

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

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934

For The Fiscal Year Ended June 28, 1998

TRANSITION REPORT PURSUANT TO SECTION 13 OR
15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from ____ to _____

Commission File No. 0-21154

CREE RESEARCH, INC.
(Exact name of registrant as specified in its charter)

North Carolina
(State or other jurisdiction of
incorporation or organization)

56-1572719
(I.R.S. Employer
Identification No.)

4600 Silicon Drive, Durham, NC 27703
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (919) 361-5709

Securities registered pursuant to Section 12(b) of the Act: None

Securities registered pursuant to Section 12(g) of the Act:

Common Stock, \$.005 par value

(Title of Class)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

The aggregate market value of common stock held by non-affiliates of the registrant as of August 7, 1998 was approximately \$149,174,000 (based on the closing sale price of \$14.125 per share).

The number of shares of the registrant's Common Stock, \$0.005 par value per share, outstanding as of August 7, 1998 was 12,991,038.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive Proxy Statement to be delivered to shareholders in connection with the Annual Meeting of Shareholders to be held November 3, 1998 are incorporated by reference into Part III.

INDEX

	Page
Part I	
Item 1. Business	3
Item 2. Properties	15
Item 3. Legal Proceedings	16
Item 4. Submission of Matters to a Vote of Security Holders	16
Part II	
Item 5. Market for Registrant's Common Equity and Related Stockholder Matters	16
Item 6. Selected Financial Data	16
Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations	18
Item 8. Financial Statements and Supplementary Data	24
Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosures	45
Part III	
Item 10. Directors and Executive Officers of the Registrant	46
Item 11. Executive Compensation	46
Item 12. Security Ownership of Certain Beneficial Owners and Management	46
Item 13. Certain Relationships and Related Transactions	46
Part IV	
Item 14. Exhibits, Financial Statement Schedules and Reports on Form 8-K	46
Signatures	49

PART I

Item 1. Business

General

Cree Research, Inc. ("Cree" or "the Company"), a North Carolina corporation, was established in 1987 to commercialize the production of silicon carbide ("SiC") material and to develop and market SiC-based wafers and devices and other wide bandgap compound semiconductor products. In December 1987, the Company acquired an exclusive license to certain technology, developed at North Carolina State University ("NCSU") relating to silicon carbide, including a process for bulk growth of single crystalline SiC. The Company has refined and improved this technology over the past eleven years and is now a world leader in the design, development, manufacture and marketing of SiC-based semiconductor materials and electronic devices. The Company incorporates its proprietary silicon carbide technology to produce compound semiconductors for use in back-lighting, indicator lamps, displays and other lighting applications. The Company also manufactures SiC crystals that are sold for use in gemstone products and SiC wafers that are sold for research directed to optoelectronic, microwave and power devices. The Company believes that, for certain electronic applications, SiC-based compound semiconductor devices offer significant advantages over competing products based on sapphire, silicon, gallium arsenide

and other materials.

The original application of the Company's SiC technology was the world's first commercially viable blue light-emitting diode ("LED"). The Company markets its blue LED chip products principally to customers who incorporate them into packaged lamps for use as indicator lights and in back-lighting applications, including automotive dashboard instrumentation, cellular handset products and liquid crystal displays ("LCD"). The LED product is also incorporated in full color display products used for advertising and in sports arena video replay boards.

The Company also believes that it supplies much of the worldwide demand for SiC wafer products to corporate, government, and university laboratories. These customers utilize the material in the research and development of optoelectronic devices, including LED products, microwave devices for use in wireless transmission and digital ultra high frequency ("UHF") broadcast and high power devices, including power rectifiers and switches, as well as other applications.

One customer, C3, Inc. ("C3") uses SiC as a gemstone material. The product is sold in bulk crystal form and then cut, faceted and polished by C3 to create gemstones with diamond-like characteristics. Physical properties of SiC are similar to those of diamond as they are both carbon-based minerals with a similar hardness.

In August 1994, the Company formed a wholly-owned subsidiary, Real Color Displays, ("RCD"), to develop and market full color LED moving message displays. As an entry into this business, RCD acquired the assets of a Hong-Kong based company engaged in the sale of moving message signs. Vertical integration into the LED display market was seen as a means for the Company to enhance its core position in LED chip production. RCD's strategy was to target the low-end full color moving message display market, which is comprised of one and two-line message signs that display text messages and single graphics, however, these products have been de-emphasized in recent years. During the second half of fiscal 1996, Cree introduced a new LED based product, marketed as the "Real Color Module TM" component, which the Company sells to original equipment manufacturers ("OEMs") for use in building large area video display systems. This product has become the primary focus for the future of the Company's display business.

The Company performs research directed to developing future products using SiC, and believes that it leads an advanced study of these devices worldwide. This research focuses on optoelectronic, microwave and power devices. A substantial amount of Cree's internal research projects are funded by Federal government agencies and departments.

The Company's products are manufactured in a manner similar to other semiconductor materials and devices. Silicon carbide is combined with other materials and then fabricated into single crystals. The crystals are then sliced into wafers and polished and either sold as bare wafer material, or processed for further manufacture. Very thin layers of additional material may be grown on the bare wafer using a process referred to as epitaxial deposition. Wafers with these epitaxial layers may be sold outright or used to manufacture other devices. Wafers that continue for device manufacture are then fabricated in a clean room environment through various processing steps. The devices fabricated on the wafer are then tested and cut into chips for sale as LED or other products.

Description of Business

Products

Blue LEDs

Cree introduced the world's first commercially viable blue LED chip product in 1989 and has since developed several generations of blue LED products, including a more robust conductive buffer chip introduced in fiscal 1998 that is brighter, easier to manufacture and has a lower unit cost. Prior to 1989, a blue LED was not readily available as the semiconductor materials used in red, amber and yellow-green LEDs, are not able to emit blue light. Blue LEDs offered by others at this time were laboratory samples that could not be produced in volumes necessary for commercialization. Inexpensive red, amber and

yellow-green LED lamps have been available for more than 20 years and are used in everyday applications such as indicator lights on printers, computers and other equipment, and traffic signal lighting for red devices. Groups of these lights are also used for single or multicolor electronic displays. The commercial availability of the blue LED, in conjunction with red and green, is critical to enable the creation of multiple chip lamps and displays capable of producing any color in the visible spectrum. Combinations of blue, green and red light in a single cell can create any color light, including white light, making it possible to create large video displays using LED technology. In addition, blue LEDs can be used as indicator lamps, in back-lighting and in various other applications in which red, amber and yellow-green LEDs are used today. LEDs offer substantial advantages over the small incandescent bulb, including longer life, lower maintenance and energy consumption and smaller space requirements.

The Company believes that its approach of manufacturing a blue LED based on a two inch diameter SiC substrate offers a more cost effective design and process than its competitors, who use a sapphire substrate. The Cree approach is compact and uses the same top and bottom contact arrangement that is employed in standard red, amber and yellow-green LED products. Most competitors place both the positive and negative contact on the top of the diode because the sapphire substrate material used in their products is not electrically conductive. Cree's smaller chip design enables the diode to use less material and permits more devices to be fabricated on each wafer processed. Competitors offer the blue LED at selling prices higher than the Company's prices. The Company has been working continuously to reduce the cost of its blue LED chip as it believes the rate of market acceptance for blue LED products is significantly dependent on pricing. The Company also anticipates the market for single blue LED lamps will increase significantly once the pricing of these products is similar to that of the red, amber and yellow-green LED products available today. During fiscal 1998, the Company was able to reduce its cost to manufacture an improved blue LED product by more than 50% through higher throughput, improved yields, smaller die size, larger wafer size and other attributes of the conductive buffer process. If the Company can continue this trend, it

4

will allow greater flexibility in pricing to customers in the future. There is no assurance, however, that the Company will be able to achieve lower costs in the future or that lower costs will produce increased sales.

Presently, the Company's blue LED chips are primarily used for back-lighting purposes in automotive dashboard, cellular handsets, LCD displays and other applications. In addition, they are also used in office equipment indicator lighting, indoor full-color video display technology, such as stadium video replay boards, moving message advertising and informational signs.

The Company supplies blue LED chips to LED component manufacturers who assemble the chip into a lamp and then manufacture solid-state lighting components to supply to OEMs. The majority of the market for LED-based display applications is in the Pacific Rim. The Company's principal customers who serve the display market are located in China, Taiwan and Japan. Cree also sells the LED product to European and domestic accounts.

Wafer Products

The Company believes that it is the leading manufacturer of semiconductor quality silicon carbide in the world today. Cree grows its own crystals using a proprietary process. The crystals are sliced into wafers, polished and then prepared for the Company's own manufacturing line or for sale to corporate, government and university programs that are using SiC for the development of electronic components. Each order may be sold as a bare wafer or customized by adding epitaxial films, depending upon the nature of the development program. These customers utilize the material as the basis for research in optoelectronic, microwave and high power devices. For the past several years, the Company has worked to improve the quality of its wafers while increasing the size. The absence of crystal defects is critical to the development of high power devices in SiC. During fiscal 1998, the Company has been able to reduce these defects by approximately 50%. Cree is developing two inch diameter wafers and expects that these wafers will constitute the majority of material sales during fiscal 1999, although development delays could defer such sales. This larger sized wafer will replace the 1 3/8 inch product which comprised the majority of sales in 1998. The larger diameter wafer is expected to enable lower wafer costs per chip for customers by substantially increasing

the total amount of chips per wafer. The potential market for wafers depends on whether the Company's customers are successful in creating commercial products using SiC materials.

Silicon Carbide Crystals for Gemstone Applications

During fiscal 1998, the Company worked under development agreements with C3. C3 was founded to develop gemstone products from SiC crystals. These agreements, which were amended and restated in July 1998 as a single agreement, call for the development of improved processes for the manufacture of near colorless, large volume silicon carbide crystals for use in lab created gemstone products. While the focus of this agreement is currently to increase crystal size and volume, longer term goals include the development of crystals with a higher color range. The development agreement will enable the Company to perform further research in the creation of larger volume SiC crystals that may eventually be employed in other products.

The Company also provides SiC crystals to C3 pursuant to an exclusive supply agreement. C3 cuts and polishes the product to fabricate diamond-like gemstones. Recently, C3 has ordered additional crystal grower equipment from Cree and contracted to increase volume requirements. The potential for increasing demand depends on Cree's ability to meet C3's requirements for color, clarity and yield. Future demand is also dependent on C3's ability to cut, facet and effectively market its gemstone products.

Modules and Moving Message Signs

5

The Company markets a modular LED-based component to customers as a building block for indoor video and display systems. The product is a low profile full-color LED sub-assembly for use in both large and small scale full-color LED display systems. It uses surface mount pixels which combine the three primary color LED chips which are assembled into very thin modules. The modules can be combined to form any size display.

Due to the diverse market for LED display systems, the Company cannot effectively address all opportunities at the display system level and has therefore chosen a strategy of supplying modules directly to well established LED display system suppliers. This approach maximizes the efficiency of the Company's sales resources, minimizes the capital investments that would need to be made as a systems supplier, and does not place the Company in competition with potential display system customers.

The Company's RCD subsidiary has been manufacturing full color moving message sign products since its inception in August 1994. The Company is able to produce a variety of color moving message products. The sign products range in brightness from indoor to high-bright, which is suitable for store window applications. These products provide a low cost and effective way of displaying text messages which can be easily changed and updated. The applications for these displays include point-of-sale advertising and informational signs.

The Company is currently reviewing the business plans for both of these product lines to maximize sales for fiscal 1999. The Company is developing a brighter blue and pure green LED product which is expected to be introduced during fiscal 1999, although development delays could defer the product introduction. The new LEDs are expected to provide the display business a low cost, high performance product suitable for outdoor applications. This expected upgrade in technology is anticipated to change market opportunities for these products.

Product Development

The Company is engaged in a number of research and development projects. Some projects have the goal of developing commercial products for the market in the near term. Other projects have longer term goals. There can be no assurance as to the successful development of commercial products or the timing thereof. All of the products under development are based on SiC materials grown using the Company's proprietary processes.

The Company partners with the Federal government in many of its current research and development efforts. Contracts are awarded to the Company to fund both short-term and long-term research projects. Funding for projects with near-term applications for the Company typically include a cost-share arrangement. Projects that may not have readily available production applications or projects that relate to longer term development are normally awarded on a cost-plus basis with built-in margins exceeding 5%. Pursuant to each contract, the amount of funding is determined based on cost estimates that include direct costs, plus an allocation for research and development, general and administrative costs, and a cost of capital expense. Cost-plus funding is determined based on actual costs plus a set percentage margin. For cost-share contracts, the actual costs are divided between the U.S. Government and the Company based on the terms of the contract. The government's cost-share is then funded to the Company. The contracts typically require the submission of a written report to document the results of such research. The government may terminate contracts with the Company at its convenience and typically obtains a nonexclusive license to use any inventions made in the course of the research solely for government purposes.

6

For financial reporting purposes, the Company includes funding for all cost-plus and cost-share contracts, where the Company anticipates that total funding will exceed direct costs over the life of the contract, as contract revenue. All associated direct costs for these contracts are reported as a cost of contract revenue. For cost-share contracts where the Company anticipates that costs will exceed funding over the life of the contract, funding is reflected as a reduction of research and development expenses, while the associated direct costs are reported as research and development expenses. During fiscal years 1998, 1997 and 1996, the Company spent \$8,474,000, \$9,411,000, and \$5,572,000, respectively, for direct expenditures relating to product research and development activities. During the same periods, the U.S Government funded \$8,241,000, \$8,760,000 and \$5,721,000, respectively, for direct and indirect expenses. In addition, customers have also sponsored research activities relating to the development of new products. During fiscal years 1998 and 1997, customers spent \$3,477,000 and \$66,000, respectively, for product research and development activities. In fiscal 1996, customers did not provide significant funding for research activities. The Company expects to continue to perform substantial research and product development projects during the next fiscal year.

The following applications are currently under research and development by the Company. The Company expects several of these applications to be completed in fiscal 1999, although delays could occur. Other development projects, such as power devices and blue laser research are not expected to produce commercial results until later years.

Silicon Carbide Material

The Company continually conducts research aimed at improving the quality of its wafers and enhancing its epitaxial (active layer) process. The Company believes it can increase the diameter of its wafers while lowering manufacturing costs and permitting the development of more complex devices. The key determinant that will enable the manufacture of a more complex device, such as power semiconductors, is the substrate quality and wafer size. Epitaxial thickness, lower defect density and the elimination of variation are important factors to improve yield, marketability and lower cost. The larger two inch wafer size, which the Company expects will comprise the majority of fiscal 1999 wafer sales, is considered a minimum standard for many niche fabrication facilities. The Company continues work on a \$7.6 million contract awarded by the Defense Advanced Research Projects Agency ("DARPA") to fund this research and development. The contract has \$1,702,000 in funds remaining and extends through May 1999.

Lower Cost Blue LED Chips

In fiscal 1998, Cree developed a blue LED that was brighter than its prior generation blue LED. The brighter chip was developed by using a new process that allows a chip design in which current flows vertically through the device. This design, which is currently manufactured on a two inch wafer, yields more chips per wafer and requires fewer manufacturing steps; therefore, it is produced at a lower cost.

In order for the product to approach the acceptance and marketability of red, amber and yellow-green LEDs, the Company's management believes the price of the chip must be further reduced. In order to reduce the cost of production, the Company must attain success in increasing volume throughput by expanding the customer base, and develop additional manufacturing yield improvements. These modifications are expected to significantly reduce unit costs by improving the die per wafer yield and spreading fixed costs over more units. There can be no assurance that these goals will be achieved. If the Company does not achieve sufficient increases in yields and volume throughput, then costs would fail to decline significantly and the Company's ability to generate higher margins or to maintain margins while reducing chip prices would be impaired.

Brighter Blue and Green LED Chips

7

The Company is working to develop brighter blue and green LEDs that would be cost-effective for outdoor applications. This design employs indium gallium nitride layers on silicon carbide. The current generation of the Company's blue LED products are primarily used in indoor applications, as the brightness of the product is not as high as some competing products. The Company believes that this chip will open new markets with a low cost platform. Cree is also developing two new green LED products that employ the same technology as the new brighter blue offering. These products are expected to be suitable for the outdoor LED display market and for traffic signal applications, respectively. Samples of these new products are expected to be released in the first quarter of fiscal 1999, although introduction could be delayed by unforeseen development problems.

High-Power Radio Frequency and Microwave Transistors

The Company is currently developing high-power transistors that operate at radio and microwave frequencies. Such devices could have important applications in cellular phone base stations, high-power solid-state broadcast systems for television and radio, and radar search and detection equipment.

The Company also continues development of a SiC-based device which is designed for use in base stations for wireless systems. This device, which is not expected to be released commercially before late fiscal 1999, can be used for frequency band applications above 1.8 gigahertz, such as the personal communications system ("PCS") base station network currently being installed by some wireless carriers. The Company believes that silicon carbide transistors will be superior to current silicon and gallium arsenide devices due to greater power per transistor. The higher output power available from SiC devices is expected to allow wireless systems to use fewer transistors per base station and less complex circuitry, at a lower cost. This power density is four to five times higher than that achieved with equivalent silicon or gallium arsenide devices. In addition, SiC's ability to dissipate heat more rapidly than other materials reduces the need for costly cooling equipment. In March 1998, the Company demonstrated a device with 53 watts of power from a single chip. Cree expects to offer a product that emits 75-100 watts of power from a single chip in order to reach commercial viability. During fiscal 1998, the Company continued to work on several contracts from Naval Research Laboratories, DARPA, and the Army Research Laboratories to advance this research. These contracts extend through August 1999.

During fiscal 1998, the Company reported the demonstration of gallium nitride on SiC transistors that, although low in total output power, operate at a power density of 6.8 watts per millimeter at 10 gigahertz. This power density is the highest ever reported for a solid state field effect transistor operating at radio or microwave frequency and is eight times higher than that achieved with equivalent silicon or gallium arsenide devices. A commercial device capable of emitting power at this level is not expected during the next fiscal year.

Blue and Ultraviolet ("UV") Laser Diodes

The storage capacity of optical disk drives can be increased significantly by utilizing a laser diode capable of emitting short wavelength light. The Company has demonstrated a laser diode fabricated from indium gallium nitride and related materials deposited on SiC substrates that emits a shorter wavelength blue light than that of the red or infrared lasers used today. This technology could potentially increase the storage capability of optical disk drives by a factor of four to five. This increased storage capability could lead to advances in CD-ROM data storage and audio and video compact disc

applications.

Government funds were last allocated to development of the blue laser diode in June of 1996 when DARPA awarded a \$4.3 million contract to the Company to be spent over a three year period. Most of these funds have now been exhausted. As a part of this development, in July 1997 the Company announced that it

8

had demonstrated a continuous wave laser operation at room temperature. Substantial work is still needed to produce a blue laser suitable for commercial application. There can be no assurance that a commercial product will result from this research and development effort.

High-Power Semiconductors

The Company is working on the development of prototype high power devices that, if successfully developed, could have many significant uses. Such devices could be employed in applications involving power conditioning as well as switching power to allow electricity to flow to other electronic components. SiC based power devices have the potential to handle up to fifty times more power density than current silicon based devices. SiC devices are expected to operate at significantly higher temperatures and voltages, have superior switching capabilities, yet retain a die size almost twenty times smaller than a silicon based device. Potential applications include power drive components for electric vehicles, lighting ballast components, industrial motor controls, and power supplies with minimal interruption used in power transmission. These power devices are not anticipated to be commercially available during the next fiscal year.

The Company recently entered into a three year, up to \$3 million, project with Kansai Power Electric Company, the fourth largest power company in the world, for research in switching systems in power transmission networks. The Company continues to make progress in improving the quality of its SiC material, improving processes for fabricating devices and improving device designs. However, there is no assurance that further work will result in improvements in processes, material quality and end products that are necessary to introduce such products to market. Also, it is anticipated that the Company will need to develop methods to reliably produce wafers of a three inch or greater diameter in order to make such devices economically viable. There can be no assurance that this will be accomplished. The Company continues to work under contracts with the government and other sources for research in this area. Work is currently being performed for the Office of Naval Research and other sources. These contracts extend through September 2000.

Gemstone Applications

During fiscal 1998, the Company worked under development agreements with C3. These agreements, which were amended and restated in July 1998 as a single agreement, call for the development of improved processes for the manufacture of colorless, large volume silicon carbide crystals for use in lab created gemstone products. The agreement obligates C3 to pay Cree's direct costs of the development effort, plus an overhead charge on certain costs. Work to be performed under this contract during the next year will target the development of larger sized crystals and is expected to result in a three inch diameter crystal for possible use in other product applications.

High-Temperature Devices

The Company has developed prototype SiC-based transistors and rectifiers that operate at higher temperatures than comparable silicon devices. These high-temperature semiconductors have potential applications in the automotive, energy and aerospace industries. For example, these devices could be used to amplify low level sensor signals directly on the engine block of an automobile engine to measure engine performance. This allows the optimization of fuel economy by adjusting engine performance during operation. In addition, these devices could find use in applications such as down hole drilling equipment and space-based power systems. Although prototype devices have been developed, additional development work is needed to achieve commercial viability. Work is currently being performed for the Defense Special Weapons Agency and other sources.

Strategic Alliances

The Company believes that the formation of strategic alliances with other companies is a viable strategy for the immediate development of its technology to bring certain products to market.

Cree and Siemens A.G. ("Siemens") entered into a Development, License and Supply Agreement in fiscal 1996 to work jointly on the development of a green LED on silicon carbide substrates, as well as improvements to Cree's blue LED product. Siemens is a manufacturer of LED lamps for its merchant components business. In addition to undertaking the joint development program, Siemens paid a \$1.5 million license fee to license certain epitaxial and fabrication technology from Cree for use in the manufacture of green and blue LEDs. The agreement also includes provisions under which Cree will supply a portion of Siemens' requirements for blue and green LEDs and wafer products required for the manufacture of such LEDs. In September 1996, the Company entered into a Purchase Agreement with Siemens, pursuant to which Siemens agreed to purchase blue LED chips made using the Company's gallium nitride-on-silicon carbide technology. In December 1997, the Purchase Agreement was amended to provide for additional shipments of LED products through December 1998. The Company is currently negotiating an extension of this agreement with Siemens.

Also, in September 1996, the Company entered into a License and Technology Transfer Agreement and a related Supply Agreement with Shin-Etsu Handotai Co. Ltd. ("Shin-Etsu") and other parties. Pursuant to these agreements, the Company granted Shin-Etsu a license to use certain epitaxial and device fabrication process technology for the manufacture of the Company's blue LED product and agreed to supply silicon carbide wafers required to manufacture the licensed product. The license agreement provided for a payment of a \$2.6 million license fee and royalties based on a percentage of sales of products made using the licensed technology.

Sales and Distribution

The Company markets its blue LED chips domestically and in a number of foreign countries. Because the production of lamp and display products incorporating LED chips is concentrated among a relatively small number of manufacturers, the Company uses an executive sales approach to market its LED chips. In Japan the Company markets its LED products and SiC wafers through its distributors Sumitomo Corporation and Shin-Etsu Handotai Co., Ltd. pursuant to a Distributorship Agreement signed in 1995. The Company markets its LED and SiC wafer products throughout the rest of the world via a small direct sales staff.

The Company currently distributes the majority of its LED-based modules directly to OEMs. The OEMs in turn manufacture, sell and generally install modular based display systems at their customers' sites.

The majority of moving message signs are sold through the Company's subsidiary, RCD, via a network of international distributors and sales representatives in South America, the United Kingdom, the Pacific Rim and Canada. RCD also employs a direct sales program and uses a dealer network to market a portion of its products in the United States.

The Company also sells SiC crystal materials for use in gemstone applications directly to C3 under an exclusive supply agreement.

Competition

characterized by rapid technological change, price erosion, and intense foreign competition. The Company believes that it currently enjoys a favorable position in the existing and potential emerging markets for SiC-based products and materials primarily as a result of its proprietary SiC-based technology. However, the Company faces actual and potential competition from a number of established domestic and international compound semiconductor companies. Many of these companies have greater engineering, manufacturing, marketing, and financial capabilities than the Company.

The Company's primary competition for the blue LED product comes from Nichia Chemical Industries, Ltd. ("Nichia") and Toyoda Gosei Co. Ltd. ("Toyoda"), companies headquartered in Japan, and from The Hewlett-Packard Company ("HP"), who currently market blue LED products that are brighter than the Company's LED device. The sales price for Cree's LED is presently lower than the standard price of the product offered by these companies. However, there can be no assurance that these companies will not offer lower pricing in the future.

Cree's LED product is made by growing epitaxial layers on SiC substrates for the subsequent fabrication of the blue LED. Competing blue LED products employ a sapphire substrate. Cree's vertical chip has a lower cost primarily as a result of its size. Cree's chip has a surface area that is 57% of the size of the current competitive chip. Thus, SiC substrates can be more expensive than sapphire and still be competitive on a price per chip basis. The sapphire substrate requires a larger chip because sapphire is an insulator material, and as such, requires a horizontal device with both contact points at the top of the device. The Cree SiC product is a conductive substrate, which allows one contact point on the top and the other on the bottom, allowing for a smaller vertical device. Furthermore, because red, amber and yellow-green chips are vertical devices, Cree's vertical structure facilitates easier use in existing LED component assembly operations.

The ability of the Company to compete successfully in existing and future markets for its products will depend on factors both within and outside its control. These factors include, but are not limited to, success in manufacturing new higher brightness SiC based products that are suitable for outdoor applications, improvements to existing products, improvements in its SiC-based process technology, increasing production capacity of LED products, protection of its products by effective utilization of intellectual property laws, diversity of product line, the rate at which customers incorporate the Company's components into their products, product introductions by the Company's competitors, and general domestic and international economic conditions. The Company; however, expects that price will be a determining factor for many of its products and it devotes substantial efforts to reduce production costs (See "Product Development"). There is no assurance that the Company's competitive position will not be adversely affected by one or more of these factors in the future, particularly in view of the fast pace of technological change in the semiconductor industry.

Sources and Availability of Raw Materials

The Company depends on single or limited source of suppliers for a number of raw materials and components used in its SiC wafer products and LEDs, including certain key materials and equipment used in its crystal growth, wafering, polishing, epitaxial deposition, device fabrication, and device test processes. The Company generally purchases these single or limited source materials and components pursuant to

purchase orders and has no guaranteed supply arrangements with such suppliers. In addition, the availability of these materials and components to the Company is dependent, in part, on the Company's ability to provide its suppliers with accurate forecasts of its future requirements. Production of many materials used in semiconductor manufacturing is limited to one or a few manufacturing facilities worldwide. Disruption of production at one or more of these facilities represents a risk for the entire semiconductor industry. However, smaller companies, such as Cree, may be at greater risk than larger companies if

supplies of any materials become scarce as suppliers may favor their larger customers in allocating their products. Any interruption in the supply of these key materials or components could have a significant adverse effect on the Company's operations.

Customers

During fiscal 1998, sales to Siemens A.G. accounted for more than 10% of total revenue. The loss of Siemens' business would have a material adverse effect on the results of operations if the Company were unable to replace the volume with another customer. In addition, sales to C3, Inc. and the Department of Defense each comprised more than 10% of total Company revenue for fiscal 1998. For the year ended June 30, 1997, revenue from Siemens and the Department of Defense each accounted for more than 10% of total revenue. For the year ended June 30, 1996, Siemens, Sumitomo and the Department of Defense revenues each accounted for more than 10% of total revenue.

Backlog

As of June 28, 1998, the Company had a firm backlog of approximately \$12.6 million consisting of approximately \$7.2 million of product orders and \$5.4 million of executed research contracts with the U.S. Government. This compares to a firm backlog level of \$17.5 million as of June 30, 1997, which consisted of approximately \$9.2 million of product orders and approximately \$8.3 million of executed research contracts with the U.S. Government.

Patents and Proprietary Rights

The Company has an exclusive license to ten U.S. patents from North Carolina State University ("NCSU"), and holds 40 additional domestic patents of its own or owned jointly. Cree licensed 12 foreign patents issued on the same NCSU technology and holds 19 foreign patents issued on Cree applications which are counterparts to the U.S. patents. The Company also holds exclusive license rights to inventions owned by NCSU which are subject to one pending U.S. patent application and two foreign applications, which are counterparts of the U.S. patent applications. Cree has 27 patent applications of its own pending in the United States and also has 79 foreign patent applications pending. In addition to its patent rights, the Company relies upon certain proprietary know-how and trade secrets in its manufacturing process and has entered into non-disclosure agreements to protect its proprietary technology with both employees and parties outside of the Company.

The Company earns a material amount of its revenues in overseas markets. See "Customers". While the Company has applied for patent protection for certain of its technologies and products in some of these markets, there can be no assurance that such markets will be subject to the Company's intellectual property rights.

The NCSU License. In 1987, the Company entered into a license agreement with NCSU pursuant to which the Company was granted a worldwide, fully paid, exclusive license to manufacture, use, and sell products and processes covered by the claims of ten U.S. patent applications filed by NCSU relating to SiC materials and SiC-based semiconductor devices, some of which also have been filed in foreign countries. Ten patents were subsequently issued with respect to eight of those applications, with expiration dates between 2007 and 2009. Twelve of the foreign filings have been issued with expiration dates from 2006 through 2012. Under the terms of the license, the U.S. Office of Naval Research has retained an interest in the licensed technology for certain military applications.

Cree's Patents. Since its inception, the Company has been granted 40 U.S. patents of its own or jointly owned. These patents expire between 2008 and

2016. The Company has filed a number of these patent applications in foreign countries, 17 of which have been issued. In addition, the Company has, in the past, entered into joint research and development programs to develop new SiC-based devices. These efforts have resulted in four jointly-owned patents, one with Purdue University, two joint patents with General Electric Corporation, and one joint patent with NCSU.

