

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

CIENA CORPORATION
(EXACT NAME OF REGISTRANT AS SPECIFIED IN ITS CHARTER)

DELAWARE
(STATE OR OTHER JURISDICTION OF
INCORPORATION OR ORGANIZATION)

1201 WINTERSON ROAD
LINTHICUM, MARYLAND 21090
(410) 865-8500
(ADDRESS, INCLUDING ZIP CODE,
AND TELEPHONE NUMBER, INCLUDING
AREA CODE, OF REGISTRANT'S
PRINCIPAL EXECUTIVE OFFICES)

23-2725311
(I.R.S. EMPLOYER
IDENTIFICATION NO.)

G. ERIC GEORGATOS
SENIOR VICE PRESIDENT, GENERAL COUNSEL
AND SECRETARY
1201 WINTERSON ROAD
LINTHICUM, MARYLAND 21090
(410) 865-8500
(NAME, ADDRESS, INCLUDING ZIP CODE,
AND TELEPHONE NUMBER, INCLUDING
AREA CODE, OF AGENT FOR SERVICE)

Copies to:
MICHAEL J. SILVER
AMY BOWERMAN FREED
HOGAN & HARTSON L.L.P.
111 S. CALVERT STREET, SUITE 1600
BALTIMORE, MARYLAND 21202
(410) 659-2700

APPROXIMATE DATE OF COMMENCEMENT OF PROPOSED SALE TO THE PUBLIC:
As soon as practicable after this Registration Statement becomes effective.

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box:

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 other than securities offered only in connection with dividend or interest reinvestment plans, check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box.

CALCULATION OF REGISTRATION FEE

TITLE OF EACH CLASS OF SECURITIES TO BE REGISTERED	AMOUNT TO BE REGISTERED	PROPOSED MAXIMUM OFFERING PRICE PER UNIT(1)	PROPOSED MAXIMUM AGGREGATE OFFERING PRICE(1)	AMOUNT OF REGISTRATION FEE
Common Stock, \$.01 par value (2).....	17,849,665 shares	\$28.25	\$504,253,036.25	\$140,183

- -----
- (1) We estimated this amount only to calculate the registration fee. We based this amount on the average of the high and low sale prices of our common stock on June 15, 1999 as reported on the Nasdaq Stock Market of \$28.25 per share.
 - (2) We are also registering Series A Junior Participating Preferred Stock Purchase Rights attached to the common stock. We are paying no separate fee under Rule 457(i).
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THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON THE DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(a) OF THE SECURITIES ACT OF 1933 OR UNTIL THE REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON THE DATE THE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(a), MAY DETERMINE.

CIENA CORPORATION

17,849,665 Shares of Common Stock

We have prepared this prospectus to allow some of our stockholders, warrantholders and optionholders to sell up to 17,849,665 shares of our common stock.

Our common stock trades on the Nasdaq Stock Market under the symbol "CIEN." On June 17, 1999, the last reported sale price of our common stock on Nasdaq was \$30 3/8 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 NOR DISAPPROVED OF THE COMMON STOCK, OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this Prospectus is _____, 1999.

THE INFORMATION IN THIS PROSPECTUS IS NOT COMPLETE AND MAY CHANGE. WE MAY NOT SELL THESE SECURITIES UNTIL THE REGISTRATION STATEMENT FILED WITH THE SEC 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.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and special reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's web site at <http://www.sec.gov>. You may also read and copy any document we file at the SEC's public reference rooms at 450 Fifth Street, N.W., Washington, D.C., and in New York, New York and Chicago, Illinois. Please call the SEC at 1-800-732-0330 for further information on the public reference rooms.

The SEC allows us to "incorporate by reference" 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 an important part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings made with the SEC under the Securities Exchange Act of 1934:

- Our Annual Report on Form 10-K for the year ended October 31, 1998 amended on April 5, 1999;
- Our Quarterly Reports on Form 10-Q for the quarters ended January 31, 1999 and April 30, 1999;
- Our Current Reports on Form 8-K filed April 1, 1999 (and amended on April 5, 1999) and filed on April 5, 1999; and
- Our description of our common stock in our Form 8-A filed on January 13, 1997, as amended.

To obtain a copy of these filings at no cost, you may write or telephone us at the following address:

Director, 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 state does not permit an offer. 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" and throughout this prospectus.

RISK FACTORS

You should carefully consider the following risk factors before deciding to invest in CIENA's common stock. You should also consider the other information in this prospectus and the additional information in CIENA's other reports on file with the SEC and in the other documents incorporated by reference in this prospectus. See "Where You Can Find More Information" on page 2.

