

CIENA CORPORATION

2,345,431 Shares of Common Stock

We have prepared this prospectus to allow the selling stockholders we identify in this prospectus to sell up to 2,345,431 shares of our common stock. We issued or will issue the shares to the selling stockholders we identify in this prospectus under the terms of the Agreement and Plan of Merger dated August 20, 2003, under which we acquired AKARA Corporation. We will not receive any of the proceeds from the sale of these shares of common stock by the selling stockholders.

Our common stock is traded on the Nasdaq Stock Market under the symbol "CIEN." On September 25, 2003, the last reported sale price of our common stock on Nasdaq was \$6.07 per share.

Investing in our common stock involves a high degree of risk. See "Risk Factors" beginning on page 4.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The information in this prospectus is not complete and may be changed. The selling stockholders may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

The date of this prospectus is September 29, 2003.

SUMMARY

You should read this summary together with the entire prospectus, including the more detailed information in our financial statements and accompanying notes incorporated by reference in the prospectus.

CIENA CORPORATION

CIENA is a leading global provider of innovative network solutions to service providers and enterprises worldwide. Our customers include long distance carriers, local exchange carriers, cable operators, internet service providers, wireless and wholesale carriers, resellers, governments, large businesses and non-profit institutions.

Our principal executive offices are located at 1201 Winterson Road, Linthicum, Maryland 21090. Our telephone number is (410) 865-8500 and our website address is <http://www.CIENA.com>. Information on our website is not part of this prospectus.

THE OFFERING

Common stock offered by selling stockholders	2,345,431 shares
Use of proceeds	CIENA Corporation will not receive any proceeds from the sale of shares in this offering.
Nasdaq National Market symbol	CIEN

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC under the Securities Act of 1933, as amended (the "Securities Act"), a registration statement on Form S-3. This prospectus does not contain all of the information contained in the registration statement, portions of which have been omitted under the rules of the SEC. We file annual, quarterly and current reports, proxy statements and other information with the SEC under the Securities Exchange Act of 1934 (the "Exchange Act"). The Exchange Act file number for our SEC filings is 000-21969. You may read and copy the registration statement and any other document we file at the following SEC public reference room:

Judiciary Plaza
450 Fifth Street, N.W.
Room 1024
Washington, D.C. 20549

You may obtain information on the operation of the public reference room in Washington, D.C. by calling the SEC at 1-800-SEC-0330. We file information electronically with the SEC. Our SEC filings are available from the SEC's Internet site at <http://www.sec.gov>, which contains reports, proxy and information statements and other information regarding issuers that file electronically. You may read and copy our SEC filings and other information at the offices of Nasdaq Operations, 1735 K Street, N.W., Washington, D.C. 20006.

INCORPORATION BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus the information we file with them, which means that we can disclose important information to you by referring you to these documents. The information incorporated by reference is considered to be a part of this prospectus, and information in documents that we file later with the SEC will automatically update and supersede the information in this prospectus. We incorporate by reference the documents listed below (and any amendments thereto) and any future filings we will make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act until the offering of our securities under the prospectus is completed or withdrawn:

- CIENA's annual report on Form 10-K for its fiscal year ended October 31, 2002, filed on December 12, 2002;
- CIENA's quarterly reports on Form 10-Q for the fiscal quarter ended January 31, 2003, filed on February 20, 2003, for the fiscal quarter ended April 30, 2003, filed on May 22, 2003, and for the fiscal quarter ended July 31, 2003, filed on August 21, 2003;
- CIENA's definitive proxy statement filed on January 27, 2003;
- CIENA's current reports on Form 8-K filed on December 12 and December 20, 2002, January 14, January 23, August 21, September 3, 2003;
- Item 7(a) of CIENA's current report on Form 8-K filed April 2, 2001;
- ONI Systems Corp.'s annual report on Form 10-K for its fiscal year ended December 31, 2001, filed on March 19, 2002 (SEC File No. 000-30633);
- ONI Systems Corp.'s quarterly report on Form 10-Q for the fiscal quarter ended March 31, 2002, filed on May 15, 2002 (SEC File No. 000-30633);
- The description of CIENA common stock set forth in the CIENA Registration Statement filed under Section 12 of the Exchange Act on Form 8-A on January 13, 1997, including any amendment or report filed with the SEC for the purpose of updating such description.

We are not, however, incorporating by reference, any documents that are not deemed "filed" with the SEC, including any information furnished pursuant to Items 9 or 12 of Form 8-K. In the event of conflicting information in these documents, the information in the latest filed document should be considered correct.

We will provide a copy of the documents, incorporated by reference, at no cost, to any person who receives this prospectus. To request a copy of any or all of these documents, you should write or telephone us at:

Investor Relations
CIENA Corporation
1201 Winterson Road
Linthicum, Maryland 21090
(410) 865-8500

You should rely only on the information incorporated by reference or provided in this prospectus or any prospectus supplement. Neither we nor the selling stockholders have authorized anyone else to provide you with different information. Neither we nor the selling stockholders are making an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus is accurate as of any date other than the date on the front of the prospectus.

FORWARD-LOOKING STATEMENTS

Some of the statements contained, or incorporated by reference, in this prospectus discuss future expectations, contain projections of results of operations or financial condition or state other “forward-looking” information. Those statements are subject to known and unknown risks, uncertainties and other factors that could cause the actual results to differ materially from those contemplated by the statements. The “forward-looking” information is based on various factors and was derived using numerous assumptions. In some cases, you can identify these so-called “forward-looking statements” by words like “may,” “will,” “should,” “expects,” “plans,” “anticipates,” “believes,” “estimates,” “predicts,” “potential,” or “continue” or the negative of those words and other comparable words. You should be aware that those statements only reflect our predictions. Actual events or results may differ substantially. Important factors that could cause our actual results to be materially different from the forward-looking statements are disclosed under the heading “Risk Factors” in our annual and quarterly reports incorporated by reference herein.

RISK FACTORS

Investing in our securities involves a high degree of risk. In addition to the other information contained in this prospectus, including the reports we incorporate by reference, you should consider the following factors before investing in our securities.

