for conditional grants of up to 50% of the program s expenses. The program must be approved by a committee of the Office of the Chief Scientist of the Israeli Ministry of Industry and Trade. The recipient of the conditional grants is required to return the grants by the payment of royalties on the revenues derived from using the grants. Current regulations promulgated under the law provide for the payment of royalties to the Office of the Chief Scientist ranging from 3% to 6% on the revenues derived from using the conditional grants until 100% of the grants are repaid. Conditional grants received under programs approved after January 1, 1999 will accrue interest at an annual rate of the 12-month LIBOR applicable to dollar deposits. Royalties are paid in NIS linked to the dollar at the exchange rate in effect at the time of payment. Following the full payment of such royalties and interest, there is generally no further liability for payment.

The terms of the conditional grants under the law require that we manufacture in Israel the products developed with these grants. These restrictions apply even after grants are fully repaid. Under the regulations promulgated under the law, the products may be manufactured outside Israel by us or by another entity, if prior approval is received from the Office of the Chief Scientist. Ordinarily, as a condition to obtaining this approval, we would be required to pay increased royalties. If we perform the manufacturing, the increased royalties would ordinarily be one percentage point above the otherwise applicable royalty rate. If the manufacturing is performed by an entity other than us, the rate would depend on the amount of manufacturing performed outside of Israel and the size of the conditional grants in relation to the investments made by us in the project. The total amount to be repaid to the Office of the Chief Scientist would also be adjusted to between 120% and 300% of the conditional grants, depending on the manufacturing volume that is performed outside Israel. We may not transfer the technology developed with funds from these conditional grants to third parties without the prior approval of a governmental committee. Approval of the transfer of technology may be granted only if the recipient abides by all the provisions of the law and related regulations, including the restrictions on the transfer of know-how outside of Israel and the obligation to pay royalties in an amount that may be increased. Approval to manufacture products outside of Israel or consent to the transfer of technology, if requested, might not be granted.

As of December 31, 2003 we received conditional grants from the Office of the Chief Scientist totaling $7.2 million. Because the implementation of regulations raising royalty rates to between 3% and 6% has been deferred, we are obligated to pay royalties of 3% of revenues derived from sales of products funded with these grants. As of December 31, 2003, our contingent liability to the Office of the Chief Scientist for conditional grants received was approximately $3.6 million. See also Note 7A to our consolidated financial statements contained elsewhere in this report.

The funds available for Office of the Chief Scientist conditional grants were reduced for 2003, and the Israeli authorities have indicated that the government may further reduce or abolish Office of the Chief Scientist grants in the future. Even if these conditional grants are maintained, we might not receive Office of the Chief Scientist grants in the future and cannot presently predict the amount of any grants we might receive.

In addition to royalty-bearing grants from the Office of Chief Scientist, in 2003, we participated in two programs sponsored by the Office of Chief Scientist. In one program, we are a member of a research consortium comprised of several Israeli high technology companies, which are engaged in the development of multimedia on-line technology. In the other program, we are cooperating with a research institute in Israel for the development of advanced measurement techniques. In both programs, the Office of Chief Scientist contributes 66% of the approved research and development budget for the research consortium and the members of the research consortium contribute the remaining 34%. No royalties from this funding are payable to the Israeli government. Expenses in excess of the approved budget are borne by the consortium members. In general, any consortium member that develops technology as part of the consortium retains the intellectual property rights to the technology developed by this member, and all the members of the consortium have the right to utilize and implement such technology without having to pay royalties to the developing consortium member. As of December 31, 2003, we had received approximately $1 million in grants from the Office of Chief Scientist in connection with the above-mentioned programs.

Political and economic conditions in Israel

The Company is incorporated under the laws of Israel, and has its principal offices and manufacturing facilities in Israel. The Company is, therefore, directly influenced by the political, economic and military conditions affecting Israel. Any major hostilities involving Israel, the interruption or curtailment of trade between Israel and its trading partners or a significant downturn in the economic or financial condition of Israel could have a material adverse effect on the Company s business, financial condition and results of operations. For additional information on risks related to operating in Israel, see Risk Factors starting on page 9 of this report.

Political Conditions. Since the establishment of the state of Israel in 1948, a number of armed conflicts have taken place between Israel and its Arab neighbors and a state of hostility, varying from time-to-time in intensity and degree, has led to security and economic problems for Israel. However, a peace agreement between Israel and Egypt was signed in 1979, a peace agreement between Israel and Jordan was signed in 1994 and, since 1993, several agreements between Israel and the Palestinian Authority representatives have been signed. As of the date hereof, Israel has not entered into any agreement with Syria or Lebanon. Currently there is stagnation in the peace process in the Middle East and ongoing hostilities between Palestinian militant groups and Israel. The resumption of hostilities in the region, which have occurred after the failure of Camp David peace talks, as well as the events of September 11, 2001, and the ongoing tension in the region, has a negative effect on the stability of the region. There can be no assurance as to whether or how the peace process will develop or what affect it or these ongoing hostilities may have upon the Company.

Beginning in 1948, nearly all Arab countries have formally adhered to a boycott of Israel and Israeli companies and, since the early 1950s, of non-Israeli companies doing business in Israel or with Israeli companies. Attempts to ensure that Arab countries are complying with this boycott have intensified due to recent hostilities between the State of Israel and the Palestinians. Despite measures to counteract the boycott, including anti-boycott legislation in the US, the boycott has had an indeterminate negative effect upon trade with and foreign investments in Israel. Although in the past such attempts did not materially affect us, there can be no assurance that restrictive laws, policies, or practices directed toward Israel or Israeli businesses will not have an adverse impact on the operation or expansion of the Company s businesses.

Due to recent presence of the Israeli military in the territories previously transferred to the control of the Palestinian authority, there were certain initiatives within the institutions of the European Union to suspend the trade agreements entered into between the State of Israel and members of the European Union. These initiatives culminated in a resolution of the European Parliament recommending that the European Union members suspend those trade agreements. It is uncertain whether such agreements will in fact be suspended, but if such agreements are suspended, it is likely to adversely affect the Company.

Military Service. Generally, all male adult citizens and permanent residents of Israel under the age of 46, or under the age of 41 with regard to certain units, are, unless exempt, obligated to perform up to approximately 36 days of military reserve duty annually. Additionally, all such residents are subject to being called to active duty at any time under emergency circumstances. Some of the Company s officers and employees are currently obligated to perform annual reserve duty. While the Company has operated effectively under these requirements since it began operations, no assessment can be made as to the full impact of such requirements on the Company s workforce or business if conditions should change, and no prediction can be made as to the effect on Company of any expansion or reduction of such obligations. For information regarding the risk obligatory military service may pose to us, see Risk Factors at page 9 of this report.

Economic conditions. Israel s economy has been subject to numerous destabilizing factors, including a period of rampant inflation in the early to mid-1980s that reached an annual peak of 445%, low foreign exchange reserves, fluctuations in world commodity prices, military conflicts and civil unrest. In the past three years, the Israeli economy has been in a recession. The Israeli government has, for these and other reasons, intervened in the economy by utilizing, among other means, fiscal and monetary policies, import duties, foreign currency restrictions and control of wages, prices and exchange rates. The Israeli government periodically changes its policies in all these areas.

Item 6. Directors, Senior Management and Employees

The following is the list of officers and directors:

Name	Age	Position
Barry Cox (1) *	64	Chairman of the Board of Directors
Giora Dishon	59	President, Chief Executive Officer, Director and Co-Founder
Moshe Finarov	52	Chief Technology Officer, Director and Co-Founder
Meir Shannie (2) *	59	Director
Micha Brunstein (3) *	60	Director
Avi Kerbs *	57	Director
Joseph Ciechanover *	71	Director
Alon Dumanis *	61	Director
Lauri Hanover *	44	External Director
Karey Holland *	48	External Director
Chai Toren *	48	Vice President Finance, Chief Financial Officer
Gad Yaron *	53	GM, Chief Operational Officer
Ronen Frish *	47	Vice President, Sales and Marketing

* Each one of these persons beneficially owns less than one percent of the Company s ordinary shares.

(1) Was appointed as Chairman in May 2003.
(2) Resigned from office in June 2003.
(3) Was appointed in November 2003.

Our directors (other than the external directors) serve as such until the Company s next annual general meeting of shareholders. Our external directors, in accordance with Israeli law, serve for a three-year term, which may be renewed for only one additional three-year term. All of our external directors were elected in 2000 and were reelected in 2003.

Mr. Barry L. Cox was appointed chairman of the Board of Directors of the Company in May, 2003. During the years 2001 to 2002 Mr. Cox served as chairman of the board of directors of MorphICs Technology Inc. and from 1998 to 2000, as chairman of the board of directors of Quantum Effect Devices Inc. Mr. Cox served as chief executive officer of Weitek Corporation between 1993 and 1995, and before that filled various roles in Intel, the last of which was president of Intel Europe. Mr. Cox holds a B.S. in engineering from the U.S. Air Force Academy and an MBA from Boston University.

Dr. Giora Dishon is a co-founder of Nova and has served as President and Chief Executive Officer since Nova s formation in 1993. 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 the Managing Director at AVX Israel Ltd., a manufacturer of electronic devices. Dr. Dishon holds a B.Sc. in Chemistry, a MSc. and a Ph.D. in Materials Science from the Hebrew University in Jerusalem.

Dr. Moshe Finarov is a co-founder of Nova and a member of the board of directors. He has served as Chief Technology Officer of Nova since Nova s formation in 1993. From 1989 to 1993 he served as Senior Physicist at Orbotech and from 1978 to 1988 he was employed at the ENIMS and PULSAR Institutes of Research in Moscow. Dr. Finarov holds a Ph.D. in Semiconductor Physics from Moscow University.

Dr. Micha Brunstein was elected as director of Nova during November 2003 by the other members of the board of directors. During the years 1983 to 1999, Dr. Brunstein served as a 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 the chairman and board member of several Israeli companies, as well as the Israel Association of Electronics Industries and the Israel-US chamber of Commerce and Industry. Dr. Brunstein holds B.Sc. in Mathematics and Physics from the Hebrew University, Jerusalem, and M.Sc. and Ph.D. degrees in Physics from the Tel Aviv University.

Mr. Avi Kerbs has served as a director of Nova since 1993. He serves as the president and chief executive officer of Teuza Management and Development Ltd., the management company of Teuza-A Fairchild Technology Venture Ltd., a venture capital Company and has done so 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 is also a director of DSS Inc., currently traded on Nasdaq Smallcap market and in two other Israeli companies. Mr. Kerbs holds a B.Sc. in Industrial Engineering and Management and an M.Sc. in Management, both from the Technion in Haifa-the Technology Institute of Israel. Mr. Kerbs was originally appointed to our board of directors by Teuza.

Mr. Joseph Ciechanover has served as a director of Nova from October 1996 until December 1998 and again from February 2000 until the present. He is the founder and president of the Challenge Fund-Etgar L.P., a venture capital firm and served as chairman of the board of El-Al Israel Airlines from 1995 until 2001. He served as a member of the advisory committee of the Bank of Israel from 1980 to 1994 and the president and a member of the board of directors of PEC Israel Economic Corporation, a diversified investment company. Mr. Ciechanover holds a law degree from the Hebrew University in Jerusalem, an L.L.M. from the University of California at Berkeley and a Ph.D. in philosophy from Boston University.