OUR RESULTS CAN BE UNPREDICTABLE

Our near term results may be break-even or may involve losses. In general, sequential revenue and operating results over the next 12 months are likely to fluctuate and may continue to fluctuate in the future due to factors including:

- timing and size of orders
- satisfaction of contractual customer acceptance criteria
- shipment delays and deferrals

We budget expense levels partially on our expectations of long term future revenue. These levels reflect our substantial investment in financial, engineering, manufacturing and logistics support resources we think we may need for large potential customers, even though we do not know the volume, duration or timing of any purchases from them. As a result, we may continue to experience increased inventory levels, operating expenses and general overhead.

Additionally, Lightera Networks, Inc. and Omnia Communications, Inc., companies we have acquired or are about to acquire, have ongoing development and operating expenses but are not expected to contribute materially to revenues until calendar 2000.

WE FACE INTENSE COMPETITION WHICH COULD HURT OUR SALES AND PROFITABILITY

A small number of very large companies have historically dominated our industry including Lucent, Alcatel, Nortel, NEC, Pirelli, Siemens, Ericsson, Fujitsu, and Hitachi. These companies have substantial financial, marketing and intellectual property resources. We sell systems which displace their legacy equipment, which represents a specific threat to these companies. Our acquisitions of Lightera and Omnia may increase this perceived threat. We expect continued aggressive tactics from many of these competitors such as:

- Substantial price discounting
- Early announcements of competing products
- "One-stop shopping" appeals
- Customer financing assistance
- Intellectual property disputes

These tactics can be particularly effective in a highly concentrated customer base such as ours.

Sprint, a significant customer of ours, has long indicated that it intends to establish a second vendor for DWDM products. We do not know when Sprint will select a second

vendor or what impact the selection might have on Sprint's purchases from us. Sprint could reduce its purchases from us, which could in turn have a material adverse effect on us.

New competitors may also emerge to compete with our existing products as well as our future products.

DELAYS IN THE DEPLOYMENT OF NEW PRODUCTS COULD HURT OUR NEAR TERM PROSPECTS

If we fail to deploy new and improved products, our competitive position and financial condition would be materially and adversely affected.

The certification process for new telecommunications equipment used in RBOC networks, which is a process traditionally conducted by Telcordia Technologies, has in the past resulted in and may continue to result in unanticipated delays which may affect the deployment of our products for the RBOC market.

In order to meet our delivery commitments for our newest products, we will need to finalize component sourcing, which we have not yet completed. Any delays in deployment could result in delays in recognizing revenues and, ultimately, could adversely affect our customer relationships.

SMALLER CUSTOMERS MAY INCREASE FLUCTUATION IN OUR RESULTS

We have recently shifted our sales focus to smaller emerging carriers. Timing and volume of purchasing from these smaller carriers can also be more unpredictable due to factors such as their need to build a customer base, acquire rights of way and interconnections necessary to sell network service, and build out new capacity, all while working within capital budget constraints. This increases the unpredictability of our financial results because even smaller carriers purchase our products in multi-million dollar increments.

Unanticipated changes in customer purchasing plans also create unpredictability in our results. Most of our anticipated revenue over the next several quarters is comprised of orders of less than \$25 million each from several customers, some of which involve extended payment terms or other financing assistance. Our ability to recognize revenue from financed sales to these carriers will be impacted by their financial condition at the time of product acceptance. Purchasing delays or changes in the amount of purchases by any of these customers, could have a material adverse effect on us.

OUR PROSPECTS DEPEND ON DEMAND FOR BANDWIDTH WHICH WE CANNOT PREDICT OR CONTROL

We may not anticipate changes in direction or magnitude of demand for bandwidth. Unanticipated reductions in bandwidth demand would adversely affect us.

Our products enable high capacity transmission over long distance, and certain short-haul portions, of optical communications networks. Our Core Director switching products are targeted to high capacity applications. Customers, however, determine:

- the quantity of bandwidth needed
- the timing of its deployment, and
- the equipment configurations and network architectures they want.

Customer determinations are subject to abrupt change in response to their own competitive pressures, pressures to raise capital and financial performance expectations.

