ESTTA Tracking number: **ESTTA733780**

Filing date: **03/16/2016**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

Notice of Opposition

Notice is hereby given that the following party opposes registration of the indicated application.

Opposer Information

Name	Cree, Inc.
Granted to Date of previous extension	04/20/2016
Address	4600 Silicon Drive Durham, NC 27703 UNITED STATES

Attorney information	WILLIAM M BRYNER KILPATRICK TOWNSEND & STOCKTON LLP 1001 WEST FOURTH STREET WINSTON-SALEM, NC 27101 UNITED STATES bbryner@ktslaw.com, lralls@ktslaw.com, hhenderson@ktslaw.com, jburns@ktslaw.com, tmadmin@ktslaw.com Phone:336-607-7300

Applicant Information

Application No	86715436	Publication date	12/22/2015
Opposition Filing Date	03/16/2016	Opposition Period Ends	04/20/2016
Applicant	Shenzhen 80 chuangxiang Ecommerce Co., Ltd Rm. 1705, Unit 2, Bldg. 4, Taiya Garden, Shenzhen, Guangdong,, CHINA		

Goods/Services Affected by Opposition

Class 009. First Use: 0 First Use In Commerce: 0
All goods and services in the class are opposed, namely: 3D spectacles; Baby monitors; Computer peripheral devices; Electric navigational instruments; Electrical adapters; Electrical and electronic burglar alarms; Electronic pens; Global positioning system(GPS); Magnifying glasses; Pedometers; Photographic cameras; Photography darkroom lamps; Portable media players; Remotecontrol telemetering machines and apparatus; Smartphones; Sound alarms; Surveying machines and instruments; Telemeters;Time clocks; Weighing machines

Grounds for Opposition

Priority and likelihood of confusion	Trademark Act section 2(d)

Marks Cited by Opposer as Basis for Opposition

U.S. Registration No.	2440530	Application Date	12/01/1999
Registration Date	04/03/2001	Foreign Priority	NONE

		Date	
Word Mark	CREE		
Design Mark	CREE		
Description of Mark	NONE		
Goods/Services	Class 009. First use: First Use: 1990/07/00 First Use In Commerce: 1990/07/00 electronic devices and materials, namely, optoelectronic devices, light emitting diodes, photodiodes, and silicon carbide semiconductor wafers		

U.S. Registration No.	3935628	Application Date	02/11/2010
Registration Date	03/22/2011	Foreign Priority Date	NONE
Word Mark	CREE		
Design Mark	CREE		
Description of Mark	NONE		
Goods/Services	Class 009. First use: First Use: 1990/07/00 First Use In Commerce: 1990/07/00 Diodes; transistors; semiconductor devices; semiconductor chips; semiconductor wafers		

U.S. Registration No.	3935630	Application Date	02/11/2010
Registration Date	03/22/2011	Foreign Priority Date	NONE
Word Mark	CREE		
Design Mark	CREE		
Description of	The mark consists of the term "CREE" tothe left of a diamond-shaped design.		

Mark	
Goods/Services	Class 009. First use: First Use: 1990/07/00 First Use In Commerce: 1990/07/00 Diodes; transistors; semiconductor devices; semiconductor chips; semiconductor wafers

U.S. Registration No.	2452761	Application Date	11/26/1999
Registration Date	05/22/2001	Foreign Priority Date	NONE
Word Mark	CREE		
Design Mark			
Description of Mark	NONE		
Goods/Services	Class 009. First use: First Use: 1990/07/00 First Use In Commerce: 1990/07/00 electronic devices and materials, namely, optoelectronic devices, light emitting diodes, photodiodes, and silicon carbide semiconductor wafers		

U.S. Registration No.	4234124	Application Date	04/04/2012
Registration Date	10/30/2012	Foreign Priority Date	NONE
Word Mark	CREE		
Design Mark			
Description of Mark	The mark consists of the word "CREE" next to a three dimensional striped diamond.		

Goods/Services	Class 009. First use: First Use: 2012/03/02 First Use In Commerce: 2012/03/02 Light emitting diodes; photodiodes; transistors; semiconductor devices; semiconductor chips; semiconductor wafers

U.S. Registration No.	4641937	Application Date	04/11/2013
Registration Date	11/18/2014	Foreign Priority Date	NONE
Word Mark	CREE		
Design Mark			
Description of Mark	NONE		
Goods/Services	Class 009. First use: First Use: 2014/03/27 First Use In Commerce: 2014/03/27 Apparatus and instruments for switching, transforming, regulating or controlling electricity; electrical integrated control systems for use in the fields of lighting, LED lighting, and security; electric switches, electrical controllers, electronic circuits and electric components for lighting, namely, electrical lighting controllers, electric light dimmers, sensors, electric transmitters and receivers for lighting; control software for lighting; wireless remote controls forlighting; calibration equipment, namely, sensors and electrical controllers forlighting; power supplies; electronic driver circuits; modules, namely, power modules and lighting modules; networking hardware, namely, lighting network hardware		