Dr. Alon Dumanis, is the Chief Executive Officer of Docor International Management, a Dutch venture capital, subsidiary of The Van-Leer Group Foundation. Dr. Dumanis serves as member of various companies boards of directors, including El Al Israel Airlines, Inventech and others. Previously, Dr. Dumanis was the Head of The Material Command in the Israel Air Force with the rank of Brigadier General. Dr. Dumanis currently serves as chairperson and member of several national steering committees and is the author of many papers published locally and internationally in a number of subject areas, including technology and management. Dr. Dumanis holds a Ph.D. in Aerospace Engineering from Purdue University in the United States.

Ms. Lauri Hanover has been a Director of the Company since 2000. Ms. Hanover has served as Corporate Vice President and Chief Financial Officer of NICE Systems Ltd. since December 2000. She previously served as Executive Vice President and Chief Financial Officer of Sapiens International Corporation N.V. since March 1997. From 1984 to 1997, Ms. Hanover served in a variety of financial management positions, including Corporate Controller, at Scitex Corporation Ltd. Ms. Hanover holds a bachelor s degree in finance from the Wharton School of Business and a Bachelor of Arts degree from the College of Arts and Sciences, both of the University of Pennsylvania. Ms. Hanover also holds a master s degree in business administration from New York University.

Dr. Karey Holland was appointed as the Company s external director in accordance with the provisions of Israeli law. Dr. Holland serves concurrently as Vice President, Technology at Thomas West Inc., an equipment manufacturer for the semiconductor industry, and as Senior Managing partner of Techcet, a Company providing strategic technical services in the semiconductor industry. Prior to her current position, Dr. Holland was employed for over five years by IPEC, a semiconductor manufacturing company, and later SpeedFam-IPEC, where she held the positions of Vice President of Process Technology and later Vice President and Chief Technological Officer. She worked for IBM from 1981 through 1993 where she held several positions including Sematech Advanced Lithography Technology Development Program Manager, Process Technology Development Manager and Manufacturing Implementation Manager. After leaving IBM and before taking her position at IPEC, Dr. Holland spent nine months at Motorola in Manufacturing Planning for the Microprocessor and Memory Technology Group. Dr. Holland holds a Ph.D. in analytical chemistry from Pennsylvania State University.

Mr. Chai Toren has served as Chief Financial Officer of Nova since 1995. From 1994 to 1995 Mr. Toren served as Chief Financial Officer of Zar Laboratories, a biotechnology Company. From 1989 to 1994, he was employed as Project Manager of the Jerusalem Foundation, a non-profit organization. Mr. Toren holds a B.A. in Economics and Business Administration from the Hebrew University in Jerusalem.

Dr. Gad Yaron was appointed as Nova s Chief Operational Officer in October 2002, and has served as Nova s Lithography Product Line Manager since 2000. From 1998 to 2000 he was New Applications Manager. From 1997 to 1998 he served as Director of Yield Management at Applied Materials Israel, a subsidiary of Applied Materials Inc. From 1988 to 1997 he served in various key engineering management positions at Intel Electronics Ltd. Dr. Yaron holds a Ph.D. in Experimental Semiconductor Physics from the Hebrew University in Jerusalem.

Mr. Ronen Frish has served as Vice President, Sales and Marketing of Nova since 1995. From 1993 to 1995, Mr. Frish served as Sales Manager at Digital Equipment Israel, a computer manufacturer. From 1987 to 1993 he held various sales and marketing management positions in Israel and in Europe at Orbot Systems and Orbotech. From 1981 to 1987 he served as a project manager at AREL Electronics. Mr. Frish holds a B.Sc. in Business Management from the Hebrew University in Jerusalem.

Voting agreement

We are not aware of any voting agreement currently valid.

Compensation

The aggregate direct remuneration paid or payable to all 13 persons who served in the capacity of director or executive officer during 2003 was approximately $900,000, including approximately $250,000, which was set aside for pension and retirement benefits and including amounts expended by us for automobiles made available to our executive officers.

The Company has approved the terms of remuneration to the external directors of the Company, according to which the external directors shall receive remuneration comprised of: an annual payment in the amount of NIS 34,122 (approximately $7,600) and an additional per meeting payment of NIS 1,270 (approximately $300). Israeli Law determines these amounts, and adherence to these amounts exempts the Company from the need to obtain the approval of the Company s shareholders with respect to the remuneration paid to the external directors.

On November 7, 2001, the Company s shareholders approved payment of remuneration to the Company s directors in the same amounts as mentioned above for the external directors. The total amount paid or payable to the directors, including external directors, for 2003 is $122,000. In 2002, this amount was $73,000.

On September 5, 2002, the Company s Board of Directors and the Company s Audit Committee approved the issuance of options to directors as follows:

Name of directors	Position	# of options
Giora Dishon	Director, CEO & President	60,000
Moshe Finarov	Director & CTO	50,000
Meir Shannie	Former Director (resigned June, 2003)	10,000
Avi Kerbs	Director	10,000
Joseph Ciechanover	Director	10,000

These grants were approved by the shareholders on October 31, 2002. The options were granted during 2003 and are subject to the terms and conditions of the Company s Option Plan 6. The options vest over a period of between one and three years and their term may not exceed seven years from the date of grant. The exercise price of these options is $2.06 per share.

As of May 15, 2003, we entered into an agreement with Mr. Barry L. Cox according to which Mr. Cox serves as chairperson of our board of directors. Under the agreement, Mr. Cox is entitled to gross annual compensation of $50,000 as well as a one-time grant of an option to purchase up to 50,000 ordinary shares of the Company, at the fair market value of the shares at the time of grant. The option vests during a three year period so that a third of the entire amount granted to Mr. Cox shall be exercisable upon each anniversary of the grant.

On May 15, 2003, the Company s Board of Directors and Audit Committee resolved (i) that the monthly gross salary of Dr. Dishon shall be increased to 44,000 NIS (approximately $9,800) for the period February 1, 2003 through July 31, 2003 and increased to 50,000 NIS (approximately $11,120) starting on August 1, 2003 and (ii) that the monthly gross salary of Dr. Finarov shall be increased to 40,000 NIS (approximately $8,900) for the period February 1, 2003 through July 31, 2003 and increased to 44,000 NIS (approximately $9,800) starting on August 1, 2003. These changes in the terms of compensation for Drs. Dishon and Finarov were approved by our shareholders on September 1, 2003.

On July 1, 2003 and on July 10, 2003, the Company s Audit Committee and Board of Directors, respectively, resolved to grant each of Lauri Hanover and Karey Holland whom serve as the Company s external directors, an option to purchase up to 10,000 ordinary shares of the Company under the term set forth in Option Plan 6, which were approved by the Company s shareholders on October 31, 2002. These resolutions were approved by the Company s shareholders on September 1, 2003. The options were granted under Option Plan 6, in the same terms of all other directors. The exercise price of these options is $2.06 per share.

On January 30, 2004, the Company s Board of Directors and the Company s Audit Committee approved the issuance of options to directors according to the following:

Name of directors	Position	# of options
Giora Dishon	Director, CEO & President	65,000
Moshe Finarov	Director & CTO	55,000
Micha Brunstein	Director	10,000
Avi Kerbs	Director	10,000
Joseph Ciechanover	Director	10,000
Alon Dumanis	Director	10,000
Lauri Hanover	Director	10,000
Karey Holland	Director	10,000

These grants were approved by the shareholders on March 31, 2004. The options were granted in March 2004 and are subject to the terms and conditions of the Company s Option Plan 7A. The options vest over a period of between one and four years and their term may not exceed seven years from the date of grant. The exercise price of these options is $5.15 per share.

Board of Directors Committees

The Company s Board of Directors has appointed the following directors committees:

The *Audit Committee* is comprised of three members, as required under Israeli law. The members are Lauri Hanover, Karey Holland and Joseph Ciechanover. The functions of the audit committee according to Israeli Law are to locate deficiencies in the business management of the Company in consultation with the Company s auditors and to suggest the measures to be taken regarding such deficiencies. The Audit Committee is also responsible for approving related party transactions. In addition, as described under Item 16, the audit committee is responsible for the approval of all audit and non-audit services provided to the Company by Deloitte & Touche and Ernst & Young.

The *Compensation Committee* is comprised of Karey Holland, Lauri Hanover and Avi Kerbs. The function of the compensation committee is to determine the compensation of directors, senior management and employees (subject to provisions regarding related party transactions).

The *Investment Committee* is comprised of Lauri Hanover and Alon Dumanis. The function of the investment committee is to review and determine the cash investment policy of the cash reserves of the Company.

Employees

Set forth below is a chart showing the number of people we employed at the times indicated.

	as of December 31,		
	2001	2002	2003
Total Personnel	249	215	212
Located in Israel	179	150	150
Located abroad (mainly U.S.)	70	65	62
In operations	37	41	37
In research and development	92	74	72

In sales and marketing	31	24	24
In service and support	66	60	62
In general and administration	23	16	17

As of December 31, 2003, we employed a total of 212 persons worldwide, not including 15 independent contractors and temporary employees, of which 72 were in research and development, 37 were in operations, 62 were in service and support, and testing, 24 were in sales and marketing and 17 were in general and administration. As of December 2003, 150 of our employees were based in Israel and 62 were located abroad.

Because we were adversely affected by, and our financial results reflect, the general slowdown in the semiconductor equipment market that started in 2001, we implemented a cost-reduction plan, which included a reduction in workforce, as seen in the above table.

We are a member of the Industrialists Association in Israel, an employer s union. As a result of this membership, a number of collective bargaining agreements apply to us. These agreements principally concern cost of living wage increases, paid vacation and holidays, length of the workday, wage tariffs, termination and severance payments. We provide our employees with benefits and working conditions that are at least as favorable as those found in the collective bargaining agreements.

Israeli labor laws and regulations apply to all our employees. The laws principally concern matters such as paid vacation, paid sick days, length of the workday, payment for overtime and severance payments upon the retirement or death of an employee or termination of employment.

Share ownership

Giora Dishon, President, Chief Executive Officer and Co-Founder, and Moshe Finarov, Vice President, Director of Technology, Director and Co-Founder, owned 708,091 and 646,892 ordinary shares of the Company, respectively, as of April 1, 2004. All other directors, external directors and senior management each hold less than 1% of the Company s shares. The following table sets forth information regarding options held by our directors and officers as of April 1, 2004:

Name	Ordinary Share Underlying Options	Expiration Dates	Exercise Prices ($/share)
Giora Dishon (1)	185,000	2007-2011	2.06-7.37
Moshe Finarov (1)	165,000	2007-2011	2.06-7.37
10 directors and officers as a group (1)	459,820	2004-2011	2.06-7.37

(1) The vesting period of each option is between one and four years from the date of grant.