Our business could continue to be adversely affected by unfavorable and uncertain conditions in the communications industry and the economy in general

The last three years have seen substantial changes in the communications industry. Most of our customers and potential customers have confronted static or declining revenues. Many have experienced significant financial distress, and some have gone out of business. This has resulted in a significant change in the structure of the equipment industry, with greater concentration of purchasing power in a small number of large services providers, combined with a substantial reduction in overall demand. Together these factors have adversely affected our revenue and operating results. In addition, most of our customers have become more conservative and uncertain about their future purchases which has made managing our business difficult.

We expect the factors described above to continue to affect our business for an indeterminate period, in several significant ways:

- capital expenditures by many of our customers will be flat or reduced;
- we will continue to have only limited ability to forecast the volume and product mix of our sales;
- managing our expenditures will be difficult in light of the uncertainties surrounding our business;
- increased competition resulting from reduced demand will put substantial downward pressures on the pricing of our products, tending to reduce our profit margins;
- increased competition resulting from reduced demand will put substantial downward pressures on the pricing of our products, tending to reduce our profit margins;
- increased competition will enable customers to insist on more favorable terms and conditions for sales, including extended payment terms or other financing assistance, as a condition of procuring their business; and
- the bankruptcies or weakened financial condition of some of our customers may require us to write off amounts due to us from prior sales.

The result of any one or a combination of these factors could lead to further reduced revenue and increased operating losses

We face intense competition that could hurt our sales and profitability

The market for networking solutions is extremely competitive. Competition in this market is based on varying combinations of price, functionality, manufacturing capability, installation, services, scalability and the ability of the system solutions to meet customers' immediate and future network requirements. A small number of very large companies, including Alcatel, Cisco Systems, Telefon AB LM Ericsson, Fujitsu Group, Hitachi Ltd., Huawei Technologies Co., Ltd, Lucent Technologies Inc., Marconi Corporation, NEC Corporation, Nortel Networks, Siemens AG and Tellabs, Inc., have historically dominated the telecommunications equipment industry. They all have greater financial, marketing, manufacturing and intellectual property resources than CIENA. They also often have existing relationships with our potential customers.

Because we sell systems that compete directly with product offerings of these companies, and in some cases displace or replace their equipment, we represent a competitive threat. The decline in the market for communications networking products has resulted in even greater competitive pressures. We expect that the aggressive tactics we have confronted on the part of many of these competitors will continue, and perhaps become more severe. These tactics include:

- intense price competition in sales of new equipment, resulting in lower profit margins;
- discounting resulting from sales of used equipment or inventory that a competitor has written down or written off;
- early announcements of competing products and other marketing efforts;
- “one-stop shopping” options;
- customer financing assistance;
- marketing and advertising assistance; and
- intellectual property disputes.

In addition, several of our largest competitors have experienced financial difficulties. We have confronted situations in which the competitor contends that unless the customer awards it the business, the competitor may fail, leaving the customer without support for the competitor’s equipment already in the network. To the extent that such arguments are successful, we may be at a disadvantage in winning new business.

Tactics such as those described above can be particularly effective in a concentrated customer base like ours. Our customers are under increasing competitive pressure to deliver their services at the lowest possible cost. This pressure may result in the pricing of communications networking systems becoming a more important factor in customer decisions. This may favor larger competitors that can spread the effect of price discounts across a larger array of products and services and across a larger customer base than ours. If we are unable to offset any reductions in the average sales price for our products by a reduction in the cost of our products, our gross profit margins will be adversely affected. Our inability to compete successfully against our competitors and maintain our gross profit margins would harm our business, financial condition and results of operations.

Many of our customers have indicated that they intend to establish a relationship with at least two vendors for communication networking products. With respect to customers for whom we are the only supplier of networking solutions, we do not know when or if these customers will select a second vendor or what impact the selection might have on purchases from us. If a second supplier is chosen, these customers could reduce their purchases from us, which could in turn have a material adverse effect on us.

New competitors continue to emerge to compete with our products. They often base their products on the latest available technology. They may achieve commercial availability of their products more quickly due to the narrower focus of their efforts. Our inability to compete successfully against these companies would harm our business, financial condition and results of operations.

Product performance problems could limit our sales prospects

The development and production of new products with high technology content often involves problems with software, components and manufacturing methods. If significant reliability, quality or network monitoring problems develop, including those due to defects in software or faulty components, a number of negative effects on our business could result, including:

- costs associated with fixing software defects or reworking our manufacturing processes;

- high service and warranty expenses;
- payment of liquidated damages for performance failures;
- high inventory obsolescence expense;
- high levels of product returns;
- delays in collecting accounts receivable;
- reduced orders from existing customers; and
- declining interest from potential customers.

Although we maintain accruals for product warranties, actual costs could exceed these amounts. From time to time, there will be interruptions or delays in the activation of our products at a customer's site. These interruptions or delays may result from product performance problems or from aspects of the installation and activation activities, some of which are outside our control. If we experience significant interruptions or delays that we cannot promptly resolve, confidence in our products could be undermined, which could cause us to lose customers or otherwise harm our business.

Economic conditions may require us to reduce the size of our business further

Since November 2001, we have undertaken reductions in force, some of which were accompanied by dispositions of assets, as part of our effort to reduce the size of our operations to better match the reduced sales of our products and services. Weakness in the global economy generally, and the telecommunications equipment market in particular, continue to affect our business substantially. We will be required to take additional steps to reduce our costs, including further reductions in force. Any such steps would likely result in significant charges from write-downs or write-offs of assets, costs of lease terminations, and expenses resulting from the termination of personnel.

Selling our products requires substantial investments of our resources which may not produce anticipated benefits.

In order to sell our products to both potential and existing customers, we must invest in financial, engineering, manufacturing and logistics support resources, even though we are unsure of the volume, duration or timing of customer purchases. Our customers are generally technically sophisticated and demanding. Consequently, we may incur substantial expenses and devote resources to potential relationships that never materialize or fulfill our expectations, in which event our investment may largely be lost. For example, we often provide equipment and services to our customers, free of charge, for the purpose of performing laboratory testing. In the quarter ending October 31, 2003, we expect inventory to increase as a result of providing a sizeable amount of equipment for a large customer trial. If we are unsuccessful in winning this contract, we may be required to take a charge for the write down or write off of this inventory.