Attachments	75861568#TMSN.png(bytes) 77934002#TMSN.png(bytes) 77934018#TMSN.png(bytes) 75859449#TMSN.png(bytes) 85588449#TMSN.png(bytes) 85901135#TMSN.png(bytes) CREBLUE Notice of Opposition.pdf(4876716 bytes)

Certificate of Service

The undersigned hereby certifies that a copy of this paper has been served upon all parties, at their address record by First Class Mail on this date.

Signature	/William M. Bryner/
Name	WILLIAM M BRYNER
Date	03/16/2016

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

CREE, INC.,	)	
	)	In the matter of Application
Opposer,	)	Serial No. 86/715436
	)	
v.	)	Mark: CREBLUE
	)	
	)	Opposition No. _____
SHENZHEN 80 CHUANGXIANG ECOMMERCE CO., LTD.	)	
	)	
Applicant.	)	

NOTICE OF OPPOSITION

Cree, Inc. ("Cree"), a North Carolina corporation having its principal place of business at 4600 Silicon Drive, Durham, North Carolina 27703, believes that it will be damaged by the registration of the trademark CREBLUE, as shown in U.S. Trademark App. Ser. No. 86/715436 for the goods identified therein (the "Application"), and hereby opposes the same.

As grounds for the opposition, Cree alleges the following:

1. Cree, together with its corporate affiliates, has been and is engaged in the manufacture of LED lighting materials since 1987. Since that time, Cree has been one of the market leaders in the United States and throughout the world in the development of energy-efficient, environmentally friendly LED lighting.

2. Cree has continuously used, and presently uses, the trademark CREE (the "CREE Mark") in interstate commerce throughout the United States in connection with the advertising, promotion, and sale of Cree's LED lighting products, including LEDs, LED circuitry and related lighting products.

3. Cree owns a number of registrations incorporating the CREE Mark (the "CREE Registrations") on the Principal Register of the United States Patent and Trademark Office (the "USPTO"), including the following:

a. Reg. No. 2440530 for CREE, issued April 3, 2001, for "electronic devices and materials, namely, optoelectronic devices, light emitting diodes, photodiodes, and silicon carbide semiconductor wafers" in International Class 9;

b. Reg. No. 3935628 for CREE, issued March 22, 2011, for "diodes; transistors; semiconductor devices; semiconductor chips; semiconductor wafers" in International Class 9;

c. Reg. No. 3935630 for CREE & Design, issued March 22, 2011, for "diodes; transistors; semiconductor devices; semiconductor chips; semiconductor wafers" in International Class 9;

d. Reg. No. 2452761 for CREE & Design, issued May 22, 2011, for "electronic devices and materials, namely, optoelectronic devices, light emitting diodes, photodiodes, and silicon carbide semiconductor wafers" in International Class 9;

e. Reg. No. 4234124 for CREE & Design, issued October 30, 2012, for "light emitting diodes; photodiodes; transistors; semiconductor devices; semiconductor chips; semiconductor wafers" in International Class 9; and

f. Reg. No. 4641937 for CREE, issued November 18, 2014, "apparatus and instruments for switching, transforming, regulating or controlling electricity; electrical integrated control systems for use in the fields of lighting, led lighting, and security; electric switches, electrical controllers, electronic circuits and electric components for lighting, namely, electrical lighting controllers, electric

light dimmers, sensors, electric transmitters and receivers for lighting; control software for lighting; wireless remote controls for lighting; calibration equipment, namely, sensors and electrical controllers for lighting; power supplies; electronic driver circuits; modules, namely, power modules and lighting modules; networking hardware, namely, lighting network hardware" in International Class 9.

Pursuant to 37 C.F.R. § 2.122(d)(1), current printouts of information from electronic database records of the USPTO showing the current status and title of the CREE Registrations are attached as **Exhibit A.**

4. As a result of Cree's use in commerce of the CREE Mark, the CREE Mark symbolizes the extensive goodwill and consumer recognition established by Cree. The CREE Mark identifies and distinguishes Cree's LED and lighting related products from competing products manufactured by others.