Through December 31, 2003, options to acquire 4,480,822 ordinary shares have been issued under the share options plans, of which options to acquire 1,482,848 shares have been exercised, 376,761 have been terminated and forfeited and 1,290,609 were exercisable as of December 31, 2003.

As of December 31, 2003, we had seven employee share option plans that provided for the grant of options to our employees, including senior management, to purchase an aggregate of 4,480,822 ordinary shares. The existing share option plans are described below (excluding the first share option plan that was comprised of options to acquire 827,700 ordinary shares, which have been fully exercised).

Options to purchase 650,000 shares at an exercise price per share of NIS 0.01 (approximately $.0023); as of December 31, 2003, all options under this plan were granted, 558,840 options were exercised, 65,704 options were exercisable and 25,456 options were forfeited;

Options to purchase 387,000 shares at an exercise price per share of $3.17; as of December 31, 2003, all options under this plan were granted, 45,159 options were exercised, 295,562 options were exercisable and 45,223 options were forfeited;

Options to purchase 668,350 shares at exercise prices ranging from $6.27 or $7.37 per share; originally, this plan included 1,000,000 shares, and was reduced to 668,350 shares by a decision of the board of directors of the Company. As of December 31, 2003, all options under this plan were granted, 2,483 options were exercised, 443,575 options were exercisable and 162,500 options were forfeited;

Options to purchase 746,500 shares at an exercise prices of $1.13, $2.17 or $2.46, the fair market value of Nova s stock on the date of grant; as of December 31, 2003, all options under this plan were granted, 48,656 options were exercised, 319,508 options were exercisable and 83,582 options were forfeited;

Options to purchase 910,000 shares at an exercise prices of $2.06, the fair market value of Nova s stock on the date of grant; as of December 31, 2003, all options under this plan were granted, none were exercised or exercisable and 40,000 options were forfeited;

Options to purchase 116,272 ordinary shares at an exercise price of $5.16 per share; granted in March 1999 to Mendy Erad, the chairman of the board at that time; as of December 31, 2003, these options were fully exercisable;

Options to purchase an aggregate of 75,000 ordinary shares at an exercise price of $3.69 per share granted to the members of our Board of Directors, other than our external directors; as of December 31, 2003, 49,998 of these options were exercisable; and

Options to purchase 50,000 ordinary shares at an exercise price of $2.68 per share; granted in May 2003 to Barry Cox, the chairman of the board; as of December 31, 2003, these options were not yet exercisable;

In addition to the option plans described above, in 2003, the Company implemented an Employee Stock Purchase Plan pursuant to which eligible employees of the Company may purchase up to 150,000 ordinary shares, subject to certain adjustments, at a discounted price. The Company issued 43,585 shares in 2003 and 24,889 shares in 2004 to cover purchases made in the first and second phase of this plan. The Employee Stock Purchase Plan is presently scheduled to run through 2005.

The following table summarizes information about share options outstanding as of December 31, 2003:

Outstanding as of December 31, 2003				Exercisable as of December 31, 2003	
Range of exercise prices	**Number outstanding**	**Weighted average remaining contractual life**	**Weighted average exercise price**	**Number exercisable**	**Weighted average exercise price**
(US dollars)		**(in years)**	**(US dollars)**		**(US dollars)**
0.0025	65,704	2.5	0.0025	65,704	0.0025
2.06	910,000	6.2	2.06	0	2.06
2.46-3.69	1,025,870	4.4	2.75	665,058	2.87
5.16	116,272	3	5.16	116,272	5.16
6.27-7.37	503,367	3.5	7	443,575	6.96
	2,621,213			1,290,609	

In addition to the option plans described above, on March 31, 2004 our shareholders approved Option Plan Number 7. Under this plan, we are authorized to issue options to purchase up to 1,500,000 ordinary shares of the Company in three sub-plans. Under the first sub-plan, Plan 7A, we may issue options to purchase up to 600,000 ordinary shares. We have granted, under Option Plan 7A, options to purchase 600,000 ordinary shares at an exercise price of $5.15 per share for directors and $4.01 for employees.

Item 7. Major Shareholder and Related Party Transactions

Major shareholders

The following table shows the number of ordinary shares beneficially owned by persons known by us to own beneficially more than five percent of the Company s ordinary shares, as of April 30, 2004.

Name	Number of Ordinary Shares Beneficially Owned*	Percentage of Ordinary Shares Beneficially Owned
Clal Electronics Industries Ltd. (1)	2,823,584	18.6%
Inventech Investments Co. Ltd.	1,165,221	7.7%
Teuza - A Fairchild Technology Venture Ltd	1,661,327	10.9%
Austin W. Marxe & David Greenhouse (2)	2,094,277	13.8%
Tamir Fishman Ventures II, L.L.C. (3)	894,600	5.9%
Shai Saul (3)	894,600	5.9%
Michael Elias (3)	901,850	5.9%
Tamir Fishman & Co. Ltd. (3)	899,700	5.9%
Eldad Tamir (3)	899,700	5.9%
Danny Fishman (3)	899,700	5.9%
Capital Group International, Inc.	774,800	5.1%
Giora Dishon (4)	810,255	5.3%
Moshe Finarov (5)	807,548	5.3%

* Unless specifically stated otherwise, the information provided hereinabove is based upon information contained in filings made by the named person with the U.S. Securities and Exchange Commission (SEC) pursuant to Regulation 13D-G.

(1) The following information is contained in Schedule 13D (Amendment No. 2) filed by, among others, Clal Electronics ltd.: each of Clal Electronics Ltd., Clal Industries Ltd., Clal Industries and Investments Ltd., IDB Development Corporation Ltd., IDB Holding Corporation Ltd., Nochi Dankner (Chairman of Clal Industries), Shelly Dankner-Bergman (Director of Clal Industries), Avraham Livnet and Ruth Manor reported having shared voting and dispositive control over 2,823,584 shares. Since June 16, 2003, this group has sold approximately 255,000 of the Company s ordinary shares.

(2) As reported on the Schedule 13G (Amendment 3) filed by Messrs. Marxe and Greenhouse on February 13, 2004, the amount indicated includes 477,178 shares held by Special Situations Cayman Fund, L.P., 70,831 shares held by Special Situations Technology Fund, L.P., 356,969 shares owned by Special Situations Technology Fund II, L.P. and 1,189,299 shares held by Special Situations Fund III, L.P.

(3) The following information is contained in a Schedule 13G (Amendment No. 1) filed by, among others, Tamir Fishman Ventures II, LLC (TFV), on February 13, 2004: (a) Five limited partnerships and a corporation directly beneficially own, in the aggregate, 894,600 shares; (b) TFV beneficially owns 894,600 shares as the sole general partner of the five limited partnerships and by virtue of its management rights with respect to a corporation ; (c) Shai Saul, is a managing member of TFV; (d) Michael Elias is a managing member of TFV and reports having sole voting and dispositive power over an additional 7,250 shares; (d) Tamir Fishman & Co. Ltd is a managing member of TFV and reports directly owning 5,100 additional shares; (e) Eldad Tamir and Danny Fishman are each Co-President and Co-CEO of Tamir Fishman & Co. Ltd.

(4) Includes shares held in trust under Israeli tax law for the benefit of the named shareholder and options to purchase 55,833 ordinary shares, which are currently exercisable or exercisable within 60 days of April 30, 2004.

(5) Includes shares held in trust under Israeli tax law for the benefit of the named shareholders and includes options to purchase 52,917 ordinary shares which are currently exercisable or exercisable within 60 days of April 30, 2004.

All major shareholders have the same voting rights.

The Company believes that, as of December 31, 2003, approximately 40% of its ordinary shares were held by United States holders.

Control of Registrant

To the Company s knowledge, it is not owned or controlled by a foreign government. Except for the shareholders identified above owning more than ten percent of the Company s ordinary shares, the Company has no knowledge of any corporation or other natural or legal person owning a controlling interest in the Company.

Related Party Transactions

On September 5, 2002, the Company s Board of Directors and the Company s Audit Committee approved the issuance of options to directors as set forth in the following chart:

Name of directors	Position	# of options
Giora Dishon	Director, CEO & President	60,000
Moshe Finarov	Director & CTO	50,000
Meir Shannie	Director	10,000
Avi Kerbs	Director	10,000
Joseph Ciechanover	Director	10,000

The options were granted during 2003 and are subject to the terms and conditions of the Company s option plan 6. The options vest over a period of between one and three years and their term may not exceed seven years from the date of grant. The exercise price of these options is $2.06 per share.

In 2002, the Company obtained directors and officers liability insurance for its officers and directors with coverage in an aggregate amount of $5,000,000. This coverage was renewed in 2003. In addition, the Company undertook to indemnify the Company s officers and directors up to an aggregate amount of $15,000,000 pursuant to the terms set forth in an Indemnification and Exculpation Letter. The Indemnification and Exculpation Letter also exculpates the officers and directors from certain liabilities relating to their positions and directors and officers with in the framework allowed under the Israeli Company s Law. The shareholders further approved our undertaking to indemnify our officers and directors within the framework allowed under Israeli Company s Law up to an aggregate amount of 15,000,000$. Under the Companies Law, a company is prohibited from undertaking to indemnify its officers or directors against: (i) breaches of fiduciary duty to the Company (other than with respect to actions taken in good faith and upon reasonable grounds that such actions shall not adversely affect the Company); (ii) breaches of the duty of care which were made either intentionally or recklessly; (iii) an action intended to produce unlawful personal profit; or (iv) a fine imposed upon the Officer. The directors and officers insurance and Indemnification and Exculpation Letter, to the extent applicable to directors, were approved by the Company s shareholders on October 31, 2002, covering acts and omissions made in their status as officers; worldwide (including the US and Canada). Company s undertakings under the Indemnification and Exculpation Letter are subject to its undertaking made under its F-1 according to which it shall not be bound to indemnify and exculpate its directors and officers if such undertaking shall be held contradictory to public policy under the ruling of the competent court.

As of May 15, 2003 we entered into an agreement with Mr. Barry L. Cox according to which Mr. Cox serves as chairperson of our board of directors. Under the agreement, Mr. Cox is entitled to gross annual compensation of $50,000 as well as a one-time grant of options to purchase up to 50,000 ordinary shares of the Company, at the fair market value of the shares at the time of grant. The options vest during a three year period so that a third of the entire amount granted to Mr. Cox shall be exercisable upon each anniversary of the grant.

On May 15, 2003, the Company s Board of Directors and Audit Committee resolved (i) that the monthly gross salary of Dr. Dishon shall be increased to 44,000 NIS (approximately $9,800) for the period February 1, 2003 through July 31, 2003 and increased to 50,000 NIS (approximately $11,120) starting on August 1, 2003 and (ii) that the monthly gross salary of Dr. Finarov shall be increased to 40,000 NIS (approximately $8,900) for the period February 1, 2003 through July 31, 2003 and increased to 44,000 NIS (approximately $9,800) starting on August 1, 2003. These changes in the terms of compensation for Drs. Dishon and Finarov were approved by our shareholders on September 1, 2003.