Our results can fluctuate unpredictably

Purchases by many of our potential and existing customers can be unpredictable, sporadic and subject to unanticipated changes. Our results, in turn, tend to fluctuate unpredictably. A decision to purchase our products requires a significant investment and commitment of resources by our customers. As a result, the sales cycles for many of our products are long, often as much as a year or two between initial contact with a potential customer and the recognition of revenue from sales to the customer. Further, purchases by our existing customers tend to be large and sporadic, depending upon their need to build a customer base, their plans for expanding their networks, the availability of financing, and the effects of regulatory and business conditions in the countries in which they operate. Current economic and market conditions have made it even more difficult to make reliable estimates of future revenue.

Fluctuations in our revenue can lead to even greater fluctuations in our operating profits. Our budgeted expense levels depend in part on our expectations of long-term future revenue. Any substantial adjustment to expenses to account for lower levels of revenue is difficult and takes time. Consequently, if our revenue does decline, our levels of inventory, operating expenses and general overhead would be high relative to our revenue, reducing our profitability, and perhaps resulting in additional operating losses.

Other factors can also contribute to fluctuations in our revenue and operating results, including:

- fluctuations in demand for our products;
- changes in our pricing policies or the pricing policies of our competitors;
- the timing and size of orders from customers;
- changes in customers' requirements, including changes or cancellations to orders from customers;
- the introduction of new products by us or our competitors;
- changes in the price or availability of components for our products;
- readiness of customer sites for installation;
- satisfaction of contractual customer acceptance criteria and related revenue recognition issues;
- manufacturing and shipment delays and deferrals;
- increased service, installation, warranty or repair costs;
- the timing and amount of employer payroll tax to be paid on employee gains on stock options exercised; and
- changes in general economic conditions as well as those specific to the telecommunications industry.

Our future success will depend on our ability to acquire new customers, expand our distribution channels and increase our product portfolio

Historically, a large percentage of our sales have been made to emerging carriers, many of which have experienced severe financial difficulties. Consequently, we expect our sales to emerging carriers to be limited, and our future success will depend, to a large extent, on our ability to increase our sales to incumbent carriers, including, in the United States, the regional Bell operating companies ("RBOCs"), and abroad, the large, traditional telecommunications operators ("TOs"), many of which were formerly government-owned "post, telephone and telegraph" enterprises. If we do not succeed in continuing to penetrate this segment of the market, our business could suffer.

We are beginning to sell some of our products through systems integrators, distributors, resellers, and similar sales channels. We also are attempting to sell some of our products to large enterprises and federal, state and local governments. Since we have only limited experience in these sales efforts, it is uncertain to what extent we will be successful.

In order to make our offerings more attractive both to our existing customers and the new customers we hope to attract, we believe it is important that we increase our portfolio to include products that operate at the edge of the network and products that enable sophisticated services, including data services, beyond transport and switching. We plan to implement this strategy through a combination of internal development, acquisitions of smaller companies, and forming strategic alliances with other vendors. If we fail to execute this strategy, our addressable market may not be large enough to enable us to reach profitability at our current size.

Our strategy calls for us to expand the range of our product offerings and to sell to a greater variety of customers, both of which involve our entry into markets with which we have limited familiarity. In doing so, we will be confronted with new development challenges and sales and service issues with which we have limited experience to date. A failure to address those issues satisfactorily would harm our prospects for growth.

Selling to large, incumbent carriers is often more difficult and time-consuming than selling to newer carriers

We have relatively limited experience in selling to large RBOCs and TOs. Many of them have long-standing supplier relationships with other vendors, which present additional challenges to the sales process. The sales cycles for these larger customers is often substantially longer than for sales to smaller customers; and they often require extensive testing of products before deciding to purchase them. Even after we have signed a sales contract with a customer, we are typically unable to recognize revenue until final acceptance tests are completed satisfactorily. The certification process for new telecommunications equipment used in the networks of the RBOCs and TOs tends to be particularly lengthy and difficult. Complying with these certification requirements may involve unanticipated delays that could adversely affect the timing of our ability to sell our products to these larger carriers.

The success of our strategy depends on our ability to increase our revenue substantially

We believe, as a matter of strategy, we must maintain a size and breadth of our product portfolio that enables us to be successful in selling to the largest communications providers. In order to carry out that strategy, we have deliberately chosen to continue to spend on research and development, sales, and other operating expenses at levels that will not permit us to return to profitability unless we can increase our revenue substantially. If we fail to do so, we will be required to modify our strategy, which would likely have an adverse effect on our financial condition.

We may not be successful in enhancing and upgrading our products

The market for communications networking solutions is characterized by rapid technological change, frequent introductions of new products, and recurring changes in customer requirements. To succeed in this market, we must continue to develop new products and new features for existing products. Doing so is difficult and costly and there is no assurance that we will continue to be successful. In addition, we must be able to identify and gain access to promising new technologies. Failure to keep pace with technological advances would impair the competitiveness of our products and sooner or later do serious harm to our business.

Our products are based on complex technology that could result in unanticipated delays in developing, improving, manufacturing or deploying them. Modifying our products to enable customers to integrate them into a new type of network architecture entails similar development risks. Certain enhancements to our products are in the development phase and are not yet ready for commercial manufacturing or deployment. The maturing process from laboratory prototype to customer trials, and subsequently to general availability, involves a number of steps, including:

- completion of product development;
- the qualification and multiple sourcing of critical components, including ASICs;
- validation of manufacturing methods and processes;
- extensive quality assurance and reliability testing, and staffing of testing infrastructure;
- validation of software; and
- establishment of systems integration and systems test validation requirements.