Although the Company has not received any claims that its products infringe on the proprietary rights of third parties, there can be no assurance that third parties will not assert infringement claims against the Company in the future with respect to current or future products or that such assertion may not require the Company to enter into royalty arrangements, prevent the Company from selling products, or result in protracted or costly litigation.

Because of rapid technological developments in the semiconductor industry and the broad and rapidly developing field of patent law, the patent position of any semiconductor device manufacturer, including that of the Company, is subject to uncertainties and may involve complex legal and factual issues. Consequently, although the Company holds certain patents, is licensed under other patents, and is currently pursuing additional patent applications, there can be no assurance that patents will be issued from any pending applications or that claims allowed by any existing or future patents issued or licensed to the Company will not be challenged, invalidated, or circumvented, or that any rights granted thereunder will provide adequate protection to the Company. Moreover, the Company may be required to participate in interference proceedings to determine the priority of inventions, which could result in substantial costs to the Company.

Environmental Regulation

The Company uses and disposes of hazardous substances and wastes in its manufacturing and research and development activities and is thus subject to a variety of federal, state and local government laws and regulations related to the storage, use and disposal of such materials. The Company is also subject to laws and regulations related to the discharge of environmental pollutants. The Company believes that it is in compliance with all applicable laws regulating hazardous materials and environmental pollutants and is not presently aware of any contamination at any of its premises for which it could be responsible under applicable law. However, the failure to comply with present or future laws or regulations relating to such materials could result in fines or other liabilities being imposed on the Company, or in suspension or cessation of operations, which events could have a material adverse effect on the Company's business and prospects.

Employees

13

As of June 28, 1998, the Company employed 248 people, all of which are located in the United States. None of the Company's employees are represented by a labor union or subject to collective bargaining agreements. The Company believes relations with its employees are strong.

Risk Factors

Ownership of the Company's securities is subject to a number of risks, including the following:

Production Efficiency and Availability of Raw Materials

The Company must continue to improve its production yields in order to reduce costs. Production yield problems or missed efficiencies may have an adverse effect on the Company's operations. Should the Company experience protracted problems in the production of its key components or the operation of its proprietary manufacturing systems, its ability to deliver its products could

be materially impacted. Such problems often occur as new products are introduced or improvements are made to existing products. As the Company expects several significant development projects to be completed in fiscal 1999, the Company may be particularly vulnerable to this risk. The Company is also dependent on a limited source of suppliers for a number of raw materials and components used in its SiC wafer products and LEDs. An interruption in the supply of these items could cause the Company's manufacturing efforts to be damaged and result in customer dissatisfaction.

Concentration of Business

The Company relies on a small number of customers for much of its sales. At present, the majority of the LED sales are made to Siemens pursuant to the parties' Purchase Agreement executed in September 1996 and amended in December 1997. This agreement calls for shipments through December 1998, subject to certain rescheduling provisions. Failure to extend this agreement could have a material adverse effect on the business and prospects of the Company. Dependence on one or a few customers may require the Company to agree to unfavorable contract terms and conditions that could cause contracts to be unprofitable. Likewise, the failure of the Company to diversify its customer base could limit the prospects for the LED business.

Foreign Sales

The Company has, and is expected to continue to have, a substantial percentage of its sales to foreign companies, primarily in Asia and Europe. There can be no assurance that the Company's current intellectual property position will be enforceable in foreign countries to the extent it is enforceable in the United States. In addition, the Company's international sales may be subject to government controls and other risks, including export licenses, federal restrictions, changes in demand resulting from currency fluctuations, political instability, trade restrictions, changes in tariffs and collection of accounts receivable. If the current slowdown in the economies of certain Asian countries worsens, the Company may be materially adversely affected.

Research and Development

To remain competitive, the Company must continue to invest substantial resources in research and development. The Company's prospects for both near-term and long-term success are substantially dependent on its ability to continue to increase the performance of its LED products and to increase production efficiency. The successful introduction of the brighter blue and green products and the expected

higher yield and lower costs of the conductive buffer product, is very important for the Company to achieve its goals for fiscal 1999. Furthering the need for enhanced efficiency, is the expected decline in the average sales price for the LED products in fiscal 1999. Without the introduction of the brighter LED products and yield and volume efficiencies of the conductive product, the Company may not maintain or realize growth in the LED business. In addition, the Company must also invest resources toward the introduction of microwave products in fiscal 1999. See "Product Development". Near-term results may suffer due to a lag between investment in development, marketing and production, and revenues derived from the investment even if new or improved products are a long-term success.

The patents and other proprietary rights of the Company may not prevent the competitors of the Company from developing noninfringing technology and products that are more attractive to customers than the technology and products of the Company. The technology and products of the Company could be determined to infringe the patents or other proprietary rights of others. In addition, defending such an infringement claim could have a material adverse impact on the Company even if the claim were found to lack merit.

Dependence on Contracts With the U.S. Government

Over the past several years, the Company has been awarded a number of contracts from agencies of the United States government for purposes of

developing SiC material and SiC-based semiconductor devices. Government policy is constantly changing, therefore, there can be no assurance that the Company will enter into any additional government contracts, or, if such contracts are entered into, that they will be profitable or produce contract revenue. In addition, there can be no assurance that after any such contracts are entered into, changing government regulations will not significantly alter the benefits of such contracts that can be expected to inure to the Company. Cutbacks in, or reallocations of Federal spending, including changes which could be proposed or implemented in the future, could have a material adverse impact on the Company's results of operations, as well as its ability to implement its research and development programs.

Item 2. Description of Property

The Company purchased real property consisting of approximately 30 acres of land on which exists a 162,000 square foot production facility and a total of 35,000 square feet of service and warehouse buildings. This property is located in Durham County, North Carolina, in the vicinity of the Research Triangle Park. The purchase price for the land and buildings was \$3 million. Since the acquisition of this facility, the Company has invested approximately \$8.4 million in building upfits and improvements. The Company plans to relocate the majority of its operations to this facility over the next few years.

The Company currently leases space for its manufacturing and primary research and development facilities, which occupy 21,900, 1,900 and 1,900 square feet, respectively, in the same building in Durham, North Carolina. The leases expire in December 2001, May 1999 and October 1998, respectively. In addition, the Company also leases approximately 13,200 square feet in a separate building in Durham, North Carolina, for its device fabrication and test processes. This lease term expires in August 2000.

Item 3. Legal Proceedings

The Company is not a party to any material litigation and is not aware of any pending or threatened litigation that could have a material adverse effect either upon the Company's business, operating results or financial condition.

Item 4. Submission of Matters to a Vote of Security Holders

15

No matters were submitted to a vote of security holders during the fourth quarter of fiscal 1998.

PART II

Item 5. Market for Registrant's Common Equity and Related Stockholder Matters

Common Stock Market Information. The Company's common stock is traded in the NASDAQ National Market System and is quoted under the symbol "CREE". The following table sets forth, for the quarters indicated, the high and low bid prices as reported by NASDAQ. Quotations represent interdealer prices without an adjustment for retail markups, markdowns or commissions and may not represent actual transactions.

	FY 1998		FY 1997	
	High ----	Low ---	High ----	Low ---
First Quarter	\$20-1/2	\$11-3/4	\$15-3/4	\$8-1/4
Second Quarter	\$29-1/5	\$15-5/8	\$14	\$8-7/8
Third Quarter	\$19-5/8	\$13-1/2	\$15-7/8	\$9-3/8
Fourth Quarter	\$17-5/8	\$14	\$15-1/8	\$9-1/2

Holders and Dividends. There were approximately 381 holders of record of the Company's Common Stock as of August 7, 1998.

The Company has never paid cash dividends on its Common Stock and does not anticipate that it will do so in the foreseeable future. There are no contractual restrictions in place that currently materially limit, or are likely in the future to materially limit, the Company from paying dividends on its common stock, but applicable state law may limit the payment of dividends. The present policy of the Company is to retain earnings, if any, to provide funds for the operation and expansion of its business.

Item 6. Selected Financial Data

The consolidated statement of operations data set forth below with respect to the years ended June 28, 1998, and June 30, 1997 and 1996, and the consolidated balance sheet data at June 28, 1998 and June 30, 1997 are derived from, and are qualified by reference to, the audited consolidated financial statements included elsewhere in this report and should be read in conjunction with those financial statements and notes thereto. The consolidated statement of operations data for the years ended June 30, 1995 and 1994 and the consolidated balance sheet data at June 30, 1996, 1995 and 1994 are derived from audited consolidated financial statements not included herein.

16

Selected Financial Data
(in thousands, except per share data)

	Years Ended				
	June 28, 1998	June 30, 1997	June 30, 1996	June 30, 1995	June 30, 1994
Statement of Operations Data:					
Product revenue, net	\$ 34,891	\$ 19,823	\$ 9,689	\$ 5,989	\$ 3,534
Contract revenue, net	7,640	6,535	3,945	3,011	3,956
License fee income	--	2,615	1,423	--	--
Total revenue	42,531	28,973	15,057	9,000	7,490
Net income (loss) from continuing operations	6,275	3,542	243	(17)	(431)
Basic earnings (loss) per common share	\$ 0.49	\$ 0.28	\$ 0.02	\$ 0.00	\$ (0.04)
Dilutive earnings (loss) per common share	\$ 0.47	\$ 0.27	\$ 0.02	\$ 0.00	\$ (0.04)
Weighted average shares outstanding	13,493	13,126	12,615	10,367	10,337
Balance Sheet Data:					
Working Capital	\$ 27,603	\$ 21,013	\$ 18,596	\$ 9,971	\$ 11,006
Total assets	72,724	50,137	43,796	20,924	20,018
Long-term obligations	10,804	1,638	--	--	14
Shareholders' equity	\$ 54,865	\$ 45,125	\$ 40,672	\$ 19,504	\$ 19,334

* The Company has not declared a dividend on common stock since its inception

** The years ended June 28, 1998 and June 30, 1997, 1996 and 1995 include the Company's wholly owned subsidiary, Real Color Displays, Inc.

17

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Cautionary Statement Identifying Important Factors That Could Cause the Company's Actual Results to Differ From Those Projected in Forward Looking Statements

Pursuant to the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995, readers of this report are advised that this

document contains both statements of historical facts and forward looking statements. Forward looking statements are subject to certain risks and uncertainties, which could cause actual results to differ materially from those indicated by the forward looking statements. Examples of forward looking statements include, but are not limited to (i) projections of revenues, income or loss, earnings per share, capital expenditures, dividends, capital structure and other financial items, (ii) statements of the plans and objectives of the Company or its management or Board of Directors, including product enhancements, or estimates or predictions of actions by customers, suppliers, competitors or regulatory authorities, (iii) statements of future economic performance, and (iv) statements of assumptions underlying other statements and statements about the Company and its business.

This report also identifies important factors which could cause actual results to differ materially from those indicated by the forward looking statements. These risks and uncertainties include the Company's ability to complete development of and successfully introduce new LED and microwave products, to lower LED and wafer costs, to gain a larger customer base, and to increase product yields and wafer size, possible price competition, potential failure to obtain expected volume increases from existing customers, potential infringement claims by third parties, potential inability of the Company to enforce its intellectual property rights against others, availability and continuation of U.S. government funded research contracts, possible delays in the introduction of other new products, and delays in customer acceptance of products or services and other factors, which are described herein. See Item 1, Business, Risk Factors.

On September 24, 1997, the Board of Directors of Cree Research, Inc. changed the Company's fiscal year from the twelve months ending June 30, to a 52 or 53 week year ending on the last Sunday in the month of June. The Company's 1998 fiscal year extended for the period from July 1, 1997 to June 28, 1998.

Results of Operations

For the fiscal year ended June 28, 1998, Cree posted record revenue and net income of \$42,531,000 and \$6,275,000, or \$0.47 per diluted share, respectively. These results reflect an increase in revenue and net income of \$13,558,000 and \$2,733,000, respectively, over the prior year. Product revenue, which includes LED, wafer and other material sales, module display products and moving message sign sales, reflects a 76% increase over fiscal 1997 results. Comparatively, product revenue also increased 105% during fiscal 1997 over 1996 amounts.

Product Revenue

During fiscal 1998, a significant portion of the rise in product revenue was directly attributable to the 132% increase in blue light-emitting diode ("LED") volume pursuant to an amendment to a purchase agreement signed in September 1996 with Siemens A.G. ("Siemens"). That agreement and two subsequent amendments, provided for \$6.8 million in additional sales to Siemens in fiscal 1998 over 1997. As amended, the agreement presently obligates Siemens to purchase certain quantities of LED products through December 1998. Additionally, the amendment provides for higher prices per unit on items shipped early in the contract, with unit prices being reduced as volume increases in the latter part of the contract. Further reductions in per unit costs are expected throughout fiscal 1999 as a result of the full implementation to the conductive buffer product, higher throughput and other plant asset efficiencies. There can be no assurance that these

efficiencies will be achieved. LED sales also increased by 70% in fiscal 1997 over 1996 amounts due to volume stemming from the original agreement and first amendment with Siemens.

The Company continues to focus on obtaining additional LED customers who are interested in ordering commercial quantities of the product. To meet this goal the Company anticipates the release of new higher brightness blue and green LED products, which are expected to be competitive in outdoor applications, during the first half of fiscal 1999. Anticipated volume associated with these new products, combined with lower LED pricing, are expected to increase customer orders. If the Company is unable to expand its customer base or release these new products, its revenue and earnings growth

potential could be adversely impacted. The Company believes that in order to significantly grow market demand for LED products and to defray competition, it must continue to substantially lower prices. During fiscal 1998, the Company's average sales price per LED unit dropped 32% over 1997 levels. This decline in price was more than offset by the 132% increase in product volume. The Company's goal is to continue to lower sales prices to meet customer price points throughout fiscal 1999. While the Company reported a lower average sales price for LEDs during fiscal 1998, total product profitability increased due to higher volumes and other efficiencies. Overall, average chip costs also declined in fiscal 1998 due to a combination of a smaller chip size, the conversion to a two inch diameter wafer, higher volume which spreads fixed costs over more units and, in the latter half of the fourth quarter, benefits from the conductive buffer technology.

During 1999, the Company anticipates further reductions in chip costs due to the full year benefits of the conductive buffer process, higher volume throughput and greater yield. If the Company is unable to realize these benefits, profits are anticipated to deteriorate during fiscal 1999 due to declining per unit sales prices in the Company's contract with Siemens. Greater volume, while maintaining margins per unit, has been and will continue to be Cree's strategy in the LED marketplace. Many current and potential customers for the Company's products are based in Asia. Poor economic conditions and currency devaluation in some countries may adversely affect the Company's ability to increase sales volume both as a result of lower demand by customers and competition reducing the price of products.

Wafer and other materials revenue has increased 56% in fiscal 1998 over 1997 due primarily to a 29% increase in wafer volume associated with a greater interest in the worldwide research community for SiC-based products. The Company continues to make improvements to the quality of its SiC material, thus increasing the demand for research in microwave and power applications. These wafer quality improvements have also led to corporate research funding, including work performed toward the development of both microwave and power devices during the year. Profits contributed by wafer sales are expected to rise as the Company continues to improve quality while lowering costs due to higher throughput and greater yield efficiency. During fiscal 1997, wafer sales grew 60% over 1996 amounts, due to the greater acceptance of the material in the marketplace and a slight increase in the average sales price due to a greater mix of premium wafer products available with low defect levels.

In July 1997, the Company announced development and supply agreements with C3, to develop and supply bulk single crystal silicon carbide for gemstone applications. The development program included the development of improved processes for manufacturing colorless single crystalline SiC for use in gemstones with diamond-like characteristics. This research is particularly important as it also funds the development of larger diameter crystals. In addition to the development agreement, the Company also entered into an exclusive supply agreement where the output of dedicated production was supplied and priced at cost plus a stipulated margin. For fiscal 1999, pricing under the supply agreement has been superseded by a separate agreement that allows output from dedicated production to be priced based on the quality of the material. In addition, C3 has agreed to pay the Company up to \$3.4 million for the purchase of additional equipment to increase available capacity at Cree. Over one half of this equipment was billed to C3 during fiscal 1998, however this transaction was not recorded as revenue. Total revenue for materials used in gemstone applications increased 89% in fiscal 1998 as compared to 1997 as a result of these two agreements. Material purchased

by C3 under the supply agreement may be used solely for the fabrication and sale of gemstones. During fiscal 1997 and 1996, the Company sold material products to C3 at margins consistent with those achieved in connection with sales of similar products to the Company's other customers.

Financial results for the display product line includes sales of both modules and sign products. Revenue for the modules business increased by 29% in fiscal 1998 over the prior year due to increased interest among customers for the video display indoor stadium sign. Moving message sign sales by RCD, the Company's subsidiary, suffered a 72% decline in revenue compared to 1997 due to a 71% decrease in volume and slightly reduced average sales prices. This reduction was prompted by the Company's shift to the module product line. During fiscal 1998, the Company primarily sold an existing inventory of moving message

signs and did not expand or refresh the product line. The Company is currently reviewing the business plan of these product lines to maximize sales for fiscal 1999. The Company expects the release of low priced, high brightness LED products that will compete in outdoor applications in fiscal 1999. These new LEDs are anticipated to change market opportunities for display products. Revenue for the display business grew 76% in fiscal 1997 from 1996 due to the introduction of the modules line of business during that year.

Contract Revenue

Research contract revenue increased 17% to \$7,640,000 during fiscal 1998 as a result of the mix of funding from available contracts. Funding for fiscal 1997 included a higher amount of proceeds recognized under two cost-share arrangements. For these agreements, funds are recorded as a reduction in research and development expense rather than as contract revenue. As funds associated with these two programs were exhausted during the second quarter of fiscal 1998, Company resources were shifted to programs under a cost-plus or catalog price arrangement, in which funding is recorded as contract revenue. Therefore, contract revenue was higher in fiscal 1998 than 1997. Contract revenue grew 66% to \$6,535,000 in fiscal 1997 as higher revenues were generated as a result of more funding being made available from the U.S. government for certain research contracts, primarily in the areas of microwave, power, blue laser and basic material development.

License Fee Income

Included in revenue for fiscal 1997 is a one-time license fee of \$2,615,000. This license fee was earned pursuant to a License and Technology Transfer Agreement entered into in September 1996 with Shin-Etsu Handotai Co. Ltd. ("Shin-Etsu"). Pursuant to this agreement, the Company granted Shin-Etsu a license to use certain epitaxial and device fabrication process technology for the manufacture of the Company's LED product. The Company also recorded an accrued expense of \$186,000 payable in July 1998 to a third party that brokered the agreement. Results for fiscal 1996 include a one-time net license fee revenue of \$1,423,000. This license fee was earned pursuant to a Development License and Supply Agreement entered in October 1995 with Siemens, in which the Company granted Siemens a license to use certain technology to manufacture blue and green LED products. No license fee arrangements were recorded by the Company during fiscal 1998.

Cost of Revenue

The Company's gross margin increased 47% to \$14,552,000, or 34% of revenue for fiscal 1998. The Company's gross margin as a percentage of sales was 34% and 24% in 1997 and 1996, respectively. License fee revenue, which has no corresponding cost, is included in both 1997 and 1996 results. Without license fees, gross margins would have been \$7,263,000 or 28% of revenue for fiscal 1997 and \$2,145,000 or 16% of revenue for the comparative period in 1996. The overall increase in margin in 1998 stems from higher revenue and lower LED and materials costs per unit. The lower unit costs were recognized due to higher

throughput, which more effectively utilized plant capacity, and yield efficiencies on LED and wafer products. This greater throughput enabled the Company to spread fixed cost investments over a larger volume of product. Greater yield in LED applications resulted from a combination of a new smaller die size, the new two inch diameter wafer and the introduction of the conductive buffer technology. Yield was also higher for LED and materials due to plant processing efficiency and improvements and a higher quality of wafer materials. Higher margins in the future are largely contingent on the Company's ability to increase the volume of LEDs produced, by gaining a larger customer base, successfully introducing new products and continued savings from the conductive buffer technology. These factors are significant due to the anticipated decline in the average LED per unit sales price to be received in 1999. If the Company is unable to improve efficiency under the new chip standards or gain orders for additional volume, gross margin could be negatively impacted. Gross margin improved in 1997 from 1996 levels, due to higher revenue and throughput associated with the Siemens agreement, and yield efficiencies, which lowered the manufacturing cost per unit.

The Company benefits from research and development efforts sponsored by U.S. government contracts. Contracts are awarded to the Company to fund both

short-term and long-term research projects. For contracts under which the Company anticipates that funding will exceed direct costs, all funding is reported as contract revenue and direct costs are reported as cost of contract revenue. For contracts under which the Company anticipates that direct costs will exceed funding, costs are reflected as research and development expenses with the related funding amounts offsetting these costs. Cost of contract revenue has increased in fiscal 1998 over 1997 due primarily to the exhaustion of funds available under two cost-share contracts during the first half of the year. Costs for research under these two arrangements were included as research and development expenses rather than a cost of contract revenue. When funding under these two contracts was completed in the second quarter of fiscal 1998, all resources were shifted to cost-plus and catalog priced contracts, where expenses are recorded as a cost of contract revenue. Contract cost of revenue was significantly higher in fiscal 1997 than 1996 as a result of more funding being made available from the U.S. government for certain research contracts, primarily in the areas of microwave, power, blue laser and basic material development.

Research and development costs have decreased by 3% to \$1,774,000 in 1998 due to a reduction in work performed under two cost-share contracts to further the blue laser research. Net costs to the Company for these projects were \$276,000 and \$671,000 for fiscal 1998 and 1997, respectively. These cost-share contracts concluded during the first half of 1998. Additionally, research and development costs for 1997, included a one-time write off of \$93,000 for the closure of the Company's Eastern European Division. The Eastern European Division, located in St. Petersburg, Russia, was a research group performing some of the Company's basic material and device development work. Work performed under cost-share arrangements in fiscal 1997 also explains why research and development costs were higher in that year than in 1996.

Sales and general and administrative expenses decreased 4% to \$4,131,100 for fiscal 1998, compared to 1997 levels as increased costs to support the growth of the business were offset by two one-time insurance payments to the Company. As a result of the dismissal in November 1997 of a securities class action lawsuit filed in October 1996, the Company was reimbursed \$216,000 by its insurance carrier for costs incurred in defense of the suit. In addition, as a result of a negotiated cost cap, the Company received a \$220,000 reimbursement of medical expenses that were incurred under a partially self insured health plan. As a percentage of revenue, these costs have decreased to 10% in 1998 from 15% and 19% in 1997 and 1996, respectively. Total sales and general and administrative expenses increased 47% in fiscal 1997 over 1996 amounts due to higher costs associated with additional sales personnel to focus the business on gaining new LED customers, the SEH license agreement commission fee (a net present value of \$172,000) and greater legal fees in connection with the defense of a securities class action lawsuit that has since been dismissed. The Company anticipates that sales and general and administrative expenses will continue to rise in future

periods to support the anticipated growth of the business, however, the cost as a percentage of total revenue is expected to decline as economies of scale continue to be realized.

Other (income) expense includes a net loss recorded on the disposal of certain fixed assets and the write-off of \$66,000 for the remaining value of goodwill associated with the acquisition of the Real Color Displays subsidiary. In addition, the Company has entered into an agreement with C3 to sell equipment manufactured by the Company at cost plus a reasonable overhead allocation. The overhead allocation was recorded as "other operating income"; however, the amount was more than offset by leasehold write-offs associated with the move to the new facility and other asset disposals.

Net interest income increased by \$123,000 in 1998 over 1997 results and decreased by \$260,000 when comparing 1997 to 1996, due to higher investable cash balances available in fiscal 1998 and 1996. Cash balances were high in fiscal 1998 as the Company generated over \$12 million from operations compared to \$6 million in fiscal 1997. Also, the Company concluded a private equity placement in September 1995 that also increased available cash in 1996.

The Company's income tax provision has increased to 29% for 1998 from a 5% effective rate experienced during 1997. The lower rate for 1997 resulted from the utilization of net operating loss carryforwards. The Company anticipates a

slightly higher tax rate for fiscal 1999 as most carryforwards previously available have now been utilized. The Company had no tax provision in 1996 as the Company generated a net operating loss for tax purposes.

Liquidity and Capital Resources

Net cash provided by operations reached a record \$12,092,000 in 1998 compared with \$6,097,000 in 1997, and cash used in operations of \$1,636,000 in 1995. These increases reported in 1998 and 1997 resulted from profitable operations of the Company. If the Company achieves its goals of increasing customer demand while lowering production costs, the Company expects that cash provided by operations will increase in 1999 and will be sufficient to fund all anticipated capital additions. The Company will; however, consider opportunities to raise capital and to fund development costs through strategic alliances and other manners.

The number of trade average days sales outstanding was reduced to 50 for 1998 from 57 and 96 days experienced in 1997 and 1996, respectively, due to collections efforts during the year.

The Company invested \$15,287,000 in capital equipment during 1998 compared to \$8,115,000 and \$14,740,000 spent during 1997 and 1996, respectively. The majority of the 1998 spending, or \$11,400,000, was due to the acquisition and upfit of a new production facility near Research Triangle Park, North Carolina. The total capital outlay for this facility and associated upfit is estimated to be approximately \$15,000,000 and is expected to be completed over the next six months. The Company currently has a loan commitment of up to \$10,000,000 from a commercial bank to finance a portion of these expenditures. As of June 28, 1998, approximately \$8,667,000 had been drawn against this loan. At this time, the Company anticipates capital additions in 1999 to be 25% lower than amounts spent in 1998 and intends to fund these additions with cash provided by operations and cash on hand. In addition, the Company also expects to draw the remaining \$1,333,000 on the loan commitment and may consider other financing alternatives. During 1997, investments were made for equipment additions in the crystal growth and epitaxial departments. During 1996, a significant investment was made for equipment related to the production of LED and wafer products. Financing activities provided the Company \$10,341,000 during 1998 mostly due to the proceeds from the issuance of long term debt discussed above. In addition, financing activities yielded \$20,924,000 during fiscal 1996. The majority of the funding was provided by the September 1995 private placement which netted approximately \$17.5 million.

Year 2000

The Company's products are of a nature that they are not subject to failure because of Year 2000 issues. The Company however, has assigned full-time information technology professionals to the task of identifying and resolving Year 2000 problems that may affect the Company's business, and has adopted a phased Year 2000 compliance plan. During the first phase, commenced in April 1998 and targeted for completion in December 1998, the Company will inventory and collect documentation on all of its computers, computer related equipment, and equipment with embedded processors. In addition, the Company will contact critical vendors and suppliers to obtain assurances of their ability to ensure smooth delivery of products and services after December 1999. In the second and third phases, the Company will prioritize and implement necessary repairs or replacements to equipment in order to achieve Year 2000 compliance, which it expects to complete in the first quarter of 1999. The final phase will consist of a testing program, scheduled for completion in the second quarter of 1999. The Company has not prepared estimates of costs for correction of Year 2000 problems. Based on information available at this time, including the Year 2000 compliance status of equipment that has been examined as well as the anticipated replacement schedule for equipment, the Company does not believe that the cost of remedial actions will have a material adverse effect on the Company's results of operations or financial condition. There can be no assurance, however, that there will not be a delay in, or increased costs associated with, the implementation of corrections as the Year 2000 compliance plan is performed. Failure to implement such changes could have an adverse effect on future results of operations. In addition, unexpected costs of correcting equipment that has not yet been fully evaluated could have an adverse effect on future results of operations.

Item 8. Financial Statements and Supplementary Data

Index to Consolidated Financial Statements

	Page

Report of Independent Accountants	25
Consolidated Balance Sheets as of June 28, 1998 and June 30, 1997	26
Consolidated Statements of Operations for the years ended June 28, 1998, and June 30, 1997 and 1996	27
Consolidated Statements of Cash Flows for the years ended June 28, 1998, and June 30, 1997 and 1996	28
Consolidated Statements of Shareholders' Equity for the years ended June 28, 1998, and June 30, 1997 and 1996	30
Notes to Consolidated Financial Statements	31

REPORT OF INDEPENDENT ACCOUNTANTS

July 22, 1998

Board of Directors and Shareholders
Cree Research, Inc.

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations, cash flows and shareholders' equity, present fairly, in all material respects, the financial position of Cree Research, Inc. and subsidiaries at June 28, 1998 and June 30, 1997, and the results of their operations and their cash flows for the year ended June 28, 1998 and for the two years in the period ended June 30, 1997, in conformity with generally accepted accounting principles. These financial statements are the responsibility of the Company's management; our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with generally accepted auditing standards which require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for the opinion expressed above.