OUR SUCCESS LARGELY DEPENDS ON OUR ABILITY TO RETAIN KEY PERSONNEL

Our success has always depended in large part on our ability to attract and retain highly-skilled technical, managerial, sales and marketing personnel, particularly those skilled and experienced with optical communications equipment. As CIENA has grown and matured, competitors' efforts to entice our employees to leave have intensified, particularly among competitive startups and other early stage companies seeking to replicate CIENA's experience. CIENA and its employees are parties to agreements that limit the employee's ability to work for a competitor following termination of employment. We expect our competitors will respect these agreements and not interfere with them. But we can make no assurances of that, or that we will be able to retain all of our key contributors or attract new personnel to add to or replace them. The loss of key personnel would likely have a material adverse effect on our business, financial condition and results of operations.

WE MAY EXPERIENCE DELAYS FROM OUR SUPPLIERS AND FOR SOME ITEMS WE DO NOT HAVE SUBSTITUTE SUPPLIERS

We depend on a small number of suppliers for key components of our products, as well as equipment used to manufacture our products. Our highest capacity product currently being shipped, the Multiwave Sentry which is capable of 96-channel configurations, includes several higher performance components for which reliable, high volume suppliers are particularly limited. On occasion, we have experienced delays in receipt of key components. Any future difficulty in obtaining sufficient and timely delivery of them could result in delays or reductions in product shipments which, in turn, could have a material adverse effect on our business, financial condition and results of operations. Uniphase Corporation and JDS FITEL, Inc., both of which are significant suppliers to CIENA, recently announced a planned merger. If the merger with Omnia and related integration activities result in delayed deliveries of key components from either of these sources, those delays could have a material adverse effect on CIENA's near-term results of operations.

PRODUCT PERFORMANCE PROBLEMS COULD LIMIT OUR SALES PROSPECTS

The production of new fiberoptic systems with high technology content involves occasional problems as the technology and manufacturing methods mature. We are aware of instances domestically and internationally of delayed installation and activation of some

of our products due to faulty components. If significant reliability, quality or network monitoring problems develop, a number of material adverse effects could result, including:

- manufacturing rework costs
- high service and warranty 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 and the addition of channels, particularly because we do not control all aspects of the installation and activation activities. If we experience significant interruptions or delays that we can not promptly resolve, confidence in our products could be undermined, which could have a material adverse effect on us.

INVESTMENT IN NEW COMPANIES AND CHANGES IN TECHNOLOGY COULD RESULT IN MORE COMPETITION

We may not be able to successfully anticipate changes in technology, industry standards, customer requirements and product offerings, yet our ability to develop and introduce new and enhanced products will impact our position as a leader in the deployment of high-capacity solutions. The accelerating pace of deregulation in the telecommunications industry will likely intensify the competition for improved technology. Many of our competitors have substantially greater financial, technical and marketing resources and manufacturing capacity with which to develop or acquire new technologies. There has been an increase in the funding of new companies intending to develop new products for the rapidly evolving telecom industry. These companies have time-to-market advantages due to the narrow and exclusive focus of their efforts. New companies may provide additional competition for our existing product lines as well as potential future products. The introduction of new products embodying new technologies or the emergence of new industry standards could render our existing products uncompetitive from a pricing standpoint, obsolete or unmarketable. Any of these outcomes would have a material adverse effect on our business, financial condition and results of operations.

OUR STOCK PRICE MAY EXHIBIT VOLATILITY

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 the activities of short sellers and risk arbitrageurs, and may have little relationship to our financial results or prospects. Volatility can also result from any divergence between our actual or anticipated financial results and published expectations of analysts, and announcements we may make. This occurred in 1998. We attempt to address this possible divergence through our public announcements and reports; however, the degree of specificity we can offer in

such announcements, and the likelihood that any forward-looking statements we make will prove correct in actual results, can and will vary. This is due primarily to:

- the uncertainties associated with our dependence on a small number of existing and potential customers
- the impact of changes in the customer mix
- the actions of competitors
- long and unpredictable sales cycles and customer purchasing programs
- the absence of unconditional minimum purchase commitments from any customer
- a lack of visibility into our customers' deployment plans over the course of the capital equipment procurement year, and
- the lack of reliable data on which to anticipate core demand for high bandwidth transmission capacity

Divergence will likely 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 relatively few customers, and particularly when a substantial majority of their purchases consist of newly-introduced products such as the 96-channel MultiWave Sentry and MultiWave Metro, there is substantial risk of widely varying quarterly results, including the so-called "missed quarter" relative to investor expectations.