Each of these steps, in turn, presents serious risks of failure, rework or delay, any one of which could decrease the speed and scope of product introduction and marketplace acceptance of the product. Specialized ASICs and intensive software testing and validation are key to the timely introduction of enhancements to several of our products and

schedule delays are common in the final validation phase, as well as in the manufacture of specialized ASICs. In addition, unexpected intellectual property disputes, failure of critical design elements, and a host of other execution risks may delay or even prevent the introduction of these products. If we do not develop and successfully introduce these products in a timely manner, our business, financial condition and results of operations would be harmed

Our strategy involves pursuing strategic acquisitions and investments that may not be successful

Our business strategy includes acquiring or making strategic investments in other companies with a view to expanding our portfolio of products and services, acquiring new technologies, and accelerating the development of new or improved products. To do so, we may issue equity that would dilute our current shareholders' percentage ownership or incur debt or assume indebtedness. In addition, we may incur significant amortization expenses related to intangible assets. In the fourth quarter fiscal 2001 and fourth quarter fiscal 2002, we incurred a significant write-off of goodwill associated with our previous acquisitions. Strategic investments and acquisitions involve numerous risks, including:

- potential large cash expenditures;
- difficulties in integrating the operations, technologies and products of the acquired companies;
- diversion of management's attention from our core business;
- potential difficulties in completing projects of the acquired company;
- the potential loss of key employees of the acquired company;
- dependence on unfamiliar or relatively small supply partners; and
- exposure to unanticipated liabilities.

In addition, acquisitions and strategic investments may involve risks of entering markets in which we have no or limited direct prior experience and where competitors in such markets have stronger market positions and of obtaining insufficient revenue to offset increased expenses associated with acquisitions.

We may not be able to achieve the benefits we anticipate from the mergers of WaveSmith and AKARA

In June 2003, we completed our merger with WaveSmith, and we completed our merger with AKARA in August 2003. The process of integrating these two companies into CIENA is complex and exposes us to a variety of risks, including the possible loss of key personnel, failure to integrate these two product lines with CIENA's other products, and difficulty integrating the sales efforts of the two companies with CIENA's existing sales structure. It is possible, therefore, that we will not achieve all of the benefits we anticipate from the mergers.

The mergers also resulted in CIENA's succeeding to all known and unknown liabilities of WaveSmith and AKARA. These liabilities may include liabilities to shareholders, customers, suppliers or employees, as well as liabilities related to intellectual property disputes. Further, CIENA estimated the fair market value of certain acquired assets and liabilities based on predictions about future developments. If these predictions are incorrect CIENA may be required to record adjustments to its financial statements in the future.

There is also some uncertainty as to whether obtaining the agreements of WaveSmith stockholders to vote in favor of the WaveSmith merger prior to filing a registration statement with the SEC complied with the registration requirements of the Securities Act. While CIENA believes that the merger was effected in compliance with applicable securities and other laws, there can be no assurance that this is the case.

We face risks in reselling the products of other companies

We have recently entered into agreements that permit us to distribute the products of other companies and may enter into other agreements in the future. To the extent we succeed in reselling the products of these companies, we may be required by customers to assume warranty and service obligations. While these suppliers have agreed to support us with respect to those obligations, they are relatively small companies with limited financial resources. If they should be unable, for any reason, to provide the required support, we may have to expend our own resources on doing so. This risk is amplified by the fact that the equipment has been designed and manufactured by others, and is thus subject to warranty claims whose magnitude we are currently unable to evaluate fully.

We may not be successful in selling our products into new markets or through new channels

We have limited experience and capability in direct sales into the enterprise, government markets or certain geographic markets. We are accordingly taking steps to develop new sales channels through distributors and systems integrators for sales of those of our products that are suitable for those markets. We have limited experience in developing and managing such channels, and it is possible that our efforts may not succeed according to plan, which could reduce our revenue and profitability.

In addition, sales to federal, state and local governments often require compliance with complex procurement rules and regulations with which we have little experience. We may be unable to compete for government opportunities if we cannot comply with these rules and regulations.

We depend on a limited number of suppliers, and for some items we do not have a substitute supplier

We depend on a limited number of suppliers for components of our products, as well as for equipment used to manufacture and test our products. Our products include several high-performance components for which reliable, high-volume suppliers are particularly limited. Furthermore, some key optical and electronic components we use in our products are currently available only from sole or limited sources, and in some cases, that source also is a competitor. Any delay in component availability for any of our products could result in delays in deployment of these products and in our ability to recognize revenue. These delays could also harm our customer relationships and our results of operations.

On occasion, we have experienced delays in receipt of components and have received components that do not perform according to their specifications. Any future difficulty in obtaining sufficient and timely delivery of components could result in delays or reductions in product shipments, which, in turn, could harm our business. A consolidation among suppliers of these components or adverse developments in their businesses affecting their ability to supply us, could adversely impact the availability of components on which we depend. Delayed deliveries of key components from these sources could adversely affect our business.

Furthermore, the market for optical components is undergoing consolidation and contraction. This is resulting in reduced competition which could lead to higher prices and lower availability of components we purchase. In addition, the loss of a source of supply of key components could require us to re-engineer products that use those components, which would increase our costs.

Any delays in component availability for any of our products or test equipment could result in delays in deployment of these products and in our ability to recognize revenue from them. These delays could also harm our customer relationships and our results of operations.

We rely on contract manufacturers for our products

We rely on a small number of contract manufacturers to perform the majority of the manufacturing operations for our products. The qualification of these manufacturers is an expensive and time-consuming process, and these contract manufacturers build modules for other companies, including our competitors. In addition, we do not have contracts in place with some of these manufacturers. We may not be able to effectively manage our relationships with our manufacturers and we cannot be certain that they will be able to fill our orders in a timely manner. If we underestimate our future product requirements, the contract manufacturers may not have enough product to meet our customer requirements, and this could result in delays in the shipment of our products and our ability to recognize

revenue. If we cannot effectively manage these manufacturers and forecast future demand, or if they fail to deliver products or components on time, our business may suffer.

Our ability to compete could be harmed if we are unable to protect and enforce our intellectual property rights or if we infringe on intellectual property rights of others

We rely on a combination of patent, copyright, trademark and trade secret laws and restrictions on disclosure to protect our intellectual property rights. We enter into non-disclosure and proprietary rights agreements with our employees and consultants, license agreements with our corporate partners, and control access to and distribution of our products, documentation and other proprietary information. Despite our efforts to protect our proprietary rights, unauthorized parties may attempt to copy or otherwise obtain and use our products or technology. Monitoring unauthorized use of our products is difficult and we cannot be certain that the steps we have taken will prevent unauthorized use of our technology, particularly in foreign countries where the laws may not protect our proprietary rights as fully as in the United States. If competitors are able to use our technology, our ability to compete effectively could be harmed. We have filed an intellectual property lawsuit to enforce our intellectual property right, and may become involved with additional disputes in the future. Such lawsuits can be costly and may significantly divert the time and attention of our personnel.