On July 1, 2003 and on July 10, 2003 the Company s Audit Committee and Board of Directors respectively, resolved to grant each of Lauri Hanover and Karey Holland whom serve as the Company s external directors, an option to purchase up to 10,000 ordinary shares of the Company under the term set forth in Option Plan 6, which were approved by the Company s shareholders on October 31, 2002. These resolutions were approved by the Company s shareholders on September 1, 2003. The options were granted under option plan 6 in the same terms of all other directors. The exercise price of these options is $2.06 per share.

On January 30, 2004, the Company s Board of Directors and the Company s Audit Committee approved the issuance of options to directors as set forth in the following chart:

Name of directors	Position	# of options
Giora Dishon	Director, CEO & President	65,000
Moshe Finarov	Director & CTO	55,000
Micha Brunstein	Director	10,000
Avi Kerbs	Director	10,000
Joseph Ciechanover	Director	10,000
Alon Dumanis	Director	10,000
Lauri Hanover	Director	10,000
Karey Holland	Director	10,000

These grants were approved by the shareholders on March 31, 2004. The options were granted during March 2004 and are subject to the terms and conditions of the Company s Option Plan 7. The options vest over a period of between one and four years and their term may not exceed seven years from the date of grant. The exercise price of these options is $5.15 per share.

Item 8. Financial Information

Consolidated Financial Statements

See Financial Statements on page 65 of this report and pages F-1 through F-21.

Significant Changes

No significant change has occurred since the date of the annual financial statements.

Legal Proceedings

From time to time, we are a party to legal proceedings and claims in the ordinary course of business. We are not currently a party to any material legal proceedings.

In 1998, Intel Corporation (Intel), a major customer and former shareholder, notified us by letter that a lawsuit had been filed against a number of semiconductor manufacturers, including Intel, by the Lemelson Medical, Education & Research Foundation. The suit alleged that these semiconductor manufacturers infringed upon U.S. patents owned by Lemelson. In its 1998 letter, Intel requested that we defend, indemnify and hold it harmless against the Lemelson claims to the extent the claims resulted from the use of the products we sold to Intel. We did not undertake the defense or agree to hold Intel harmless as it requested. Subsequently, in January 2004, in a suit filed against Lemelson by Cognex Corporation,but not involving Intel or Nova, the United States District Court for the District of Nevada found that various Lemelson patents, including those upon which Lemelson based its claims against Intel, were invalid and not enforceable. We, therefore, believe that we will not have any liability to Intel in connection with the Lemelson suit against Intel and other semiconductor manufacturers. We have, however, not received any formal communication from Intel withdrawing its request for defense and indemnification.

Dividend Policies

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.

We obtained the status of approved enterprise under the Law for the Encouragement of Capital Investments, 1959, under which we may certain realize tax exemptions. We may further obtain such status in the future. If we distribute a cash dividend from income which is tax exempt, we would have to pay corporate tax at the rate of up to 25% on the amount equal to the amount distributed and on the amount of corporate tax which would have been due in the absence of the tax exemption, in addition to withholding tax on such dividends paid. For further description of the conditions limiting our ability to declare and pay dividends see Israeli Taxation .

The distribution of dividends may also be limited by the Israeli Companies Law, which permits the distribution of dividends only out of retained earnings or earnings derived over the two most recent fiscal years, whichever is higher, provided that there is no reasonable concern that payment of a dividend will prevent a company from satisfying its existing and foreseeable obligations as they become due. Our Articles provide that dividends will be paid at the discretion of, and upon resolution by, our board of directors.

Export Sales

Substantially all of our products are sold to customers located outside Israel.

Item 9. The Offer and Listing

Offer and listing details

The information presented in the table below presents, for the periods indicated, the reported high and low closing sales prices on the Nasdaq National Market of our ordinary shares. The shares began trading on the Nasdaq National Market on April 11, 2000 at a price of $18 per share. Our ordinary shares were registered for trading on the Tel Aviv Stock Exchange in 2002 and the table below presents, for the periods indicated, the reported high and low sales prices on the Tel Aviv Stock Exchange.

Nasdaq National Market

		Price per share (US$)	
		High	**Low**
Yearly highs and lows			
2000		21.94	6.56
2001		10.97	2.46
2002		4.54	0.86
2003		7.19	1.42
Quarterly highs and lows			
2002			
	First quarter	4.54	3.45
	Second quarter	3.70	2.19
	Third quarter	2.25	1.12
	Fourth quarter	2.00	0.86
2003			
	First quarter	2.62	1.42
	Second quarter	4.30	2.22
	Third quarter	5.78	3.21
	Fourth quarter	7.19	4.62
2004			
	First quarter	8.20	5.15
Monthly highs and lows			
2003			
	November	7.37	5.62

	December	7.06	5.18
2004			
	January	8.20	5.90
	February	7.80	6.34
	March	6.64	5.15
	April	7.30	5.40
	May	5.38	3.97

Tel Aviv Stock Exchange *

	Price per share (NIS)	
	High	**Low**
Yearly highs and lows		
2002	1,158	1,080
Quarterly highs and lows		
2002		
Second quarter	1,158	1,158
Third quarter	1,158	1,158
Fourth quarter	1,080	1,080

* Since the fourth quarter of 2002, there has been no market activity at the TASE.

Item 10. Additional Information

Set forth below is a summary of certain provisions of the Company s memorandum and articles of association, as amended to date, and Israeli law affecting shareholders of the Company. This summary does not purport to be complete and is qualified in its entirety by reference to our memorandum and articles of association and such law.

Registration. The Company was incepted and registered in the Israeli Registrar of Company s on May 17, 1993, under registration number 51-181-246-3.

Purpose of the Company. The purposes of the Company, as provided by Article B(3) of our memorandum and articles of association, are (a) 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, (b) to initiate, participate, manage, execute, import and export any kind of project within the borders of the State of Israel and/or outside Israel, (c) 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 (d) to engage in any legal activity, both in Israel and abroad.

Approval of Related Party Transaction; Corporate Borrowings. The Israeli Companies Law requires that an office holder of a company, including directors and executive officers, promptly disclose to the board of directors of that company any personal interest that the office holder or the affiliates of the office holder may have and all related material information known about any existing or proposed transaction with the company. Once the office holder complies with this disclosure requirement, the approval of the board of directors is required for the transaction unless the articles of association provide otherwise. If the transaction is an extraordinary transaction, it also requires the approval of the audit committee prior to its being approved by the board of directors. In the event that the transaction is between the company and a director regarding the director s terms of engagement with the company, including with regard to other positions in the company filled by the director, the transaction would require the approval of the audit committee and then the board of directors and the shareholders.

The Companies Law applies the same disclosure requirements to a controlling shareholder of a public company. A controlling shareholder is a shareholder who has the ability to direct the activities of a company, including a shareholder that owns 25% or more of the voting rights if no other shareholder owns more than 50% of the voting rights, but excluding a shareholder whose power derives solely from his or her position on the board of directors or any other position with the company. Approving and extraordinary transaction with a controlling shareholder requires the approval of the Company s audit committee, the board of directors and the Company s shareholders. Approval by the Company s shareholder must be by the affirmative vote of a majority of the shares attending in person or by proxy and, in addition, at least one third of the holders of shares who are not controlling shareholders attending in person or represented by proxy must vote in favor of the proposal, or the aggregate number of shares voted against the proposal must not exceed one per cent (1%) of the Company s issued and outstanding shares.

Under our articles of association, a transaction by the Company with an officer or director of the Company, in which transaction such officer or director has a personal interest, other than an extraordinary transaction, does not require any board or shareholder approval. Interested board members may not vote on extraordinary transactions. Arrangements regarding the compensation of directors are considered extraordinary transactions and require approval by the board or directors, audit committee and the shareholders. Arrangements as to compensation of officers who are not directors require approval only by the board of directors.

Under regulations promulgated under the Companies Law regarding payment of compensation to external directors, compensation of external directors shall be comprised of annual compensation ranging from NIS 26,000 to NIS 42,425 and a per meeting payment ranging from NIS 925 to NIS 1,625. These amounts are adjusted twice a year in accordance with the Israeli consumer price index. However, with regard to a company, which shares are traded in an exchange outside of Israel, and is subject to laws which impose upon the external directors demands which exceed the demands imposed upon them under Israeli law, the maximum amount payable to the external directors is 100,000NIS per annum and 3,000 NIS per meeting. The approval of the shareholders of the Company is required for such compensation, unless it is at a fixed amount set forth in these regulations. Additionally, external directors are entitled to compensation in stock (including by way of granting options to purchase the Company s stock), provided that such compensation is granted within the framework of a stock incentive plan applicable to all other directors and further provided the amount of stock granted or purchasable shall not fall below the lowest amount granted to any other director and shall not exceed the average amount of stock granted to all other directors.

Our articles of association grant broad powers to the board of directors to authorize the Company to borrow funds, repay borrowings, make guarantees and grant security interests in borrowings. There is no mandatory retirement age for the Company s directors and a director need not be a shareholder of the Company.

Share Capital. The Company currently has one class of ordinary stock, 0.01 NIS par value per share. Our articles of association provide that the board of directors may declare dividends out of funds legally available therefor. Under the Israeli Companies Law, dividends may be paid out of net earnings, as calculated under that law, for the two years preceding the distribution of the dividend and retained earnings, provided that there is no reasonable concern that the dividend will prevent the company from satisfying its existing and foreseeable obligations as they become due. For more information, see the Company s balance sheet and the statement of shareholders equity in the financial statements.

Changes of Rights of Holders of the Ordinary Shares. The rights attached to the ordinary shares may be changed, converted, expanded or altered in any other way by the shareholders with the vote of the holders of at least 75% of the ordinary shares.

Shareholders Meetings. An annual meeting shall be convened at least once every calendar year, and no later than 15 months after the preceding annual meeting, to deliberate on the financial reports, appointment of directors, appointment of an auditing accountant, and any other matter which the board of directors places on the agenda of the annual meeting, at a time and place that the board of directors shall determine. An extraordinary meeting may be called by the board of directors and at the demand of any of the following: two directors or one-quarter of the directors then serving; one or more shareholders who hold at least five per cent of the issued and outstanding capital stock and at least one percent of the voting rights in the Company; or one or more shareholders who hold at least five percent of the voting rights in the Company.

According to our articles of association, the quorum required for an ordinary meeting of shareholders is at least two shareholders present in person or by proxy who together hold or represent in the aggregate more than one this (33.33%) of the voting power. A meeting adjourned for lack of a quorum is adjourned to the same day in the following week at the same time and place or any time and place as the chairman may designate with the consent of a majority of the shareholder votes cast on the matter. At the reconvened meeting, the required quorum consists of any number of members present in person or by proxy, regardless of the number of shares represented. Israeli Companies Law and regulations determine that prior notice of no less than 21 days should be given the company s shareholders, prior to convening a meeting however, the law further prescribes that the board of directors may determine a shorter notice period provided that it does not fall below 14 days and that notices may be provided by way of publishing notice of such meeting in a new paper of general circulation.