LEGAL PROCEEDINGS COULD HAVE AN ADVERSE EFFECT ON OUR BUSINESS

In August 1998, shareholder class action lawsuits were filed against us and certain of our officers and directors. We believe the lawsuits, now consolidated into one, are without merit and are defending vigorously against them. However, because the consolidated lawsuit is at an early stage, it is not possible to predict the outcome at this time. If decided adversely to CIENA, however, it could have a material adverse effect on our financial condition and results of operations.

SOME OF OUR SUPPLIERS ARE ALSO OUR COMPETITORS

Some of our component suppliers are both primary sources for components and major competitors in the market for system equipment. For example, we buy certain key components from:

- Lucent
- Alcatel
- Nortel
- NEC, and
- Siemens

Each of these companies offers optical communications systems and equipment which are competitive with our products. Also, Lucent is the sole source of two components and is one of two suppliers of two others. Alcatel and Nortel are suppliers of lasers used in our

products and NEC is a supplier of an important piece of testing equipment. A decline in reliability or other adverse change in these supply relationships could materially and adversely affect our business, financial condition and results of operations.

WE MAY NOT BE ABLE TO SUCCESSFULLY COMPLETE DEVELOPMENT AND ACHIEVE COMMERCIAL ACCEPTANCE OF LIGHTERA AND OMNIA PRODUCTS

Both Lightera and Omnia's products are in the laboratory testing phase but the products have not matured into commercially manufacturable units suitable for field deployment. We expect that field deployable units of Omnia's products will be available in the second half of calendar 1999, and Lightera's products by the end of the first quarter of calendar 2000. The maturing process from laboratory prototype to commercial acceptance involves a number of steps, including:

- successful completion of product development
- the qualification and multiple sourcing of critical components, including application-specific integrated circuits ("ASIC's") which are not yet finalized
- validation of manufacturing methods
- extensive quality assurance and reliability testing, and staffing of testing infrastructure
- software validation
- establishment of systems integration and burn in requirements, and
- identification and qualification of component suppliers

Each of these steps in turn presents serious risks of failure, rework or delay, any one of which could materially and adversely affect the speed and scope of product introduction and marketplace acceptance of the products. Specialized ASIC's, in particular, are key to the timely introduction of Lightera's and Omnia's products, and schedule delays are common in the final testing and manufacture of such components. 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. Commercial acceptance of the products is also not established and there is no assurance that the substantial sales and marketing efforts necessary to achieve commercial acceptance in traditionally long sales cycles will be successful.

WE MAY NOT BE ABLE TO RETAIN KEY EMPLOYEES OF LIGHTERA AND OMNIA

Because of the high valuation we placed on Lightera and Omnia, their key founders and employees have received or will receive a substantial number of CIENA shares and can sell these shares at substantial gains. In many cases, these individuals could become financially independent through these sales, before the products of either company have fully matured into commercially deliverable products commanding reasonable market share. Additionally, startup and other companies will seek out these individuals due to the financial result they have achieved for their investors. Under the circumstances, we face a difficult and significant task of retaining and motivating the key personnel of both companies to stay committed to us. We do not have employment contracts with these personnel. We may not be successful in retaining them.

WE EXPECT THAT OUR ACQUISITIONS OF LIGHTERA AND OMNIA WILL MAKE OUR STOCK PRICE MORE VOLATILE

Both Lightera and Omnia are still completing their respective development stages, and we do not expect either of them to generate any revenue or earnings for at least several months. As a result, we expect to report approximately breakeven results of operations, and may report operating losses, for the balance of the fiscal year. Under these circumstances, we can expect significant volatility over the next several quarters as investors make judgments as to our relative progress in:

- bringing the Lightera and Omnia products to market
- integrating the two companies
- managing retention issues, and
- generally executing on the strategic vision.

Additionally, the shares being offered by former Lightera shareholders through this prospectus, and the shares issued to former Omnia shareholders, together account for approximately 25% of the outstanding shares of CIENA. If a large portion of these shares are sold immediately or soon after they are eligible for sale, the stock price may experience further volatility and may decline.

THE COMPANY

CIENA designs, makes and sells open architecture, dense wavelength division multiplexing systems for fiberoptic communications networks, including long-distance and local exchange carriers. Our systems enable these carriers to carry greater volumes of communications traffic over existing fiber, by using multiple optical signals, or wavelengths, where prior equipment used only a single optical signal. CIENA also provides a range of engineering, furnishing and installation services for our customers.

We designed all of our MultiWave systems with open architecture that allows them to work with our customers' existing fiber optic transmission systems that have a broad range of transmission speeds and signal formats. We target our research and development efforts to broaden the product applications of our technology and to integrate the technology as part of a more comprehensive approach to optical communications solutions.