We have been subject to several claims of patent infringement, which in some cases have required us to pay the patent holders substantial sums or enter into license agreements requiring ongoing royalty payments. The frequency of assertions of patent infringement in the field of telecommunications networking solutions seems to be increasing as patent holders seek alternative sources of revenue. There is a possibility that we may again find ourselves required to take patent licenses or to redesign or stop selling products that allegedly infringe patents belonging to others. If we are sued for infringement and are unsuccessful in defending the suit, we could be subject to significant damages, and our business and customer relationships could be adversely affected.

We face risks associated with our international operations

We market, sell and service our products globally. We have established offices around the world, including in North America, Europe, Latin America and in the Asia Pacific region. We will continue to expand our international operations and enter new international markets. This expansion will require significant management attention and financial resources to develop successfully direct and indirect international sales and support channels. In some countries, our success will depend in part on our ability to form relationships with local partners. We cannot be sure that we will be able to identify appropriate partners or reach mutually satisfactory arrangements with them for sales of our products. There is a risk that we may sometimes choose the wrong partner. For these reasons, we may not be able to maintain or increase international market demand for our products.

International operations are subject to inherent risks, and our future results could be adversely affected by a variety of uncontrollable and changing factors. These include:

- greater difficulty in collecting accounts receivable and longer collection periods
- difficulties and costs of staffing and managing foreign operations;
- the impact of recessions in economies outside the United States;
- unexpected changes in regulatory requirements;
- certification requirements;
- reduced protection for intellectual property rights in some countries;
- potentially adverse tax consequences;
- political and economic instability;

- trade protection measures and other regulatory requirements;
- service provider and government spending patterns; and
- natural disasters and epidemics

Such factors could have a material adverse impact on our operating results and financial condition.

If we are unable to retain and attract qualified personnel, we may be unable to effectively manage our business.

If we are unable to retain and motivate our existing employees and attract qualified personnel to fill key positions, we may be unable to effectively develop our existing products, make timely product introductions and increase sales. Since we generally do not have employment contracts with our employees, we must rely upon providing competitive compensation packages and a dynamic work environment to retain and motivate employees. In response to the decline in our revenue and weakness in the telecommunications equipment market, we have not increased salaries for or paid bonuses to most of our employees since the end of fiscal 2001. Since our compensation packages include equity-based incentives, pressure on our stock price could affect our ability to continue to offer competitive compensation packages to our employees. In addition to these compensation issues, we must continue to motivate employees to execute our strategies and achieve our goals, which may be difficult due to morale challenges posed by the workforce reductions and uncertainty in our industry and the economy in general.

If we lose members of our management team or other key personnel, it may be difficult to replace them. Even in the current economic downturn, competition for highly skilled technical and other personnel can be intense. As a result, we may not be successful in identifying, recruiting and hiring qualified engineers and other key personnel.

Some of our suppliers are also competitors

Some of our component suppliers are both primary sources for components and major competitors in the market for system equipment. We buy components from Alcatel, NEC and Siemens. Each of these companies offers optical communications systems and equipment that compete against our products. A decline in reliability or other adverse change in these supply relationships could harm our business.

We are exposed to the credit risk of our customers

Industry and economic conditions have weakened the financial position of some of our customers. To sell to some of these customers, we may be required to take risks of uncollectible accounts. While we monitor these situations carefully and attempt to take appropriate measures to protect ourselves, it is possible that we may have to write down or write off doubtful accounts. Such write-downs or write-offs, if large, could have a material adverse effect on our operating results and financial condition.

Our stock price is volatile

Our common stock price has experienced substantial volatility in the past, and is likely to remain volatile in the future. Volatility can arise as a result of divergence between our actual or anticipated financial results and published expectations of analysts, and announcements that we, our competitors, or our customers may make.

Divergence between our actual results and our anticipated results, analyst estimates and public announcements by us, our competitors, or by customers will occur from time to time in the future, with resulting stock price volatility, irrespective of our overall year-to-year performance or long-term prospects. As long as we continue to depend on a limited customer base, and particularly when a substantial majority of their purchases consist of newly-introduced products, there is substantial chance that our quarterly results will vary widely.

USE OF PROCEEDS

CIENA will not receive any proceeds from the sale of the shares of common stock sold by the selling stockholders in this offering.

SELLING STOCKHOLDERS

We are registering 2,345,431 shares covered by this prospectus on behalf of the selling stockholders named in the table below. We issued 2,343,015 of the shares to the selling stockholders in a private placement transaction in connection with our acquisition of AKARA Corporation and will issue 2,416 of the shares in a private placement when a warrant that we assumed in connection with that acquisition is exercised. We have registered these shares to permit the selling stockholders, the warrant holder following the exercise of its warrant and their respective pledgees, donees, transferees, distributees, assignees or other successors-in-interest that receive their shares from selling stockholders as a gift, partnership distribution or another non-sale related transfer after the date of this prospectus (collectively, the "Selling Stockholders") to resell the shares when they deem appropriate.

The following table sets forth the following information with respect to each Selling Stockholder as of September 26, 2003: (i) name of the Selling Stockholder; (ii) the number of shares of CIENA common stock we believe each Selling Stockholder beneficially owned before this offering; (iii) the number of shares of CIENA common stock the Selling Stockholder is offering; and (iv) the number of total outstanding shares of CIENA common stock that the Selling Stockholder will beneficially own after the Selling Stockholder sells all of the shares in this offering. None of the Selling Stockholders has had a material relationship with us within the last three years other than as a result of the ownership of the shares or other securities of CIENA. Based on the number of shares of Common Stock outstanding as of September 26, 2003, no Selling Stockholder will beneficially hold more than 1% of CIENA's Common Stock after the offering. We do not know how long the Selling Stockholders will hold the shares before selling them and we currently have no agreements, arrangements or understandings with any of the Selling Stockholders regarding the sale of any of these shares. The shares offered by this prospectus may be offered from time to time by the Selling Stockholders named below.