Raleigh, North Carolina

CREE RESEARCH, INC.
CONSOLIDATED BALANCE SHEETS
(in 000's, except per share amounts)

	June 28, 1998	June 30, 1997
	-----	-----
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 17,680	\$ 10,448
Marketable securities	657	--
Accounts receivable, net	10,479	7,694
Inventories	2,543	3,949
Deferred income tax	1,952	1,830
Prepaid expenses and other current assets	1,347	466
	-----	-----
Total current assets	34,658	24,387
Property and equipment, net	36,476	24,333
Patent and license rights, net	1,525	1,267
Other assets	65	150
	-----	-----
Total assets	\$ 72,724	\$ 50,137
	=====	=====
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable, trade	\$ 5,595	\$ 2,248
Current maturities of long term debt	17	--
Accrued salaries and wages	391	292
Other accrued expenses	1,052	834
	-----	-----
Total current liabilities	7,055	3,374
Long term liabilities:		
Long term debt	8,650	--
Deferred income tax	2,154	1,638
	-----	-----
Total long term liabilities	10,804	1,638
Shareholders' equity:		
Preferred stock, par value \$0.01; 2,750 shares authorized; none issued and outstanding	--	--
Common stock, \$0.005 par value; 14,500 shares authorized; shares issued and outstanding 12,989 at June 28, 1998 and 12,523 at June 30, 1997	65	62
Additional paid-in-capital	49,676	46,214
Retained earnings (deficit)	5,124	(1,151)
	-----	-----
Total shareholders' equity	54,865	45,125
	-----	-----
Total liabilities and shareholders' equity	\$ 72,724	\$ 50,137
	=====	=====

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

CREE RESEARCH, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(in 000's except per share amounts)

	June 28, 1998	June 30, 1997	June 30, 1996
	-----	-----	-----
Revenue:			
Product revenue, net	\$ 34,891	\$ 19,823	\$ 9,689
Contract revenue, net	7,640	6,535	3,945
License fee income	--	2,615	1,423
	-----	-----	-----
Total revenue	42,531	28,973	15,057
Cost of revenue:			
Product revenue, net	21,727	13,388	8,411
Contract revenue, net	6,252	5,707	3,078

Total cost of revenue	27,979	19,095	11,489
Gross margin	14,552	9,878	3,568
Operating expenses:			
Research and development	1,774	1,826	1,286
Sales, general and administrative	4,131	4,301	2,917
Other (income) expense	502	639	(11)
Income (loss) from operations	8,145	3,112	(624)
Interest income, net	730	607	867
Income before income taxes	8,875	3,719	243
Income tax expense	2,600	177	--
Net income	\$ 6,275	\$ 3,542	\$ 243
Basic earnings per common share	\$ 0.49	\$ 0.28	\$ 0.02
Diluted earnings per common share	\$ 0.47	\$ 0.27	\$ 0.02
Weighted Average Shares Outstanding	13,493	13,126	12,615

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

27

CREE RESEARCH, INC.
CONSOLIDATED STATEMENTS OF CASH FLOW
(in 000's)

	June 28, 1998	June 30, 1997	June 30, 1996
Operating activities:			
Net income	\$ 6,275	\$ 3,542	\$ 243
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	4,217	3,356	1,765
Loss (gain) on disposal of property & equipment	719	631	(8)
Loss on write off of patents	17	141	--
Amortization of patent rights	102	108	126
Amortization & write off of goodwill	86	41	41
Purchase of marketable trading securities	(1,500)	--	--
Proceeds from sale of marketable trading securities	421	--	--
Loss on marketable trading securities	32	--	--
Deferred income taxes	394	(192)	--
Tax benefits associated with stock options	1,791	96	--
Changes in assets & liabilities:			
Accounts receivable	(2,398)	(891)	(3,258)
Inventories	1,406	(723)	(1,549)
Deferred cost on research contracts	--	--	81
Prepaid expenses & other assets	(882)	(262)	49
Accounts payable, trade	1,092	(226)	714
Accrued expenses	320	476	160
Net cash provided by (used in) operating activities	12,092	6,097	(1,636)
Investing activities:			
Maturity of investment securities	--	1,787	2,124
Purchase of property & equipment	(15,287)	(8,115)	(14,740)
Proceeds from sale of assets	463	13	52
Purchase of patent rights	(377)	(310)	(310)
Net cash used in investing activities	(15,201)	(6,625)	(12,874)
Financing activities:			
Proceeds from issuance of long-term debt	8,667	--	--
Net proceeds from issuance of common stock	2,936	926	20,924
Repurchase of common stock	(1,262)	(112)	--
Net cash provided by financing activities	10,341	814	20,924
Net increase in cash and cash equivalents	\$ 7,232	\$ 286	\$ 6,414
Cash and cash equivalents:			
Beginning of year	10,448	10,162	3,748

End of year

\$ 17,680
=====\$ 10,448
=====\$ 10,162
=====

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

28

CREE RESEARCH, INC.
CONSOLIDATED STATEMENTS OF CASH FLOW
(in 000's)
(Continued)

	Years Ended		
	June 28, 1998	June 30, 1997	June 30, 1996
Supplemental disclosure of cash flow information:			
Cash paid for interest, net of amounts capitalized	\$ 74	\$ -	\$ 5
Cash paid for income taxes	\$ 336	\$ 300	\$ -

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

29

CREE RESEARCH, INC.
CONSOLIDATED STATEMENT OF SHAREHOLDERS' EQUITY
YEARS ENDING JUNE 28, 1998 AND JUNE 30, 1997 AND 1996
(IN 000'S)

	Common Stock Par Value	Additional Paid-in Capital	Retained Earnings	Unearned Compensation	Treasury Stock	Total Shareholders' Equity
Balance at June 30, 1995	\$ 52	\$ 24,427	\$ (4,936)	\$ (2)	\$ (38)	\$ 19,503
Common stock options exercised for cash, 122 shares	1	412				413
Common stock warrants exercised for cash, 665 shares	3	2,916				2,919
Compensation expense for common stock options				2		2
Proceeds from sale of 1,079 shares of common stock and 300 common stock warrants, net of issuance costs of \$625	5	17,587				17,592
Net income			243			243
Balance at June 30, 1996	61	45,342	(4,693)	--	(38)	40,672
Common stock options exercised for cash, 52 shares		160				160
Common stock warrants exercised for cash, 203 shares	1	766				767
Purchase of common stock for the treasury, 10 shares					(112)	(112)
Retirement of 20 treasury shares		(150)			150	--
Income tax benefits from stock option exercises		96				96
Net income			3,542			3,542
Balance at June 30, 1997	62	46,214	(1,151)	--	--	45,125
Common stock options exercised for cash, 217 shares	1	1,693				1,694
Common stock warrants exercised for cash, 331 shares	2	1,240				1,242
Purchase of common stock for the treasury, 82 shares					(1,262)	(1,262)
Retirement of 82 treasury shares		(1,262)			1,262	--
Income tax benefits from stock option exercises		1,791				1,791
Net income			6,275			6,275
Balance at June 28, 1998	\$ 65	\$ 49,676	\$ 5,124	\$ --	\$ --	\$ 54,865

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

30

CREE RESEARCH, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. NATURE OF BUSINESS

Cree Research, Inc. ("the Company" or "Cree"), a North Carolina corporation, develops, manufactures, and markets silicon carbide-based semiconductor devices. Revenues are primarily derived from the sale of blue light emitting diodes ("LEDs"), silicon carbide ("SiC") based materials and full-color LED based electronic displays and modules. The Company markets its blue LED chip products principally to customers who incorporate them into packaged lamps for resale to original equipment manufacturers. The Company also sells SiC material products to corporate, government, and university research laboratories. In addition, the Company is engaged in a variety of research programs related to the advancement of SiC process technology and the development of electronic devices that take advantage of SiC's unique physical and electronic properties. These research projects are primarily funded by Federal government agencies and departments. The Company recovers the costs of a majority of its research and development efforts from revenues on these contracts with agencies of the Federal government.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation

The consolidated financial statements include the accounts of Cree Research, Inc., and its wholly-owned subsidiaries, Real Color Displays, Inc. ("RCD"), Cree Research FSC, Inc. and Cree Technologies, Inc. All material intercompany accounts and transactions have been eliminated in consolidation.

Change in Fiscal Year

On September 24, 1997, the Board of Directors of Cree Research, Inc. changed the Company's fiscal year from the twelve months ending June 30, to a 52 or 53 week year ending on the last Sunday in the month of June. Accordingly, all quarterly reporting reflected a 13 week period in fiscal 1998, except that the period ended September 28, 1997, which commenced July 1, 1997, reflected the results of twelve weeks and five days. The Company's 1998 fiscal year extended for the period from July 1, 1997 to June 28, 1998.

Estimates

The preparation of these financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, and the disclosure of contingent assets and liabilities, at June 28, 1998 and June 30, 1997, and the reported amounts of revenues and expenses during the years ended June 28, 1998 and June 30, 1997 and 1996. Actual amounts could differ from those estimates.

Revenue Recognition

The Company recognizes product revenue at the time of shipment or in accordance with the terms of the relevant contract. Revenue from government contracts is recorded on the percentage-of-completion method as expenses per contract are incurred. License fee income is recognized when the transfer of licensed technology is completed.

31

Contract revenue represents reimbursement by various U.S. Government entities to aid in the furthering of the development of the Company's technology by supplementing the Company's research and development efforts. Any resulting technology obtained by the Company through these efforts remain the property of

the Company after the completion of the contract, subject to certain license rights obtained by the government. Contract revenue includes funding of direct research and development costs and a portion of the Company's general and administrative expenses and other operating expenses for contracts under which funding is expected to exceed direct costs over the life of the contract. The specific reimbursement provisions of the contracts, including the portion of the Company's general and administrative expenses and other operating expenses that are reimbursed, vary by contract. Such reimbursements are recorded as contract revenue. For contracts under which the Company anticipates that direct costs will exceed amounts to be funded over the life of the contract (i.e., certain cost share arrangements), the Company reports direct costs as research and development expenses with related reimbursements recorded as an offset to those expenses.

In September 1996, the Company entered into a license and supply agreement with Shin-Etsu Handotai Co. LTD. ("Shin-Etsu") and other parties to use certain LED fabrication technology and has agreed to supply silicon carbide wafers required to manufacture the licensed product. The license agreement provides for payment of a license fee and royalties based on a percentage of sales of products made using the licensed technology. The license fee was payable in installments which totaled \$2,700,000. As of June 28, 1998, all license fees have been received. The Company also has recorded a short-term accrued expense of \$186,000 payable in the first quarter of fiscal 1999 to the third party that brokered the license agreement. Substantially all of the Company's obligations to transfer the licensed technology were performed during fiscal 1997, and the net present value of the license fee payments and commission were recognized. In October 1995, the Company also entered into an agreement to license its technology for the joint development and manufacture of LEDs using Cree's technology to Siemens A.G. License fees are payable in installments totaling \$1,500,000. As of June 28, 1998, all fees have been received. The Company's obligation to transfer the licensed technology was substantially completed during fiscal 1996, and the net present value of the license fee payments was recorded as revenue at that time.

Cash and Cash Equivalents

Cash and cash equivalents consist of unrestricted cash accounts and highly liquid investments with an original maturity of three months or less when purchased.

Marketable Securities

Investments are accounted for in accordance with Statement of Financial Accounting Standards No. 115 (SFAS No. 115) "Accounting for Certain Investments in Debt and Equity Securities". This statement requires certain securities to be classified into three categories:

- (a) Securities Held-to-Maturity- Debt securities that the entity has the positive intent and ability to hold to maturity are reported at amortized cost.
- (b) Trading Securities- Debt and equity securities that are bought and held principally for the purpose of selling in the near term are reported at fair value, with unrealized gains and losses included in earnings.
- (c) Securities Available-for-Sale- Debt and equity securities not classified as either securities held-to-maturity or trading securities are reported at fair value with unrealized gains or losses excluded from earnings and reported as a separate component of stockholders' equity.

The Company's short-term investments are comprised of equity securities that are classified as trading securities, which are carried at their fair value based upon quoted market prices of those investments at June 28, 1998, with net realized and unrealized gains and losses included in net earnings.

As of June 28, 1998, short-term investments consist of common stock holdings in C3, Inc. ("C3"), a portion of which were purchased in November 1997. The Company's president has, through a binding agreement, promised to indemnify the Company for losses of up to \$300,000, plus the lesser of \$100,000 or the net difference between the per share selling price and \$9.375 per share for all shares of C3 common stock sold by Cree. This indemnity covers losses that may result from the sale of shares purchased in November 1997 below the purchase

price paid, offset by gains realized on shares acquired directly from C3 in January 1997 (see below). Payment of this obligation is due within ten days after receipt by the president of the Company's written demand made pursuant to a vote of the majority of the members of the Board of Directors. At June 28, 1998, the Company had recorded a \$390,000 receivable from the president (included in net accounts receivable) based upon this agreement for the net realized and unrealized losses on this investment. Realized losses on shares of C3 stock sold by the Company during fiscal 1998 totaled \$254,000, and unrealized losses offset by the unrealized gain on shares acquired from C3 directly (see below) were \$168,000 at June 28, 1998. Approximately \$32,000 of losses on the investment in C3 stock is included in other income (expense) for fiscal 1998.

In addition to the shares of C3 purchased in November 1997, the Company acquired 24,601 shares of C3 common stock in January 1997. These shares were issued pursuant to an option C3 granted to the Company in 1995. The option gave the Company the right to acquire, for an aggregate consideration of \$500, one percent of the outstanding common stock of C3. C3 retained the right to waive the consideration and issue the stock at any time, which it elected to do in January 1997. The shares issued pursuant to the option are restricted securities within the meaning of Rule 144 under the Securities Act of 1933, which permits the sale of such securities without registration if certain conditions are met. The shares first became eligible for sale under Rule 144 in the third quarter of fiscal 1998.

Inventories

Inventories are stated at the lower of cost or market, with cost being determined under the first-in, first-out (FIFO) method. Inventories consists of the following:

	June 28, 1998	June 30, 1997
Raw materials	\$ 999,000	\$ 1,559,000
Work-in-progress	752,000	1,374,000
Finished goods	792,000	1,016,000
	-----	-----
	\$ 2,543,000	\$ 3,949,000
	=====	=====

Property and Equipment

Property and equipment are recorded at cost and depreciated on a straight-line basis over the estimated useful lives of the assets, which range from three to 20 years. Leasehold improvements are amortized over the life of the related lease. Expenditures for repairs and maintenance are charged to expense as incurred. The costs of major renewals and betterments are capitalized and depreciated over their estimated useful lives. The cost and related accumulated depreciation of the assets are removed from the accounts upon disposition and any resulting gain or loss is reflected in operations.

During the first quarter of fiscal 1996, the Company changed its previous estimate on the useful lives of some of its manufacturing equipment from five to nine years. The change in estimate was based on the Company's experience with similar fixed assets. The net adjustment increased net income approximately \$280,000, or \$0.02 per share, for fiscal 1996.

The Company has entered into an agreement with C3 to sell crystal growth equipment manufactured by the Company to C3 at cost plus a reasonable overhead allocation. As a result of this transaction, the Company has recognized the overhead allocation as "other operating income".

In November 1997, the Company purchased real property consisting of approximately 30 acres of land with a production facility of approximately 162,000 square feet and a total of approximately 35,000 square feet of service and warehouse buildings. This property is located in Durham, North Carolina, in the vicinity of the Research Triangle Park. The purchase price of the land and buildings was \$3,000,000. The Company moved most of its sales and administrative personnel to this facility in January 1998. The Company anticipates it will relocate several other operations to this facility over the next few quarters. All areas, with the exception of certain crystal growth and wafer fabrication

assets, are expected to relocate during fiscal 1999.

The Company assesses the realizability of the carrying value of its investment in property and equipment whenever events or changes in circumstance indicate that an impairment may have occurred in accordance with the provisions of Statement of Financial Accounting Standards No. 121 ("SFAS No. 121"), "Accounting for Impairment of Long Lived Assets and Assets to be Disposed of". As of June 28, 1998, the Company has not recorded any impairment in the carrying value of its property and equipment.

Patent and License Rights

Patent rights reflect costs incurred to enhance and maintain the Company's intellectual property position. License rights reflect costs incurred to use the intellectual property of others. Both are amortized on a straight line basis. During fiscal 1997, the Company changed its previous estimate of the useful lives of patents from 17 years beginning at the date of patent issue to 20 years from the date of patent application to conform to a legislative amendment made to the U.S. patent laws which became effective in June 1995. This change in estimate had no material impact to net income or earnings per share, since the average period of time between patent application and issue is generally about three years. Amortization expense was \$102,000, \$108,000 and \$126,000, for the years ended June 28, 1998 and June 30, 1997 and 1996, respectively. Total accumulated amortization for patents was approximately \$560,000 and \$460,000 at June 28, 1998 and June 30, 1997, respectively.

Goodwill

Goodwill represented the amount by which the costs to acquire the net assets of the Real Color Displays subsidiary exceeded their related fair value at acquisition. Based on a review of undiscounted cash flows of the subsidiary anticipated over the remaining amortization period, the Company determined that goodwill had been impaired. As a result, the Company wrote off the remaining \$66,000 carrying value of such goodwill in the second quarter of fiscal 1998. As required by generally accepted accounting principles, this charge was included in the results of operations.

Research and Development Policy

The Company partners with the Federal government in many of its current research and development efforts. By entering into contracts, the Company has most of its research and product development costs funded by the U.S. government. The contract funding may be based on a cost-plus or a cost-share

34

arrangement. Pursuant to each contract, the amount of funding is determined based on cost estimates that include direct costs, plus an allocation for research and development, general and administrative and a cost of capital expense. Cost-plus funding is determined based on actual costs plus a set percentage margin. For the cost-share contracts, the actual costs are divided between the U.S. government and the Company based on the terms of the contract. The government's cost share is then funded to the Company. Activities performed under both of these arrangements include research regarding silicon carbide and gallium nitride materials. The contracts typically require the submission of a written report that documents the results of such research.

Funding on contracts under which the Company anticipates that funding will exceed direct costs over the life of the contract is recorded as contract revenue and related costs are reported as a cost of contract revenue. For contracts under which the Company anticipates that direct costs will exceed amounts to be funded over the life of the contract, direct costs are shown as research and development expenses and related funding as an offset of those expenses. The following table details information about contracts for which direct expenses exceed funding by period as reflected in the statements of operations:

	Year ended (in 000's)		
	June 28, 1998	June 30, 1997	June 30, 1996
Net research and development costs	\$ 276	\$ 671	\$ 368
Government funding	601	2,186	1,918

Total direct costs incurred	\$ 877	\$2,857	\$2,286
	=====	=====	=====

As of June 28, 1998, all funding under contracts where the Company anticipates that direct costs will exceed amounts to be funded has been exhausted. Therefore, the Company anticipates that all future funding under existing contracts will be reflected as contract revenue while direct costs will be reported as contract cost of revenue.

Interest Capitalization

During the year ended June 28, 1998, the Company capitalized interest on funds used to construct property, plant and equipment in connection with the newly acquired facility. Interest capitalized during fiscal 1998 was \$128,000.

Credit Risk, Major Customers and Major Suppliers

Financial instruments which potentially subject the Company to a concentration of credit risk consist principally of cash equivalents and accounts receivable. The Company's cash equivalents consist of U.S. Treasury bills, government agency bonds and commercial paper. Certain bank deposits may at times be in excess of the FDIC insurance limit.

The Company sells its products to manufacturers and researchers worldwide and generally requires no collateral. The Company maintains reserves for potential credit losses, and such losses, in the aggregate, have generally been within management's expectations. The Company presently derives primarily all of its contract revenues from contracts with the U.S. Department of Defense. Approximately 18% and 33%, respectively, of the Company's accounts receivable balance at June 28, 1998 and June 30, 1997 was due from the Department of Defense. In addition, the Company had amounts due from Siemens totaling 37% and

35

19%, of accounts receivable balances at June 28, 1998 and June 30, 1997, respectively, and amounts due from C3 totaling 23% and 1%, of accounts receivable balances at June 28, 1998 and June 30, 1997, respectively.

The Company has derived its product revenue from sales primarily in the United States, the Far East, and Europe as follows:

	Year Ended		
	1998	1997	1996
	----	----	----
United States	26%	21%	31%
Far East	15%	33%	27%
Europe	58%	44%	38%
Other	1%	2%	4%

One customer accounted for 51% and 46% of product revenue for fiscal 1998 and 1997, respectively. Another customer accounted for 13% and 2% of product revenue for fiscal 1998 and 1997, respectively. In addition, two customers accounted for 32% of product revenue in fiscal 1996. The Department of Defense accounted for 93%, 99% and 97% of contract revenues during fiscal 1998, 1997, and 1996, respectively.

The Company depends on single or limited source suppliers for a number of raw materials and components used in its SiC wafer products and LEDs. Any interruption in the supply of these key materials or components could have a significant adverse effect on the Company's operations.

Per Share Data

Basic earnings per common share is computed using the weighted average number of shares outstanding. Diluted earnings per common share is computed using the weighted average number of shares outstanding adjusted for the incremental shares attributed to outstanding options to purchase common stock.

Incremental shares of 631,000, 670,000 and 789,000 in 1998, 1997 and 1996, respectively, were used in the calculation of diluted earnings per common

share.

Accounting for Stock Based Compensation

In accordance with Accounting Principles Board Opinion No. 25, Accounting for Stock Issued to Employees, no compensation is recorded for stock options or other stock-based awards that are granted to employees with an exercise price equal to or above the common stock price on the grant date. Compensation related to performance share grants is recognized from the grant date until the performance conditions are satisfied, based on the market price of the Company's common stock.

In October, 1995, the Financial Accounting Standards Board ("FASB") issued Statement No. 123 ("FAS 123"), "Accounting for Stock Based Compensation." This Statement establishes fair value as the measurement basis for equity instruments issued in exchange for goods or services and stock-based compensation plans. Fair value may be measured using quoted market prices, option-pricing models or other reasonable estimation methods. FAS 123 permits the Company to choose between adoption of the fair value based method or disclosing pro forma net income information. The Statement is effective for transactions entered into after December 31, 1995. The Company will continue to account for stock-based compensation in accordance with Accounting Principles Board Opinion No. 25, as amended, and provide only the pro forma disclosures required by FAS 123.

3. ACCOUNTS RECEIVABLE

36

The following is a summary of accounts receivable:

	June 28, 1998	June 30, 1997
Trade receivables	\$ 8,971,000	\$ 5,210,000
Other short term receivables	1,659,000	2,700,000
	-----	-----
Allowance for doubtful accounts	10,630,000	7,910,000
	151,000	216,000
	-----	-----
Current receivables	10,479,000	7,694,000
Long term receivables	56,000	54,000
	-----	-----
Total accounts receivable	\$10,535,000	\$ 7,748,000
	=====	=====

The following table summarizes the changes in the Company's allowance for doubtful accounts for the years ended June 28, 1998, June 30, 1997 and 1996:

Allowance for Doubtful Accounts:
(dollars in thousands)

Years Ended	Balance At Beginning of Period	Charges To Cost and Expenses	Deductions (Write-offs Charged To Reserve)	Balance At End of Period
1998	\$ 216	50	(115)	\$ 151
1997	\$ 50	190	(24)	\$ 216
1996	\$ 22	203	(175)	\$ 50

4. PROPERTY AND EQUIPMENT

The following is a summary of property and equipment:

	June 28, 1998	June 30, 1997
Office equipment and furnishings.....	\$1,372,000	\$909,000
Land and buildings	3,501,000	-
Machinery and equipment.....	28,136,000	22,312,000
Construction in progress.....	9,074,000	2,669,000

Leasehold improvements.....	4,697,000	5,420,000
	-----	-----
	46,780,000	31,310,000
Accumulated depreciation and amortization.....	(10,304,000)	(6,977,000)
	-----	-----
	\$36,476,000	\$24,333,000
	=====	=====

Depreciation and amortization of property and equipment totaled \$4,217,000, \$3,356,000 and \$1,765,000 for the year ended June 28, 1998, June 30, 1997 and June 30, 1996, respectively.

37

5. SHAREHOLDERS' EQUITY

The Board of Directors is authorized to issue 1,250,000 and 1,500,000 shares of Class A Voting and Class B Non-Voting preferred stock, respectively, each with a par value of \$0.01 per share, at its discretion. This preferred stock may be issued in one or more series with the number of shares, designation, relative rights, preferences, and limitations to be determined by resolution of the Board of Directors.

6. STOCK OPTIONS AND STOCK WARRANTS

As permitted by FAS 123, "Accounting For Stock-Based Compensation", the Company has elected to follow Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees" and related interpretations and amendments in accounting for its employee stock option plans.

The Company's Amended and Restated Equity Compensation Plan has authorized the grant of options for up to 2,540,000 shares of the Company's common stock. All options granted have 10 year terms and vest and become fully exercisable within 5 years. The Company had granted 96,000 options with a 10 year term for shares of the Company's common stock under the Stock Option Plan for Non-Employee Directors (Directors Formula Plan). This Plan was terminated in November 1997 and all 96,000 options granted under this plan are now fully vested. The Company's current stock plans provide for grants of options with exercise prices equal to or exceeding fair market value on the date of grant.

Pro forma information regarding net income and earnings per share is required by Statement 123, and has been determined as if the Company had accounted for its employee stock options under the fair value method of the Statement. The fair value of these options was estimated at the date of grant using a Black-Scholes option pricing model with weighted average risk free rates of interest of 5.6% and 6.7%, for the years ended June 28, 1998 and June 30, 1997, respectively. The volatility factor of the expected market price of the Company's common stock is .748 and the weighted-average expected life of the options was 7 years for executives and directors and 5 years for other employees.

For purposes of pro-forma disclosures, the estimated fair value of the options is amortized to expense over the options' vesting period. The Company's pro forma information is as follows:

	YEARS ENDED		
	JUNE 28, 1998	JUNE 30, 1997	JUNE 30, 1996
	-----	-----	-----
Net income, as reported	\$ 6,275,000	\$ 3,542,000	\$243,000
Pro forma net income, as adjusted for FAS 123	4,405,000	1,418,000	243,000
Pro forma earnings per share:			
Basic	\$ 0.34	\$ 0.11	\$ 0.02
If Diluted	\$ 0.33	\$ 0.11	\$ 0.02

The following table details the number of stock options outstanding and their related exercise prices as of June 28:

Number of Options Outstanding As Of June 28, 1998

Exercise Price	Number of Options	Weighted-Average Contractual Life
\$ 0.42	5,497	2 years
\$ 3.13	8,000	6 years
\$ 3.63	250,200	5 years
\$ 3.75	13,317	3 years
\$ 4.00	78,700	6 years
\$ 4.38	6,000	6 years
\$ 6.82	6,700	5 years
\$ 7.38	6,000	6 years
\$ 9.38	26,600	9 years
\$ 10.25	14,500	9 years
\$ 11.19	16,800	8 years
\$ 12.98	409,100	9 years
\$ 14.38	203,400	7 years
\$ 15.75	48,000	8 years
\$ 16.38	43,500	10 years
\$ 17.75	19,000	10 years
\$ 18.75	40,000	9 years
\$ 19.38	10,000	10 years
	1,205,314	

Total Option Activity

	June 28, 1998		June 30, 1997		June 30, 1996	
	Options (in 000's)	Weighted Average Price	Options (in 000's)	Weighted Average Price	Options (in 000's)	Weighted Average Price
Outstanding-beginning of year	927	\$ 4.76	632	\$ 4.39	769	\$ 4.23
Granted	542	\$13.98	381	\$ 13.56	-	\$ -
Exercised	217	\$ 7.80	52	\$ 3.08	122	\$ 3.39
Forfeited	47	\$ 8.67	34	\$ 8.05	15	\$ 4.36
Outstanding-end of year	1205	\$10.19	927	\$ 4.76	632	\$ 4.39
Exercisable at end of year	599	\$ 8.40	702	\$ 7.44	439	\$ 3.78

During fiscal year 1992, the Company issued stock warrants to purchasers of Class B Non-Voting preferred stock, Series C. The warrants entitled the holders to purchase 607,320 shares of common stock at \$3.75 per share. In September 1992, the Company issued stock warrants to additional purchasers of Class B Non-Voting preferred stock, Series C. The warrants entitled the holders to purchase 363,644 shares of common stock at \$4.13 per share. Warrants to purchase 331,326, 202,996 and 425,642 shares of common stock were exercised during the years ended June 28, 1998, June 30, 1997 and 1996, respectively. All remaining warrants expired effective February 8, 1998.

In connection with the Company's September 1995 private placement, the Company issued an additional 300,000 warrants, which have an exercise price of \$27.23 and expire September 2000. As of June 28, 1998, all of these warrants remain outstanding and represent the only warrants outstanding.

7. COMMITMENTS

The Company currently leases three facilities under four separate lease agreements. These facilities are comprised of both office and manufacturing space. The first facility has a remaining lease period of approximately three and one half years for a multi-suite block. Effective May 1, 1998, the Company has notified the lessor of its intention to exercise a right to terminate for all suites with the exception of the base suite. This right to terminate will be effective May 1, 1999. Also associated with this facility is a sublease agreement entered into in fiscal 1996 to lease an adjacent 1,900 square feet. That sublease expires in October 1998 and will not be renewed. The lease term for the second facility began in September 1995. This facility has a remaining lease period of approximately two years with two options to renew for a total of four additional years. All of these agreements provide for rental adjustments for increases in property taxes, the consumer price index and general property maintenance.

Rent expense associated with these leases totaled \$522,000, \$549,000 and \$388,000 for the years ended June 28, 1998, and June 30, 1997 and 1996, respectively. Future minimum rentals as of June 28, 1998 under these leases are as follows:

40

Year Ended	Minimal Rental Amount
-----	-----
1999	\$ 389,000
2000	334,000
2001	284,000
2002	138,000
Total	\$ 1,145,000

8. LONG-TERM DEBT

In November 1997, the Company entered into a term loan from a commercial bank for up to \$10,000,000 to finance the purchase and upfit of the new main facility in Durham, North Carolina. Approximately \$2,950,000 was disbursed under the loan to finance the initial purchase of the facility with the remaining proceeds expected to be disbursed on a monthly basis based on actual expenditures incurred. Draws under the loan agreement may be made during the eighteen month period ending in May 1999. The loan, which is collateralized by the purchased property and subsequent upfits, accrues interest at a fixed rate of 8% and carries customary covenants, including the maintenance of a minimum tangible net worth and other requirements. Accrued interest is due monthly through May 1999, at which time the outstanding principal balance will be amortized over twenty years until 2011, when the loan balance becomes due. At June 28, 1998, short term and long term borrowings associated with this loan were \$17,000 and \$8,650,000, respectively, leaving \$1,333,000 unused and available.