There are no limitations on the rights of non-resident or foreign owners to hold or vote ordinary shares imposed under Israeli law or under the Company s memorandum or articles of association.

Board of Directors. Our articles of association provide that directors may be elected either at our annual general meeting or an extraordinary meeting of shareholders by a vote of the holders of at least 50% of the total number of votes represented at such meeting. In addition, our board of directors is authorized to appoint directors, at its discretion, provided that the total number of directors shall not exceed the maximum number of directors permitted by our articles of association. Each of our directors holds office until the next annual general meeting of shareholders. However, in accordance with the Companies Law, our external directors serve for three years. The Companies Law requires that the offices of the Chief Executive Officer and the Chairman of the board of directors be held by different persons. However, the Companies Law further provide that those positions may be held by the same person for a period not exceeding three years if approved by a majority of the company s shareholder which shall include at least two thirds of the voting shareholders which are not controlling shareholders.

External directors may be elected at our annual general meeting or an extraordinary meeting of our shareholders in a number and manner stipulated by law, namely, for a term of three years which may be renewed for only one additional three year term and requires the affirmative vote of a majority of the shares and in addition either that (i) at least one third (33.33%) of the holders of shares who are not controlling shareholders attending in person or represented by proxy have voted in favor of the proposal, or (ii) the aggregate number of shares voting against the proposal have not exceeded one per cent (1%) of the Company s issued and outstanding share capital. External directors may be removed from office only under the following circumstances: (i) an external director ceases to meet the legal requirements for appointment as an external director or breaches his or her fiduciary duty to the Company and a resolution to remove such outside director is made by the shareholders at a meeting at which such external director is granted a reasonable opportunity to express his position; (ii) an external director ceases to meet the legal requirements for appointment as an external director or breaches his or her fiduciary duty to the Company and a court orders that such director be removed; or (iii) an external director is unable to perform his or her duties or is convicted of certain felonies and a court orders that such director be removed.

The board of directors has the authority to issue preferred stock in one or more classes or series and to fix the voting powers, preferences and relative participating, optional or other special rights of such preferred stock, without any further vote or action by the shareholders. The authority given to the board of directors to issue preferred stock without seeking the approval of the shareholders may have the effect of delaying a change in control of the Company.

Changes in Capital. Our share capital may be increased or decreased by a vote of the holders of at least 75% of the shares present at the shareholders meeting.

Acquisition of a Controlling Stake. According to the Company s Law, an acquisition of a controlling stake , defined as 25% or more of the voting rights unless another shareholder holds 25% or more of the voting rights, or an acquisition pursuant to which such purchaser shall hold 45% or more of the voting rights of the company if no other shareholder owns more than 50% of the voting rights, may not be preformed by way of market accumulation but only by way of a tender offer made to all of the company s shareholders on a pro rata basis. Such offer needs to be approved by the company s shareholders. A shareholder may be free to object to such offer without such objection being deemed as waiver of his right to sell its respective shares if the transaction is approved by a majority of the company s shareholders despite his objection. Shares purchased not in accordance with those provisions shall become dormant shares and shall not grant the purchaser any rights so long as held by the purchaser.

Merger. The Companies Law requires an acquirer of a public company s shares who wishes to acquire all of the company s shares without the approval of its minority shareholders to acquire at least 95% of all outstanding shares. Even if the acquirer acquires 95% of the outstanding shares, the remaining minority shareholders may seek to block the acquisition in court.

The Companies Law provides that corporate mergers require the approval of both companies boards of directors and shareholders. In the event, however that shares of the target company are held by the acquiring company or by a person holding 25% or more of the shares of the acquiring company, the merger will not be approved if a majority of the shareholders of the target company attending and voting at the meeting at which the merger is considered (without taking into account, for that purpose, the shares held by the acquiring company or by a person holding 25% or more of the shares of the acquiring company) object to and do not vote in favor of the merger. If a person holds 25% or more of the shares of more than one merging company, the same provisions shall apply with regard to the shareholders vote with respect to each such company. Upon the request of a creditor of either party to the proposed merger, the Israeli courts may delay or prevent the merger if the courts conclude that there exists a reasonable concern that as a result of the merger the surviving company will be unable to satisfy the target company s obligations. Furthermore, a merger may not close unless at least 70 days have passed from the time that the requisite approvals of the merger have been filed with the Israeli Registrar of Companies.

In addition, the Companies Law preserves provisions of its predecessor, the Companies Ordinance, dealing with arrangements between a company and its shareholders. These arrangements may be used to effect squeeze out transactions in which the target company becomes a wholly owned subsidiary of the acquirer. These provisions generally require that the merger be approved by at least 75% of the shares of participating shareholders and a majority of the shareholders voting at a shareholders meeting. In addition to shareholder approval, court approval of the transaction is required, which entails further delay.

A merger, the acquisition of a controlling stake or any transaction in which all or substantially all the assets of a company are de facto transferred to another company, may require the approval of the Israeli Commissioner of Restrictive Trade Practices, in the event that the aggregate annual sales volume in Israel of all the companies which are parties to such transaction, exceeds 150,000,000NIS (approximately $33,000,000, an amount which is adjusted on a semi annual basis), and also if after the consummation of such transactions, the joint market, in Israel, or at any identified geographic part of Israel will be in excess of 50% with respect to such products and services.

Material Contracts

Lease Agreement between Nova and Ef-Shar Ltd. dated May 28, 2000 for Nova s facilities in Israel. A summary of this lease is provided at Exhibit 4.13.

Exchange Controls

Non-residents of Israel who purchase our ordinary shares outside of Israel with U.S. dollars or other foreign currency will be able to convert dividends (if any) thereon, and any amounts payable upon the dissolution, liquidation or winding up of the affairs of the Company, as well as the proceeds of any sale in Israel of the ordinary shares to an Israeli resident, into freely repatriable dollars, at a rate of exchange prevailing at the time of conversion, pursuant to regulations issued under the Currency Control Law, 1978, provided that Israeli income tax has been withheld by the Company with respect to such amounts. Israeli residents are eligible to purchase securities of certain companies, including our ordinary shares, if they are listed on a foreign exchange in a designated country, which is defined to include the Nasdaq.

Taxation

The following summary describes the current tax structure applicable to companies in Israel, with special reference to its effect on us. It also discusses Israeli tax consequences material to persons holding our ordinary shares. Because some parts of the summary are based on new tax legislation yet to be judicially or administratively interpreted, we cannot be sure that the views expressed will accord with any future interpretation. The summary is not intended, and should not be construed, as legal or professional tax advice and does not exhaust all possible tax considerations. Accordingly, you should consult your own tax advisor as to the particular tax consequences of an investment in our ordinary shares.

Tax Reform

During the year 2002, tax reform legislation was enacted with effect from January 1, 2003, which significantly changed the taxation basis of corporate and individual taxpayers from a territorial basis to a worldwide basis. From such date, an Israel resident taxpayer will be taxed on income produced and derived both in and out of Israel. The main provisions of the tax reform that may affect the Company are as follows:

Transfer pricing of international transactions with related parties.
The Income Tax Ordinance was amended to include provisions concerning transfer pricing between related parties, where one of the parties is situated abroad. Detailed provisions are to be included in Income Tax Regulations that have yet to be issued. Although the Company considers that the transfer pricing policy adopted with foreign affiliates is economically fair, an adjustment may be required following the issue of the said Regulations.

Employee stock incentive plans.
The tax reform codified past practice and determined three alternative tracks for taxing employee stock option plans. Where a trustee arrangement is in place, the employer can either claim an expense for tax purposes while the employee will be fully taxed up to the maximum marginal tax rate of 50% or the Company can waive the tax expense and the employee will pay a reduced tax rate of 25%. Where there is no trustee arrangement, the employee is fully taxable and no expense is allowed to the Company. There are detailed provisions for implementing these tracks. For Option Plans 6 and 7, which were allocated after the implementation of the tax reform, the Company has used the trustee arrangement, with waiver of the tax expense for the company and employee payment of reduced tax rate of 25%. As a result of the reform, the income tax authorities may allow a change of tracks with regard to unvested options issued under option plans prior to the tax reform taking effect, subject to the optionees agreeing to certain restrictions. We are currently examining our ability to effectively change such tracks with regard to Option Plans 3, 4 and 5.

Controlled foreign company (CFC).
The amendment to the law introduced Controlled Foreign Company (CFC) provisions, which, in certain circumstances, will lead to the Israeli company being charged tax on passive income of foreign affiliates as if it had received a dividend from such companies.

Capital gains tax.
Capital gains tax is reduced to 25% from 36%, except with respect to capital gains from marketable securities, with transitional provisions for assets acquired prior to January 1, 2003. For further discussion see below Capital Gains Tax .

C*arrying forward of capital losses.*
The seven year limit for carrying forward of capital losses has been removed with respect to capital losses arising from 1996 and thereafter.

General Corporate Tax Structure

Israeli companies are taxed at a rate of 36% of taxable income. However, the effective tax rate payable by a company that derives income from an approved enterprise may be considerably less, as further discussed below.

Tax Benefits under the Law for the Encouragement of Capital Investments, 1959

The Law for the Encouragement of Capital Investments, 1959, provides that upon application to the Investment Center of the Ministry of Industry and Commerce of the State of Israel, a proposed capital investment in eligible facilities may 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, such as the equipment to be purchased and utilized under the program. The tax benefits derived from this certificate of approval relate only to taxable income derived from growth in operations as determined generally by the growth in manufacturing revenues attributable to the specific approved enterprise. If a company has more than one approval or only a portion of its capital investments are approved, its effective tax rate is the result of a weighted combination of the applicable rates. The tax benefits under the law are not available for income derived from products manufactured outside of Israel.

Taxable income of a company derived from an approved enterprise is taxed at the maximum rate of 25%, rather than the usual rate of 36%, for the benefit period. This period is ordinarily seven years commencing with the year in which the approved enterprise first generates taxable income, and is limited to 12 years from the year of commencement of operations, as determined by the Investment Center, or 14 years from the year of approval, whichever is earlier.

A company owning an approved enterprise may elect to receive an alternative package of benefits. Under the alternative package, the company s undistributed income derived from an approved enterprise will be exempt from tax for a period of between two and ten years from the first year of taxable income, depending on the geographic location of the approved enterprise within Israel, subject to the 12- and 14-year limitations, and the company will be eligible for the tax benefits under the law for the remainder of the benefits period.

A company that has an approved enterprise program is eligible for further tax benefits if it qualifies as a foreign investors company. A foreign investors company is a company more than 25% of whose share capital and combined share and loan capital is owned by non-Israeli residents. A company, which qualifies as a foreign investors company and has an approved enterprise program is eligible for tax benefits for a ten-year benefit period instead of the ordinary seven-year period. Income derived from the approved enterprise program will be exempt from tax for a specified period and will be taxed at a reduced rate for the rest of the period. The tax rate for the additional eight years is 25%, unless the level of foreign investment exceeds 49%, in which case the tax rate is 20% if the foreign investment is more than 49% and less than 74%, 15% if more than 74% and less than 90%, and 10% if 90% or more.