Selling Stockholders	Number of Shares of Common Stock Beneficially Owned before Offering	Number of Shares of Common Stock Offered	Number of Shares of Common Stock Beneficially Owned after Offering
Greylock X Limited Partnership	561,351	561,351	0
Greylock X-A Limited Partnership	43,149	43,149	0
Battery Ventures V, L.P.	606,180	606,180	0
Battery Ventures Convergence Fund, L.P.	51,516	51,516	0
Battery Investment Partners V, LLC	13,970	13,970	0
McCance Family Limited Partnership (1)	11,754	11,754	0
Howard E. Cox, Jr. (2)	11,754	11,754	0
The Roger L. Evans Revocable Trust dtd 12/16/99 (3)	9,067	9,067	0
Mapache Investments L.P. u/a/d 05/31/99 (4)	6,800	6,800	0
David N. Strohm (5)	2,266	2,266	0
William S. Kaiser (2)	5,977	5,977	0
William W. Helman (2)	5,977	5,977	0
Aneel Bhusri (2)	3,022	3,022	0
Charles M. Hazard, Jr.	2,783	2,783	0
David Sze (2)	3,022	3,022	0
David B. Aronoff (2)	134	134	0
Solomon Wong	1,688	1,688	0
Jim Dolce	11,254	11,254	0
Charles Chi and Renee Van Dieen Tenants in Common (6)	4,365	4,365	0
MAWAM, LLLP	4,220	4,220	0
PWB Limited Partnership	4,220	4,220	0
High Street Investors 2000	5,627	5,627	0
Diner P-4 Holdings Limited Partnership	5,627	5,627	0
Matthew Westover	1,406	1,406	0
John M. McQuillan	5,627	5,627	0
Katherine Wong	2,250	2,250	0
Azmina Somani	1,125	1,125	0
Morgan Keegan Early Stage Fund, L.P.	22,985	22,985	0
Morgan Keegan Opportunity Fund, L.P.	48,327	48,327	0
Morgan Keegan Employee Fund, L.P. (sub account A)	10,608	10,608	0
Morgan Keegan Employee Fund, L.P. (sub account B)	6,483	6,483	0
DRW Venture Partners, LP	23,547	23,547	0
The Deal Revocable Trust DTD 10/6/98	5,477	589	4,888
Sanjiv Wadhvani	589	589	0
Charles A. Kennedy	589	589	0
Steven Denegri	589	589	0
Robert Montague	589	589	0
GKM Partners I, L.P.	2,357	2,357	0
Sumitomo Corporation	58,936	58,936	0
Presidio Venture Partners, LLC	58,936	58,936	0
Liberty Mutual Insurance Company (7)	134,592	122,292	12,300
CIV LLC	176,808	176,808	0
The VenGrowth II Investment Fund Inc.	412,553	412,553	0
Marcel Noyes	5,071	5,071	0
Dominion Akara, LLC	5,009	5,009	0
GATX Financial Corporation (8)	2,416	2,416	0

- (1) This selling stockholder is controlled by Henry F. McCance who is a general partner of Greylock X GP Limited Partnership. Greylock X GP Limited Partnership is the general partner of Greylock X Limited Partnership and Greylock X-A Limited Partnership. This selling stockholder has disclaimed beneficial ownership of the shares of CIENA Common Stock owned by Greylock X Limited Partnership and Greylock X-A Limited Partnership except to the extent of its pecuniary interest therein.
- (2) This selling stockholder is a general partner of Greylock X GP Limited Partnership. Greylock X GP Limited Partnership is the general partner of Greylock X Limited Partnership and Greylock X-A Limited Partnership. The selling stockholder has disclaimed beneficial ownership of the shares of CIENA Common Stock owned by Greylock X Limited Partnership and Greylock X-A Limited Partnership except to the extent of the selling stockholder's pecuniary interest therein.
- (3) This selling stockholder is controlled by Roger L. Evans who is a general partner of Greylock X GP Limited Partnership. Greylock X GP Limited Partnership is the general partner of Greylock X Limited Partnership and Greylock X-A Limited Partnership. Mr. Evans has disclaimed beneficial ownership of the shares of CIENA Common Stock owned by Greylock X Limited Partnership and Greylock X-A Limited Partnership except to the extent of its pecuniary interest therein.
- (4) This selling stockholder is affiliated with David N. Strohm who is a general partner of Greylock X GP Limited Partnership and is also offering shares pursuant to this Registration Statement. Greylock X GP Limited Partnership is the general partner of Greylock X Limited Partnership and Greylock X-A Limited Partnership. Mr. Strohm has disclaimed beneficial ownership of the shares of CIENA Common Stock owned by Greylock X Limited Partnership and Greylock X-A Limited Partnership except to the extent of its interest therein.
- (5) David N. Strohm is a general partner of Greylock X GP Limited Partnership. Greylock X GP Limited Partnership is the general partner of Greylock X Limited Partnership and Greylock X-A Limited Partnership. Mr. Strohm is also an affiliate of Mapache Investments LP, u/a/d 05/31/99. Mr. Strohm has disclaimed beneficial ownership of the shares of CIENA Common Stock owned by Greylock X Limited Partnership, Greylock X-A Limited Partnership and Mapache Investments L.P. u/a/d 05/31/99 except to the extent of his pecuniary interest therein.
- (6) This selling stockholder is controlled by Charles Chi who is a general partner of Greylock X GP Limited Partnership. Greylock X GP Limited Partnership is the general partner of Greylock X Limited Partnership and Greylock X-A Limited Partnership. This selling stockholder has disclaimed beneficial ownership of the shares of CIENA Common Stock owned by Greylock X Limited Partnership and Greylock X-A Limited Partnership except to the extent of its pecuniary interest therein.
- (7) In addition to the securities offered, Liberty Mutual Insurance Company beneficially owns 12,300 shares of CIENA Common Stock. Furthermore, Liberty Mutual Insurance Company is a wholly owned subsidiary of Liberty Mutual Group, Inc, which has another wholly owned subsidiary, Liberty Mutual Fire Insurance Company, that is the beneficial owner of 3,100 shares of CIENA Common Stock.
- (8) This selling stockholder holds a warrant exercisable in part for shares of CIENA Common Stock. The numbers shown in the table assume that the warrant is exercised in full for cash.