In March 1999, we acquired Lightera Networks, Inc., which is developing optical core switches for fiberoptic communications networks. In addition, we expect to complete the acquisition of Omnia Communications, Inc. in July 1999. Omnia is a telecommunications equipment supplier.

USE OF PROCEEDS

We will not receive any proceeds from the sale of the common stock by the selling stockholders. We may receive a small amount of proceeds when the one optionholder and two warrantholders exercise the warrants that they hold and we will use those proceeds for general corporate purposes.

SELLING STOCKHOLDERS

This Prospectus relates to the offering by the stockholders named in the Prospectus for resale of up to 17,849,665 shares of common stock. Throughout this Prospectus, we may refer to these stockholders, warrantholders, optionholders, and their pledgees, donees, transferees or other successors in interest who receive shares in non-sale transactions, as the "selling stockholders." If they sell all of these shares in this offering, the selling stockholders will beneficially own no shares of CIENA common stock. The selling stockholders who are currently stockholders acquired their common stock on March 31, 1999 from us in exchange for their shares of Lightera Networks, Inc. The warrantholders and optionholder may acquire their shares when they exercise warrants or options which they acquired from us on March 31, 1999 in exchange for their Lightera warrants and options.

The following table sets forth the following information with respect to each selling stockholder as of June 17, 1999: (i) name and nature of any position or other relationship with CIENA within the past three years; (ii) the number and percentage of total outstanding shares of CIENA common stock each selling stockholder beneficially owns before this offering; (iii) the number of shares of common stock the selling stockholder is offering; and (iv) the number and percentage of total outstanding shares of CIENA common stock that the selling stockholder will own after the selling stockholder sells all of the shares in this offering. The number of shares beneficially owned by each selling stockholder includes shares held in escrow until April 1, 2000 to allow the settlement of contingencies in connection with the merger of Lightera into CIENA. The

total number of shares held in escrow on behalf of all of the selling stockholders is 1,448,806 shares.

SELLING STOCKHOLDERS	NUMBER OF SHARES BENEFICIALLY OWNED BEFORE THE OFFERING	PERCENTAGE OF TOTAL CIENA OUTSTANDING SHARES BENEFICIALLY OWNED BEFORE THE OFFERING	NUMBER OF SHARES OFFERED	NUMBER AND PERCENTAGE OF SHARES BENEFICIALLY OWNED AFTER OFFERING
InterWest Partners VI, L.P. and affiliates (1).....	2,735,071	2.25%	2,735,071	0
Venrock Associates II, L.P. and affiliates (2).....	2,714,969	2.24%	2,714,969	0
Brentwood Associates VIII, L.P. and affiliates (3).....	2,714,968	2.24%	2,714,968	0
Kleiner Perkins Caufield & Byers VIII, L.P. and affiliates (4).....	2,297,576	1.89%	2,297,576	0
Drew Perkins (5)(6).....	1,665,540	1.37%	1,665,540	0
Jagdeep Singh (6)(7).....	1,577,889	1.30%	1,577,889	0
Charles Chi (6).....	785,639	*	785,639	0
Daniel E. Klausmeier (6).....	784,031	*	784,031	0
Dave Chambers (6).....	482,491	*	482,491	0
Howard Lukens (6).....	281,453	*	281,453	0
Storm Ventures Fund I, L.P. ...	201,037	*	201,037	0
Comdisco, Inc. (8).....	151,975	*	151,975	0
Venture Lending & Leasing II, Inc. (8).....	143,599	*	143,599	0
Lonny J. Orona (6).....	120,622	*	120,622	0
Forty-nine other former stockholders of Lightera and one former optionholder of Lightera, none of whom beneficially owns more than .07% of the shares.....	1,192,771	*	1,192,771	0

"*" means less than 1%

(1) Includes 82,534 shares owned by InterWest Investors VI, L.P., and 20,103 shares owned by W. Scott Hedrick.

(2) Includes 1,175,096 shares owned by Venrock Associates.

(3) Includes 102,377 shares owned by Brentwood Affiliates Fund II, L.P. and 155,535 shares owned by James Mongiello.

(4) Includes 122,690 shares owned by KPCB VIII Founders Fund, L.P. and 57,439 shares owned by KPCB Information Sciences Zaibatsu Fund II, L.P.

(5) Includes 40,207 shares owned by each of the Todd Ian Perkins Trust and the Cody Erin Perkins Trust.