The aggregate maturities for long-term debt for the five years after June 28, 1998 are :

Year Ended	Amount Due
-----	-----
1999	\$ 17,000
2000	213,000
2001	230,000
2002	250,000
2003	270,000
Thereafter	7,687,000
Total	\$ 8,667,000
	=====

9. INCOME TAXES

The Company accounts for its income taxes under the provisions of

Statement of Financial Accounting Standards No. 109 ("FAS 109"), "Accounting for Income Taxes." Under the asset and liability method of FAS 109, deferred tax assets and liabilities are recognized for the estimated future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates in effect for the year in which those temporary differences are expected to be recovered or settled. Under FAS 109, the effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

41

The actual income tax expense attributable to earnings for the years ended June 28, 1998, and June 30, 1997 and 1996 differed from the amounts computed by applying the U.S. federal tax rate of 34 percent to pretax earnings as a result of the following:

	1998	1997	1996
	-----	-----	-----
Federal income tax provision at statutory rate (34%)	\$ 3,018,000	\$ 1,265,000	\$ 83,000
State tax provision	166,000	193,000	36,000
Increase (decrease) in income tax expense resulting from:			
Foreign sales corporation	(214,000)	-	-
Increase (decrease) in valuation allowance	(358,000)	(1,279,000)	(106,000)
Other	(12,000)	(2,000)	(13,000)
	-----	-----	-----
Income tax expense	\$ 2,600,000	\$ 177,000	\$ -
	=====	=====	=====

The following are the components of the provision for income taxes for the years ended June 28, 1998 and June 30, 1997:

	1998	1997
	-----	-----
Current:		
Federal	\$ 699,000	\$ 54,000
Foreign Tax Withholding	50,000	220,000
State	269,000	95,000
	-----	-----
	1,018,000	369,000
Deferred:		
Federal	1,582,000	(442,000)
State	-	250,000
	-----	-----
	1,582,000	(192,000)
	-----	-----
Net Provision	\$ 2,600,000	\$177,000
	=====	=====

There is no tax provision for fiscal 1996.

The tax effects of temporary differences that give rise to significant portions of the deferred tax assets and deferred tax liabilities are as follows:

42

	June 28, 1998	June 30, 1997
	-----	-----
Deferred tax assets:		
Net operating loss carryforwards	\$ 1,304,000	\$ 2,413,000
Research tax credits	169,000	157,000
Compensation	62,000	115,000

Inventory	120,000	199,000
Bad debt	56,000	84,000
Goodwill	--	31,000
Alternative minimum tax	261,000	64,000
Foreign tax credit	270,000	220,000
Other	--	10,000
	-----	-----
Total gross deferred tax assets	2,242,000	3,293,000
Less valuation allowance	(290,000)	(1,463,000)
	-----	-----
Net deferred tax asset	1,952,000	1,830,000
Deferred tax liabilities:		
Property and equipment, due to depreciation	2,154,000	1,638,000
	-----	-----
Gross deferred tax liabilities	2,154,000	1,638,000
	-----	-----
Net deferred tax asset (liability)	\$ (202,000)	\$ 192,000
	=====	=====

The net change in the total valuation allowance for the years ended June 28, 1998 and June 30, 1997 was \$1,173,000 and \$1,201,000, respectively. Included in the valuation allowance is \$0 and \$815,000, respectively, for 1998 and 1997 to offset net operating losses ("NOL") generated by the exercise of stock options. The reduction in the valuation allowance does not impact the 1998 tax provision as such taxes are reflected in additional paid in capital. The primary reason for the reduction in the valuation allowance in 1998 and 1997 was the greater likelihood of the utilization of future tax benefits from net operating loss carryforwards. Realization of deferred tax assets associated with the NOL carryforwards is dependent upon the Company generating sufficient taxable income prior to their expiration. Management believes that there is a risk that certain of the state NOL carryforwards may expire unused and, accordingly, has established a valuation allowance against them. Although realization is not assured for the remaining deferred tax assets, management believes it is more likely than not that they will be realized through future taxable earnings. However, the net deferred tax assets could be reduced in the future if management's estimates of taxable income during the carryforward period are significantly reduced.

As of June 28, 1998, the Company has net operating loss carryforwards for Federal purposes of \$3,493,000 and \$2,346,000 for state purposes. The carryforward expiration period is 2011 to 2013 for Federal tax purposes and from 2000 to 2003 for state purposes.

10. ACQUISITION

In August 1994, the Company formed a North Carolina wholly-owned subsidiary, RCD, to develop and market full color LED displays. Subsequently, RCD acquired the net assets of Color Cells International, Ltd., a Hong-Kong based company in this line of business, for cash consideration of \$215,000 and assumption of \$152,000 of liabilities. The terms of the acquisition called for an "Earn-Out Payment" based on calculated net profits, payable half in cash and half in Cree common stock. Earn-Out Payments were subject to certain limitations concerning the timing (calculation based on certain eligible shipments through September 1997) and amount (maximum payments of \$1.8 million) of any such payments. As of the end of the earn-out period in September 1997, no amounts had been earned or paid under this agreement.

11. RETIREMENT PLAN

The Company maintains an employee benefit plan (the "Plan") pursuant to Section 401(k) of the Internal Revenue Code. Under the Plan, there is no fixed dollar amount of retirement benefits, and actual benefits received by employees will depend on the amount of each employee's account balance at the time of retirement. All employees are eligible to participate under the Plan on the first day of a new fiscal quarter after date of hire. The Plan is not insured by the Pension Benefit Guaranty Corporation.

The Company may, at its discretion, make contributions to the Plan. However, the Company did not make any contributions to the Plan during the years ended June 28, 1998, June 30, 1997 or 1996.

12. CONTINGENCIES

The consolidated securities class action lawsuits previously pending against the Company and certain of its directors and officers in the U.S. District Court for the Middle District of North Carolina were dismissed with prejudice on November 28, 1997. The dismissal was pursuant to a stipulation of the named parties entered after the court granted the defendant's motions to dismiss the consolidated complaint for failure to state a claim. No payments were made to the plaintiffs to obtain the dismissal. By stipulating to the dismissal with prejudice, the plaintiffs waived any right to re-file the action or to appeal the court's order of dismissal.

13. EARNINGS PER SHARE

The Company has adopted Statement of Financial Accounting Standards (SFAS) No. 128, "Earnings Per Share", as of December 28, 1997. SFAS No. 128 required the Company to change its method of computing, presenting and disclosing earnings per share information. All prior period data presented has been restated to conform to the provisions of SFAS No. 128.

The following computation reconciles the differences between the basic and diluted presentations:

44

	Year Ended		
	June 28, 1998	June 30, 1997	June 30, 1996
Basic:			
Net income	\$ 6,275,000	\$ 3,542,000	\$ 243,000
Weighted average common shares	12,862,917	12,455,494	11,825,857
Basic income per common share	\$ 0.49	\$ 0.28	\$ 0.02
Diluted:			
Net income	\$ 6,275,000	\$ 3,542,000	\$ 243,000
Weighted average shares:			
Common shares outstanding	12,862,917	12,455,494	11,825,857
Dilutive effect of stock options & warrants	630,533	670,048	789,107
Total shares and common share equivalents	13,493,450	13,125,542	12,614,964
Diluted income per common share	\$ 0.47	\$ 0.27	\$ 0.02

14. NEW ACCOUNTING PRONOUNCEMENTS

The Company will adopt Statement of Financial Accounting Standards No. 130 "Reporting Comprehensive Income" ("SFAS No. 130") for the year ended June 27, 1999. SFAS No. 130 requires the Company to display an amount representing total comprehensive income for the period in a financial statement which is displayed with the same prominence as other financial statements. Upon adoption, all prior period data presented will be restated to conform to the provisions of SFAS No. 130. The application of the new pronouncement is not expected to have a material impact on the Company's financial statements.

The Company will adopt Statement of Financial Accounting Standards No. 131 "Disclosures about Segments of an Enterprise and Related Information" ("SFAS No. 131") for the year ended June 27, 1999. SFAS No. 131 requires the Company to

report selected information about operating segments in its financial statements. It also establishes standards for related disclosures about products and services, geographic areas, and major customers. The application of the new pronouncement is not expected to have a material impact on the Company's disclosures.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

PART III

45

Item 10. Directors and Executive Officers

Item 11. Executive Compensation

Item 12. Security Ownership of Certain Beneficial Owners and Management

Item 13. Certain Relationships and Related Transactions

The information called for in items 10 through 13 is incorporated by reference from the Company's definitive proxy statement relating to its annual meeting of stockholders, which will be filed with the Securities and Exchange Commission within 120 days after the end of fiscal 1998.

PART IV

Item 14. Exhibits, Financial Statement Schedules and Reports on Form 8-K

(a) (1) and (2) Financial statements and financial statement schedule - the financial statements, financial statements schedule, and report of independent accountants are filed as part of this report (see index to Consolidated Financial Statements at Part II Item 8 on page 23 of this Form 10-K).

(a) (3) The following exhibits have been or are being filed herewith and are numbered in accordance with Item 601 of Regulation S-K:

Exhibit No.	Description
3.1	Articles of Incorporation, as amended to date
3.2	Bylaws, as amended to date
10.1	Amended and Restated Equity Compensation Plan of the Company, as amended to date
10.2	Lease Agreements for Meridian Parkway facility dated February 10, 1988, as amended from time to time through August 25, 1992(1)
10.3	Amendments to Lease Agreements for the Meridian Parkway facility dated April 12, 1993 and June 15, 1993(2)
10.3	License Agreement between the Company and North Carolina State University dated December 3, 1987(1)
10.4	Amendment to License Agreement between the Company and North Carolina State University dated September 11, 1989(1)
10.5	Agreement between General Instrument Corporation and the Company dated June 24, 1988(1)

46

- 10.6 Letter Agreement with General Instrument Corporation dated February 21, 1992, superseding agreement dated June 24, 1988(1)
- 10.7 Contract between the Company and Siemens A.G. dated October 24, 1995(3)
- 10.8 Purchase Agreement between the Company and Siemens A.G. dated September 11, 1996 (4)
- 10.9 License and Technology Transfer Agreement between the Company and Shin- Etsu Handotai Co. Ltd dated September 30, 1996 (5)
- 10.10 Supply Agreement between the Company and Shin-Etsu HandotaiCo. Ltd, dated September 30, 1996 (5)
- 10.11 First Amendment to Purchase Agreement between the Company and Siemens A.G. dated April 22, 1997 (6)
- 10.12 Second Amendment to Purchase Agreement between the Company and Siemens A.G. dated December 9, 1997 (7)
- 10.13 Agreement between the Company and F. Neal Hunter dated December 28, 1997.
- 10.14 Amended and Restated Indemnity Agreement between the Company and F. Neal Hunter dated June 26, 1998.
- 11.00 Computation of Per Share Earnings
- 21.00 Subsidiaries of Registrant
- 23.00 Consent of Independent Accountants
- 27.00 Financial Data Schedule (for SEC use only)
- (1) Incorporated by reference herein. Filed as an exhibit to the Company's Registration Statement filed on Form SB-2 and declared effective by the Securities and Exchange Commission on February 8, 1993 and bearing Registration #33-55998.
- (2) Incorporated by reference herein. Filed as an exhibit to the Company's annual report filed on Form 10-KSB with the Securities and Exchange Commission on August 1, 1993.
- (3) Incorporated by reference herein. Filed as an exhibit to the Company's Registration Statement filed on Form S-3 (No. 33-98728) declared effective by the Securities and Exchange Commission on December 27, 1995. Confidential treatment of portions of this was granted by the Securities and Exchange Commission pursuant to Rule 24 b-2 by order dated December 29, 1995.
- (4) Incorporated by reference herein. Filed as an exhibit to the Company's quarterly report filed on Form 10K with the Securities and Exchange Commission on September 30, 1996. Confidential treatment of portions of this document was granted by the Securities and Exchange Commission pursuant to Rule 24b-2 by order dated November 21, 1996.
- (5) Incorporated by reference herein. Filed as an exhibit to the Company's quarterly report filed on Form 10Q with the Securities and Exchange Commission on November 14, 1996. Confidential treatment of portions of this document was granted by the Securities and Exchange Commission pursuant to Rule 24b-2 by order dated February 3, 1997.
- (6) Incorporated by reference herein. Filed as an exhibit to the Company's quarterly report filed on Form 10Q with the Securities and Exchange Commission on May 2, 1997. Confidential treatment of portions of this document was granted by the Securities and Exchange Commission pursuant to Rule 24b-2 by order dated June 26, 1997.
- (7) Incorporated by reference herein. Filed as an exhibit to the Company's quarterly report filed on Form 10Q with the Securities and Exchange Commission

on January 30, 1998. Confidential treatment of portions of this document was granted by the Securities and Exchange Commission pursuant to Rule 24b-2 by letter dated February 12, 1998.

(b) Reports on Form 8-K filed during the last quarter of the period covered by this report. None.

48

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities and Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

CREE RESEARCH, INC.

By: s/ F. Neal Hunter

F. Neal Hunter
President and Chief Executive Officer

Date: August 19, 1998

Pursuant to the requirements of the Securities and Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature -----	Title -----	Date -----
s/F. Neal Hunter ----- F. Neal Hunter	Chairman of the Board	August 19, 1998
s/Cynthia B. Merrell ----- Cynthia B. Merrell	Chief Financial Officer	August 19, 1998
s/Calvin H. Carter, Jr., Ph. D. ----- Calvin H. Carter, Jr., Ph.D.	Director	August 19, 1998
s/James E. Dykes ----- James E. Dykes	Director	August 19, 1998
s/Michael W. Haley ----- Michael W. Haley	Director	August 19, 1998
s/Walter L. Robb, Ph.D. ----- Walter L. Robb, Ph.D.	Director	August 19, 1998
s/Dolph W. von Arx ----- Dolph W. von Arx	Director	August 19, 1998
s/John W. Palmour, Ph.D. ----- John W. Palmour, Ph.D.	Director	August 19, 1998

49

ARTICLES OF INCORPORATION

OF

CREE RESEARCH, INC.
(as amended through August 14, 1995)

I, the undersigned, being a person of full age, do make and acknowledge these Articles of Incorporation for the purpose of forming a business corporation under and by virtue of the laws of the State of North Carolina.

ARTICLE I

The name of the corporation shall be Cree Research, Inc.

ARTICLE II

The period of duration of the corporation shall be perpetual.

ARTICLE III

The purpose for which the corporation is organized is to engage in any lawful act or activity for which corporations may be organized under Chapter 55 of the General Statutes of North Carolina.

ARTICLE IV

The aggregate number of shares of capital stock which the Corporation shall have authority to issue is 17,250,000 shares divided into three classes consisting of 1,250,000 shares of Class A Voting Preferred Stock with a par value of \$0.01 per share, 1,500,000 shares of Class B Non-Voting Preferred Stock with a par value of \$0.01 per share, and 14,500,000 shares of Common Stock with a par value of \$0.005 per share. (The term "Preferred Stock," when used in this Article IV without reference to a

particular class, means both the Class A Voting Preferred Stock and the Class B Non-Voting Preferred Stock.) The Board of Directors is authorized from time to time to establish one or more series of any class of Preferred Stock and to determine the preferences, limitations and relative rights, insofar as the same are not fixed by these Articles of Incorporation, of each such series and the number of shares and designation thereof (the resolutions so establishing and determining each such series being hereinafter referred to as a "Series Resolution"). The Board of Directors from time to time may increase the number of shares of any series of Preferred Stock by providing that any unissued shares of Preferred Stock of that class shall constitute part of such series or decrease the number of shares of any series of Preferred Stock (but not below the number of shares of such series outstanding) by providing that any unissued shares of Preferred Stock of that class previously assigned to such series shall no longer constitute a part of such series, and may alter the terms of any series of Preferred Stock prior to the issuance of shares of such series.

Subject to the foregoing powers of the Board of Directors, the preferences, limitations and relative rights of the Preferred Stock and the Common Stock are as follows:

A. Dividends

The holders of the Common Stock shall be entitled to receive dividends as, when and if declared by the Board of Directors out of funds legally available for the payment of dividends. The holders of the Preferred Stock shall be entitled to receive dividends on a parity with the holders of the Common Stock as, when and if declared by the Board of Directors out of funds legally available for the payment of dividends. Such dividends on shares of Preferred Stock shall be equal to the amount which would be paid

to the holder thereof on the number of shares of Common Stock into which such shares of Preferred Stock are convertible on the record date for determining eligibility to receive such dividends.

B. Voting Rights

- (1) The holders of Common Stock shall have the right to vote upon all matters submitted to the stockholders of the corporation and shall be entitled to one vote for each share of Common Stock held by them respectively.
- (2) The holders of Class A Voting Preferred Stock shall be entitled to vote upon all matters upon which holders of Common Stock have the right to vote and, except as otherwise required by applicable law, each holder of shares of Class A Voting Preferred Stock shall be entitled to the number of votes equal to the number of whole shares of Common Stock into which such shares of Class A Voting Preferred Stock are convertible at the record date for determining the stockholders entitled to vote on such matters, such votes to be counted together with all other shares of capital stock having general voting powers and not separately as a class.
- (3) Except as otherwise required by applicable law, the holders of Class B Nonvoting Preferred Stock shall have no voting power whatsoever and shall not have the right to vote on any matter or otherwise participate in any proceedings in which actions shall be taken by the Corporation or the shareholders thereof or be entitled to notification as to any meeting of the shareholders. In any case where applicable law requires voting by holders of Class B Nonvoting Preferred Stock, except as otherwise required by applicable law, each such holder shall be entitled to the number of votes equal to the number of whole shares of Common Stock into which such shares of Class B Voting Preferred Stock are convertible at the record date for determining the stockholders entitled to vote on such matters, such votes to be counted together with all other shares of capital stock having general voting powers and not separately as a group.
- (4) In any case where applicable law requires a separate vote by the holders of shares of a class of stock of the corporation or a series thereof, in taking such separate vote each holder of such shares shall be entitled to one vote for each such share held.

C. Liquidation Preference

In the event of any liquidation, dissolution or winding up of the corporation, either voluntary or involuntary, the holders of shares of the Preferred Stock shall be entitled to receive out of the assets of the corporation available for distribution to its stockholders, before any distribution or payment shall be made to the holders of the Common Stock, an amount per share determined in accordance with the Series Resolution applicable to such shares (which amount may be designated in the Series Resolution as the "Liquidation Preference" of such series), or, if no such amount is specified in the applicable Series Resolution, the par value of such shares. Written notice of such liquidation, dissolution or winding up, stating a payment date, the amount of such payment and the place where said payment shall be payable, shall be given by first-class mail, postage prepaid, not less than 30 days prior to the payment date stated therein to the holders of the Preferred Stock, such notice to be addressed to each such holder at his address as shown on the corporation's records. If upon such liquidation, dissolution or winding up of the corporation, the assets of the corporation available for distribution to its stockholders shall be insufficient to permit the payment in full of such amounts to the holders of the Preferred Stock, then the entire assets available for distribution shall be distributed among the holders of the Preferred Stock ratably in proportion to the full amount to which they would otherwise be respectively entitled. If upon such liquidation, dissolution or winding up of the corporation, the assets of the corporation available for distribution to

its stockholders exceed such amounts to be

paid to the holders of the Preferred Stock, the assets remaining after payment of such amounts to the holders of the Preferred Stock shall be paid as follows:

- (1) the holders of the Common Stock shall first be paid an amount for each share of Common Stock held by them respectively equal to the quotient obtained by dividing the aggregate amounts paid to the holders of the Preferred Stock pursuant to the preceding sentence by the number of shares of Common Stock into which all of the outstanding shares of Preferred Stock are convertible at the time of such distribution to holders of the Preferred Stock;
- (2) then the entire remaining balance of such assets shall be paid to the holders of the Common Stock and the Preferred Stock in an amount for each share of Common Stock or Preferred Stock held by them respectively equal to the quotient obtained by dividing such balance by the aggregate number of outstanding shares of Preferred Stock and Common Stock, and for purposes of this distribution each share of Preferred Stock shall be deemed to have been converted into the number of shares of Common Stock into which such share of Preferred Stock is convertible at the time of such distribution.

For purposes of this Paragraph C, no merger or consolidation of the corporation into or with any other corporation or entity, nor any voluntary sale, lease, exchange, transfer, mortgage, pledge or other disposition of all or substantially all of the corporation's assets, whether for cash, securities or otherwise, shall be deemed to be a liquidation, dissolution or winding up of the corporation. For purposes of this Paragraph C, if any assets distributed to stockholders upon liquidation of the corporation consist of property other than cash, the amount of such distribution shall be deemed to be the fair market value thereof at the time of such distribution, as determined in good faith by the Board of Directors.

D. Conversion Rights [See Endnote (1)]

If so provided in the Series Resolutions applicable to such shares, shares of Preferred Stock shall be convertible into Common Stock on the terms and conditions stated in such Series Resolution. If no provision is made for the conversion of shares of Preferred Stock into Common Stock by the Series Resolution applicable to such shares of Preferred Stock, then, solely for purposes of applying Paragraphs A, B and C hereof, such shares of Preferred Stock shall be treated as convertible into one share of Common Stock at any time and without adjustment.

ARTICLE V

The minimum amount of consideration to be received by the corporation for its shares before it shall commence business is One Dollar (\$1.00) in cash or property of equivalent value.

ARTICLE VI

The address of the initial registered office of the corporation in North Carolina is Suite 450, 2626 Glenwood Avenue, Raleigh, Wake County, North Carolina 27608; and the name of the initial registered agent at such address is Fred D. Hutchison.

ARTICLE VII

The number of Directors of the corporation may be fixed by the bylaws. The number of the Directors constituting the initial Board of Directors shall be three (3), and the names and addresses of the persons who are to serve as Directors until the first meeting of the shareholders, or until their successors be elected and qualify are:

Name	Address
-----	-----
Calvin H. Carter, Jr.	4400 Yates Pond Road Raleigh, North Carolina 27606
F. Neal Hunter	621 Tinkerbelle Road

Chapel Hill, North Carolina 27514

C. Eric Hunter

5639 Chapel Hill Road
Apt. 910
Durham, North Carolina 27707

ARTICLE VIII

The name and address of the incorporator is:

Name	Address
-----	-----
Fred D. Hutchison	Suite 450, 2626 Glenwood Avenue Raleigh, North Carolina 27608

ARTICLE IX

There shall be no preemptive rights with respect to the shares of the capital stock of the corporation.

ARTICLE X

No director of the Corporation shall have personal liability arising out of an action whether by or in the right of the Corporation or otherwise for monetary damages for breach of his or her duty as a director; provided, however, that the foregoing shall not limit or eliminate the personal liability of a director with respect to (i) acts or omissions not made in good faith that such director at the time of such breach knew or believed were in conflict with the best interests of the corporation, (ii) any liability under Section 55-32 of the North Carolina General Statutes or any successor provision, (iii) any transaction from which such director derived an improper personal benefit, or (iv) acts or omissions occurring prior to the date of the effectiveness of this Article. As used in this Article, the term "improper personal benefit" does not include a director's compensation or other incidental benefit for or on account of his

or her service as a director, officer, employee, independent contractor, attorney, or consultant of the corporation.

Furthermore, notwithstanding the foregoing provision, in the event that Section 55-7 or any other provision of the North Carolina General Statutes is amended or enacted to permit further limitation or elimination of the personal liability of a director, the personal liability of the corporation's directors shall be limited or eliminated to the fullest extent permitted by the applicable law.

This Article shall not affect a charter or bylaw provision or contract or resolution of the corporation indemnifying or agreeing to indemnify a director against personal liability. Any repeal or modification of this Article shall not adversely affect any limitation hereunder on the personal liability of a director with respect to acts or omissions occurring prior to such repeal or modification.

ENDNOTE (1)

The Corporation's Articles of Incorporation, all amendments thereto and all outstanding Statements of Classification of Shares were amended by resolution passed by the shareholders of the Corporation on January 5, 1993, as follows:

"The Conversion Price adjustments which are presently included in the Corporation's Articles of Incorporation and Statements of Classification of Shares which relate to the Corporation's outstanding Class A Voting and Class B Non-voting Preferred Stock, which adjustments are to be made in the event that outstanding shares of Common Stock of the Corporation shall be subdivided or increased, by stock split or stock dividend, into a greater number of shares of Common Stock, shall be deleted so that in the event of a simultaneous stock split of the Corporation's Common and Preferred Stock, the proportionate interests of the shareholders of outstanding Common and Preferred Stock remains the same before and after the effectiveness of such stock split."

CLASS A VOTING PREFERRED STOCK -- SERIES A
Preferences, Limitations and Relative Rights

1. Designation

65,474 shares of the Preferred Stock, \$0.01 par value, of Cree Research, Inc. (the "Corporation") shall constitute a series of such Preferred Stock designated as "Class A Voting Preferred Stock -- Series A."

2. Liquidation Preference

The liquidation preference of each share of the Series A Preferred Stock shall be the original issue price per share paid by the holder of such share.

3. Voluntary Conversion

Each share of Series A Preferred Stock may be converted at any time without the payment of any consideration, at the rate (the "Conversion Rate") of one share of Common Stock of the Corporation for each share of Series A Preferred Stock so converted, subject to adjustment in accordance with the provisions hereof. All such conversions shall be at the option of the holder of such Series A Preferred Stock.

Such option to convert shares of Series A Preferred Stock into shares of Common Stock may be exercised as to all or any portion of such shares of Series A Preferred Stock by, and only by, surrendering for such purpose to the Corporation at its principal executive office or at such other place as may be designated by the Corporation the certificate or certificates representing such shares of Series A Preferred Stock, duly endorsed or accompanied by proper instruments of transfer together with a written notice from the holder thereof stating that he elects to convert the same and the name or names and addresses to which certificates for Common Stock will be issued. No fractional shares of Common Stock shall be issued upon conversion of Series A Preferred Stock. In lieu of any fractional shares to which the holder would otherwise be entitled, the Corporation shall pay to the holder cash equal to such fraction multiplied by the Liquidation Preference divided by the number of shares of Common Stock (including any fractional interest for such purpose) into which each share of Preferred Stock may then be converted. The Corporation shall, as soon as practicable thereafter, issue and deliver to such holder of Series A Preferred Stock, or to a third party such holder may designate in writing, a certificate or certificates for the number of shares of Common Stock to which he shall be entitled as aforesaid and, a check payable to the holder in the amount of any cash amounts payable as the result of conversion into fractional shares of Common Stock plus declared but unpaid dividends, and if less than all the shares of the Series A Preferred Stock represented by such certificates are converted, a certificate representing the shares of Series A Preferred Stock not converted. Such conversion shall be deemed to have been made immediately prior to the close of business on

the date of such surrender of the shares of Series A Preferred Stock to be converted, and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock on such date.

The number of shares of Common Stock into which each share of Series A Preferred Stock may be converted shall be subject to the following adjustments:

- (a) If the Corporation shall after the date of issuance of the Series A Preferred Stock subdivide the outstanding shares of Common Stock into a greater number of shares of Common Stock or combine the outstanding shares of Common Stock into a lesser number of shares, or issue by way of a stock dividend on its Common Stock or reclassification of its shares of Common Stock any shares of the Corporation, the number of shares of Common Stock into which each share of Series A Preferred Stock may be converted immediately prior thereto shall be adjusted so that the holder of the Series A Preferred Stock thereafter surrendered for conversion shall be entitled to receive for each share of Series A Preferred Stock the number of shares of Common Stock which he would have owned or been entitled to receive after the happening of any of the events described above if his Series A Preferred Stock had been converted immediately prior to the happening of such event, such adjustment to become effective concurrently with the time at which such subdivision or combination or

reclassification, as the case may be, became effective.

- (b) In the event of any consolidation with or merger of the Corporation with or into another corporation, or in case of any sale, lease or conveyance to another corporation of the assets of the Corporation as an entirety or substantially as an entirety, each share of Series A Preferred Stock shall after the date of such consolidation, merger, sale, lease or conveyance be convertible into the number of shares of stock or other securities or property (including cash) to which the Common Stock issuable (at the time of such consolidation, merger, sale, lease or conveyance) upon conversion of such share of Series A Preferred Stock would have been entitled upon such consolidation, merger, sale, lease or conveyance; and in any such case, if necessary, the provisions set forth herein with respect to the rights and interests thereafter of the holders of the shares of Series A Preferred Stock shall be appropriately adjusted so as to be applicable, as nearly as may reasonably be, to any shares of stock or other securities or property thereafter deliverable on the conversion of the shares of Series A Preferred Stock.
- (c) Upon any adjustment of the number of shares into which Series A Preferred Stock may be converted, then in each such case the Corporation shall give written notice thereof within 30 days of the occurrence of the adjustment, addressed to each registered holder of Series A Preferred Stock at the address of such holder as shown on the records of the Corporation, which notice shall state the Conversion Rate resulting from such adjustment and the increase or decrease, if any, in the number of shares issuable upon the conversion of Series A Preferred Stock setting forth in reasonable detail the method of calculation and the facts upon which such calculation is based.

4. Mandatory Conversion

The Series A Preferred Stock shall automatically be converted into Common Stock simultaneously with the closing of an underwritten public offering of the Corporation's Common Stock pursuant to an effective registration statement filed by the Corporation under the Securities Act of 1933, as amended. The provisions of Section 3 regarding the number of shares of Common Stock which shall be issuable upon the conversion of Series A Preferred Stock into Common Stock shall be applicable to such mandatory conversion. The Corporation shall give written notice of the date of such closing (the "Mandatory Conversion Date") to each holder of record of Series A Preferred Stock, as promptly as practicable after the Mandatory Conversion Date. Such notice shall be given by first-class mail, postage prepaid, addressed to such holder at his address as shown on the records of the Corporation, notifying such holder that the shares have been converted and calling upon such holder to surrender to the Corporation the certificate representing his shares of Series A Preferred Stock, duly endorsed or accompanied by proper instruments of transfer.

Within 60 days after the Mandatory Conversion Date, each holder of shares of Series A Preferred Stock shall present and surrender his certificate or certificates for such shares to the Corporation at the principal executive office of the Corporation or at such other place as may be designated by the Corporation and shall be issued new certificates representing the shares of Common Stock issuable upon such conversion. Upon the Mandatory Conversion Date, each person who was a holder of Series A Preferred Stock on that date shall be deemed to have become the holder of the Common Stock deemed to be issued on conversion and not of the Series A Preferred Stock being converted. All rights of the holders of such converted shares shall cease with respect to such shares except for rights in connection with such shares which have become matured obligations to such holders prior to such conversion and the right to receive certificates of Common Stock representing the shares deemed to be issued upon such conversion.