PLAN OF DISTRIBUTION

The Selling Stockholders may sell the common stock from time to time. The Selling Stockholders will act independently of us in making decisions regarding the timing, manner and size of each sale.

The Selling Stockholders may make these sales on one or more exchanges, in the over-the-counter market, through put or call options transactions relating to the shares, through short sales of such shares, in privately negotiated transactions or a combination of such methods of sale or otherwise, at prices and terms that are then-prevailing or at prices related to the then-current market price, fixed prices, varying prices determined at the time of sale or at negotiated prices. The Selling Stockholders will have the sole discretion not to accept any purchase offer or make any sale of shares if they deem the purchase price to be unsatisfactory at any particular time.

The Selling Stockholders may use one or more of the following methods to sell the common stock:

- a block trade in which the Selling Stockholder's broker or dealer will attempt to sell the shares as agent, but may position and resell all or a portion of the block as a principal to facilitate the transaction;
- a broker or dealer may purchase the common stock as a principal and then resell the common stock for its own account pursuant to this prospectus;
- an exchange distribution in accordance with the rules of the applicable exchange; and
- ordinary brokerage transactions and transactions in which the broker solicits purchasers.

To our knowledge, none of the Selling Stockholders has entered into any agreements, understandings or arrangements with any underwriters or broker-dealers regarding the sale of their securities, nor is there an underwriter or coordinating broker acting in connection with the proposed sale of shares of common stock offered by this prospectus; however, the Selling Stockholders may enter into agreements, understandings or arrangements with an underwriter or broker-dealer regarding the sale of their shares in the future. To the extent required, this prospectus may be amended or supplemented from time to time to describe a specific plan of distribution. If the plan of distribution involves an arrangement with a broker-dealer for the sale of shares through a block trade, special offering, exchange distribution or secondary distribution or a purchase by a broker or dealer, the supplement will disclose:

- the name of each Selling Stockholder and of the participating broker-dealer(s);
- the number of shares involved;
- the price at which the shares were sold;
- the commissions paid or discounts or concessions allowed to such broker-dealer(s), where applicable;
- that such broker-dealer(s) did not conduct any investigation to verify the information set out or incorporated by reference in this prospectus; and
- other facts material to the transaction.

In effecting sales, broker-dealers engaged by the Selling Stockholders may arrange for other broker-dealers to participate in the resales.

From time to time, the Selling Stockholders may pledge, donate, transfer, distribute or assign shares to third parties, and such third parties may pledge, donate, transfer, distribute or assign such shares to their respective partners, shareholders or other beneficiaries, and such third parties, partners, shareholders or other beneficiaries shall be deemed "Selling Stockholders" for purposes of this prospectus. The number of the Selling Stockholders' shares beneficially owned by a Selling Stockholder who pledges, donates, transfers, distributes or assigns shares will decrease as and when such Selling Stockholders takes such actions. The plan of distribution for Selling Stockholders' shares sold hereunder will otherwise remain unchanged, except that any pledgee, donee, transferee, distributee or assignee or other successors-in-interest will be "Selling Stockholders" hereunder.

The Selling Stockholders may enter into hedging transactions with broker-dealers in connection with distributions of the shares or otherwise. In these transactions, broker-dealers may engage in short sales of the shares in the course of hedging the positions they assume with Selling Stockholders. The Selling Stockholders may also sell shares short and redeliver the shares to close out such short positions. The Selling Stockholders may enter into options

or other transactions with broker-dealers that require the delivery to the broker-dealer of the shares. The broker-dealer may then resell or otherwise transfer such shares pursuant to this prospectus. The Selling Stockholders also may loan or pledge the shares to a broker-dealer. The broker-dealer may sell the shares so loaned, or upon default, the broker-dealer may sell the pledged shares pursuant to this prospectus.

Broker-dealers or agents may receive compensation in the form of commissions, discounts or concessions from Selling Stockholders. Broker-dealers or agents may also receive compensation from the purchasers of the shares for whom they act as agents or to whom they sell as principal, or both. Compensation as to a particular broker-dealer might be in excess of customary commissions and will be in amounts to be negotiated in connection with the sale. Broker-dealers or agents and any other participating broker-dealers, and the Selling Stockholders, may be deemed to be “underwriters” within the meaning of Section 2(11) of the Securities Act in connection with sales of the shares. Accordingly, any such commission, discount or concession received by them and any profit on the resale of the shares purchased by them may be deemed to be underwriting discounts or concessions under the Securities Act.

Any shares covered by this prospectus which qualify for sale pursuant to Rule 144 under the Securities Act may be sold under Rule 144 rather than pursuant to this prospectus.

The shares will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states the shares may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations, any person engaged in the distribution of the shares may not simultaneously engage in market making activities with respect to our common stock for a period of two business days prior to the commencement of such distribution. In addition, each Selling Stockholder will be subject to applicable provisions of the Exchange Act and the associated rules and regulations under the Exchange Act, including Regulation M, which provisions may limit the timing of purchases and sales of shares of our common stock by the Selling Stockholders.

We will make copies of this prospectus available to the Selling Stockholders and have informed them of the need to deliver copies of this prospectus to purchasers at or prior to the time of any sale of the shares.

We will bear all costs, expense and fees in connection with the registration of the shares. The Selling Stockholders will bear all commissions and discounts, if any, attributable to the sale of the shares. The Selling Stockholders may agree to indemnify any broker-dealer or agent that participates in transactions involving sales of the shares against certain liabilities, including liabilities arising under the Securities Act. We have agreed to indemnify the Selling Stockholders against certain liabilities in connection with their offering of the shares, including liabilities arising under the Securities Act.

UNAUDITED PRO FORMA COMBINED FINANCIAL DATA

The following unaudited pro forma combined statement of operations present the merger between CIENA and ONI Systems as if the merger had been completed on November 1, 2001. CIENA acquired ONI Systems, Inc. on June 21, 2002.