(6) These selling stockholders became employees of CIENA on March 31, 1999, the date on which the acquisition of Lightera was completed. Howard Lukens was previously employed by CIENA prior to October, 1998.

(7) Mr. Singh is a member of the Board of Directors of CIENA.

(8) These selling stockholders hold warrants to purchase CIENA shares; the numbers shown in the table assume that the warrants are exercised in full for cash.

PLAN OF DISTRIBUTION

The common stock being offered by the selling stockholders may be sold in transactions on the Nasdaq Stock Market, on another market on which the common stock may be trading, or in privately-negotiated transactions. The sale price to the public may be the market price prevailing at the time of sale, a price related to the prevailing market price or any other price the selling stockholders may determine. The common stock may also be sold under SEC Rule 144 and not under this prospectus. No sales under Rule 144 can be made until April 1, 2000, which is one year after the earliest date the selling stockholders acquired their shares from us. The selling stockholders have the discretion not to accept any purchase offer or make any sale of common stock if they deem the purchase price to be unsatisfactory at any particular time, or for any reason.

The selling stockholders may also sell the common stock directly to broker-dealers acting as principals and/or to broker-dealers acting as agents for themselves or their customers. Brokers acting as agents for the selling stockholders will receive usual and customary commissions for brokerage transactions, and broker-dealers acting as principals will do so for their own account at negotiated prices and at their own risk. It is possible that the selling stockholders will sell shares of common stock to broker-dealers or other purchasers at a price per share which may be below the then market price. In addition, the selling stockholders may enter into hedging transactions with broker-dealers who may engage in short sales of common stock in the course of hedging the positions they assume with a selling stockholder. The selling stockholders also may sell shares short and deliver the shares to close out their positions, and may loan or pledge their shares to a broker-dealer who may have the right to sell the loaned or pledged shares on default or otherwise. The selling stockholders and any brokers, dealers or agents, upon effecting the sale of any of the common stock offered hereby, may be deemed "underwriters" as that term is defined under the Securities Act or the Exchange Act, or the rules and regulations thereunder.

The selling stockholders and any other persons participating in the sale or distribution of the common stock will be subject to applicable provisions of the Exchange Act and its rules and regulations, which may limit the timing of purchases and sales of any of the common stock by the selling stockholders or other distribution participants. Furthermore, under Regulation M, persons engaged in a distribution of securities are prohibited from simultaneously engaging in market making and other activities with respect to such securities for a specified period of time before the commencement of distributions subject to specified exceptions or exemptions. This may affect the marketability of the common stock.

CIENA has agreed to indemnify the selling stockholders against some important liabilities, including liabilities under the Securities Act, or to contribute to any payments these selling stockholders may be required to make in respect of these liabilities. CIENA is paying the costs of this registration for the selling stockholders.

LEGAL MATTERS

The legal validity of the CIENA common stock offered by this prospectus was passed upon for CIENA by Hogan & Hartson L.L.P., counsel to CIENA.

EXPERTS

The consolidated financial statements incorporated in this Prospectus by reference to the Annual Report on Form 10-K of CIENA Corporation for the year ended October 31, 1998 and the Current Report on Form 8-K of CIENA Corporation filed on April 1, 1999 and amended on April 5, 1999, 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.

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CIENA CORPORATION

Common Stock

PROSPECTUS

June , 1999

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION.

The following table sets forth the fees and expenses in connection with the issuance and distribution of the securities being registered. Except for the SEC registration fee, all amounts are estimates.

SEC registration fee.....	\$140,183
Accounting fees and expenses.....	10,000
Legal fees and expenses.....	20,000
Blue Sky fees and expenses (including counsel fees).....	1,000
Printing and engraving expenses.....	10,000
Transfer agent's and registrar's fees and expenses.....	15,000
Miscellaneous expenses, including Listing Fees.....	53,817

Total.....	\$250,000
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ITEM 15. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Section 145 of the Delaware General Corporation Law ("DGCL") authorizes a court to award, or a corporation's board of directors to grant indemnity to directors and officers under some circumstances for liabilities incurred in connection with their activities in such capacities (including reimbursement for expenses incurred). The Registrant's Amended and Restated Certificate of Incorporation provides that no director of the Registrant will be personally liable to the Registrant or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director's duty of loyalty to the Registrant or to its stockholders, (ii) for acts or omissions not made in good faith or which involved intentional misconduct or a knowing violation of the law, (iii) under Section 174 of the DGCL, or (iv) for any transactions from which the director derives an improper personal benefit. In addition, the Registrant's Amended and Restated Bylaws provide that any director or officer who was or is a party or is threatened to be made a party to any action or proceeding by reason of his or her services to the Registrant will be indemnified to the fullest extent permitted by the DGCL.