The Investment Center bases its decision of whether to approve or reject a company s application for designation as an approved enterprise on criteria set forth in the law and related regulations, the then prevailing policy of the Investment Center and the specific objectives and financial criteria of the applicant. Accordingly, a company cannot be certain in advance whether its application will be approved. In addition, the benefits available to an approved enterprise are conditional upon compliance with the conditions stipulated in the law and related regulations and the criteria set forth in the specific certificate of approval. In the event that a company violates these conditions, in whole or in part, it would be required to refund the amount of tax benefits plus an amount linked to the Israeli consumer price index and interest.

A major portion of our production facilities has been granted the status of approved enterprises. Income arising from our approved enterprise facilities is tax-free under the alternative package of benefits described above and entitled to reduced tax rates of up to 25%, based on the level of foreign ownership for specified periods. We have derived, and expect to continue to derive, a substantial portion of our income from our approved enterprise facilities. In general, the benefits for most of our current production facilities in Israel will continue until termination in 2006. Our current investments in facilities are made under new approvals, the benefits of which will continue no longer than 2009.

An approved enterprise may elect to distribute dividends from taxable or tax-exempt income. Dividends distributed from taxable income are considered to be attributable to the entire taxable income of the enterprise and their effective tax rate is the result of a weighted combination of the applicable tax rates. We currently intend to reinvest the amount of our income and not to distribute such income as a dividend. In the event that we do pay a cash dividend from income that is derived from our approved enterprises under the alternative package of benefits, which income would normally be tax-exempt, we would be required to pay tax on the amount intended to be distributed as dividends at the rate which would have been applicable had we not elected the alternative package of benefits, generally 10% to 25%, depending on the percentage of our

shares held by foreign shareholders. The dividend recipient is taxed at the reduced rate of 15% applicable to dividends from approved enterprises if the dividend is distributed during the tax-exemption period or within 12 years thereafter. We would be required to withhold this tax at source, as final tax in Israel. See U.S. Taxation - Distributions on the Ordinary Shares and Note 11 to our Consolidated Financial Statements.

The law also provides that an approved enterprise is entitled to accelerated depreciation on property and equipment included in an approved investment program, generally ranging from 200% for equipment, to 400% for buildings, of ordinary depreciation rates during the first five tax years of the operation of these assets with a ceiling of 20% per year for depreciation on buildings.

Tax Benefits for Research and Development

Israeli tax law allows a tax deduction in the year incurred for expenditures, including capital expenditures, in scientific research and development projects, if the projects are approved by the relevant Israeli government ministry and the research and development is for the promotion of the enterprise. Expenditures from projects not so approved are deductible over a three-year period. However, expenses made out of proceeds made available to us through government grants are not deductible according to Israeli law.

Tax Benefits under the Law for the Encouragement of Industry (Taxes), 1969

According to the Law for the Encouragement of Industry (Taxes), 1969, an industrial company is a company located in Israel, of which at least 90% of the income, exclusive of income from defense loans, capital gains, interest and dividends, is derived from an industrial enterprise owned by it. An industrial enterprise is defined as an enterprise whose major activity in a given tax year is industrial production activity. We believe that we currently qualify as an industrial company within the definition of the Law for the Encouragement of Industry (Taxes), 1969.

Under the law, industrial companies are entitled to the following preferred corporate tax benefits:

deduction of purchases of know-how and patents over an eight-year period for tax purposes;

deduction of specified expenses incurred in connection with a public issuance of securities over a three-year period for tax purposes, although Israeli tax authorities have indicated that they do not allow these deductions in connection with offerings outside of Israel;

an election to file a consolidated tax return with related Israeli industrial companies that satisfy conditions set forth in the law; and

Additionally, certain tax laws and regulation allow accelerated depreciation rates on equipment and buildings for industrial companies while referring to the definition of industrial company set out by the Law for the Encouragement of Industry (Taxes), 1969.

Eligibility for the benefits under the law does not require receipt of prior approval from any governmental authority. However, the Israeli tax authorities may determine that we do not qualify as an industrial company. In addition, we might not continue to qualify as an industrial Company in the future. As a result of either of the foregoing, the benefits described above might not be available in the future.

Special Provisions Relating to Taxation Under Inflationary Conditions

The Income Tax Law (Inflationary Adjustments) (the Inflationary Adjustments Law), 1985 represents an attempt to overcome the problems presented to a traditional tax system by an economy undergoing inflation. The law is highly complex. Its features that are material to us can be described as follows:

A special tax adjustment for the preservation of equity whereby corporate assets are classified broadly into fixed, or inflation immune assets and non-fixed, or soft assets. Where a company s equity exceeds the depreciated cost of its fixed assets, the company may take a deduction from taxable income, including tax-exempt income, that reflects the effect of multiplication of the annual rate of inflation on this excess, up to a ceiling of 70% of taxable income, including tax exempt income, in any single tax year, with the unused portion carried forward on a linked basis. If the depreciated cost of fixed assets exceeds a company s equity, then the excess multiplied by the annual rate of inflation is added to taxable income.

Depreciation deductions on fixed assets and losses carried forward are generally adjusted for inflation based on the increase of the Israeli consumer price index.

Gains on traded securities, which are normally exempt from tax, are taxable in specified circumstances. However, the regular tax rules governing business income in Israel apply to dealers in securities.

In accordance with an amendment to the Inflationary Adjustments Law, the Minister of Finance may, with the approval of the Knesset Finance Committee, determine by order, during a certain fiscal year (or until February 28th of the following year), in which the rate of increase of the price index would not exceed or shall not have exceeded, as applicable, 3%, that all or some of the provisions of this law shall not apply to such fiscal year, or, that the rate of increase of the price index relating to such fiscal year shall be deemed to be 0%, and to make the adjustments required to be made as a result of such determination.

Capital Gains Tax

Israeli law imposes a capital gains tax on the sale of capital assets. The law distinguishes between the inflationary surplus and the real gain. The inflationary surplus is a portion of the total capital gain, which is equivalent to the increase of the relevant asset s purchase price that is attributable to the increase in the Israeli consumer price index between the date of purchase and the date of sale. The real gain is the excess of the total capital gain over the inflationary surplus. Inflationary surplus accumulated after December 31, 1993 is exempt from any capital gains tax in Israel. The real gain is added to ordinary income, which is taxed at ordinary rates of 30% to 50% for individuals and 36%, up to December 31, 2002 and 25% thereafter for corporations. Prior to the reform, individuals were exempt from capital gains tax on the sale of shares listed for trade in certain stock exchanges, including Nasdaq under certain conditions.

As a result of the recent tax reform legislation in Israel, gains from the sale of our ordinary shares and warrants to purchase our ordinary shares derived from January 1, 2003 and on will in general be liable to capital gains tax of up to 15% so long as our shares are eligible for sale on a designated foreign stock market such as Nasdaq. However, according to the tax reform subordinate legislation, non-residents of Israel will be exempt from any capital gains tax from the sale of our securities so long as the gains are not derived through a permanent establishment that the non-resident maintains in Israel, and so long as our securities remain listed for trading as described above. These provisions dealing with capital gains exemptions are not applicable to a person whose gains from selling or otherwise disposing of our securities are: (i) deemed to be business income (such as a broker or dealer); (ii) whose taxable income is determined pursuant to the Israeli Income Tax Law (Inflation Adjustments), 1985; or (iii) who purchased our shares prior to our initial public offering. The Israeli Income Tax Law (Inflation Adjustments) would not normally be applicable to non-resident shareholders who have no business activity in Israel.

In any event, under the US-Israel Tax Treaty, a US treaty resident may only be liable for Israeli capital gains tax on the sale of our ordinary shares (subject to the provisions of Israeli domestic law as described above) if that US treaty resident holds 10% or more of the voting power in our company.

Under a treaty between the governments of the United States and Israel, Israeli capital gains tax does not apply to the sale, exchange or disposition of ordinary shares by a person who qualifies as a resident of the United States within the meaning of the treaty and who is entitled to claim the benefits afforded to such resident by the treaty. This exemption does not apply if the person holds, directly or indirectly, ordinary shares representing 10% or more of our voting power during any part of the 12-month period preceding the applicable sale, exchange or disposition. However, the person would be permitted to claim a credit for the capital gains tax paid in Israel against the U.S. income tax imposed for the applicable sale, exchange or disposition, subject to the limitations in U.S. laws applicable to foreign tax credits. The U.S.-Israel Tax Treaty does not relate to the U.S. state or local taxes.

Taxation of the Ordinary Income of Non-Resident Holders of Our Shares

Non-residents of Israel pay income tax on income accrued or derived from sources in Israel. These sources of income include passive income such as dividends, royalties and interest, as well as non-passive income from services rendered in Israel. On distributions of dividends other than bonus shares, or stock dividends, income tax at the rate of 25% is withheld at source. If the income out of which the dividend is being paid is attributable to an approved enterprise, the rate is 15%. A different rate may be provided in a treaty between Israel and the shareholder s country of residence. Under the U.S.-Israel Tax Treaty, the maximum tax on dividends paid to a U.S. resident is 25% however, the tax rate is reduced to 12.5% for dividends not generated by an approved enterprise to a corporation which holds 10% or more of the company s voting power during a certain period preceding the distribution of the dividend. Also, under the treaty with the U.S., if the income out of which the dividend is being paid is attributable to an approved enterprise and the non-resident is a U.S. corporation that holds 10% of the company s voting power, the rate is 15%.

A non-resident of Israel who receives interest, dividend or royalty income derived from or accrued in Israel, from which tax was withheld at the source, is generally exempt from the duty to file tax returns in Israel on such income, provided that income was not derived from a business conducted in Israel by the taxpayer.

Under Israeli law, non-Israeli corporations might be required to pay Israeli taxes on the sale of traded securities in an Israeli Company, taking into consideration the provisions of any applicable double taxation treaty.

Foreign Exchange Regulations

Non-residents of Israel who hold our ordinary shares are able to receive any dividends, and any amounts payable upon the dissolution, liquidation and winding up of our affairs, freely repatriable in non-Israeli currency at the rate of exchange prevailing at the time of conversion. However, Israeli income tax is required to have been paid or withheld on these amounts. In addition, there are currently no Israeli currency control restrictions on the proceeds from the sale of ordinary shares. However, legislation remains in effect by which currency controls can be imposed by administrative action at any time.

U.S. TAXATION

The following describes the material United States federal income tax consequences of the purchase, ownership and disposition of the 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 United States 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.

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 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.

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 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 dollar;
- persons who acquire their ordinary shares in a compensatory transaction;
- broker-dealers;
- insurance companies;
- tax-exempt organizations;
- financial institutions; and
- persons subject to the alternative minimum tax.

Availability of Reduced Tax Rates

U.S. legislation enacted in 2003 reduced to 15% the maximum U.S. Federal income tax rate on certain long-term capital gains and on qualifying dividends. Long-term capital gains from the sale of our ordinary shares would be eligible for this reduced rate. Dividends, if any, would also be eligible for this reduced rate, provided that we do not constitute a passive foreign investment company.