The unaudited pro forma combined financial data is based on estimates and assumptions that have been made solely for the purposes of developing these unaudited pro forma combined financial data. The unaudited pro forma combined financial data is not necessarily an indication of the results that would have been achieved had the transaction been consummated as of the dates indicated or results that may be achieved in the future.

**UNAUDITED PRO FORMA COMBINED
STATEMENT OF OPERATIONS
Year Ended October 31, 2002
(In thousands, except per share data)**

	October 31, 2002 Historical CIENA	Period from October 1, 2001 to June 21, 2002 Historical ONI Systems	Adjustments	Pro Forma October 31, 2002 CIENA
Revenue	\$ 361,155	\$ 69,858	\$ —	\$ 431,013
Excess and obsolete inventory costs	286,475		—	286,475
Cost of goods sold	309,559	61,610	—	371,169
Gross profit (loss)	(234,879)	8,248	—	(226,631)
Operating expenses				
Research and development (exclusive of \$15,672, \$1,833, \$2,439, and \$19,944 deferred stock compensation costs)	239,619	51,213	—	290,832
Selling and marketing (exclusive of \$3,560, \$1,396, (\$684), and \$4,272 deferred stock compensation costs)	130,276	37,688	—	167,964
General and administrative (exclusive of \$1,092, \$731, \$213 and \$2,036 deferred stock compensation costs)	50,820	30,650	—	81,470
Deferred stock compensation costs	20,324	3,960	1,968 A	26,252
Amortization of goodwill	—	1,233	(1,233) B	—
Amortization of intangible assets	8,972	3,363	(2,363) C	9,972
Restructuring costs	225,429	3,051	—	228,480
Goodwill impairment	557,286	—	—	557,286
Pirelli litigation	1,792	—	—	1,792
Provision for doubtful accounts	14,813	—	—	14,813
Total operating expenses	1,249,331	131,158	(1,628)	1,378,861
Income (loss) from operations	(1,484,210)	(122,910)	1,628	(1,605,492)
Other income (expense), net	(2,554)	2,197	(16,504) D	(16,861)
Income (loss) before income taxes	(1,486,764)	(120,713)	(14,876)	(1,622,353)
Provision for income tax	110,735	364	—	111,099
Net loss	\$(1,597,499)	\$(121,077)	\$(14,876)	\$(1,733,452)
Basic net loss per common share	\$ (4.37)			\$ (4.00)
Diluted net loss per common share and dilutive potential common share	\$ (4.37)			\$ (4.00)
Weighted average basic common shares outstanding	365,202		67,640 E	432,842
Weighted average basic common and dilutive potential common shares outstanding	365,202		67,640 E	432,842

**NOTE TO UNAUDITED PRO FORMA
COMBINED FINANCIAL DATA**

NOTE 1 — PRO FORMA ADJUSTMENTS

- A. To eliminate historical deferred stock compensation and related amortization charges for ONI Systems stock option grants and record deferred stock compensation in accordance with FIN 44, "Accounting for Certain Transactions Involving Stock Compensation — an interpretation of APB 25," related to ONI Systems unvested stock options and restricted common stock.
- B. To eliminate historical goodwill amortization for ONI Systems. CIENA adopted Statement of Financial Accounting Standards No. 142, "Goodwill and Other Intangible Assets" (SFAS No. 142), and ceased amortizing goodwill beginning on November 1, 2001.
- C. To eliminate historical amortization of the non-goodwill intangibles for ONI Systems and record amortization of intangibles associated with the ONI Systems acquisition for the period prior to the consummation date.
- D. To record accretion of notes acquired with the purchase of ONI Systems for entire twelve-month period.
- E. To adjust the CIENA weighted average common shares to reflect the acquisition of ONI Systems as of November 1, 2001.

LEGAL MATTERS

Certain legal matters with respect to the common shares offered hereby have been passed upon for us by Hogan & Hartson L.L.P., Baltimore, Maryland.

EXPERTS

The consolidated financial statements of CIENA Corporation as of October 31, 2002 and 2001 and for each of the three years in the period ended October 31, 2002 incorporated in this prospectus by reference to CIENA's Annual Report on Form 10-K for the year ended October 31, 2002 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, independent accountants, given on the authority of said firm as experts in auditing and accounting.

The consolidated financial statements of ONI Systems Corp. as of December 31, 2001 and 2000, and for each of the years in the three-year period ended December 31, 2001, have been incorporated by reference in this prospectus by reference to ONI Systems' Annual Report on Form 10-K for the year ended December 31, 2001 in reliance upon the report of KPMG LLP, independent accountants, incorporated by reference herein, and upon the authority of said firm as experts in auditing and accounting. CIENA has agreed to indemnify KPMG LLP against legal costs and expenses KPMG LLP may incur in connection with KPMG LLP's successful defense of any legal proceeding arising out of its consent to the incorporation by reference of the foregoing report in this prospectus.

The financial statements of Cyrus Systems, Inc., a development stage company, as of December 31, 2000 and 1999 and for the period from July 24, 1998 (inception) to December 31, 1998, for the years ended December 31, 2000 and 1999 and for the period from July 24, 1998 (inception) to December 31, 2000 incorporated in this prospectus by reference to the CIENA Form 8-K dated April 2, 2001 have been audited by Deloitte & Touche LLP, independent auditors, as stated in their report, which is incorporated herein by reference, and have been so incorporated in reliance upon the report of such firm, given upon their authority as experts in accounting and auditing

TABLE OF CONTENTS

	Page Number
Summary	1
CIENA Corporation	1
The Offering	1
Where You Can Find More Information	2
Incorporation by Reference	2
Forward-Looking Statements	3
Risk Factors	4
Use of Proceeds	13
Selling Stockholders	13
Plan of Distribution	14
Unaudited Pro Forma Combined Financial Data	16
Unaudited Pro Forma Combined Statement of Operations	17
Notes to Unaudited Pro Forma Combined Financial Data	18
Legal Matters	19
Experts	19

CIENA CORPORATION

2,345,431 shares

Common Stock

PROSPECTUS

September 29, 2003