1. Designation

11,334 shares of the Preferred Stock, \$0.01 par value, of the Corporation shall constitute a series of such Preferred Stock designated as "Class A Voting Preferred Stock -- Series B."

2. Liquidation Preference

The Liquidation Preference of the Series B Preferred Stock shall be the price per share received by the Corporation upon the original issuance of such shares.

3. Voluntary Conversion

Each share of Series B Preferred Stock may be converted at any time, without the payment of any consideration, at the rate (the "Conversion Rate") of one share of Common Stock of the Corporation for each share of Series B Preferred Stock so converted, subject to adjustment in accordance with the provisions hereof. All such conversions shall be at the option of the holder of such Series B Preferred Stock.

Such option to convert shares of Series B Preferred Stock into shares of Common Stock may be exercised as to all or any portion of such shares of Series B Preferred Stock by, and only by, surrendering for such purpose to the Corporation at its principal executive office or at such other place as may be designated by the Corporation the certificate or certificates representing such shares of Series B Preferred Stock, duly endorsed or accompanied by proper instruments of transfer together with a written notice from the holder thereof stating that he elects to convert the same and the name or names and addresses to which certificates for Common Stock will be issued. No fractional shares of Common Stock shall be issued upon conversion of Series B Preferred Stock. In lieu of any fractional shares to which the holder would otherwise be entitled, the Corporation shall pay to the holder cash equal to such fraction multiplied by the Liquidation Preference divided by the number of shares of Common Stock (including any fractional interest for such purpose) into which each share of Preferred Stock may then be converted. The Corporation shall, as soon as practicable thereafter, issue and deliver to such holder of Series B Preferred Stock, or to a third party such holder may designate in writing, a certificate or certificates for the number of shares of Common Stock to which he shall be entitled as aforesaid and, a check payable to the holder in the amount of any cash amounts payable as the result of conversion into fractional shares of Common Stock plus declared but unpaid dividends, and if less than all the shares of the Series B Preferred Stock represented by such certificates are converted, a certificate representing the shares of Series B Preferred Stock not converted. Such conversion shall be deemed to have been made immediately prior to the close of business on the date of such surrender of the shares of Series B Preferred

Stock to be converted, and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock on such date.

The number of shares of Common Stock into which each share of Series B Preferred Stock may be converted shall be subject to the following adjustments:

- (a) If the Corporation shall after the date of issuance of the Series B Preferred Stock subdivide the outstanding shares of Common Stock into a greater number of shares of Common Stock or combine the outstanding shares of Common Stock into a lesser number of shares, or issue by way of a stock dividend on its Common Stock or reclassification of its shares of Common Stock any shares of the Corporation, the number of shares of Common Stock into which each share of Series B Preferred Stock may be converted immediately prior thereto shall be adjusted so that the holder of the Series B Preferred Stock thereafter surrendered for conversion shall be entitled to receive for each share of Series B Preferred Stock the number of shares of Common Stock which he would have owned or been entitled to receive after the happening of any of the events described above if his Series B Preferred Stock had been converted immediately prior to the happening of such event, such adjustment to become effective concurrently with the time at which such subdivision or combination or reclassification, as the case may be, became effective.
- (b) In the event of any consolidation with or merger of the

Corporation with or into another corporation, or in case of any sale, lease or conveyance to another corporation of the assets of the Corporation as an entirety or substantially as an entirety, each share of Series B Preferred Stock shall after the date of such consolidation, merger, sale, lease or conveyance be convertible into the number of shares of stock or other securities or property (including cash) to which the Common Stock issuable (at the time of such consolidation, merger, sale, lease or conveyance) upon conversion of such share of Series B Preferred Stock would have been entitled upon such consolidation, merger, sale, lease or conveyance; and in any such case, if necessary, the provisions set forth herein with respect to the rights and interests thereafter of the holders of the shares of Series B Preferred Stock shall be appropriately adjusted so as to be applicable, as nearly as may reasonably be, to any shares of stock or other securities or property thereafter deliverable on the conversion of the shares of Series B Preferred Stock.

- (c) Upon any adjustment of the number of shares into which Series B Preferred Stock may be converted, then in each such case the Corporation shall give written notice thereof within 30 days of the occurrence of the adjustment, addressed to each registered holder of Series B Preferred Stock at the address of such holder as shown on the records of the Corporation, which notice shall state the Conversion Rate resulting from such adjustment and the increase or decrease, if any, in the number of shares issuable upon the conversion of Series B Preferred Stock setting forth in reasonable detail the method of calculation and the facts upon which such calculation is based.

4. Mandatory Conversion

The Series B Preferred Stock shall automatically be converted into Common Stock simultaneously with the closing of an underwritten public offering of the Corporation's Common Stock pursuant to an effective registration statement filed by the Corporation under the Securities Act of 1933, as amended. The provisions of Section 3 regarding the number of shares of Common Stock which shall be issuable upon the conversion of Series B Preferred Stock into Common Stock shall be applicable to such mandatory conversion. The Corporation shall give written notice of the date of such closing (the "Mandatory Conversion Date") to each holder of record of Series B Preferred Stock, as promptly as practicable after the Mandatory Conversion Date. Such notice shall be given by first-class mail, postage prepaid, addressed to such holder at his address as shown on the records of the Corporation, notifying such holder that the shares have been converted and calling upon such holder to surrender to the Corporation the certificate representing his shares of Series B Preferred Stock, duly endorsed or accompanied by proper instruments of transfer.

Within 60 days after the Mandatory Conversion Date, each holder of shares of Series B Preferred Stock shall present and surrender his certificate or certificates for such shares to the Corporation at the principal executive office of the Corporation or at such other place as may be designated by the Corporation and shall be issued new certificates representing the shares of Common Stock issuable upon such conversion. Upon the Mandatory Conversion Date, each person who was a holder of Series B Preferred Stock on that date shall be deemed to have become the holder of the Common Stock deemed to be issued on conversion and not of the Series B Preferred Stock being converted. All rights of the holders of such converted shares shall cease with respect to such shares except for rights in connection with such shares which have become matured obligations to such holders prior to such conversion and the right to receive certificates of Common Stock representing the shares deemed to be issued upon such conversion.

1. Designation

48,000 shares of the Class B Nonvoting Preferred Stock, \$0.01 par value, of the Corporation shall constitute a series of such Preferred Stock designated as "Class B Nonvoting Preferred Stock -- Series A." Such series is referred to herein as the "Series A Preferred Stock."

2. Liquidation Preference

The Liquidation Preference of the Series A Preferred Stock shall be \$100.00 per share.

3. Voluntary Conversion

A. Right to Convert. Each share of Series A Preferred Stock may be converted at any time, without the payment of any consideration, into fully paid and nonassessable shares of Common Stock of the Corporation at the Conversion Price (as hereinafter defined) in effect at the time of conversion determined as provided herein, and all such conversions shall be at the option of the holder of such Series A Preferred Stock; provided, however, that if within 15 days after the certificate or certificates representing shares to be converted are surrendered as provided in the next paragraph (the "Objection Period"), the Board of Directors of the Corporation, by action of a majority of the directors then holding office, shall adopt a resolution objecting to the conversion of such shares under this Section 3, then the exercise of the option to convert such shares shall be null and void and the certificate or certificates surrendered shall be returned as soon as practicable thereafter to the holder of record of such shares. Shares of Series A Preferred Stock attempted to be converted but as to which conversion an objection is made as provided herein shall again become eligible for conversion under this Section 3 upon return of the certificate or certificates representing such shares.

B. Mechanics of Conversion. Subject to the preceding paragraph, such option to convert shares of Series A Preferred Stock into shares of Common Stock may be exercised as to all or any portion of such shares of Series A Preferred Stock by, and only by, surrendering for such purpose to the Corporation at its principal executive office or at such other place as may be designated by the Corporation the certificate or certificates representing such shares of Series A Preferred Stock, duly endorsed or accompanied by proper instruments of transfer together with a written notice from the holder thereof stating that he elects to

convert the same and the name or names and addresses to which certificates for Common Stock will be issued. No fractional shares of Common Stock shall be issued upon conversion of Series A Preferred Stock. In lieu of any fractional shares to which the holder would otherwise be entitled, the Corporation shall pay to the holder cash equal to such fraction multiplied by the then effective Conversion Price. The Corporation shall, within 20 days after surrender of the certificate or certificates as provided in this paragraph or as soon as practicable thereafter, unless a resolution objecting to the conversion is adopted the Board of Directors within the Objection Period as provided herein, issue and deliver to such holder of Series A Preferred Stock, or to such third party as such holder may designate in writing, a certificate or certificates for the number of shares of Common Stock to which he shall be entitled as aforesaid and, a check payable to the holder in the amount of any cash amounts payable as the result of conversion into fractional shares of Common Stock plus declared but unpaid dividends, and if less than all the shares of the Series A Preferred Stock represented by such certificates are converted, a certificate representing the shares of Series A Preferred Stock not converted. Unless a resolution objecting to the conversion is adopted by the Board of Directors within the Objection Period as provided herein, such conversion shall be deemed to have been made immediately prior to the opening of business on the date immediately following the expiration of the Objection Period, and the person or persons

entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock on such date.

C. Conversion Price. For purposes of Sections 3, 4 and 5 hereof, each share of Series A Preferred Stock shall be convertible into the number of shares of Common Stock that results from dividing \$100.00 by the Conversion Price per share in effect at the time of conversion. The Conversion Price per share of Series A Preferred Stock shall initially be \$100.00 and shall be subject to adjustment from time to time as provided in Section 5 and as follows:

(1) If the Corporation shall after the date of issuance of the Series A Preferred Stock subdivide the outstanding shares of Common Stock into a greater number of shares of Common Stock or combine the outstanding shares of Common Stock into a lesser number of shares, or increase the number of outstanding shares of Common Stock by way of a stock dividend on its Common Stock, the Conversion Price then in effect shall be adjusted so that the holder of the Series A Preferred Stock thereafter surrendered for conversion shall be

entitled to receive for each share of Series A Preferred Stock the number of shares of Common Stock which he would have owned or been entitled to receive after the happening of any of the events described above if his Series A Preferred Stock had been converted immediately prior to the happening of such event, such adjustment to become effective concurrently with the time at which such subdivision or combination or stock dividend, as the case may be, became effective.

(2) If the Common Stock issuable upon conversion of the Series A Preferred Stock shall be changed into the same or a different number of shares of any other class or classes of stock, whether by capital reorganization, reclassification or otherwise (other than a subdivision or combination of shares provided for above), the Conversion Price then in effect shall, concurrently with the effectiveness of such reorganization or reclassification, be proportionately adjusted such that the Series A Preferred Stock shall be convertible into, in lieu of the number of shares of Common Stock which the holders would otherwise have been entitled to receive, a number of shares of such other class or classes of stock equivalent to the number of shares of Common Stock that would have been subject to receipt by the holders upon conversion of the Series A Preferred Stock immediately before that change.

(3) In the event of any consolidation with or merger of the Corporation with or into another corporation, or in case of any sale, lease or conveyance to another corporation of the assets of the Corporation as an entirety or substantially as an entirety, each share of Series A Preferred Stock shall after the date of such consolidation, merger, sale, lease or conveyance be convertible into the number of shares of stock or other securities or property (including cash) to which the Common Stock issuable (at the time of such consolidation, merger, sale, lease or conveyance) upon conversion of such share of Series A Preferred Stock would have been entitled upon such consolidation, merger, sale, lease or conveyance; and in any such case, if necessary, the provisions set forth herein with respect to the rights and interests thereafter of the holders of the shares of Series A Preferred Stock shall be appropriately adjusted so as to be applicable, as nearly as may reasonably be, to any shares of stock or other securities or property thereafter deliverable on the conversion of the shares of Series A Preferred Stock.

(4) Upon any adjustment, under the provisions of this Section 3(C) or the provisions of Section 5, of the number or character of shares into which Series A Preferred Stock may be converted, then in each such case the Corporation shall give written

notice thereof within 30 days of the occurrence of the adjustment, addressed to each registered holder of Series A Preferred Stock at the address of such holder as shown on the records of the Corporation, which notice shall state the Conversion Price resulting from such adjustment and the increase or decrease, if any, in the number of shares issuable upon the conversion of Series A Preferred Stock setting forth in reasonable detail the method of calculation and the facts upon which such calculation is based.

4. Mandatory Conversion

Each share of Series A Preferred Stock shall automatically be converted into fully paid and nonassessable shares of Common Stock at the then effective Conversion Price simultaneously with the closing of an underwritten public offering (a "Registered Public Offering") of the Corporation's Common Stock pursuant to an effective registration statement filed by the Corporation under the Securities Act of 1933, as amended. The provisions of Section 3 regarding the number of shares of Common Stock which shall be issuable upon the conversion of Series A Preferred Stock into Common Stock, and the amount of payment for any fractional shares in lieu of the issuance thereof, shall be applicable to such mandatory conversion. Upon the closing of a Registered Public Offering, the outstanding shares of Series A Preferred Stock shall be converted automatically without any further action on the part of the holders of such shares and regardless of whether the certificate or certificates representing the converted shares are surrendered, and all rights of the holders of such converted shares shall cease with respect to the converted shares upon such conversion except for rights to any declared but unpaid dividends with respect to such converted shares and the right to receive certificates representing the shares of Common Stock deemed issued upon such conversion and any payment for fractional shares in accordance herewith. The Corporation shall give written notice of the date of such closing (the "Mandatory Conversion Date") to each holder of record of Series A Preferred Stock, as promptly as practicable after the Mandatory Conversion Date. Such notice shall be given by first-class mail, postage prepaid, addressed to such holder at his address as shown on the records of the Corporation, notifying such holder that the shares have been converted and calling upon such holder to surrender to the Corporation the certificate or certificates representing his shares of Series A Preferred Stock. Each holder of shares of Series A Preferred Stock shall present and surrender his certificate or certificates for such shares to the Corporation at the principal executive office of the Corporation or at such other place as may be designated by the Corporation, duly endorsed or accompanied by proper instruments of transfer together with a written notice from the holder

thereof stating the name or names and addresses to which certificates for Common Stock are to be issued, and the Corporation shall, as soon as practicable thereafter, issue and deliver to such holder of Series A Preferred Stock, or to such third party as such holder may designate in writing, a certificate or certificates for the number of shares of Common Stock to which he shall be entitled as aforesaid and a check payable to the holder in the amount of any cash amounts payable as the result of conversion into fractional shares of Common Stock plus declared but unpaid dividends.

5. Certain Adjustments to Conversion Price for Diluting Issues

A. Special Definitions. For purposes of this Section 5, the following definitions shall apply:

- (1) "Options" shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire either Common Stock or Convertible Securities.
- (2) "Convertible Securities" shall mean any evidences of indebtedness, shares or other securities convertible into or exchangeable for Common Stock and shall include, without limitation, shares of the Class A Voting Preferred Stock and the Class B Nonvoting Preferred Stock of the Corporation.
- (3) "Original Issue Date" shall mean the date upon which the first share of the Series A Preferred Stock was first issued by the Corporation.
- (4) "Additional Shares of Common" shall mean all shares of Common

Stock issued or, pursuant to Section 5(C), deemed to be issued, by the Corporation after the Original Issue Date, except shares of Common Stock issued or issuable at any time:

(a) upon conversion of shares of the Series A Preferred Stock as provided herein;

(b) to employees, officers or directors of the Corporation pursuant to a stock grant, stock option plan or stock purchase plan or other stock agreement or arrangement approved by the Board of Directors of the Corporation;

(c) as a dividend or distribution on all outstanding shares of all classes of the capital stock of the Corporation or a dividend or distribution on all outstanding shares of all classes of the Preferred Stock of the Corporation;

(d) in the circumstances described in Section 3(C); or

(e) pursuant to the exercise of Options outstanding on or prior to the Original Issue Date or the conversion or exchange of Convertible Securities outstanding on or prior to the Original Issue Date.

- B. Adjustments for Issuance of Additional Shares of Common. No adjustment in the Conversion Price for any shares of Series A Preferred Stock shall be made in respect of the issuance of Additional Shares of Common except as expressly provided in this Section 5(B). In the event the Corporation, at any time or from time to time within 120 days after the Original Issue Date, shall issue Additional Shares of Common (including Additional Shares of Common deemed issued pursuant to Section 5(C)) without consideration or for a consideration per share (determined pursuant to Section 5(D) hereof) less than the Conversion Price for a share of Series A Preferred Stock in effect on the date of, and immediately prior to such issue, then the Conversion Price shall be reduced, concurrently with such issue, to a price (calculated to the nearest one hundredth of a cent) equal to the consideration per share received by the Corporation for the Additional Shares of Common so issued.
- C. Deemed Issue of Additional Shares of Common. In the event the Corporation, at any time or from time to time within 120 days after the Original Issue Date, shall issue any Options or Convertible Securities, then the maximum number of shares of Common Stock (as set forth in the instrument relating thereto without regard to any provisions contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall (except as otherwise provided in Section 5(a)(4)) be deemed to be Additional Shares of Common issued as of the time of such issue; provided, that Additional Shares of Common shall not be deemed to have been issued unless the consideration per share (determined pursuant to Section 5(D) hereof) of such Additional Shares of Common would be less than the Conversion Price in effect on the date of and immediately prior to such issue, and, provided further, that in any such case in which Additional Shares of Common are deemed to be issued:
- (1) no further adjustment in the Conversion Price shall be made upon the subsequent issue of shares of Common Stock or Convertible Securities upon the exercise of such Options or conversion or exchange of such Convertible Securities;
 - (2) if such Options or Convertible Securities by their terms provide, with the passage of time or otherwise, for any change in the amount of

consideration payable to the corporation, or change in the

number of shares of Common Stock issuable, upon the exercise, conversion or exchange thereof, the Conversion Price computed upon the original issue thereof, and any subsequent adjustments based thereon, shall, upon any such change becoming effective, be recomputed to reflect an appropriate increase or decrease reflecting such change insofar as it affects such Options or the rights of conversion or exchange under such Convertible Securities;

- (3) upon the expiration of any such Options or any rights of conversion or exchange under such Convertible Securities which shall not have been exercised, the Conversion Price computed upon the original issue thereof, and any subsequent adjustments based thereon, shall, upon such expiration, be recomputed as if:

(a) in the case of Convertible Securities or Options for Common Stock, the only Additional Shares of Common issued were shares of Common Stock, if any, actually issued upon the exercise of such Options or the conversion or exchange of such Convertible Securities and the consideration received therefor was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration actually received by the Corporation upon such exercise, or for the issue of all such Convertible Securities which were actually converted or exchanged, plus the additional consideration, if any, actually received by the Corporation upon such conversion or exchange, and

(b) in the case of Options for Convertible Securities, only the Convertible Securities, if any, actually issued upon the exercise thereof were issued at the time of issue of such Options, and the consideration received by the Corporation for the Additional Shares of Common deemed to have been issued was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, and the consideration deemed to have been received by the Corporation upon the issue of the Convertible Securities with respect to such Options as were actually exercised.

- (4) in the case of any Options which expire by their terms not more than thirty (30) days after the date of issue thereof, no adjustment of the Conversion Price shall be made until the expiration or exercise of all such Options, whereupon such adjustment shall be made in the same manner provided in clause (3) above.

D. Determination of Consideration. For purposes of this Section 5, the consideration received by the Corporation for the issue of any Additional Shares of Common shall be computed as follows:

- (1) Except as provided in Section D(2) below, such consideration shall:
- (a) insofar as it consists of cash, be computed at the aggregate amount of cash received by the Corporation (before commission or expenses) excluding amounts paid or payable for accrued interest or accrued dividends;
- (b) insofar as it consists of property other than cash, be computed at the fair value thereof at the time of such issue, as determined in good faith by the Board of Directors; and
- (c) in the event Additional Shares of Common are issued together with other shares or securities or other assets of the Corporation for consideration which covers both, at the proportion of such consideration so received, computed as provided in clauses (a) and (b) above, as determined in good faith by the Board of Directors.
- (2) The consideration per share received by the Corporation for Additional Shares of Common deemed to have been issued pursuant to Section 5(C) shall be determined by dividing

(a) the total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provisions contained thereof for a subsequent adjustment of such consideration) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities by

(b) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options of the conversion or exchange of such Convertible Securities.

6. Amendments to Articles of Incorporation

The Corporation shall not, without the affirmative vote or written consent in lieu of a vote of the holders of such number of outstanding shares of Series A Preferred Stock as may be required by applicable law (with such shares to be counted either separately or as a group with other shares of the Corporation's capital stock in the manner specified by applicable law), adopt any amendment to its Articles of Incorporation which would: (a) adversely change the rights or preferences of the Series A Preferred Stock; (b) create a new class of shares of capital stock having rights or preferences with respect to distributions or to dissolution that are prior or superior to the Series A Preferred Stock; or (c) increase the rights or preferences of any class of capital stock that, after giving effect to the amendment, have rights or preferences with respect to distributions or to dissolution that are prior or superior to the Series A Preferred Stock.

7. Other Rights and Privileges

Holders of Series A Preferred Stock shall have the same relative rights and privileges as are granted to holders of Common Stock by the Articles of Incorporation (as the same may be amended from time to time), except as otherwise provided in the Articles of Incorporation (as the same may be amended from time to time) and in Sections 1 through 6 above.

CREE RESEARCH, INC.
CLASS B NONVOTING PREFERRED STOCK -- SERIES B
Preferences, Limitations and Relative Rights

1. Designation

19,200 shares of the Class B Nonvoting Preferred Stock, \$0.01 par value per share, of the Corporation shall constitute a series of such Preferred Stock designated as "Class B Nonvoting Preferred Stock -- Series B." Such series is referred to herein as the "Series B Nonvoting Preferred Stock."

2. Liquidation Preference

The Liquidation Preference of the Series B Nonvoting Preferred Stock shall be \$100.00 per share.

3. Conversion

- A. **Mandatory Conversion.** Each outstanding share of Series B Nonvoting Preferred Stock shall be converted into fully paid and nonassessable shares of Common Stock at the then effective Conversion Price (as defined below) simultaneously with the closing of an underwritten public offering (a "Registered Public Offering") of the Corporation's Common Stock pursuant to an effective registration statement filed by the Corporation under the Securities Act of 1933, as amended. Upon the closing of a Registered Public Offering, the out-standing shares of Series B Nonvoting Preferred Stock shall be deemed automatically converted without any further action on the part of the holders of such

shares and regardless of whether the certificate or certificates representing the converted shares are surrendered, and all rights of the holders of such converted shares shall cease with respect to the converted shares except for rights to any declared but unpaid dividends on such converted shares and the right to receive certificates representing the shares of Common Stock deemed issued upon such conversion and any payment for fractional shares in accordance herewith. No fractional shares of Common Stock shall be issued upon conversion of Series B Nonvoting Preferred Stock. In lieu of fractional shares to which the holder would otherwise be entitled, the Corporation shall pay to the holder, without interest, cash equal to such fraction multiplied by the Conversion Price in effect at the time of conversion.

- B. Mechanics of Conversion. The Corporation shall, as promptly as practicable after the closing of a Registered Public Offering, give written notice of the closing to each holder of record of the Series B Non-voting Preferred Stock thereby converted stating that the shares have been converted and calling upon such

holder to surrender to the Corporation the certificate or certificates representing his shares of Series B Nonvoting Preferred Stock. Such notice shall be given by first-class mail, postage prepaid, addressed to such holder at his address as shown on the records of the Corporation. Each holder of shares of Series B Nonvoting Preferred Stock shall present and surrender his certificate or certificates for such shares to the Corporation at the principal executive office of the Corporation or at such other place as may be designated by the Corporation in its notice to the holder, duly endorsed or accompanied by proper instruments of transfer together with a written notice from the holder thereof stating the name or names and addresses to which certificates for Common Stock are to be issued, and the Corporation shall, as soon as practicable thereafter, issue and deliver to such holder of Series B Nonvoting Preferred Stock, or to such third party as such holder may designate in writing, a certificate or certificates for the number of shares of Common Stock to which he shall be entitled as aforesaid and a check payable to the holder for any cash amounts payable in lieu of fractional shares of Common Stock plus any declared but unpaid dividends on the converted shares.

- C. Conversion Price. For purposes of this Section 3, each share of Series B Nonvoting Preferred Stock shall be convertible into the number of shares of Common Stock that results from dividing \$100.00 by the Conversion Price per share in effect at the time of conversion. The Conversion Price per share of Series B Nonvoting Preferred Stock shall initially be \$100.00 and shall be subject to adjustment from time to time as follows:

- (1) In the event the outstanding shares of Common Stock shall be subdivided or increased, by stock split or stock dividend, into a greater number of shares of Common Stock, the Conversion Price then in effect shall, concurrently with the effectiveness of such subdivision or payment of such stock dividend, be proportionately decreased. In the event the outstanding shares of Common Stock shall be combined or consolidated, by reclassification or otherwise, into a lesser number of shares of Common Stock, the Conversion Price then in effect shall, concurrently with the effectiveness of such combination or consolidation, be proportionately increased.
- (2) If the Common Stock issuable upon conversion of the Series B Nonvoting Preferred Stock shall be changed into the same or a different number of shares of any other class or classes of stock of the Corporation, whether by capital reorganization, reclassification or otherwise (other than a subdivision or combination of shares provided for above), the Conversion Price then in

effect shall, concurrently with the effectiveness of such reorganization or reclassification, be proportionately adjusted such that the Series B Nonvoting Preferred Stock shall be convertible into, in lieu of the shares of Common

Stock which the holders would otherwise have been entitled to receive, a number of shares of such other class or classes of stock equivalent to the number of shares of Common Stock that would have been subject to receipt by the holders upon conversion of the Series B Nonvoting Preferred Stock immediately before such event.

- (3) Upon each adjustment of the Conversion Price provided for hereunder and upon each change in the number of shares of Common Stock issuable upon conversion of the Series B Nonvoting Preferred Stock pursuant to the provisions hereof, the Corporation shall promptly give written notice thereof to each registered holder of Series B Nonvoting Preferred Stock, first-class mail, postage prepaid, addressed to such holder at his address as shown on the records of the Corporation, which notice shall state the Conversion Price resulting from such adjustment and the increase or decrease, if any, in the number of shares issuable upon conversion of Series B Nonvoting Preferred Stock or specifying the other shares of stock, securities or assets and the amount thereof so issuable and setting forth in reasonable detail the method of calculation and the facts upon which such calculation is based.

- D. Consolidations and Mergers. In the event of any consolidation or merger of the Corporation with or into another corporation (other than a merger in which the Corporation is a continuing corporation and which does not result in any reclassification of the Common Stock of the Corporation), then as a condition of effecting such merger or consolidation lawful and adequate provisions shall be made whereby each holder of outstanding shares of Series B Nonvoting Preferred Stock shall be entitled to receive, upon the consummation of such consolidation or merger, such shares of stock, securities or assets to which such holder would have been entitled upon the consummation thereof if such shares of Series B Nonvoting Preferred Stock had been converted into Common Stock immediately prior thereto. In any such case, upon the consummation of such consolidation or merger, all rights of holders of shares of Series B Nonvoting Preferred Stock shall cease with respect to such shares except for the right to receive shares of stock, securities or assets in accordance with the provisions made pursuant to the preceding sentence.

CLASS B NONVOTING PREFERRED STOCK - SERIES C
Preferences, Limitations and Relative Rights

1. Designation

53,500 shares of the Class B Non-voting Preferred Stock, \$0.01 par value per share, of the Corporation shall constitute a series of such Preferred Stock designated as "Class B Non-voting Preferred Stock -- Series C. ("Series C Non-voting Preferred Stock").

2. Liquidation Preference

The Liquidation Preference of the Series C Non-voting Preferred Stock shall be \$100.00 per share.

3. Conversion

- A. Mandatory Conversion. Each outstanding share of Series C Non-voting Preferred Stock shall be converted into fully paid and nonassessable shares of Common Stock at the then effective Conversion Price (as defined below) simultaneously with the closing of an underwritten public offering (a "Registered Public Offering") of the Corporation's Common Stock pursuant to an effective registration statement filed by the Corporation under the Securities Act of 1933, as amended. Upon the closing of a Registered Public Offering, the outstanding shares of Series C Non-voting Preferred Stock shall be deemed automatically converted without any further action on the part of the holders of such shares and regardless of whether the certificate or certificates representing the converted shares are surrendered, and all rights of the holders of such converted shares shall

cease with respect to the converted shares except for rights to any declared but unpaid dividends on such converted shares and the right to receive certificates representing the shares of Common Stock deemed issued upon such conversion of Series C Non-voting Preferred Stock. In lieu of fractional shares to which the holder would otherwise be entitled, the Corporation shall pay to the holder, without interest, cash equal to such fraction multiplied by the Conversion Price in effect at the time of conversion.

- B. Mechanics of Conversion. The Corporation shall, as promptly as practicable after the closing of a Registered Public Offering, give written notice of the closing to each holder of record of the Series C Non-voting Preferred Stock thereby converted stating that the shares have been converted and calling upon such holder to surrender to the Corporation the certificate or certificates representing his shares of Series C Non-voting Preferred Stock. Such notice shall be given by first-class mail, postage prepaid, addressed to such

holder at his address as shown on the records of the Corporation. Each holder of shares of Series C Non-voting Preferred Stock shall present and surrender his certificate or certificates for such shares to the Corporation at the principal executive office of the Corporation or at such other place as may be designated by the Corporation in its notice to the holder, duly endorsed or accompanied by proper instruments of transfer together with a written notice from the holder thereof stating the name or names and addresses to which certificates for Common Stock are to be issued, and the Corporation shall, as soon as practicable thereafter, issue and deliver to such holder of Series C Non-voting Preferred Stock, or to such third party as such holder may designate in writing, a certificate or certificates for the number of shares of Common Stock to which he shall be entitled as aforesaid and a check payable to the holder for any cash amounts payable in lieu of fractional shares of Common Stock plus any declared but unpaid dividends on the converted shares.