The Registrant has entered into agreements with each of its executive officers and directors under which the Registrant has agreed to indemnify each of them against expenses and losses incurred for claims brought against them by reason of their being an officer or director of the Registrant. There is no pending litigation or proceeding involving a director or officer of the Registrant as to which indemnification is being sought, nor is the Registrant aware of any pending or threatened litigation that may result in claims for indemnification by any director or executive officer.

ITEM 16. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.

(a) Exhibits:

EXHIBIT NUMBER	DESCRIPTION
4.1(1)	Specimen Stock Certificate
4.2(2)	Rights Agreement dated December 29, 1997
4.3(3)	Amendment to Rights Agreement
5.1	Hogan & Hartson L.L.P. Opinion
23.1	Consent of Independent Accountants
23.3	Consent of Hogan & Hartson L.L.P. (included in Exhibit 5.1)
24	Power of Attorney (included in signature page)

(1) Incorporated by reference to CIENA's Registration Statement on Form S-1 (SEC File No. 333-17729).

(2) Incorporated by reference to CIENA's Form 8-K dated December 29, 1997.

(3) Incorporated by reference to CIENA's Form 8-K dated October 14, 1998.

(b) Financial Statement Schedules.

CIENA acquired Lightera on March 31, 1999, in a transaction accounted for as a pooling-of-interests. Accordingly, all financial statements and pro forma financial information prescribed by Rule 3-05 of Regulation S-X and Article 11 of Regulation S-X, respectively, are incorporated herein by reference to CIENA's Current Report on Form 8-K as filed on April 1, 1999 and amended as of April 5, 1999.

ITEM 17. UNDERTAKINGS.

(a) The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933.

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment to the registration statement) which, individually or when viewed together, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to the information in the registration statement.

Provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) do not apply if the registration statement is on Form S-3 or Form S-8, and the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed by the registrant pursuant to Section 13 or Section 15(d) of the Securities and Exchange Act of 1934 that are incorporated by reference in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act, each of these post-effective amendments shall be deemed to be a new registration statement relating to the securities being offered, and the offering of those securities at that time shall be deemed to be their initial bona fide offering.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities being offered, and the offering of those securities at that time shall be deemed to be their initial bona fide offering.

(c) Insofar as directors, officers and controlling persons of the Registrant are permitted to seek indemnification for liabilities arising under the Securities Act, under the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission, this indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a director, officer or controlling person asserts a claim for indemnification against these types of liabilities in connection with the securities being registered, other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether indemnification by it under these circumstances is against public policy as expressed in the Securities Act and will be governed by the final adjudication of the issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Linthicum, State of Maryland, on June 18, 1999.

CIENA CORPORATION

By: /s/ PATRICK H. NETTLES, PH.D.

 Patrick H. Nettles, Ph.D.
 President and Chief Executive
 Officer

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Patrick H. Nettles, Ph.D., Joseph R. Chinnici and G. Eric Georgatos, and each of them, with full power of substitution and resubstitution and each with full power to act without the other, his or her true and lawful attorney-in-fact and agent, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement, and to file the same, with all exhibits thereto, and all other documents in connection therewith, with the Securities and Exchange Commission or any state, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their, his or her substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Date: June 18, 1999

/s/ PATRICK H. NETTLES, PH.D.

 Patrick H. Nettles, Ph.D.
 President and Chief Executive Officer

Date: June 18, 1999

/s/ JOSEPH R. CHINNICI

 Joseph R. Chinnici
 Sr. Vice President, Chief Financial Officer
 Principal Financial Officer

Date: June 18, 1999

/s/ ANDREW C. PETRIK

 Andrew C. Petrik
 Vice President, Controller and Treasurer
 Principal Accounting Officer

Date: June 18, 1999

/s/ HARVEY B. CASH

Harvey B. Cash
Director

Date: June 18, 1999

/s/ BILLY B. OLIVER

Billy B. Oliver
Director

Date: June 18, 1999

/s/ JAGDEEP SINGH

Jagdeep Singh
Director

Date: June 18, 1999

/s/ MICHAEL J. ZAK

Michael J. Zak
Director

Date: June 18, 1999

/s/ STEPHEN P. BRADLEY

Stephen P. Bradley
Director

HOGAN & HARTSON L.L.P.
111 South Calvert Street
Baltimore, Maryland 21202

June 18, 1999

Board of Directors
CIENA Corporation
1201 Winterson Road
Linthicum, MD 21090

Ladies and Gentlemen:

We are acting as counsel to CIENA Corporation, a Delaware corporation (the "COMPANY"), in connection with its registration statement on Form S-3, as amended (the "REGISTRATION STATEMENT") filed with the Securities and Exchange Commission relating to the proposed public offering of up to 17,849,665 shares of the Company's common stock, par value \$.01 per share, all of which shares (the "SHARES") are to be sold by the Selling Stockholders named therein including certain holders of Warrants and one holder of Options to acquire certain of the Shares. This opinion letter is furnished to you at your request to enable you to fulfill the requirements of Item 601(b)(5) of Regulation S-K, 17 C.F.R. Section 229.601(b)(5), in connection with the Registration Statement.

For purposes of this opinion letter, we have examined copies of the following documents:

1. An executed copy of the Registration Statement.
2. The Third Restated Certificate of Incorporation of the Company, as certified by the Secretary of the State of the State of Delaware on April 19, 1999 and by the Secretary of the Company on the date hereof as then being complete, accurate and in effect.
3. The Bylaws of the Company, as certified by the Secretary of the Company on the date hereof as then being complete, accurate and in effect.
4. Resolutions of the Board of Directors of Lightera adopted at a meeting held on May 11, 1998 and September 25, 1998, as certified by the Secretary of the Company on the date hereof as then being complete, accurate and in effect, relating to the issuance and sale of the Warrants and Options.
5. Resolutions of the Board of Directors of the Company adopted at a meeting held on March 14, 1999, as certified by the Secretary of the Company on the date hereof as then being complete, accurate and in effect, relating to the issuance and

sale of the Shares, the exchange of the Warrants and Options and arrangements in connection therewith.

6. Executed copies of the Agreement and Plan of Merger, dated March 15, 1999, by and among the Company, Lightera Networks, Inc. and certain of the Selling Stockholders (the "Merger Agreement"), relating to, among other things, the issuance of the Shares.
7. Executed copies of the Warrants and the Stock Option Agreement.

In our examination of the aforesaid documents, we have assumed the genuineness of all signatures, the legal capacity of all natural persons, the authenticity, accuracy and completeness of all documents submitted to us, the authenticity of all original documents and the conformity to authentic original documents of all documents submitted to us as copies (including telecopies). This opinion letter is given, and all statements herein are made, in the context of the foregoing.

This opinion letter is based as to matters of law solely on Delaware corporate law. We express no opinion herein as to any other laws, statutes, ordinances, rules, or regulations.

Based upon, subject to and limited by the foregoing, we are of the opinion that (i) the Shares are validly issued, fully paid and nonassessable, and (ii) following issuance of the Warrant and Option Shares pursuant to the terms of the Option Agreement and the Warrant Agreements, and receipt by the Company of the consideration for the Warrant and Option Shares specified in the resolutions of the Board of Directors referred to in paragraph 4 above and in the Option Agreement and Warrant Agreements, the Warrant and Option Shares will be validly issued, fully paid and nonassessable.

This opinion letter has been prepared for your use in connection with the Registration Statement and speaks as of the date hereof. We assume no obligation to advise you of any changes in the foregoing subsequent to the delivery of this opinion letter.

We hereby consent to the filing of this opinion letter as Exhibit 5.1 to the Registration Statement and to the reference to this firm under the caption "Legal Matters" in the prospectus constituting a part of the Registration Statement. In giving this consent, we do not thereby admit that we are an "expert" within the meaning of the Securities Act of 1933, as amended.

Very truly yours,

/s/ Hogan & Hartson L.L.P.

HOGAN & HARTSON L.L.P.

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the incorporation by reference in this Registration Statement on Form S-3 of CIENA Corporation of our report dated November 25, 1998 relating to the consolidated financial statements appearing in CIENA Corporation's Annual Report on Form 10-K for the year ended October 31, 1998. We also consent to the incorporation by reference of our report dated November 25, 1998, except as to Note 2 "Lightera" which is as of March 31, 1999 which appears in the Current Report on Form 8-K of CIENA Corporation dated April 5, 1999 and amended on April 5, 1999. We also consent to the reference to us under heading "Experts" in such Registration Statement.

PricewaterhouseCoopers LLP
McLean, Virginia
June 18, 1999