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 Israeli Taxation Taxation of Non-Resident Holders of Our Shares. In general, a 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 and accumulated earnings and profits, as determined for U.S. federal income tax purposes. 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 from the deemed disposition of the ordinary shares. Corporate holders generally will not be allowed a deduction for dividends received on the ordinary shares.

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 the 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 income of U.S. holders and the day the NIS are converted into U.S. dollars or otherwise are disposed of, will be taxable as ordinary income 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 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, 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 Companies

In general, a foreign (that is, non-U.S.) corporation will be a passive foreign investment company for any taxable year if either (1) 75% or more of its gross income in the taxable year is passive income, or (2) 50% or more of the average value of its gross assets in the taxable year is held for the production of, or produces, passive income. 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. 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 passive foreign investment company 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, 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 passive foreign investment company 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 passive foreign investment company, 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.

Status of Nova as a Passive Foreign Investment company. Under the income test, less than 75% of our gross income was passive income in 2003. The determination of our status under the asset test is more difficult, because that test requires a quarterly determination of the fair market value of our passive and non-passive assets. For 2003, because we continue to have substantial amounts of cash and short-term deposits and the market value of our ordinary shares has decreased, a determination of the value of our non-passive assets by reference to the market value of our ordinary shares would result in a conclusion that the average value of our passive assets exceeds 50% of the average value of our gross assets. Therefore, there is a risk that we were a passive foreign investment company in 2003 or we will be a passive foreign investment company in subsequent years. There is, however, no requirement that the fair market value of a company s assets be determined solely by reference to the market value of the company s stock. Accordingly, after making a determination of the gross fair market value of our non-passive assets, we believe that the average percentage of the value of our passive assets is less than 50% of the average gross fair market value of our total assets. If we will be treated as a passive foreign investment company 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 particular, if a U.S. holder makes a qualified electing fund election for all taxable years that the U.S. holder holds the ordinary shares during which we are treated as a passive foreign investment company, the U.S. holder will be required for each taxable year to include in income a pro rata share of our undistributed ordinary earnings and net capital gain, if any, as ordinary income and long-term capital gain, respectively. We will comply with all the requirements of the Code so that U.S. holders of our ordinary shares will be able to elect to treat Nova as a qualified electing fund if they so choose.

Alternatively, if a U.S. holder elects to mark-to-market its ordinary shares, the U.S. holder will generally include in income any excess of the fair market value of the ordinary shares at the close of each taxable year over the holder s adjusted basis in such stock. 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 stock. An election to mark-to-market generally will apply to the taxable year in which the election is made and all subsequent taxable years.

If a U.S. holder makes one of these two elections, 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.

A number of specific rules and requirements apply to both of these elections, and you are urged to consult your tax advisor concerning these elections if we become a passive foreign investment company.

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 31%. Backup withholding will not apply, however, to a holder who furnishes a correct taxpayer identification number or certificate of foreign status and makes any other required certification or who is otherwise exempt from backup withholding (for example, if you are a corporation). 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). Finalized Treasury Regulation, which are applicable to payments made after December 31, 2000, have generally expanded the circumstances under which information reporting and backup withholding may apply.

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.

Documents on Display

The documents referred to herein, including our memorandum and articles of association, can be obtained from the Company at its registered office at Weizmann Science Park, Building 22, 2nd Floor, Ness-Ziona 76100, Israel. In addition, the Company is subject to certain informational requirements of the Securities Exchange Act of 1934 and the rules and regulations promulgated thereunder. In accordance therewith, the Company files reports with the United States Securities and Exchange Commission (SEC). Reports and other information provided to the SEC by the Company may be inspected and copied at the public reference facilities maintained by the SEC at Room 1024, 450 Fifth Street, N.W., Washington, D.C. 20549. Information on the operation of the public reference facilities may be obtained by calling the SEC at 1-800-SEC-0330. In addition, certain of the Company s reports filed with the SEC are available on-line at www.sec.gov.

Item 11. Quantitative and Qualitative Disclosures About Market Risk

Market risk

Market risk represents the risk of loss that may impact the consolidated financial position, results of operations or cash flows of the Company. The Company is exposed to market risk in the area of foreign exchange rates, as described below.

The Company does not utilize financial instruments for trading purposes and holds no derivative financial instruments that could expose it to significant market risk.

Impact of Inflation and Currency Fluctuation

Substantially all of our sales are made in U.S. dollars. Over 50% of our expenses in 2003 were in dollars or in NIS linked to the dollar. Most of the remaining expenses were in NIS. The dollar cost of our operations in Israel is influenced by any increase and the timing of such increase, in the rate of inflation in Israel that is not offset by the devaluation of the NIS in relation to the dollar. During 2003, the value of the NIS increased against the dollar by 7.6%, while the consumer price index in Israel decreased 1.9%. During 2002, the value of the NIS decreased against the dollar by 7.3%, while the consumer price index in Israel increased by 6.5%. During 2001, the value of the NIS decreased against the dollar by 9.3%, while the consumer price index in Israel increased by 1.4%. See Note 2A of our Consolidated Financial Statements. We believe that the rate of inflation in Israel has had a minor effect on our business to date. However, our dollar costs in Israel will increase if inflation in Israel exceeds the devaluation of the NIS against the dollar or if the timing of this devaluation lags behind inflation in Israel. As of December 31, 2003, the majority of our net monetary assets were denominated in dollars and the remainder was denominated mainly in NIS. Net monetary assets that are not denominated in dollars or dollar-linked NIS are affected by the risk of currency fluctuations. In addition, approximately 5% of our expenses are in Euros. During 2003, the value of the Euro increased against the dollar by approximately 20%.

Based upon historical US dollar currency movement, the Company does not believe that reasonably possible near-term changes in the US dollar currency of 10% will result in a material effect on future earnings, financial position or cash flows of the Company.

In 2001, the Company entered into several currency-forward transactions (NIS/dollar) of approximately $8.8 million with settlement dates ranging from January to June 2002, designed to reduce cash-flow exposure to the impact of exchange-rate fluctuations on firm commitments of approximately $12 million. In accordance with SFAS 133 the Company recorded in 2001 an unrealized loss from the decrease of $212 in the fair market value of derivatives recorded as other comprehensive loss in the statement of changes of shareholders equity. The corresponding liability was separately reported as fair market value of forward contracts within other current liabilities . In 2002 this decrease was charged to operations on the relevant settlement dates.

In 2002, the Company did not enter into currency-forward transactions (NIS/dollar). The Company did enter into currency-put options transactions to insure (NIS/dollar) rate in 2002. The total accumulated sum insured in the year was approximately $4 million, and the results of these transactions did not have, as expected, material effect on the operational results of the Company.

In 2003, the Company entered into currency-forward and currency-put options transactions (NIS/dollar) to insure (NIS/dollar) rate in 2003. The total accumulated sum insured in the year was approximately $4 million (including $400,000, with settlement date of January 2004; see Note 14 to our Consolidated Financial Statements), and the results of these transactions did not have, as expected, any material effect on the operational results of the Company.

Item 12. Description of Securities Other than Equity Securities

Not applicable.

PART II

Item 13. Defaults, Dividend Arrearages and Delinquencies

None.

Item 14. Material Modification to the Rights of Security Holders and Use of Proceeds

The effective date of the Securities Act registration statement for which use of proceeds is being disclosed is April 11, 2000. The commission file number assigned to that registration statement is 333-11640.

We sold 3,000,000 ordinary shares for consideration of $54 million. The net proceeds amounted to $49.2 million. As of March 31, 2004, approximately $16.5 million of the net proceeds had been used for working capital requirements and $3.5 million for capital expenditures.

Item 15

Evaluation of disclosure controls and procedures

Based on their evaluation as of the end of the period covered by this Annual Report on Form 20-F, the Company s President and Chief Executive Officer and Chief Financial Officer have concluded that the Company s disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 (the Exchange Act)) are effective to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the Securities and Exchange Commission s rules and forms.

Changes in internal controls

During the fiscal year ended December 31, 2003, there were no significant changes in our internal controls over financial reporting or in other factors that could significantly affect these controls subsequent to the date of their evaluation.

Item 16

Reserved.

Item 16A.

Audit Committee Financial Expert

Our Board of Directors has determined that our Audit Committee includes one audit committee financial expert, Lauri Hanover.

Item 16B.

Code of Ethics

The Company has adopted a written code of conduct that applies to all Company employees, including the Company s directors, principal executive officer, principal financial officer and principal accounting officer.

You may review our code of conduct on our website, http://nova.co.il under Investor Relations section.

Item 16C

Principal Accountant Fees and Services

During each of the last two fiscal years, Brightman Almagor & Co., a member of Deloitte Touche Tohmatsu (Deloitte & Touche) has acted as the Company s independent auditors.

AUDIT FEES

Deloitte & Touche billed the Company approximately $34,000 for audit services for fiscal 2003, including fees associated with the annual audit and reviews of the Company s quarterly financial results submitted on Form 6-K, consultations on various accounting issues and performance of local statutory audits. Deloitte & Touche billed the Company approximately $32,000 for audit services in fiscal 2002.

AUDIT-RELATED FEES

Deloitte & Touche did not bill for any audit-related services in 2003 or 2002, except as included under the caption AUDIT FEES .

TAX FEES

Deloitte & Touche billed the Company approximately $2,000 for tax advice, including fees associated with tax compliance services, tax planning services and other tax consulting services for fiscal 2003. Deloitte & Touche billed the Company approximately $1,000 for tax advice in fiscal 2002.

ALL OTHER FEES

Deloitte & Touche billed the Company approximately $37,500 for services other than Audit Fees and Tax Fees described above for fiscal 2003. In fiscal 2003, such other services included consulting for office of the chief scientist grants refund and consulting regarding investment center application. Deloitte & Touche billed the Company approximately $1,000 for services other than Audit Fees and Tax Fees described above for fiscal 2002. In fiscal 2002, such other services included consulting regarding investment center application.

PRE-APPROVAL POLICIES FOR NON-AUDIT SERVICES

Prior to the engagement of Deloitte & Touche each year, the engagement is approved by the Audit Committee of the Board of Directors. The Company s Audit Committee rules of procedure provide for a process with respect to the prior approval of all services, including non-audit services, to be performed by the independent auditors for the Company. In fiscal 2003 and 2002, the Company s Audit Committee approved all of the services provided by Deloitte & Touche.

Item 16D

Exemptions from the Listing Standards for Audit Committees

None.

PART III

Item 17. Financial Statements

Not applicable.

Item 18. Financial Statements

See pages F-1 through F-22.