- C. Conversion Price. For purposes of this Section 3, each share of Series C Non-voting Preferred Stock shall be convertible into the number of shares of Common Stock that results from dividing \$100.00 by the Conversion Price per share in effect at the time of conversion. The Conversion Price per share of Series C Non-voting Preferred Stock shall initially be \$100.00 and shall be subject to adjustment from time to time as follows:

- (1) In the event the outstanding shares of Common Stock shall be subdivided or increase, by stock split or stock dividend, into a greater number of shares of Common Stock, the Conversion Price then in effect shall, concurrently with the effectiveness of such subdivision or payment of such stock dividend, be proportionately decreased. In the event the outstanding shares of Common Stock shall be combined or consolidated, by reclassification or otherwise, into a lesser number of shares of Common Stock, the Conversion Price then in effect shall, concurrently with the effectiveness of such combination or consolidation, be proportionately increased.
- (2) If the Common Stock issuable upon conversion of the Series C Non-voting Preferred Stock shall be changed into the same or a different number of shares of any other class or classes of stock of the Corporation, whether by capital reorganization, reclassification or otherwise (other than a subdivision or combination of shares provided for above), the Conversion Price then in effect shall, concurrently with the effectiveness of such reorganization or reclassification, be proportionately adjusted such that the Series C Non-voting Preferred Stock shall be convertible

into, in lieu of the shares of Common Stock which the holders would otherwise have been entitled to receive, a number of shares of such other class or classes of stock equivalent to

the number of shares of Common Stock that would have been subject to receipt by the holders upon conversion of the Series C Non-voting Preferred Stock immediately before such event.

- (3) Upon each adjustment of the Conversion Price provided for hereunder and upon each change in the number of shares of Common Stock issuable upon conversion of the Series C Non-voting Preferred Stock pursuant to the provisions hereof, the Corporation shall promptly give written notice thereof to each registered holder of Series C Non-voting Preferred Stock, first-class mail, postage prepaid, addressed to such holder at his address as shown on the records of the Corporation, which notice shall state the Conversion Price resulting from such adjustment and the increase or decrease, if any, in the number of shares issuable upon conversion of Series C Non-voting Preferred Stock or specifying the other shares of stock, securities or assets and the amount thereof so issuable and setting forth in reasonable detail the method of calculation and the facts upon which such calculation is based.

- D. Consolidations and Mergers. In the event of any consolidation or merger of the Corporation with or into another corporation (other than a merger in which the Corporation is a continuing corporation and which does not result in any reclassification of the Common Stock of the Corporation), then as a condition of effecting such merger or consolidation lawful and adequate provisions shall be made whereby each holder of outstanding shares of Series C Non-voting Preferred Stock shall be entitled to receive, upon the consummation of such consolidation or merger, such shares of stock, securities or assets to which such holder would have been entitled upon the consummation thereof if such shares of Series C Non-voting Preferred Stock had been converted into Common Stock immediately prior thereto. In any such case, upon the consummation of such consolidation or merger, all rights of holders of shares of Series C Non-voting Preferred Stock shall cease with respect to such shares except for the right to receive shares of stock, securities or assets in accordance with the provisions made pursuant to the preceding sentence.

CLASS B NONVOTING PREFERRED STOCK - SERIES C
(WITH ALTERNATIVE LIQUIDATION PRICE)
Preferences, Limitations and Relative Rights

1. Designation

In addition to the 53,500 shares of the Class B Non-voting Preferred Stock, \$0.01 par value per share, of the Corporation authorized by amendment to the Articles of Incorporated dated June 24, 1991, and a second amendment dated May 12, 1992, an additional 40,910 shares shall constitute a part of the same series of such Preferred Stock designated as "Class B Non-voting Preferred Stock -- Series C. (for a total authorized number of shares of 94,410) ("Series C Non-voting Preferred Stock").

2. Liquidation Preference

The Liquidation Preference of the additional shares of Series C Non-voting Preferred Stock which is the subject of this amendment shall be \$110.00 per share. The liquidation preference of all previously issued Series C Non-voting Preferred Stock shall not be altered or changed by this amendment.

3. Conversion

- A. Mandatory Conversion. Each outstanding share of Series C Non-voting Preferred Stock shall be converted into fully paid and nonassessable shares of Common Stock at the then effective Conversion Price (as defined below) simultaneously with the closing of an underwritten public offering (a "Registered Public Offering") of the Corporation's Common Stock pursuant to an effective registration statement filed by the Corporation under the Securities Act of 1933, as amended. Upon the closing of a

Registered Public Offering, the outstanding shares of Series C Non-voting Preferred Stock shall be deemed automatically converted without any further action on the part of the holders of such shares and regardless of whether the certificate or certificates representing the converted shares are surrendered, and all rights of the holders of such converted shares shall cease with respect to the converted shares except for rights to any declared but unpaid dividends on such converted shares and the right to receive certificates representing the shares of Common Stock deemed issued upon such conversion of Series C Non-voting Preferred Stock. In lieu of fractional shares to which the holder would otherwise be entitled, the Corporation shall pay to the holder, without interest, cash equal to such fraction multiplied by the Conversion Price in effect at the time of conversion.

- B. Mechanics of Conversion. The Corporation shall, as promptly as practicable after the closing of a Registered Public Offering, give written notice of the closing to each holder of record of the Series C Non-voting Preferred Stock thereby converted stating that the shares have been converted and calling upon such holder to surrender to the Corporation the certificate or certificates representing his shares of Series C Non-voting Preferred Stock. Such notice shall be given by first-class mail, postage prepaid, addressed to such holder at his address as shown on the records of the Corporation. Each holder of shares of Series C Non-voting Preferred Stock shall present and surrender his certificate or certificates for such shares to the Corporation at the principal executive office of the Corporation or at such other place as may be designated by the Corporation in its notice to the holder, duly endorsed or accompanied by proper instruments of transfer together with a written notice from the holder thereof stating the name or names and addresses to which certificates for Common Stock are to be issued, and the Corporation shall, as soon as practicable thereafter, issue and deliver to such holder of Series C Non-voting Preferred Stock, or to such third party as such holder may designate in writing, a certificate or certificates for the number of shares of Common Stock to which he shall be entitled as aforesaid and a check payable to the holder for any cash amounts payable in lieu of fractional shares of Common Stock plus any declared but unpaid dividends on the converted shares.
- C. Conversion Price. For purposes of this Section 3, each share of Series C Non-voting Preferred Stock which is the subject of this amendment (40,910) shall be convertible into the number of shares of Common Stock that results from dividing \$110.00 by the Conversion Price per share in effect at the time of conversion. The Conversion Price per share of Series C Non-voting Preferred Stock, which is the subject of this amendment, shall initially be \$110.00 and shall be subject to adjustment from time to time as follows:
- (1) In the event the outstanding shares of Common Stock shall be subdivided or increase, by stock split or stock dividend, into a greater number of shares of Common Stock, the Conversion Price then in effect shall, concurrently with the effectiveness of such subdivision or payment of such stock dividend, be proportionately decreased. In the event the outstanding shares of Common Stock shall be combined or consolidated, by reclassification or otherwise, into a lesser number of shares of Common Stock, the Conversion Price then in effect shall, concurrently with the effectiveness of such combination or consolidation, be proportionately increased.
 - (2) If the Common Stock issuable upon conversion of the Series C Non-voting Preferred Stock shall be changed into the same or a different number of shares of any other class or classes of stock of the Corporation, whether by capital reorganization, reclassification or otherwise (other than a subdivision or combination of shares provided for above), the Conversion Price then in effect shall, concurrently with the effectiveness of such reorganization or reclassification, be

proportionately adjusted such that the Series C Non-voting Preferred Stock shall be convertible into, in lieu of the shares of Common Stock which the holders would otherwise have been entitled to receive, a number of shares of such other class or classes of stock equivalent to the number of shares of Common Stock that would have been subject to receipt by the holders upon conversion of the Series C Non-voting Preferred Stock immediately before such event.

- (3) Upon each adjustment of the Conversion Price provided for hereunder and upon each change in the number of shares of Common Stock issuable upon conversion of the Series C Non-voting Preferred Stock pursuant to the provisions hereof, the Corporation shall promptly give written notice thereof to each registered holder of Series C Non-voting Preferred Stock, first-class mail, postage prepaid, addressed to such holder at his address as shown on the records of the Corporation, which notice shall state the Conversion Price resulting from such adjustment and the increase or decrease, if any, in the number of shares issuable upon conversion of Series C Non-voting Preferred Stock or specifying the other shares of stock, securities or assets and the amount thereof so issuable and setting forth in reasonable detail the method of calculation and the facts upon which such calculation is based.
- (4) Consolidations and Mergers. In the event of any consolidation or merger of the Corporation with or into another corporation (other than a merger in which the Corporation is a continuing corporation and which does not result in any reclassification of the Common Stock of the Corporation), then as a condition of effecting such merger or consolidation lawful and adequate provisions shall be made whereby each holder of outstanding shares of Series C Non-voting Preferred Stock shall be entitled to receive, upon the consummation of such consolidation or merger, such shares of stock, securities or assets to which such holder would have been entitled upon the consummation thereof if such shares of Series C Non-voting Preferred Stock had been converted into Common Stock

immediately prior thereto. In any such case, upon the consummation of such consolidation or merger, all rights of holders of shares of Series C Non-voting Preferred Stock shall cease with respect to such shares except for the right to receive shares of stock, securities or assets in accordance with the provisions made pursuant to the preceding sentence.

BYLAWS

OF

CREE RESEARCH, INC.
(as amended through July 28, 1998)

ARTICLE I
OFFICES

1. Principal Office. The principal office of the Corporation shall be located in Durham County, North Carolina or such other place as is designated by the Board of Directors.
2. Registered Office. The registered office of the Corporation required by law to be maintained in the State of North Carolina may be, but need not be, identical with the principal office.
3. Other Offices. The Corporation may have offices at such other places, either within or without the State of North Carolina, as the Board of Directors may from time to time determine or as the affairs of the Corporation may require.

ARTICLE II
MEETINGS OF SHAREHOLDERS

1. Place of Meetings. All meetings of shareholders shall be held at the principal office of the Corporation or at such other place, either within or without the State of North Carolina, as shall be designated in the notice of the meeting or agreed upon by a majority of the shareholders entitled to vote thereat.
2. Annual Meeting. The annual meeting of the shareholders shall be held at the principal office of the Corporation at ten o'clock (10:00) a.m., on the first Tuesday in October of each year if not a legal holiday, and if such, the next secular day following, for the purpose of electing Directors of the Corporation and for the transaction of such other business as may be properly brought before the meeting close.
3. Substitute Annual Meeting. If the annual meeting shall not be held on the day designated by these Bylaws, a substitute annual meeting may be called in accordance with the provisions of paragraph 4 of this Article II. A meeting so called shall be designated and treated for all purposes as the annual meeting.
4. Special Meetings. Special meetings of the shareholders may be called at any time by the President, the Secretary or the Board of Directors of the Corporation, or by any shareholder pursuant to the written request of the holders of not less than one-tenth of all the shares entitled to vote at the meeting.
5. Notice of Meetings.

(a) Written or printed notice stating the time and place of the meeting shall be delivered not less than ten (10) nor more than fifty (50) days before the date thereof, either personally or by mail, by or at the direction of the President, the Secretary, or other person calling the meeting, to each shareholder of record entitled to vote at such meeting. If mailed, such notice shall be deemed to be delivered when deposited in the United States mail addressed to the shareholder at his address as it appears on the record of shareholders of the Corporation, with postage thereon prepaid.

(b) In the case of an annual or substitute annual meeting, the notice of meeting need not specifically state the business to be transacted thereat unless it is a matter, other than election of Directors, on which the vote of the shareholders is expressly required by the provisions of the North Carolina Business Corporation Act. In the case of a special meeting, the notice of meeting shall specifically state the purpose or purposes for which the meeting is called.

(c) When a meeting is adjourned for thirty (30) days or more, notice of the adjourned meeting shall be given as in the case of an original meeting. When a meeting is adjourned for less than thirty (30) days in any one adjournment, it is not necessary to give any notice of the time and place of the adjourned meeting or of the business to be transacted thereat other than by announcement at the meeting at which the adjournment is taken.

6. Voting Lists. At least ten (10) days before each meeting of shareholders the Secretary of the Corporation shall prepare an alphabetical list of the shareholders entitled to vote at such meeting or any adjournment thereof, with the address of and number of shares held by each, which list shall be kept on file at the registered office of the Corporation for a period of ten (10) days prior to such meeting, and shall be subject to inspection by any shareholder at any time during the usual business hours. This list shall also be produced and kept open at the time and place of the meeting and shall be subject to inspection by any shareholder during the whole time of the meeting.

7. Quorum.

(a) Unless otherwise provided by law, the holders of a majority of the shares entitled to vote, represented in person or by proxy, shall constitute a quorum at a meeting of shareholders. In the absence of a quorum at the opening of any meeting of shareholders, such meeting may be adjourned from time to time by the vote of a majority of the shares voting on the motion to adjourn, but no other business may be transacted until and unless a quorum is present. At any adjourned meeting at which a quorum is present, any business may be transacted which might have been transacted at the original meeting.

3

(b) The shareholders at a meeting at which a quorum is present may continue to do business until adjournment, notwithstanding the withdrawal of sufficient shareholders to leave less than a quorum.

8. Voting of Shares

(a) Each outstanding share having voting rights shall be entitled to one vote on each matter submitted to a vote at a meeting of shareholders.

(b) Except in the election of Directors, the vote of a majority of the shares voted on any matter at a meeting of shareholders, duly held and at which a quorum is present, shall be the act of the shareholders on that matter, unless the vote by a greater number is required by law or by the charter or Bylaws of the Corporation.

(c) Voting on all matters except the election of Directors shall be by voice vote or by a show of hands unless the holders of one-tenth of the shares represented at the meeting shall, prior to the voting on any matter, demand a ballot vote on that particular matter.

9. Proxies. Shares may be voted either in person or by one or more agents authorized by a written proxy executed by the shareholder or by his duly authorized attorney-in-fact. A proxy is not valid after the expiration of eleven (11) months from the date of its execution, unless the person executing it specifies therein the length of time for which it is to continue in force, or limits its use to a particular meeting, but no proxy, whether or not designated as irrevocable, shall be valid after ten (10) years from the date of its execution, unless renewed or extended at any time before its expiration for not more than ten (10) years from the date of such renewal or extension.

4

Section 10. Notice of Shareholder Business and Nominations.

(a) Annual Meetings of Shareholders.

(i) Nominations of persons for election to the Board of Directors of the Corporation and the proposal of business to be considered by the shareholders may be made at an annual meeting of shareholders: (a) pursuant to the notice of meeting pursuant to Article II, Section 5 of these Bylaws; (b) by or at the direction of the Board of Directors; or (c) by any shareholder of the

Corporation who was a shareholder of record at the time of giving of notice provided for in this Bylaw (Article II, Section 10), who is entitled to vote at the meeting and who complies with the notice procedures set forth in this Bylaw.

(ii) For nominations or other business to be properly brought before an annual meeting by a shareholder pursuant to clause (c) of paragraph (a)(i) of this Bylaw, the shareholder must have given timely notice thereof in writing to the Secretary of the Corporation and such other business must otherwise be a proper matter for shareholder action. To be timely, a shareholder's notice shall be delivered to the Secretary at the principal executive offices of the Corporation not later than the close of business on the 60th calendar day nor earlier than the close of business on the 90th calendar day prior to the first anniversary of the preceding year's annual meeting; PROVIDED, HOWEVER, that in the event that the date of the annual meeting is more than 30 calendar days before or more than 60 calendar days after such anniversary date, notice by the shareholder to be timely must be so delivered not earlier than the close of business on the 90th calendar day prior to such annual meeting and not later than the close of business on the later of the 60th calendar day prior to such annual meeting or the 10th calendar day following the calendar day on which public announcement of

5

the date of such meeting is first made by the Corporation. In no event shall the public announcement of an adjournment of an annual meeting commence a new time period for the giving of a shareholder's notice as described above. Such shareholder's notice shall set forth: (a) as to each person whom the shareholder proposes to nominate for election or reelection as a director all information relating to such person that is required to be disclosed in solicitations of proxies for election of directors in an election contest, or is otherwise required, in each case pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended (the "Exchange Act") and Rule 14a-11 thereunder (including such person's written consent to being named in the proxy statement as a nominee and to serving as a director if elected); (b) as to any other business that the shareholder proposes to bring before the meeting, a brief description of the business desired to be brought before the meeting, the reasons for conducting such business at the meeting and any material interest in such business of such shareholder and the beneficial owner, if any, on whose behalf the proposal is made; and (c) as to the shareholder giving the notice and the beneficial owner, if any, on whose behalf the nomination or proposal is made the name and address of such shareholder, as they appear on the Corporation's books, and of such beneficial owner and the class and number of shares of the Corporation which are owned beneficially and of record by such shareholder and such beneficial owner.

(b) Special Meetings of Shareholders.

(i) Only such business shall be conducted at a special meeting of shareholders as shall have been brought before the meeting pursuant to the notice of meeting under Article II, Section 5 of these Bylaws. If directors are to be elected at a special meeting of shareholders pursuant to the notice of meeting, nominations of persons for election to the Board of

6

Directors at such meeting may be made (a) by or at the direction of the Board of Directors, or (b) by any shareholder of the Corporation who is a shareholder of record at the time of giving of notice provided for in this Bylaw, who shall be entitled to vote at the meeting and who complies with the notice procedures set forth in this Bylaw.

(ii) In the event a special meeting of shareholders is called for the purpose of electing one or more directors to the Board of Directors, any shareholder may, pursuant to clause (b) above, nominate a person or persons (as the case may be) for election to such position(s) as specified in the notice of meeting, if the shareholder shall have delivered notice containing the information specified in paragraph (a)(ii) of this Bylaw to the Secretary at the principal executive offices of the Corporation not earlier than the close of business on the 90th calendar day prior to such special meeting and not later than the close of business on the later of the 60th calendar day prior to such special meeting or the 10th calendar day following the day on which public

announcement is first made of the date of the special meeting and of the nominees proposed by the Board of Directors to be elected at such meeting. In no event shall the public announcement of an adjournment of a special meeting commence a new time period for the giving of a shareholder's notice as described above.

(c) General.

(i) Only such persons who are nominated in accordance with the procedures set forth in this Bylaw shall be eligible to serve as directors and only such business shall be conducted at a meeting of shareholders as shall have been brought before the meeting in accordance with the procedures set forth in this Bylaw. Except as otherwise provided by law, the Articles of Incorporation or these Bylaws, the Chairman of the meeting shall

7

have the power and duty to determine whether a nomination or any business proposed to be brought before the meeting was made or proposed, as the case may be, in accordance with the procedures set forth in this Bylaw and, if any proposed nomination or business is not in compliance with this Bylaw, to declare that such defective proposal or nomination shall be disregarded.

(ii) For purposes of this Bylaw, "public announcement" shall mean disclosure in a press release reported a national news service or in a document publicly filed by the Corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the Exchange Act.

(iii) Notwithstanding the foregoing provisions of this Bylaw, a shareholder shall also comply with all applicable requirements of the Exchange Act and the rules and regulations thereunder with respect to the matters set forth in this Bylaw. Nothing in this Bylaw shall be deemed to affect any rights of shareholders to request inclusion of proposals in the Corporation's proxy statement pursuant to Rule 14a-8 under the Exchange Act.

11. Informal Action by Shareholders. Any action which is required or permitted to be taken at a meeting of the shareholders may be taken without a meeting if a consent in writing, setting forth the action so taken, shall be signed by all of the persons who would be entitled to vote upon such action at a meeting, and filed with the Secretary of the Corporation to be kept in the Corporate Minute Book, whether done before or after the action so taken. Such consent shall have the same force and effect as a unanimous vote of shareholders.

8

ARTICLE III
DIRECTORS

1. General Powers. The business and affairs of the Corporation shall be managed by the Board of Directors or by such committees as the Board may establish pursuant to these Bylaws.

2. Number, Term and Qualification. The number of Directors of the Corporation shall be not less than three (3), the exact number of which shall be determined from time to time by resolution of the shareholders. Each Director shall hold office until his death, resignation, retirement, removal, disqualification, or his successor is elected and qualifies. Directors need not be residents of the State of North Carolina or shareholders of the Corporation.

3. Election of Directors. Except as provided in paragraph 6 of this Article III, the Directors shall be elected at the annual meeting of shareholders; and those persons who receive the highest number of votes shall be deemed to have been elected. If any shareholder so demands, election of Directors shall be by ballot.

4. Cumulative Voting. At each election for Directors, every shareholder entitled to vote at such election shall have the right to vote, in person or by proxy, the number of shares standing of record in his name for as many persons as there are Directors to be elected and for whose election he has a right to vote, or to

cumulate his vote by giving one candidate as many votes as the number of such Directors multiplied by the number of his shares shall equal, or by distributing such votes on the same principle among any number of such candidates. This right of cumulative voting shall not be exercised unless some shareholder or proxy holder announces in open meeting, before the voting for Directors starts, his intention so to vote cumulatively; and if such announcement is made, the chair shall declare that all

9

shares entitled to vote have the right to vote cumulatively and shall announce the number of shares present in person and by proxy and shall thereupon grant a recess of not less than one hour nor more than four hours, as he shall determine, or of such other period of time as is unanimously then agreed upon.

5. Removal. Directors may be removed from office with or without cause by a vote of shareholders holding a majority of the outstanding shares entitled to vote at an election of Directors; provided, however, unless the entire Board is removed, an individual Director may not be removed if the number of shares voting against the removal would be sufficient to elect a Director if such shares were voted cumulatively at an annual election. If any Directors are so removed, new Directors may be elected at the same meeting.

6. Vacancies. A vacancy occurring in the Board of Directors, including a vacancy created by an increase in the authorized number of Directors approved by the shareholders in accordance with these Bylaws, may be filled by a majority of the remaining Directors, though less than a quorum, or by the sole remaining Director. The shareholders may elect a Director at any time to fill any vacancy not filled by the Directors.

7. Chairman. There may be a Chairman of the Board of Directors elected by the Directors from their number at any meeting of the Board. The Chairman shall preside at all meetings of the Board of Directors and of shareholders and perform such other duties as may be directed by the Board. Until a Chairman of the Board of Directors is elected, the President of the Corporation shall preside at the meetings of the Board of Directors and shareholders.

10

8. Compensation. The Board of Directors may compensate Directors for their services as such and may provide for the payment of all expenses incurred by Directors in attending regular and special meetings of the Board.

9. Executive and Other Committees.

(a) The Board of Directors, by resolution adopted by a majority of the number of Directors then in office, may designate from among its members an Executive Committee and one or more other committees, each consisting of two or more directors, and each of which, to the extent provided in the resolution, shall have and may exercise all of the authority of the Board of Directors, except no such committee shall have authority as to the following matters:

(i) The dissolution, merger or consolidation of the Corporation; or the sale, lease or exchange of all or substantially all of the property of the Corporation.

(ii) The designation of any such committee or the filling of vacancies in the Board of Directors or on any such committee.

(iii) The fixing of compensation of the Directors for serving on the Board or on any such committee.

(iv) The amendment or repeal of the Bylaws or adoption of new Bylaws.

(v) The amendment or repeal of any resolution of the Board which by its terms shall not be so amendable or repealable.

(b) Any such committee, or any member thereof, may be discharged or removed by action of the majority of the Board of

Directors. Any resolutions adopted or other action taken by any such committee within the scope of the authority delegated to it by the Board of Directors shall be deemed for all purposes to be adopted or taken by the Board of Directors.

ARTICLE IV
MEETINGS OF DIRECTORS

1. Regular Meetings. A regular meeting of the Board of Directors shall be held immediately after, and at the same place as, the annual meeting of shareholders. In addition, the Board of Directors may provide, by resolution, the time and place, either within or without the State of North Carolina, for the holding of additional regular meetings.

2. Special Meetings. Special meetings of the Board of Directors may be called by or at the request of the Chairman of the Board, if one has been duly elected, the President or any two Directors. Such meetings may be held either within or without the State of North Carolina.

3. Notice of Meetings.

(a) The Secretary shall give notice, at least two days before the meeting, by any usual means of communication of any regular meeting of the Board of Directors.

(b) The person or persons calling a special meeting of the Board of Directors shall, at least two days before the meeting, give notice thereof by any usual means of communication. Such notice or waiver of notice shall specify the business to be transacted at, or the purpose of, the meeting that is called. Notice of an adjourned meeting need not be given if the time and place are fixed at the meeting adjourning and if the period of adjournment does not exceed ten (10) days in any one adjournment.

(c) Attendance by a Director at a meeting shall constitute a waiver of notice of such meeting, except where a Director attends a meeting for the express purpose of objecting to the transaction of any business because the meeting is not lawfully called or convened.

4. Quorum. A majority of the Directors in office shall constitute a quorum for the transaction of business at any meeting of the Board of Directors.

5. Manner of Acting.

(a) Except as otherwise provided in Paragraph 5, the act of a majority of the Directors then in office shall be the act of the Board of Directors, unless a greater number is required by law, the charter of the Corporation, or a Bylaw adopted by the shareholders.

(b) The vote of a majority of the number of Directors then in office shall be required to adopt a resolution constituting an Executive Committee or other committee of the Board. The vote of a majority of the Directors then holding office shall be required to adopt, amend or repeal a Bylaw, or to adopt a resolution dissolving the Corporation without action by the shareholders, in circumstances authorized by law. Vacancies in the Board of Directors may be filled as provided in paragraph 6 of Article III of these Bylaws.

6. Informal Action by Directors. Action taken by the Directors or members of a committee of the Board of Directors without a meeting is nevertheless Board or committee action if written consent to the action in question is signed by all of the Directors or members of the committee, as the case may be, and filed with the minutes of the proceedings of the Board or committee, whether done before or after the action so taken.

7. Attendance by Telephone. Any one or more Directors or members of a committee may participate in a meeting of the Board or committee by means of a conference telephone or similar communications device which allows all persons participating in the meeting to hear each other, and such participation in the meeting shall be deemed presence in person at such meeting.

ARTICLE V
OFFICERS

1. Number. The officers of the Corporation shall consist of a President, a Secretary, a Treasurer, and such Vice Presidents, Assistant Secretaries, Assistant Treasurers and other officers as the Board of Directors may from time to time elect. Any two or more offices, other than that of President and Secretary, may be held by the same person. In no event, however, may an officer act in more than one capacity where action of two or more officers is required.

2. Election and Term. The officers of the Corporation shall be elected by the Board of Directors. Such election may be held at any regular or special meeting of the Board. Each officer shall hold office until his death, resignation, retirement, removal, disqualification, or his successor is elected and qualifies.

3. Removal. Any officer or agent elected or appointed by the Board of Directors may be removed by the Board with or without cause; but such removal shall be without prejudice to the contract rights, if any, of the person so removed.

4. Compensation. The compensation of all officers of the Corporation shall be fixed by the Board of Directors.

14

5. President. The President shall be the chief executive officer of the Corporation, and, subject to the control of the Board of Directors, shall supervise and control the management of the Corporation in accordance with these Bylaws.

He shall, in the absence of a Chairman of the Board of Directors, preside at all meetings of the shareholders. He shall sign, with any other proper officer, certificates for shares of the Corporation and any deeds, mortgages, bonds, contracts, or other instruments which may be lawfully executed on behalf of the Corporation, except where required or permitted by law to be otherwise signed and executed and except where the signing and execution thereof shall be delegated by the Board of Directors to some other officer or agent; and, in general, he shall perform all duties incident to the office of President and such other duties as may be prescribed by the Board of Directors from time to time.

6. Vice Presidents. The Vice Presidents, in the order of their election, unless otherwise determined by the Board of Directors, shall, in the absence or disability of the President, perform the duties and exercise the powers of that office. In addition, they shall perform such other duties and have such other powers as the Board of Directors shall prescribe.

7. Secretary. The Secretary shall keep accurate records of the acts and proceedings of all meetings of shareholders and Directors. He shall give all notices required by law and by these Bylaws. He shall have general charge of the corporate books and records and of the corporate seal, and he shall affix the corporate seal to any lawfully executed instrument requiring it. He shall have general charge of the stock transfer books of the Corporation and shall keep, at the registered or principal office of the Corporation, a record of shareholders showing the name and address of each shareholder and the number and class of

15

the shares held by each. He shall sign such instruments as may require his signature, and, in general, shall perform all duties incident to the office of Secretary and such other duties as may be assigned him from time to time by the

President or by the Board of Directors.

8. Treasurer. The Treasurer shall have custody of all funds and securities belonging to the Corporation and shall receive, deposit or disburse the same under the direction of the Board of Directors. He shall keep full and accurate accounts of the finances of the Corporation in books especially provided for that purpose; and he shall cause a true statement of its assets and liabilities as of the close of each fiscal year and of the results of its operations and of changes in surplus for such fiscal year, all in reasonable detail, including particulars as to convertible securities and options then outstanding, to be made and filed at the registered or principal office of the Corporation within four months after the end of such fiscal year. The statement so filed shall be kept available for inspection by any shareholder of record for a period of ten (10) years; and the Treasurer shall mail or otherwise deliver a copy of the latest such statement to any shareholder upon his written request therefor. The Treasurer shall, in general, perform all duties incident to his office and such other duties as may be assigned to him from time to time by the President or by the Board of Directors.

9. Assistant Secretaries and Treasurers. The Assistant Secretaries and Assistant Treasurers shall, in the absence or disability of the Secretary or the Treasurer, respectively, perform the duties and exercise the powers of those offices, and they shall, in general, perform such other duties as shall be assigned to them by the Secretary or the Treasurer, respectively, or by the President or by the Board of Directors.

16

10. Bonds. The Board of Directors, by resolution, may require any or all officers, agents and employees of the Corporation to give bond to the Corporation, with sufficient sureties, conditioned on the faithful performance of the duties of their respective offices or positions, and to comply with such other conditions as may from time to time be required by the Board of Directors.

ARTICLE VI CONTRACTS, LOANS AND DEPOSITS

1. Contracts. The Board of Directors may authorize any officer or officers, or agent or agents, to enter into any contract or execute and deliver any instrument on behalf of the Corporation, and such authority may be general or confined to specific instances.

2. Loans. No loans shall be contracted on behalf of the Corporation and no evidence of indebtedness shall be issued in its name unless authorized by a resolution of the Board of Directors. Such authority may be general or confined to specific instances.

3. Checks and Drafts. All checks, drafts or other orders for the payment of money issued in the name of the Corporation shall be signed by such officer or officers, or agent or agents, of the Corporation and in such manner as shall from time to time be determined by resolution of the Board of Directors.

4. Deposits. All funds of the Corporation not otherwise employed shall be deposited from time to time to the credit of the Corporation in such depository or depositories as the Board of Directors shall direct.

17

ARTICLE VII CERTIFICATES FOR SHARES AND OTHER TRANSFER

1. Certificates for Shares. Certificates representing shares of the Corporation shall be issued, in such form as the Board of Directors shall determine, to every shareholder for the fully paid shares owned by him. These certificates shall be signed by the President or any Vice President or a person who has been designated as the chief executive officer of the Corporation and by the Secretary, Assistant Secretary, Treasurer or Assistant Treasurer and sealed with the seal of the Corporation or a facsimile thereof. The signatures of any such officers upon a certificate may be facsimiles or may be engraved or printed or omitted if the certificate is countersigned by a transfer agent, or registered

by a registrar, other than the Corporation itself or an employee of the Corporation. In case any officer who has signed or whose facsimile or other signature has been placed upon such certificate shall have ceased to be such officer before such certificate is issued, it may be issued by the Corporation with the same effect as if he were such officer at the date of its issue. They shall be consecutively numbered or otherwise identified; and the name and address of the persons to whom they are issued, with the number of shares and date of issue, shall be entered on the stock transfer books of the Corporation.

2. Transfer of Shares. Transfer of shares shall be made on the stock transfer books of the Corporation only upon surrender of the certificates for the shares sought to be transferred by the record holder thereof or by his duly authorized agent, transferee or legal representative. All certificates surrendered for transfer shall be canceled before new certificates for the transferred shares shall be issued.

3. Closing Transfer Books and Fixing Record Date.

(a) For the purpose of determining shareholders entitled to

18

notice of or to vote at any meeting of shareholders or any adjournment thereof, or entitled to receive payment of any dividend, or in order to make a determination of shareholders for any other proper purpose, the Board of Directors may provide that the stock transfer books shall be closed for a stated period but not to exceed, in any case, fifty (50) days. If the stock transfer books shall be closed for the purpose of determining shareholders entitled to notice of or to vote at a meeting of shareholders, such books shall be closed for at least ten (10) full days immediately preceding the date of such meeting.

(b) In lieu of closing the stock transfer books, the Board of Directors may fix in advance a date as the record date for any such determination of shareholders, such date in any case to be not more than sixty (60) days and, in case of a meeting of shareholders, not less than ten (10) full days immediately preceding the date on which the particular action, requiring such determination of shareholders, is to be taken.

(c) If the stock transfer books are not closed and no record date is fixed for the determination of shareholders entitled to notice of or to vote at a meeting of shareholders, or of shareholders entitled to receive payment of a dividend, the date on which notice of the meeting is mailed or the date on which the resolution of the Board of Directors declaring such dividend is adopted, as the case may be, shall be the record date for such determination of shareholders.

(d) When a determination of shareholders entitled to vote at any meeting of shareholders has been made as provided in this Section 3, such determination shall apply to any adjournment thereof regardless of its length except where the determination has been made through the closing of the stock transfer books and the stated period of closing has expired.

19

4. Lost Certificates. The Board of Directors may authorize the issuance of a new share certificate in place of a certificate claimed to have been lost or destroyed, upon receipt of an affidavit of such fact from the person claiming the loss or destruction. When authorizing such issuance of a new certificate, the Board may require the claimant to give the Corporation a bond in such sum as it may direct to indemnify the Corporation against loss from any claim with respect to the certificate claimed to have been lost or destroyed; or the Board may, by resolution reciting that the circumstances justify such action, authorize the issuance of the new certificate without requiring such a bond.

ARTICLE VIII
INDEMNIFICATION AND REIMBURSEMENT
OF DIRECTORS AND OFFICERS

1. Expenses and Liabilities: The Corporation shall have the power to indemnify any present or former director, officer, employee or agent of the Corporation,

or any person who has served or is serving in such capacity at the request of the Corporation in any other corporation, partnership, joint venture, trust or other enterprise or as a trustee or administrator under an employee benefit plan, with respect to any liability or litigation expenses, including reasonable attorneys' fees, incurred by any such person to the extent and upon the terms and conditions provided by law. Therefore, to the extent and upon the terms and conditions provided by law, the Corporation shall so indemnify any and all of its officers and directors against liability and litigation expenses, including reasonable attorneys' fees, arising out of their status as such or their activities in any of the foregoing capacities (excluding, however, liability or litigation expenses which any of the foregoing may incur on account of his or her activities which were, at the time taken, known or believed by him or her to be clearly in conflict with the best interest of the Corporation).

20

Such officers and directors shall be entitled to recover from the Corporation, and the Corporation shall pay, all reasonable costs, expenses, and attorneys' fees in connection with the enforcement of rights to indemnification granted herein. Any person who at any time after the adoption of this bylaw serves or has served in either of the aforesaid capacities for or on behalf of the Corporation shall be deemed to be doing or to have done so in reliance upon and as consideration for the right of indemnification provided herein. Such right shall inure to the benefit of the legal representatives of any such person and shall not be exclusive of any other rights to which such person may be entitled apart from the provisions of this bylaw.

The right of indemnification hereinabove provided for shall not be exclusive of any rights to which any such director, officer, employee or agent may otherwise be entitled under any bylaw, agreement, vote of the Board of Directors or shareholders or otherwise with respect to any liability or litigation expenses arising out of his activities in such capacity.

2. Advance Payment of Expenses. Expenses incurred by a director, officer, employee or agent in defending a civil or criminal action, suit or proceeding may be paid by the Corporation in advance of the final disposition of such action, suit or proceeding, as authorized by the Board of Directors in the specific case, upon receipt of an undertaking by or on behalf of the director, officer, employee or agent to repay such amount unless it shall ultimately be determined that he or she is entitled to be indemnified by the Corporation against such expenses. Notwithstanding the above, the Corporation shall, upon receipt of an undertaking by or on behalf of the director or officer involved to repay the expenses described in the first paragraph of this Article VIII unless it shall ultimately be determined that he or she is entitled to be indemnified by the Corporation against such expenses, pay such expenses incurred by

21

such director or officer in defending a civil or criminal action, suit or proceeding in advance of the final disposition of such action, suit or proceeding.

3. Insurance. The Corporation shall have the power to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise or as a trustee or administrator under an employee benefit plan against any liability asserted against him and incurred by him in such capacity, or arising out of his status as such, whether or not the Corporation or other such enterprise would have the power to indemnify him against such liability.

ARTICLE IX GENERAL PROVISIONS

1. Dividends. The Board of Directors may from time to time declare, and the Corporation may pay, dividends on its outstanding shares in the manner and upon the terms and conditions provided by law and by its charter.

2. Seal. The corporate seal of the Corporation shall consist of two concentric

circles between which is the name of the Corporation and in the center of which is inscribed "1987", and such seal, as impressed on the margin hereof, is hereby adopted as the corporate seal of the Corporation.

3. Waiver of Notice. Whenever any notice is required to be given to any shareholder or Director under the provisions of the North Carolina Business Corporation Act or under the provisions of the charter or Bylaws of the Corporation, a waiver thereof in writing signed by the person or persons entitled to such notice,

22

whether before or after the time stated therein, shall be equivalent to the giving of such notice.

4. Fiscal Year. The fiscal year of the Corporation shall be determined by the Board of Directors.

5. Form of Records. Any records maintained by the Corporation in the regular course of its business, including its stock ledger, books of account, and minute books, may be kept on, or be in the form of, punch cards, magnetic tape, photographs, microphotographs, or any other information storage device; provided that the records so kept can be converted into clearly legible form within a reasonable time. The Corporation shall so convert any records so kept upon the request of any person entitled to inspect the same.

6. Amendments. Except as otherwise provided herein, these Bylaws may be amended or repealed and new Bylaws may be adopted by the affirmative vote of a majority of the Directors then holding office at any regular or special meeting of the Board of Directors or by affirmative vote of shareholders entitled to exercise a majority of voting power of the Corporation.

The Board of Directors shall have no power to adopt a Bylaw:

(1) Changing the statutory requirement for a quorum of Directors or action by Directors or changing the statutory requirement for a quorum of shareholders or action by shareholders;

(2) Providing for the management of the Corporation otherwise than by the Board of Directors or the committees thereof;

23

(3) Increasing or decreasing the number of Directors; or

(4) Classifying and staggering the election of Directors.

No Bylaw adopted or amended by the shareholders may be altered or repealed by the Board of Directors.

24

CREE RESEARCH, INC.

AMENDED AND RESTATED
EQUITY COMPENSATION PLAN
(as amended through November 11, 1997)

(formerly the Cree Research, Inc.
Employee Stock Option Plan)

ARTICLE I - GENERAL PROVISIONS

- 1.1 The Plan is designed, for the benefit of the Company, to attract and retain for the Company personnel of exceptional ability; to motivate such personnel through added incentives to make a maximum contribution to the Company; to develop and maintain a highly competent management team; and to be competitive with other companies with respect to executive compensation.
- 1.2 Awards under the Plan may be made to Participants in the form of (i) Incentive Stock Options; (ii) Nonqualified Stock Options; (iii) Restricted Stock; and (iv) Other Stock-Based Awards and such other forms of equity-based compensation as may be provided and are permissible under this Plan and the law.
- 1.3 The Cree Research, Inc. Employee Stock Option Plan (the "Stock Option Plan") was initially adopted effective August 2, 1989, and was amended and restated in the form of the Equity Compensation Plan effective as of July 1, 1995. This amendment and restatement of the Stock Option Plan shall be effective as of September 17, 1996 (the "Effective Date"). Notwithstanding any other provision of this Plan, any Award granted to a Participant prior to the date on which the shareholders of the Company approve the Plan (which approval must be obtained within the 12-month period before the Effective Date or the 12-month period after the Effective Date in order for Incentive Stock Options to be granted under the Plan) shall be conditioned upon and subject to such shareholder approval to the extent required by Section 16(b) of the Act, or the rules thereunder, or Section 422 of the Code. If an Incentive Stock Option is granted prior to the date on which such shareholder approval is obtained, and such approval is not obtained after the end of the 12-month period beginning on the effective date, such Incentive Stock Option shall be deemed a Nonqualified Stock Option granted pursuant to Article V.

1

ARTICLE II - DEFINITIONS

Except where the context otherwise indicates, the following definitions apply:

- 2.1 "Acceleration Event" means the occurrence of an event defined in Article IX of the Plan.
- 2.2 "Act" means the Securities Exchange Act of 1934, as now in effect or as hereafter amended. All citations to sections of the Act or rules thereunder are to such sections or rules as they may from time to time be amended or renumbered.
- 2.3 "Agreement" means the written agreement evidencing each Award granted to a Participant under the Plan.
- 2.4 "Award" means an award granted to a Participant in accordance with the provisions of the Plan, including, but not limited to, a Stock Option, Restricted Stock, Other Stock-Based Awards, or any combination of the foregoing.
- 2.5 "Board" means the Board of Directors of Cree Research, Inc.

- 2.6 "Code" means the Internal Revenue Code of 1986, as now in effect or as hereafter amended. All citations to sections of the Code are to such sections as they may from time to time be amended or renumbered.
- 2.7 "Committee" means the Compensation Committee or such other committee consisting of two or more members as may be appointed by the Board to administer this Plan pursuant to Article III. To the extent required by Rule 16b-3 under the Act, the Committee shall consist of individuals who are members of the Board and Non-employee Directors. Committee members may also be appointed for such limited purposes as may be provided by the Board.
- 2.8 "Company" means Cree Research, Inc., a North Carolina corporation, and its successors and assigns. The term "Company" shall include any corporation which is a member of a controlled group of corporations (as defined in Section 414(b) of the Code, as modified by Section 415(h) of the Code) which includes the Company; any trade or business (whether or not incorporated) which is under common control (as defined in Section 414(c) of the Code, as modified by Section 415(h) of the Code) with the Company; any organization (whether or not incorporated) which is a member of an affiliated service group (as defined in Section 414(m) of the Code) which includes the Company; and any other entity required to be aggregated with the Company pursuant to regulations under Section 414(o) of the Code. With respect to all purposes of the Plan, including, but not

2

limited to, the establishment, amendment, termination, operation and administration of the Plan, Cree Research, Inc. shall be authorized to act on behalf of all other entities included within the definition of "Company".

- 2.9 "Disability" means a disability as determined under procedures established by the Committee or in any Award.
- 2.10 "Discount Stock Options" means Nonqualified Stock Options which provide for an exercise price of less than the Fair Market Value of the Stock at the date of the Award.
- 2.11 "Non-employee Director" shall have the meaning set forth in Rule 16b-3 under the Act.
- 2.12 "Early Retirement" shall mean retirement from active employment with the Company, with the express consent of the Committee, pursuant to early retirement provisions established by the Committee or in any Award.
- 2.13 "Eligible Participant" means any employee of the Company, as shall be determined by the Committee, as well as any other person, including directors, whose participation the Committee determines is in the best interest of the Company, subject to limitations as may be provided by the Code, the Act or the Committee.
- 2.14 "Fair Market Value" means, with respect to any given day, the following:
- (i) If the Stock is not listed for trading on a national securities exchange but is listed on the NASDAQ National Market System or the NASDAQ Small-Cap Market System, then the Fair Market Value shall be the last sale price of the Stock on the date of reference if a minimum of 100 shares are traded on such date or, if less than 100 shares are traded on such date, then the last sale price of the Stock as of the last date on which at least 100 shares were traded, in either case as reported by the NASDAQ National Market System or the NASDAQ Small-Cap Market System, as the case may be.
 - (ii) If the Stock is listed for trading on any national securities exchange, then the Fair Market Value shall be the closing price of the Stock on such exchange on the date of reference if a minimum of 100 shares are traded on such date or, if less than 100 shares are traded on such date, then the closing price of the Stock on such exchange as of the last date on which at least 100

shares were traded.

The Committee may establish an alternative method of

3

determining Fair Market Value.

- 2.15 "Incentive Stock Option" means a Stock Option granted under Article IV of the Plan, and as defined in Section 422 of the Code.
- 2.16 "Nonqualified Stock Option" means a Stock Option granted under Article V of the Plan.
- 2.17 "Normal Retirement" shall mean retirement from active employment with the Company on or after age 65, or pursuant to such other requirements as may be established by the Committee or in any Award.
- 2.18 "Option Grant Date" means, as to any Stock Option, the latest of:
- (a) the date on which the Committee grants the Stock Option by entering into an Award Agreement with the Participant;
 - (b) the date the Participant receiving the Stock Option becomes an employee of the Company, to the extent employment status is a condition of the grant or a requirement of the Code or the Act; or
 - (c) such other date (later than the dates described in (a) and (b) above) as the Committee may designate.
- 2.19 "Participant" means an Eligible Participant to whom an Award has been granted and who has entered into an Agreement evidencing the Award.
- 2.20 "Plan" means the Cree Research, Inc. Equity Compensation Plan as set forth herein, and, as further amended or amended and restated from time to time.
- 2.21 "Restricted Stock" means an Award of Stock under Article VII of the Plan, which Stock is issued with the restriction that the holder may not sell, transfer, pledge, or assign such Stock and with such other restrictions as the Committee, in its sole discretion, may impose, including without limitation, any restriction on the right to vote such Stock, and the right to receive any cash dividends, which restrictions may lapse separately or in combination at such time or times, in installments or otherwise, as the Committee may deem appropriate.
- 2.22 "Restriction Period" means the period commencing on the date an Award of Restricted Stock is granted and ending on such date as the Committee shall determine.
- 4
- 2.23 "Retirement" shall mean Early Retirement or Normal Retirement.
- 2.24 "Stock" means shares of the Common Stock of Cree Research, Inc., par value \$.005 per share, as may be adjusted pursuant to the provisions of Section 3.11.
- 2.25 "Stock Option" means an Award under Article IV or V of the Plan of an option to purchase Stock. A Stock Option may be either an Incentive Stock Option or a Nonqualified Stock Option.
- 2.26 "Termination of Employment" means the discontinuance of employment of a Participant with the Company for any reason. The determination of whether a Participant has discontinued employment shall be made by the Committee in its discretion. In determining whether a Termination of Employment has occurred, the Committee may provide that service as a consultant or service with a business enterprise in which the Company has a significant ownership interest shall be treated as employment with the Company. The Committee shall have the discretion, exercisable either at the time the Award is granted or at the time the Participant terminates employment, to establish as a provision applicable to the exercise of one or more Awards that during the limited period of

exercisability following Termination of Employment, the Award may be exercised not only with respect to the number of shares of Stock for which it is exercisable at the time of the Termination of Employment but also with respect to one or more subsequent installments for which the Award would have become exercisable had the Termination of Employment not occurred.

ARTICLE III - ADMINISTRATION

3.1 This Plan shall be administered by the Committee. A Committee member who is not a Non-employee Director, with respect to action to be taken by the Committee, shall not be able to participate in the decision to the extent prescribed by Rule 16b-3 under the Act. The Committee, in its discretion, may delegate to one or more of its members such of its powers as it deems appropriate. The Committee also may limit the power of any member to the extent necessary to comply with Rule 16b-3 under the Act or any other law. Members of the Committee shall be appointed originally, and as vacancies occur, by the Board, to serve at the pleasure of the Board. The Board may serve as the Committee, if by the terms of the Plan all Board members are otherwise eligible to serve on the Committee.

5

3.2 The Committee shall meet at such times and places as it determines. A majority of its members shall constitute a quorum, and the decision of a majority of those present at any meeting at which a quorum is present shall constitute the decision of the Committee. A memorandum signed by all of its members shall constitute the decision of the Committee without necessity, in such event, for holding an actual meeting.

3.3 The Committee shall have the exclusive right to interpret, construe and administer the Plan, to select the persons who are eligible to receive an Award, and to act in all matters pertaining to the granting of an Award and the contents of the Agreement evidencing the Award, including without limitation, the determination of the number of Stock Options, shares of Stock subject to an Award, and the form, terms, conditions and duration of each Award, and any amendment thereof consistent with the provisions of the Plan. All acts, determinations and decisions of the Committee made or taken pursuant to grants of authority under the Plan or with respect to any questions arising in connection with the administration and interpretation of the Plan, including the severability of any and all of the provisions thereof, shall be conclusive, final and binding upon all Participants, Eligible Participants and their beneficiaries.

3.4 The Committee may adopt such rules, regulations and procedures of general application for the administration of this Plan, as it deems appropriate.

3.5 Without limiting the foregoing Sections 3.1, 3.2, 3.3 and 3.4, and notwithstanding any other provisions of the Plan, the Committee is authorized to take such action as it determines to be necessary or advisable, and fair and equitable to Participants, with respect to an Award in the event of an Acceleration Event as defined in Article IX. Such action may include, but shall not be limited to, establishing, amending or waiving the forms, terms, conditions and duration of an Award and the Award Agreement, so as to provide for earlier, later, extended or additional times for exercise or payments, differing methods for calculating payments, alternate forms and amounts of payment, an accelerated release of restrictions or other modifications. The Committee may take such actions pursuant to this Section 3.5 by adopting rules and regulations of general applicability to all Participants or to certain categories of Participants, by including, amending or waiving terms and conditions in an Award and the Award Agreement, or by taking action with respect to individual Participants.

6

3.6 The number of shares of Stock which are available for Award under the Plan shall be 2,540,000 shares or any larger number of shares of Stock that, subsequent to the date this Plan is adopted, may be authorized

for issuance by the Company. Such shares of Stock shall be made available from authorized and unissued shares. If, for any reason, any shares of Stock awarded or subject to purchase under the Plan are not delivered or purchased, or are reacquired by the Company, for reasons including, but not limited to, a forfeiture of Restricted Stock or termination, expiration or cancellation of a Stock Option, or any other termination of an Award without payment being made in the form of Stock, whether or not Restricted Stock, such shares of Stock shall not be charged against the aggregate number of shares of Stock available for Awards under the Plan, and may again be available for Award under the Plan.

- 3.7 Each Award granted under the Plan shall be evidenced by a written Award Agreement. Each Award Agreement shall be subject to and incorporate, by reference or otherwise, the applicable terms and conditions of the Plan, and any other terms and conditions, not inconsistent with the Plan, as may be imposed by the Committee.
- 3.8 The Company shall not be required to issue or deliver any certificates for shares of Stock prior to:
- (a) the listing of such shares on any stock exchange on which the Stock may then be listed; and
 - (b) the completion of any registration or qualification of such shares of Stock under any federal or state law, or any ruling or regulation of any government body which the Company shall, in its discretion, determine to be necessary or advisable.
- 3.9 All certificates for shares of Stock delivered under the Plan shall also be subject to such stop-transfer orders and other restrictions as the Committee may deem advisable under the rules, regulations, and other requirements of the Securities and Exchange Commission, any stock exchange upon which the Stock is then listed and any applicable federal or state laws, and the Committee may cause a legend or legends to be placed on any such certificates to make appropriate reference to such restrictions. In making such determination, the Committee may rely upon an opinion of counsel for the Company.
- 3.10 Subject to the restrictions on Restricted Stock, as provided in Article VII of the Plan and in the Restricted Stock Award Agreement, each Participant who receives an Award of Restricted Stock shall have all of the rights of a

7

shareholder with respect to such shares of Stock, including the right to vote the shares to the extent, if any, such shares possess voting rights and receive dividends and other distributions. Except as provided otherwise in the Plan or in an Award Agreement, no Participant awarded a Stock Option shall have any right as a shareholder with respect to any shares of Stock covered by his or her Stock Option prior to the date of issuance to him or her of a certificate or certificates for such shares of Stock.

- 3.11 If any reorganization, recapitalization, reclassification, stock split-up, stock dividend, or consolidation of shares of Stock, merger or consolidation of the Company or sale or other disposition by the Company of all or a portion of its assets, any other change in the Company's corporate structure, or any distribution to shareholders other than a cash dividend results in the outstanding shares of Stock, or any securities exchanged therefor or received in their place, being exchanged for a different number or class of shares of Stock or other securities of the Company, or for shares of Stock or other securities of any other corporation; or new, different or additional shares or other securities of the Company or of any other corporation being received by the holders of outstanding shares of Stock, then equitable adjustments shall be made by the Committee in:
- (a) the limitation on the aggregate number of shares of Stock that may be awarded as set forth in Section 3.6 of the Plan;
 - (b) the number and class of Stock that may be subject to an Award, and which have not been issued or transferred under an

outstanding Award;

- (c) the purchase price to be paid per share of Stock under outstanding Stock Options; and
- (d) the terms, conditions or restrictions of any Award and Award Agreement, including the price payable for the acquisition of Stock; provided, however, that all adjustments made as the result of the foregoing in respect of each Incentive Stock Option shall be made so that such Stock Option shall continue to be an Incentive Stock Option, as defined in Section 422 of the Code.

3.12 In addition to such other rights of indemnification as they may have as directors or as members of the Committee, the members of the Committee shall be indemnified by the Company against reasonable expenses, including attorney's fees, actually and necessarily incurred in connection with the defense of any action, suit or proceeding, or in connection

8

with any appeal therein, to which they or any of them may be a party by reason of any action taken or failure to act under or in connection with the Plan or any Award granted thereunder, and against all amounts paid by them in settlement thereof, provided such settlement is approved by independent legal counsel selected by the Company, or paid by them in satisfaction of a judgment or settlement in any such action, suit or proceeding, except as to matters as to which the Committee member has been negligent or engaged in misconduct in the performance of his duties; provided, that within 60 days after institution of any such action, suit or proceeding, a Committee member shall in writing offer the Company the opportunity, at its own expense, to handle and defend the same.

3.13 The Committee may require each person purchasing shares of Stock pursuant to a Stock Option or other Award under the Plan to represent to and agree with the Company in writing that he is acquiring the shares of Stock without a view to distribution thereof. The certificates for such shares of Stock may include any legend which the Committee deems appropriate to reflect any restrictions on transfer.

3.14 The Committee shall be authorized to make adjustments in performance based criteria or in the terms and conditions of other Awards in recognition of unusual or nonrecurring events affecting the Company or its financial statements or changes in applicable laws, regulations or accounting principles. The Committee may correct any defect, supply any omission or reconcile any inconsistency in the Plan or any Award Agreement in the manner and to the extent it shall deem desirable to carry it into effect. In the event the Company shall assume outstanding employee benefit awards or the right or obligation to make future such awards in connection with the acquisition of another corporation or business entity, the Committee may, in its discretion, make such adjustments in the terms of Awards under the Plan as it shall deem appropriate.

3.15 The Committee shall have full power and authority to determine whether, to what extent and under what circumstances, any Award shall be canceled or suspended. In particular, but without limitation, all outstanding Awards to any Participant may be canceled if (a) the Participant, without the consent of the Committee, while employed by the Company or after termination of such employment, becomes associated with, employed by, renders services to, or owns any interest in, other than any insubstantial interest, as determined by the Committee, any business that is in competition with the Company or with any business in which the Company has a substantial interest as determined by the Committee; or (b) is terminated for cause as determined by the Committee.

9

ARTICLE IV - INCENTIVE STOCK OPTIONS

4.1 Each provision of this Article IV and of each Incentive Stock Option granted hereunder shall be construed in accordance with the provisions

of Section 422 of the Code, and any provision hereof that cannot be so construed shall be disregarded.

4.2 Incentive Stock Options shall be granted only to Eligible Participants who are in the active employment of the Company, each of whom may be granted one or more such Incentive Stock Options for a reason related to his employment at such time or times determined by the Committee following the Effective Date through the date which is ten (10) years following the Effective Date, subject to the following conditions:

(a) The Incentive Stock Option price per share of Stock shall be set in the Award Agreement, but shall not be less than 100% of the Fair Market Value of the Stock on the Option Grant Date. If the Eligible Participant owns more than 10% of the outstanding Stock (as determined pursuant to Section 424(d) of the Code) on the Option Grant Date, the Incentive Stock Option price per share shall not be less than 110% of the Fair Market Value of the Stock on the Option Grant Date.

(b) The Incentive Stock Option may be exercised in whole or in part from time to time within ten (10) years from the Option Grant Date (five (5) years if the Eligible Participant owns more than 10% of the Stock on the Option Grant Date), or such shorter period as may be specified by the Committee in the Award; provided, that in any event, the Incentive Stock Option shall lapse and cease to be exercisable upon a Termination of Employment or within such period following a Termination of Employment as shall have been specified in the Incentive Stock Option Award Agreement, which period shall in no event exceed three months unless:

(i) employment shall have terminated as a result of death or Disability, in which event such period shall not exceed one year after the date of death or Disability; or

(ii) death shall have occurred following a Termination of Employment and while the Incentive Stock Option or Stock Right was still exercisable, in which event such period shall not exceed one year after the date of death;

10

provided, further, that such period following a Termination of Employment shall in no event extend the original exercise period of the Incentive Stock Option or any related Stock Right.

(c) To the extent the aggregate Fair Market Value, determined as of the Option Grant Date, of the shares of Stock with respect to which Incentive Stock Options (determined without regard to this subsection) are first exercisable during any calendar year by any Eligible Participant exceeds \$100,000, such options shall be treated as Nonqualified Stock Options granted under Article V.

(d) The Committee may adopt any other terms and conditions which it determines should be imposed for the Incentive Stock Option to qualify under Section 422 of the Code, as well as any other terms and conditions not inconsistent with this Article IV as determined by the Committee.

4.3 The Committee may at any time offer to buy out for a payment in cash, Stock or Restricted Stock an Incentive Stock Option previously granted, based on such terms and conditions as the Committee shall establish and communicate to the Participant at the time that such offer is made.

4.4 If the Incentive Stock Option Award Agreement so provides, the Committee may require that all or part of the shares of Stock to be issued upon the exercise of an Incentive Stock Option shall take the form of Restricted Stock, which shall be valued on the date of exercise, as determined by the Committee, on the basis of the Fair Market Value of such Restricted Stock determined without regard to the deferral limitations and/or forfeiture restrictions involved.

- 5.1 One or more Stock Options may be granted as Nonqualified Stock Options to Eligible Participants to purchase shares of Stock at such time or times determined by the Committee, following the Effective Date, subject to the terms and conditions set forth in this Article V.
- 5.2 The Nonqualified Stock Option price per share of Stock shall be established in the Award Agreement and may be less than or greater than 100% of the Fair Market Value at the time of the grant.
- 5.3 The Nonqualified Stock Option may be exercised in full or in part from time to time within such period as may be

11

specified by the Committee or in the Award Agreement; provided, that, in any event, the Nonqualified Stock Option and the related Stock Right shall lapse and cease to be exercisable three months following the Participant's Termination of Employment.

- 5.4 The Nonqualified Stock Option Award Agreement may include any other terms and conditions not inconsistent with this Article V or in Article VI, as determined by the Committee.