Item 19. Exhibits

Number	Description
1.1	Articles of Association (incorporated by reference to exhibit 3.1 to the Company s Registration Statement on Form F-1 (registration number 333-11640))
1.2	First Amendment to the Company s Articles of Association (incorporated by reference to the Company s Current Report on Form 6-K filed on June 4, 2002)
4.1	1997 Stock Option Plan (Plan 2) (incorporated by reference to exhibit 10.1 to the Company s Registration Statement on Form F-1 (registration number 333-11640))
4.2	Option Plan 3 (incorporated by reference to exhibit 10.2 to the Company s Registration Statement on Form F-1 (registration number 333-11640))
4.3	Option Plan 4A and 4B (incorporated by reference to exhibit 10.3 to the Company s Registration Statement on Form F-1 (registration number 333-11640))
4.4	Option Plan 5 (incorporated by reference to Exhibit 4.4 to the Company s Annual Report for 20-F for 2002 filed May 9, 2002
4.5	Option Plan 6 (incorporated by reference to Exhibit 4.1 to the Company s Registration Statement on Form S-8 filed December 24, 2002 (registration number 333-102193))

Number	Description
4.6	Employment Agreement between Nova and Giora Dishon (incorporated by reference to exhibit 10.4 to the Company s Registration Statement on Form F-1 (registration number 333-11640))
4.7	Employment Agreement between Nova and Moshe Finarov (incorporated by reference to exhibit 10.6 to the Company s Registration Statement on Form F-1 (registration number 333-11640))
4.8	Employment Agreement between Nova and Chai Toren (incorporated by reference to exhibit 10.7 to the Company s Registration Statement on Form F-1 (registration number 333-11640))
4.9	Employment Agreement between Nova and Ronen Frish (incorporated by reference to exhibit 10.8 to the Company s Registration Statement on Form F-1 (registration number 333-11640))
4.10	Agreements between Nova and the Office of the Chief Scientist in Israel (incorporated by reference to exhibit 10.10 to the Company s Registration Statement on Form F-1 (registration number 333-11640))
4.11	Certificate of Approval from the Investment Center in Israel (incorporated by reference to exhibit 10.11 to the Company s Registration Statement on Form F-1 (registration number 333-11640))
4.12	Lease Agreement between Nova and Ef-Shar Ltd. (incorporated by reference to Exhibit 4.14 to the Company s Annual Report on Form 20-F filed on May 9, 2002)
4.13	Summary of Lease Agreement between Nova and Ef-Shar Ltd. (incorporated by reference to Exhibit 4.15 to the Company s Annual Report on Form 20-F filed on May 9, 2002)
4.14	Letter Agreement between Barry Cox and the Company dated May 15, 2003 (incorporated by reference to Exhibit 4.1 to the Company s Registration Statement on Form S-8 filed on May 17, 2004 (registration number 333-115556))
4.15	Employee Stock Purchase Plan 1 (incorporated herein by reference to Exhibit 4.1 to the Company s Registration Statement on Form S-8 filed on March 24, 2003 (File No. 33-103981))
4.16	Letter of Indemnification and Exculpation for certain directors, officers and/or employees (incorporated herein by reference Annex A to the Company s Current Report on Form 6-K filed on October 8, 2002)
4.17	

	Option Plan 7A (incorporated by reference to Exhibit 41. to the Company s Registration Statement on Form S-8 filed on May 17, 2004 (registration number 333-115554))
8	List of Subsidiaries (filed herewith)
12.1	Certification required by Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended (filed herewith)
12.2	Certification required by Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended (filed herewith)
13.1	Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith)
13.2	Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith)
14.1	Consent of Brightman Almagor & Co. (filed herewith)

Signatures

Pursuant to the requirements of Section 12 of the Securities Exchange Act of 1934, the registrant certifies that it meets all of the requirements for filing on Form 20-F and has duly caused this annual report to be signed on its behalf by the undersigned, thereunto duly authorized.

NOVA MEASURING INSTRUMENTS, LTD.

By: /s/ Giora Dishon

Giora Dishon, President and Chief Executive Officer

Date: June 29, 2003

NOVA MEASURING INSTRUMENTS LTD.

CONSOLIDATED FINANCIAL STATEMENTS

AS OF DECEMBER 31, 2003

NOVA MEASURING INSTRUMENTS LTD.

CONSOLIDATED FINANCIAL STATEMENTS
AS OF DECEMBER 31, 2003

Contents

INDEPENDENT AUDITORS REPORT
TO THE SHAREHOLDERS OF
NOVA MEASURING INSTRUMENTS LTD.

We have audited the accompanying consolidated balance sheets of Nova Measuring Instruments Ltd. (the Company) and its subsidiaries as of December 31, 2003 and 2002, and the related consolidated statements of operations, shareholders equity and comprehensive loss and cash flows for each of the three years in the period ended December 31, 2003. These financial statements are the responsibility of the Company s management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by the Company s management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of the Company and its subsidiaries as of December 31, 2003 and 2002, and their consolidated results of operations and cash flows for each of the three years in the period ended December 31, 2003, in conformity with accounting principles generally accepted in the United States of America.

Brightman Almagor & Co.
Certified Public Accountants (Israel)
A member of Deloitte Touche Tohmatsu

Tel Aviv, Israel
February 18, 2004

NOVA MEASURING INSTRUMENTS LTD.
CONSOLIDATED BALANCE SHEETS
(In thousands, except share and per share data)

	As of December 31,	
	2003	**2002**
CURRENT ASSETS		
Cash and cash equivalents	$ 26,634	$ 36,964
Short-term interest-bearing bank deposits	711	622
Held to maturity securities	4,296	994
Trade accounts receivable (no allowance for doubtful accounts)	5,804	2,902
Inventories (Note 3)	4,152	3,150
Other current assets	1,244	1,049

	42,841	45,681
LONG-TERM ASSETS		
Long-term interest-bearing bank deposits	1,386	-
Other Long term assets	242	88
Severance pay funds (Note 6)	2,024	1,701
	3,652	1,789
FIXED ASSETS, NET (Note 4)	1,425	1,777
Total assets	$ 47,918	$ 49,247
CURRENT LIABILITIES		
Trade accounts payable	$ 5,389	$ 3,340
Other current liabilities (Note 5)	7,102	7,616
	12,491	10,956
LONG-TERM LIABILITIES		
Liability for employee termination benefits (Note 6)	2,653	2,162
Deferred Income	263	239
Other long-term liability (Note 9)	175	213
	3,091	2,614
COMMITMENTS AND CONTINGENCIES (Note 7)		
SHAREHOLDERS EQUITY (Note 8)		
Ordinary shares, NIS 0.01 par value - authorized 40,000,000 shares, issued and outstanding 15,117,538 and 14,929,867 shares, respectively	46	46
Additional paid-in capital	72,785	72,614
Deferred stock-based compensation	(122)	(809)
Accumulated other comprehensive income	13	-
Accumulated deficit	(40,386)	(36,174)
Total shareholders equity	32,336	35,677
Total liabilities and shareholders equity	$ 47,918	$ 49,247

The accompanying notes are an integral part of the consolidated financial statements.

NOVA MEASURING INSTRUMENTS LTD.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share data)

	Year ended December 31,		
	2003	2002	2001
REVENUES:			
Product sales	$ 21,152	$ 14,506	$ 14,735
Services	5,536	5,865	6,436
	26,688	20,371	21,171
COST OF REVENUES:			
Product sales	10,270	6,752	9,175
Services	6,265	6,601	7,295
	16,535	13,353	16,470
GROSS PROFIT	10,153	7,018	4,701
OPERATING EXPENSES			
Research and development expenses, net of participation by the OCS of $2,321, $1,679 and $1,839, respectively (Note 7)	8,561	9,894	13,253
Technology for use in research and development (Note 9)	-	1,478	-
Sales and marketing expenses	6,534	6,950	6,852
General and administrative expenses	1,898	1,797	3,032
Other operating expenses (Income) (Note 10)	(2,203)	-	1,025
	14,790	20,119	24,162
OPERATING LOSS	(4,637)	(13,101)	(19,461)
INTEREST INCOME (net of related expenses of $28, $30 and $32, respectively)	425	144	2,587
LOSS FOR THE YEAR	$ (4,212)	$ (12,957)	$ (16,874)
LOSS PER SHARE			
Loss per share	$ (0.28)	$ (0.88)	$ (1.16)
Shares used in calculation of loss per share	14,994	14,786	14,578

The accompanying notes are an integral part of the consolidated financial statements.

NOVA MEASURING INSTRUMENTS LTD.
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS EQUITY AND COMPREHENSIVE LOSS
(In thousands)

	Share capital						
	Ordinary shares	Deferred shares	Additional Paid-in capital	Deferred stock-based compensation	Accumulated other Comprehensive Income (Loss)	Accumulated Deficit	Total
Balance as of January 1, 2001	$ 43	$ 3	$ 73,219	$ (4,303)	$ -	$ (6,343)	$ 62,619
Employee share-based plans	(*) -		8				8
Amortization of deferred stock- based compensation				1,777			1,777
Forfeiture of employee share options			(453)	453			-
Decrease in fair market value of derivatives					(212)		(212)
Unrealized losses on investments					(312)		(312)
Loss for the year						(16,874)	(16,874)
Total comprehensive loss							**(17,398)**
Balance as of December 31, 2001	$ 43	$ 3	$ 72,774	$ (2,073)	$ (524)	$ (23,217)	$ 47,006
Employee share-based plans	(*) -		31				31
Amortization of deferred stock- based compensation				1,073			1,073
Forfeiture of employee share options			(191)	191			-
Realization of losses on derivatives					212		212
Realization of losses on investments					312		312
Conversion of deferred shares into ordinary shares	3	(3)					-
Loss for the year						(12,957)	(12,957)
Total comprehensive loss							**(12,433)**
Balance as of December 31, 2002	$ 46	$ -	$ 72,614	$ (809)	$ -	$ (36,174)	$ 35,677
Employee share-based plans	(*) -		318				318
Amortization of deferred stock- based compensation				540			540
Forfeiture of employee share options			(147)	147			-
Increase in fair market value of derivatives					13		13
Loss for the year						(4,212)	(4,212)
Total comprehensive loss							**(4,199)**
Balance as of December 31, 2003	$ 46	$ -	$ 72,785	$ (122)	$ 13	$ (40,386)	$ 32,336

The accompanying notes are an integral part of the consolidated financial statements. (*) Less than $1

NOVA MEASURING INSTRUMENTS LTD.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year ended December 31,		
	2003	2002	2001
CASH FLOWS - OPERATING ACTIVITIES			

Loss for the year	$ (4,212)	$ (12,957)	$ (16,874)
Adjustments to reconcile net loss for the year to net cash used in operating activities Schedule A	(1,295)	5,046	11,126
Net cash - operating activities	(5,507)	(7,911)	(5,748)
CASH FLOWS - INVESTING ACTIVITIES			
Technology for use in research and development	-	(1,265)	-
Decrease (increase) in short-term interest-bearing bank deposits	(89)	(622)	44,410
Proceeds from held to maturity securities	-	15,167	2,383
Investment in held to maturity securities	(3,302)	(8,947)	(9,597)
Proceeds from available for sale securities	-	6,644	-
Investment in available for sale securities	-	-	(7,296)
Investment in long-term interest-bearing bank deposits	(1,386)	-	-
Additions to fixed assets	(364)	(601)	(1,141)
Net cash - investing activities	(5,141)	10,376	28,759
CASH FLOWS - FINANCING ACTIVITIES			
Shares issued under employee share-based plans	318	31	8
Net cash - financing activities	318	31	8