ARTICLE VI - INCIDENTS OF STOCK OPTIONS AND STOCK RIGHTS

- 6.1 Each Stock Option shall be granted subject to such terms and conditions, if any, not inconsistent with this Plan, as shall be determined by the Committee, including any provisions as to continued employment as consideration for the grant or exercise of such Stock Option and any provisions which may be advisable to comply with applicable laws, regulations or rulings of any governmental authority.
- 6.2 A Stock Option shall not be transferable by the Participant other than by will or by the laws of descent and distribution, or, to the extent otherwise allowed by Rule 16b-3 under the Act or other applicable law, pursuant to a qualified domestic relations order as defined by the Code or the Employee Retirement Income Security Act, or the rules thereunder, and shall be exercisable during the lifetime of the Participant only by him or by his guardian or legal representative.
- 6.3 Shares of Stock purchased upon exercise of a Stock Option shall be paid for in such amounts, at such times and upon such terms as shall be determined by the Committee, subject to limitations set forth in the Stock Option Award Agreement. Without limiting the foregoing, the Committee may establish payment terms for the exercise of Stock Options which permit the Participant to deliver shares of Stock, or other evidence of ownership of Stock satisfactory to the Company, with a Fair Market Value equal to the Stock Option price as payment.
- 6.4 No cash dividends shall be paid on shares of Stock subject to unexercised Stock Options. The Committee may provide, however, that a Participant to whom a Stock Option has been granted which is exercisable in whole or in part at a future time for shares of Stock shall be entitled to receive an amount per share equal in value to the cash dividends, if any, paid per share on issued and outstanding Stock, as of the dividend record dates occurring during the period between the date of the grant and the time each such share of Stock is delivered pursuant to exercise of such Stock Option or the related Stock

12

Right. Such amounts (herein called "dividend equivalents") may, in the discretion of the Committee, be:

- (a) paid in cash or Stock either from time to time prior to, or at the time of the delivery of, such Stock, or upon expiration of the Stock Option if it shall not have been fully exercised; or
- (b) converted into contingently credited shares of Stock, with respect to which dividend equivalents may accrue, in such manner,

at such value, and deliverable at such time or times, as may be determined by the Committee.

Such Stock, whether delivered or contingently credited, shall be charged against the limitations set forth in Section 3.6.

- 6.5 The Committee, in its sole discretion, may authorize payment of interest equivalents on dividend equivalents which are payable in cash at a future time.
- 6.6 In the event of Disability or death, the Committee, with the consent of the Participant or his legal representative, may authorize payment, in cash or in Stock, or partly in cash and partly in Stock, as the Committee may direct, of an amount equal to the difference at the time between the Fair Market Value of the Stock subject to a Stock Option and the option price in consideration of the surrender of the Stock Option.
- 6.7 If a Participant is required to pay to the Company an amount with respect to income and employment tax withholding obligations in connection with exercise of a Nonqualified Stock Option, and/or with respect to certain dispositions of Stock acquired upon the exercise of an Incentive Stock Option, the Committee, in its discretion and subject to such rules as it may adopt, may permit the Participant to satisfy the obligation, in whole or in part, by making an irrevocable election that a portion of the total Fair Market Value of the shares of Stock subject to the Nonqualified Stock Option and/or with respect to certain dispositions of Stock acquired upon the exercise of an Incentive Stock Option, be paid in the form of cash in lieu of the issuance of Stock and that such cash payment be applied to the satisfaction of the withholding obligations. The amount to be withheld shall not exceed the statutory minimum federal and state income and employment tax liability arising from the Stock Option exercise transaction. Notwithstanding any other provision of the Plan, any election under this Section 6.7 is required to satisfy the applicable requirements under Rule 16b-3 of the Act.

13

- 6.8 The Committee may permit the voluntary surrender of all or a portion of any Stock Option granted under the Plan to be conditioned upon the granting to the Participant of a new Stock Option for the same or a different number of shares of Stock as the Stock Option surrendered, or may require such surrender as a condition precedent to a grant of a new Stock Option to such Participant. Subject to the provisions of the Plan, such new Stock Option shall be exercisable at the such price, during such period and on such other terms and conditions as are specified by the Committee at the time the new Stock Option is granted. Upon surrender, the Stock Options surrendered shall be canceled and the shares of Stock previously subject to them shall be available for the grant of other Stock Options.

ARTICLE VII - RESTRICTED STOCK

- 7.1 Restricted Stock Awards may be made to certain Participants as an incentive for the performance of future services that will contribute materially to the successful operation of the Company. Awards of Restricted Stock may be made either alone, in addition to or in tandem with other Awards granted under the Plan and/or cash payments made outside of the Plan.
- 7.2 With respect to Awards of Restricted Stock, the Committee shall:
- (a) determine the purchase price, if any, to be paid for such Restricted Stock, which may be equal to or less than par value and may be zero, subject to such minimum consideration as may be required by applicable law;
 - (b) determine the length of the Restriction Period;
 - (c) determine any restrictions applicable to the Restricted Stock such as service or performance, other than those set forth in this Article VII;

- (d) determine if the restrictions shall lapse as to all shares of Restricted Stock at the end of the Restriction Period or as to a portion of the shares of Restricted Stock in installments during the Restriction Period; and
- (e) determine if dividends and other distributions on the Restricted Stock are to be paid currently to the Participant or paid to the Company for the account of the Participant.

14

- 7.3 Awards of Restricted Stock must be accepted within a period of 60 days, or such shorter period as the Committee may specify, by executing a Restricted Stock Award Agreement and paying whatever price, if any, is required. The prospective recipient of a Restricted Stock Award shall not have any rights with respect to such Award, unless such recipient has executed a Restricted Stock Award Agreement and has delivered a fully executed copy thereof to the Committee, and has otherwise complied with the applicable terms and conditions of such Award.
- 7.4 Except when the Committee determines otherwise, or as otherwise provided in the Restricted Stock Award Agreement, if a Participant terminates employment with the Company for any reason before the expiration of the Restriction Period, all shares of Restricted Stock still subject to restriction shall be forfeited by the Participant and shall be reacquired by the Company.
- 7.5 Except as otherwise provided in this Article VII, no shares of Restricted Stock received by a Participant shall be sold, exchanged, transferred, pledged, hypothecated or otherwise disposed of during the Restriction Period.
- 7.6 To the extent not otherwise provided in a Restricted Stock Award Agreement, in cases of death, Disability or Retirement or in cases of special circumstances, the committee, if it finds that a waiver would be appropriate, may elect to waive any or all remaining restrictions with respect to such Participant's Restricted Stock.
- 7.7 In the event of hardship or other special circumstances of a Participant whose employment with the Company is involuntarily terminated, the Committee may waive in whole or in part any or all remaining restrictions with respect to any or all of the Participant's Restricted Stock, based on such factors and criteria as the Committee may deem appropriate.
- 7.8 The certificates representing shares of Restricted Stock may either:
 - (a) be held in custody by the Company until the Restriction Period expires or until restrictions thereon otherwise lapse, and the Participant shall deliver to the Company a stock power endorsed in blank relating to the Restricted Stock; and/or
 - (b) be issued to the Participant and registered in the name of the Participant, and shall bear an appropriate restrictive legend and shall be subject to appropriate stop-transfer orders.

15

- 7.9 Except as provided in this Article VII, a Participant receiving a Restricted Stock Award shall have, with respect to the shares of Restricted Stock covered by any Award, all of the rights of a shareholder of the Company, including the right to vote the shares to the extent, if any, such shares possess voting rights and the right to receive any dividends; provided, however, the Committee may require that any dividends on such shares of Restricted Stock shall be automatically deferred and reinvested in additional Restricted Stock subject to the same restrictions as the underlying Award, or may require that dividends and other distributions on Restricted Stock shall be paid to the Company for the account of the Participant. The Committee shall determine whether interest shall be paid on such

amounts, the rate of any such interest, and the other terms applicable to such amounts.

- 7.10 If and when the Restriction Period expires without a prior forfeiture of the Restricted Stock subject to such Restriction Period, unrestricted certificates for such shares shall be delivered to the Participant.
- 7.11 In order to better ensure that Award payments actually reflect the performance of the Company and the service of the Participant, the Committee may provide, in its sole discretion, for a tandem performance-based or other Award designed to guarantee a minimum value, payable in cash or Stock to the recipient of a Restricted Stock Award, subject to such performance, future service, deferral and other terms and conditions as may be specified by the Committee.

ARTICLE VIII - OTHER STOCK-BASED AWARDS

- 8.1 Other awards that are valued in whole or in part by reference to, or are otherwise based on, Stock ("Other Stock-Based Awards"), including without limitation, convertible preferred stock, convertible debentures, exchangeable securities, phantom stock and Stock awards or options valued by reference to book value or performance, may be granted either alone or in addition to or in tandem with Stock Options or Restricted Stock granted under the Plan and/or cash awards made outside of the Plan.

Subject to the provisions of the Plan, the Committee shall have authority to determine the Eligible Participants to whom and the time or times at which such Awards shall be made, the number of shares of Stock subject to such Awards, and all other conditions of the Awards. The Committee also may provide for the grant of shares of Stock upon the completion of a specified Performance Period.

16

The provisions of Other Stock-Based Awards need not be the same with respect to each recipient.

- 8.2 Other Stock-Based Awards made pursuant to this Article VIII shall be subject to the following terms and conditions:

- (a) Subject to the provisions of this Plan and the Award Agreement, shares of Stock subject to Awards made under this Article VIII may not be sold, assigned, transferred, pledged or otherwise encumbered prior to the date on which the shares are issued, or, if later, the date on which any applicable restriction, performance or deferral period lapses.
- (b) Subject to the provisions of this Plan and the Award Agreement and unless otherwise determined by the Committee at the time of the Award, the recipient of an Award under this Article VIII shall be entitled to receive, currently or on a deferred basis, interest or dividends or interest or dividend equivalents with respect to the number of shares covered by the Award, as determined at the time of the Award by the Committee, in its sole discretion, and the Committee may provide that such amounts, if any, shall be deemed to have been reinvested in additional Stock or otherwise reinvested.
- (c) Any Award under this Article VIII and any Stock covered by any such Award shall vest or be forfeited to the extent so provided in the Award Agreement, as determined by the Committee, in its sole discretion.
- (d) Upon the Participant's Retirement, Disability or death, or in cases of special circumstances, the Committee may, in its sole discretion, waive in whole or in part any or all of the remaining limitations imposed hereunder, if any, with respect to any or all of an Award under this Article VIII.
- (e) Each Award under this Article VIII shall be confirmed by, and

subject to the terms of, an Award Agreement.

- (f) Stock, including securities convertible into Stock, issued on a bonus basis under this Article VIII may be issued for no cash consideration.

8.3 Other Stock-Based Awards may include a phantom stock Award, which is subject to the following terms and conditions:

17

- (a) The Committee shall select the Eligible Participants who may receive phantom stock Awards. The Eligible Participant shall be awarded a phantom stock unit, which shall be the equivalent to a share of Stock.
- (b) Under an Award of phantom stock, payment shall be made on the dates or dates as specified by the Committee or as stated in the Award Agreement and phantom stock Awards may be settled in cash, Stock, or some combination thereof as determined by the Committee in its sole discretion.
- (c) The Committee shall determine such other terms and conditions of each Award as it deems necessary in its sole discretion.

ARTICLE IX - ACCELERATION EVENTS

9.1 For the purposes of the Plan, an Acceleration Event shall occur in the event of a "Potential Change in Control," or "Change in Control" or a "Board-Approved Change in Control", as those terms are defined below.

9.2 A "Change in Control" shall be deemed to have occurred if:

- (a) Any "Person" as defined in Section 3(a)(9) of the Act, including a "group" (as that term is used in Sections 13(d)(3) and 14(d)(2) of the Act), but excluding the Company and any employee benefit plan sponsored or maintained by the Company, including any trustee of such plan acting as trustee, who:
 - (i) makes a tender or exchange offer for any shares of the Company's Stock (as defined below) pursuant to which any shares of the Company's Stock are purchased (an "Offer"); or
 - (ii) together with its "affiliates" and "associates" (as those terms are defined in Rule 12b-2 under the Act) becomes the "Beneficial Owner" (within the meaning of Rule 13d-3 under the Act) of at least 20% of the Company's Stock (an "Acquisition");
- (b) The shareholders of the Company approve a definitive agreement or plan to merge or consolidate the Company with or into another corporation, to sell or otherwise dispose of all or substantially all of its assets, or to liquidate the Company (individually, a "Transaction"); or

18

- (c) When, during any period of 24 consecutive months during the existence of the Plan, the individuals who, at the beginning of such period, constitute the Board (the "Incumbent Directors") cease for any reason other than death to constitute at least a majority thereof; provided, however, that a director who was not a director at the beginning of such 24 month period shall be deemed to have satisfied such 24 month requirement, and be an Incumbent Director, if such director was elected by, or on the recommendation of or with the approval of, at least two-thirds of the directors who then qualified as Incumbent Directors either actually, because they were directors at the beginning of such 24 month period, or by prior operation of this Section 9.2(c).

9.3 A "Board-Approved Change in Control" shall be deemed to have occurred if the Offer, Acquisition or Transaction, as the case may be, is approved

by a majority of the Directors serving as members of the Board at the time of the Potential Change in Control or Change in Control.

- 9.4 A "Potential Change in Control" means the happening of any one of the following:
- (a) The approval by shareholders of an agreement by the Company, the consummation of which would result in a Change in Control of the Company, as defined in Section 9.2; or
 - (b) The acquisition of Beneficial Ownership, directly or indirectly, by any entity, person or group, other than the Company or any Company employee benefit plan, including any trustee of such plan acting as such trustee, of securities of the Company representing five percent or more of the combined voting power of the Company's outstanding securities and the adoption by the Board of a resolution to the effect that a Potential Change in Control of the Company has occurred for the purposes of this Plan.
- 9.5 Upon the occurrence of an Acceleration Event, the Committee in its discretion may declare any or all then outstanding Stock option, not previously exercisable and vested as immediately exercisable and fully vested, in whole or in part.
- 9.6 Upon the occurrence of an Acceleration Event, the Committee in its discretion may declare the restrictions applicable to Awards of Restricted Stock or Other Stock-Based Awards to have lapsed, in which case the Company shall remove all restrictive legends and stop-transfer orders applicable to the certificates for such shares of Stock, and deliver such certificates to the Participants in whose names they are registered.

19

- 9.7 Upon the occurrence of an Acceleration Event, the value of all outstanding Stock Options, Restricted Stock and Other Stock-Based Awards, in each case to the extent vested, shall, unless otherwise determined by the Committee in its sole discretion at or after grant but prior to any Change in Control, be cashed out on the basis of the "Change in Control Price" (as defined in Section 9.8) as of the date such Change in Control or such Potential Change in Control is determined to have occurred or such other date as the Committee may determine prior to the Change in Control.
- 9.8 For purposes of Section 9.7, "Change in Control Price" means the highest price per share of Stock paid in any transaction reported on any exchange on which the Stock is then traded or on the NASDAQ National Market System or the NASDAQ Small-Cap Market System, as the case may be, or paid or offered in any bona fide transaction related to a Potential or actual Change in Control of the Company, at any time during the 60 day period immediately preceding the occurrence of the Change in Control, or, where applicable, the occurrence of the Potential Change in Control event, in each case as determined by the Committee.

ARTICLE X - AMENDMENT AND TERMINATION

- 10.1 The Board, upon recommendation of the Committee, or otherwise, at any time and from time to time, may amend or terminate the Plan. To the extent required by Rule 16b-3 under the Act, no amendment, without approval by the Company's shareholders, shall:
- (a) alter the group of persons eligible to participate in the Plan;
 - (b) except as provided in Section 3.6, increase the maximum number of shares of Stock or Stock Options which are available for Awards under the Plan;
 - (c) extend the period during which Incentive Stock option Awards may be granted beyond the date which is ten (10) years following the Effective Date.
 - (d) limit or restrict the powers of the Committee with respect to the

administration of this Plan;

- (e) change the definition of an Eligible Participant for the purpose of an Incentive Stock Option or increase the limit or the value of shares of Stock for which an Eligible Participant may be granted an Incentive Stock Option;

20

- (f) materially increase the benefits accruing to Participants under this Plan;
- (g) materially modify the requirements as to eligibility for participation in this Plan; or
- (h) change any of the provisions of this Article X.

10.2 No amendment to or discontinuance of this Plan or any provision thereof by the Board or the shareholders of the Company shall, without the written consent of the Participant, adversely affect, as shall be determined by the Committee, any Award theretofore granted to such Participant under this Plan; provided, however, the Committee retains the right and power to:

- (a) annul any Award if the Participant is terminated for cause as determined by the Committee;
- (b) provide for the forfeiture of shares of Stock or other gain under an Award as determined by the Committee for competing against the Company; and
- (c) convert any outstanding Incentive Stock Option to a Nonqualified Stock Option.

10.3 If an Acceleration Event has occurred, no amendment or termination shall impair the rights of any person with respect to an outstanding Award as provided in Article IX.

ARTICLE XI - MISCELLANEOUS PROVISIONS

11.1 Nothing in the Plan or any Award granted hereunder shall confer upon any Participant any right to continue in the employ of the Company, or to serve as a director thereof, or interfere in any way with the right of the Company to terminate his or her employment at any time. Unless specifically provided otherwise, no Award granted under the Plan shall be deemed salary or compensation for the purpose of computing benefits under any employee benefit plan or other arrangement of the Company for the benefit of its employees unless the Company shall determine otherwise. No Participant shall have any claim to an Award until it is actually granted under the Plan. To the extent that any person acquires a right to receive payments from the Company under the Plan, such right shall, except as otherwise provided by the Committee, be no greater than the right of an unsecured general creditor of the Company. All payments to be made hereunder shall be paid from the general funds of the company, and no special or separate fund shall be

21

established and no segregation of assets shall be made to assure payment of such amounts, except as provided in Article VII with respect to Restricted Stock and except as otherwise provided by the Committee.

11.2 The Company may make such provisions and take such steps as it may deem necessary or appropriate for the withholding of any taxes which the Company is required by any law or regulation of any governmental authority, whether federal, state or local, domestic or foreign, to withhold in connection with any Stock Option or the exercise thereof, or in connection with any other type of equity-based compensation provided hereunder or the exercise thereof, including, but not limited to, the withholding of payment of all or any portion of such Award or another Award under this Plan until the Participant reimburses the

Company for the amount the Company is required to withhold with respect to such taxes, or canceling any portion of such Award or another Award under this Plan in an amount sufficient to reimburse itself for the amount it is required to so withhold, or selling any property contingently credited by the Company for the purpose of paying such Award or another Award under this Plan, in order to withhold or reimburse itself for the amount it is required to so withhold.

- 11.3 The Plan and the grant of Awards shall be subject to all applicable federal and state laws, rules, and regulations and to such approvals by any United States government or regulatory agency as may be required. Any provision herein relating to compliance with Rule 16b-3 under the Act shall not be applicable with respect to participation in the Plan by Participants who are not subject to Section 16(b) of the Act.
- 11.4 The terms of the Plan shall be binding upon the Company, and its successors and assigns.
- 11.5 Neither a Stock Option, nor any other type of equity-based compensation provided for hereunder, shall be transferable except as provided for herein. Unless otherwise provided by the Committee or in an Award Agreement, transfer restrictions shall only apply to Incentive Stock Options as required in Article IV and to the extent otherwise required by federal or state securities laws. If any Participant makes such a transfer in violation hereof, any obligation of the Company shall forthwith terminate.
- 11.6 This Plan and all actions taken hereunder shall be governed by the laws of the State of North Carolina.
- 11.7 The Plan is intended to constitute an "unfunded" plan for incentive and deferred compensation. With respect to any

22

payments not yet made to a Participant by the Company, nothing contained herein shall give any such Participant any rights that are greater than those of a general creditor of the Company. In its sole discretion, the Committee may authorize the creation of trusts or other arrangements to meet the obligations created under the Plan to deliver shares of Stock or payments in lieu of or with respect to Awards hereunder; provided, however, that, unless the Committee otherwise determines with the consent of the affected Participant, the existence of such trusts or other arrangements is consistent with the "unfunded" status of the Plan.

- 11.8 Each Participant exercising an Award hereunder agrees to give the Committee prompt written notice of any election made by such Participant under Section 83(b) of the Code, or any similar provision thereof.
- 11.9 If any provision of this Plan or an Award Agreement is or becomes or is deemed invalid, illegal or unenforceable in any jurisdiction, or would disqualify the Plan or any Award Agreement under any law deemed applicable by the Committee, such provision shall be construed or deemed amended to conform to applicable laws or if it cannot be construed or deemed amended without, in the determination of the Committee, materially altering the intent of the Plan or the Award Agreement, it shall be stricken and the remainder of the Plan or the Award Agreement shall remain in full force and effect.

23

AGREEMENT

AGREEMENT, made and entered into this the 28th day of December, 1997, by F. NEAL HUNTER, an individual residing in Durham County, North Carolina ("Hunter"), and CREE RESEARCH, INC., a North Carolina corporation ("Cree").

W I T N E S S E T H:

WHEREAS, Hunter presently serves as Cree's President and Chief Executive Officer, and as a member and Chairman of its Board of Directors, and holds a substantial number of shares of Cree's common stock; and

WHEREAS, on November 14, 1997, pursuant to Hunter's direction after consultation with its Board of Directors, Cree purchased 100,000 shares of the common stock of C3, Inc., a North Carolina corporation ("C3"), at a price of \$15 per share; and

WHEREAS, in addition to the shares purchased on November 14, 1997, Cree owns 24,601 shares of C3 common stock issued pursuant to an option contained in the Assignment Agreement between Cree and C3 dated June 28, 1995; and

WHEREAS, Hunter, for consideration deemed by him to be sufficient, desires to provide legally binding assurances to Cree that, if Cree would otherwise suffer a loss on the sale of the 100,000 shares of C3 stock purchased November 14, 1997, Hunter will indemnify Cree against such loss, up to a maximum of \$300,000;

NOW, THEREFORE, for and in consideration of the foregoing premises and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, Hunter agrees with Cree as follows:

1. Upon any sale by Cree of shares of C3 common stock at a price of less than \$15 per share, Hunter will pay Cree the difference between the per share selling price and \$15 per share, multiplied times the number of shares sold, subject to and in accordance with the terms and conditions of this Agreement. Commission and other trading expenses shall be disregarded in applying this paragraph.

2. This Agreement shall apply to all sales of shares of C3 common stock from time to time made by Cree, whether the shares sold are held of record or in a nominee account for the benefit of Cree, until Cree has sold an aggregate of 100,000 shares.

3. Payment of amounts due under this Agreement shall be made within ten (10) days after Hunter is notified in writing of the number of shares of C3 sold and the per share selling price.

4. Hunter's maximum liability under this Agreement shall in no event exceed the sum of \$300,000.

5. Hunter's obligations under this Agreement shall terminate in the event Cree purchases any additional shares of C3 common stock.

6. In the event of any stock split or stock dividend with respect to the C3 common stock, the numbers of shares and per share prices provided for in this Agreement shall be appropriately adjusted.

7. This Agreement shall be binding upon and inure to the benefit of Hunter and his heirs, personal representatives, successors and assigns and upon Cree and its successors and assigns. This Agreement shall be governed by the laws of the State of North Carolina. This Agreement shall not be amended except in a document executed on behalf of both parties.

IN WITNESS WHEREOF, the undersigned has executed this Agreement and affixed his seal hereto on the date first stated in the preamble above.

/s/ F. Neal Hunter

(SEAL)

F. Neal Hunter

AMENDED AND RESTATED
INDEMNITY AGREEMENT

AMENDED AND RESTATED INDEMNITY AGREEMENT (this "Agreement"), made and entered into as of this the 26th day of June, 1998, by F. NEAL HUNTER, an individual residing in Durham County, North Carolina ("Hunter"), and CREE RESEARCH, INC., a North Carolina corporation ("Cree").

W I T N E S S E T H:

WHEREAS, Hunter serves as Cree's President and Chief Executive Officer, and as a member and Chairman of its Board of Directors, and holds a substantial number of shares of Cree's common stock: and

WHEREAS, Cree owns 24,601 shares of the common stock of C3, Inc., a North Carolina corporation ("C3"), issued pursuant to an Assignment Agreement between Cree and C3 dated June 28, 1995 which gave Cree the right to acquire one percent of the outstanding common stock of C3 for \$500 but permitted C3 to waive the consideration and issue the stock at any time, which C3 elected to do in January 1997; and

WHEREAS, C3 conducted an initial public offering of its common stock in November 1997 and, pursuant to Hunter's direction after consultation with its Board of Directors, Cree purchased 100,000 shares in the offering, at the offering price of \$15 per share, based upon the judgment that the market price of the shares would likely increase and that the purchase would thus enhance Cree's value; and

WHEREAS, the market price of C3's common stock thereafter declined and, in order to avoid having Cree record a loss as a result of its C3 holdings, Hunter entered into an agreement with Cree on December 28, 1997 under which he promised to indemnify Cree against any losses that might result from the sale of its C3 stock, up to a maximum of \$300,000 (such agreement is referred to herein as the "Original Agreement"); and

WHEREAS, Cree subsequently sold 45,000 of its C3 shares, realizing a loss for which Hunter is obligated under the Original Agreement and leaving a balance of 79,601 shares of C3 stock owned by Cree at the date of this Agreement;

WHEREAS, based on the market price of C3's common stock at the date of this Agreement, Hunter's \$300,000 maximum indemnity under the Original Agreement would be insufficient to avoid realizing further losses if Cree were to liquidate its remaining C3 stock; and

WHEREAS, Hunter believes it is in Cree's interest to continue holding its remaining C3 stock and, in order to avoid having Cree record a further loss as a result of its C3 holdings, Hunter has reached an agreement with Cree to increase the maximum amount of his indemnity on the terms and conditions set forth below; and

WHEREAS, Hunter and Cree desire to memorialize their understanding and agreement by amending and restating the provisions of the Original Agreement as set forth below;

NOW, THEREFORE, for and in consideration of the foregoing premises and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, Hunter and Cree agree that the Original Agreement is hereby amended and restated to read as follows:

1. For all shares of C3 common stock sold by Cree at a price less than \$15 per share, Hunter will pay Cree the difference between the per share selling price and \$15 per share, subject to and in accordance with the terms and conditions of this Agreement. Commissions and other trading expenses shall be disregarded for purposes of this Agreement.

2. This Agreement shall apply to all sales of C3 common stock from time to time made by Cree after November 14, 1997, whether the shares sold are held of record or in a nominee account for the benefit of Cree, until Cree has sold an

aggregate of 100,000 shares.

3. Payment of amounts due under this Agreement shall be made within ten (10) days after receipt by Hunter of Cree's written demand therefor setting out the number of shares sold, the date sold and the per share selling price. The demand must be made pursuant to the vote of a majority of the members of the Board of Directors of Cree other than Hunter.

4. Hunter's maximum liability under this Agreement shall in no event exceed:

- (a) \$300,000; plus
- (b) the lesser of
 - (i) \$100,000 and
 - (ii) the difference between the per share selling price and \$9.375 per share for all shares of C3 common stock sold by Cree, at a price less than \$9.375 per share, after June 26, 1998

and prior to the date of the demand under paragraph 3 of this Agreement;

minus

- (c) the difference between the per share selling price and \$9.375 per share for all shares of C3 common stock sold by Cree, at a price greater than \$9.375 per share, after June 26, 1998 and prior to the date of the demand under paragraph 3 of this Agreement.

5. Hunter's obligations under this Agreement shall terminate in the event Cree purchases any additional shares of C3 common stock.

6. In the event of any stock split or stock dividend with respect to the C3 common stock, the numbers of shares and per share prices provided for in this Agreement shall be appropriately adjusted.

7. This Agreement shall be binding upon and inure to the benefit of Hunter and his heirs, personal representatives, successors and assigns and upon Cree and its successors and assigns. This Agreement shall be governed by the laws of the State of North Carolina. This Agreement shall not be amended except in a document executed on behalf of both parties.

IN WITNESS WHEREOF, the parties have executed this Agreement and affixed their respective seals hereto as of the date first stated in the preamble above.

/s/ F. Neal Hunter (SEAL)

F. Neal Hunter

CREE RESEARCH, INC.

(CORPORATE SEAL)

Attest:

By: /s/ Charles M. Swoboda

Charles M. Swoboda, Vice President

/s/ Adam H. Broome

Adam H. Broome, Secretary

CREE RESEARCH, INC.
EXHIBIT 11
STATEMENT RE: COMPUTATION OF EARNINGS PER SHARE

	YEAR ENDED				
	JUNE 28, 1998	JUNE 30, 1997	JUNE 30, 1996	JUNE 30, 1995	JUNE 30, 1994
BASIC:					
Weighted average common shares outstanding	2,863,000	12,455,000	11,826,000	10,367,290	10,336,646
Net income (loss)	6,275,000	3,542,000	243,000	(17,000)	(431,000)
Net Income (Loss) Per Common Share	\$ 0.49	\$ 0.28	\$ 0.02	\$ (0.00)	\$ (0.04)
DILUTED:					
Weighted average common shares outstanding	2,863,000	12,455,000	11,826,000	10,367,290	10,336,646
Dilutive Effect of Stock options & Warrants	630,000	671,000	789,000	-	-
Total Shares	13,493,000	13,126,000	12,615,000	10,367,290	10,336,646
Net income (loss)	6,275,000	3,542,000	243,000	(17,000)	(431,000)
Net Income (Loss) Per Common Share	\$ 0.47	\$ 0.27	\$ 0.02	\$ (0.00)	\$ (0.04)

SUBSIDIARIES OF REGISTRANT

Real Color Displays, Inc.
Incorporated under the laws of the State of North Carolina

Cree Technologies, Inc.
Incorporated under the laws of the State of North Carolina

Cree Research FSC, Inc.
Incorporated under the laws of Barbados

EXHIBIT 23

CONSENT OF INDEPENDENT ACCOUNTANTS

We consent to the incorporation by reference in the registration statements of Cree Research, Inc. on Form S-8 (Numbers 33-98956 and 33-98958) and Form S-3 (Number 33-98728) of our reports dated July 22, 1998 on our audits of the consolidated financial statements as of June 28, 1998 and June 30, 1997 and for the year ended June 28, 1998 and for the two years in the period ended June 30, 1997 which reports are included in this annual report on Form 10-K.

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