5. In displaying its CREE Mark in the marketplace in connection with its LED and lighting products, Cree has consistently used packaging and other trade dress in which the color blue is the primary feature. Examples of such packaging and trade dress are shown below and attached as **Exhibit B.**

6. On August 5, 2015, Applicant Shenzhen 80 Chuangxiang Ecommerce Co., Ltd. ("Applicant") filed the Application under Lanham Act § 1(b), 15 U.S.C. § 1051(b), by which Applicant seeks to register the mark CREBLUE in standard character format (the "CREBLUE Mark") in connection with "3D spectacles; Baby monitors; Computer peripheral devices; Electric navigational instruments; Electrical adapters; Electrical and electronic burglar alarms; Electronic pens; Global positioning system (GPS); Magnifying glasses; Pedometers;

Photographic cameras; Photography darkroom lamps; Portable media players; Remote control telemetering machines and apparatus; Smartphones; Sound alarms; Surveying machines and instruments; Telemeters; Time clocks; Weighing machines" in International Class 9.

7. Cree has used the CREE Mark since before Applicant's first use, actual or constructive, of the CREBLUE mark shown in the Application.

8. Applicant's CREBLUE Mark, as shown in the Application, is confusingly similar in sight, sound and connotation to Cree's previously used CREE Mark. Further, the CREBLUE Mark consists entirely of a phonetic equivalent of the CREE Mark and the term "BLUE," the color that plays a prominent role in Cree's trade dress.

9. The goods identified in the Application are highly related to the goods for which Cree has previously used the CREE Mark.

10. On information and belief, Applicant adopted the confusingly similar CREBLUE Mark to give Applicant's goods an appeal and salability to prospective purchasers that such goods would not possess absent an association with Opposer's CREE Mark.

11. Applicant's CREBLUE Mark, when used in connection with Applicant's goods as identified in the Application, so resembles Cree's previously used CREE Mark as to likely cause confusion, to cause mistake, and/or to deceive members of the public concerning a sponsorship or endorsement of, or an affiliation, connection, or association with the sources of goods sold under the CREE Mark in violation of Section 2(d) of the Lanham Act, 15 U.S.C. § 1052(d), with consequent injury to Cree, the public, and the trade.

12. Applicant's CREBLUE Mark, as shown in the Application, is confusingly similar in sound and appearance to the previously registered CREE Mark as shown in the CREE Registrations. Further, the CREBLUE Mark consists entirely of a phonetic equivalent of the

CREE Mark and the term "BLUE," the color that plays a prominent role in Cree's trade dress.

13. The goods identified in the Application are identical and highly related to the goods identified in the CREE Registrations.

14. Applicant's CREBLUE Mark, when used in connection with Applicant's goods as identified in the Application, so resembles the previously registered marks shown in the CREE Registrations as to likely cause confusion, to cause mistake, and/or to deceive members of the public concerning a sponsorship or endorsement of, or an affiliation, connection, or association with the sources of goods sold under the CREE Mark, as shown in the CREE Registrations, in violation of Section 2(d) of the Lanham Act, 15 U.S.C. § 1052(d), with consequent injury to Cree, the public, and the trade.

15. Pursuant to Section 13(a) of the Lanham Act, 15 U.S.C. § 1063(a), Cree believes it will be damaged by registration of Applicant's CREBLUE Mark in that members of the purchasing public and/or the trade are likely to be confused or mistaken that Applicant's goods offered under Applicant's CREBLUE Mark originate from Cree, or from the same source as goods sold under Cree's CREE Mark, or that such goods of Applicant are sponsored by, endorsed by, or affiliated with the source of goods sold under Cree's CREE Mark. Such likelihood of confusion results in damage to the goodwill among purchasers and the trade that Cree's CREE Mark symbolizes. Registration of Applicant's CREBLUE Mark will support and assist Applicant in the confusing and misleading use of Applicant's CREBLUE Mark, and, in addition, will give color and exclusive statutory right to Applicant in violation and derogation of the prior and superior rights of Cree.

WHEREFORE, Cree requests that registration of Applicant's CREBLUE Mark, as shown in the Application, be refused.

The required fee for instituting this opposition proceeding is being submitted herewith. Please charge any deficiency or refund in the filing fee to Deposit Account No. 20-1430.

Please recognize William M. Bryner and the law firm of Kilpatrick Townsend & Stockton LLP as attorneys for Cree in connection with this opposition proceeding. Please address all correspondence regarding this proceeding to William M. Bryner at Kilpatrick Townsend & Stockton LLP, 1001 West Fourth Street, Winston-Salem, NC, 27101.

This the 16th day of March, 2016.

/William M. Bryner/

William M. Bryner
Harris W. Henderson
KILPATRICK TOWNSEND & STOCKTON LLP
1001 West Fourth Street
Winston-Salem, NC 27101
Telephone: (336) 607-7300
wbryner@kilpatricktownsend.com
hhenderson@kilpatricktownsend.com

Attorneys for Opposer

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

CREE, INC.,	)	
	)	In the matter of Application
Opposer,	)	Serial No. 86/715436
	)	
v.	)	Mark: CREBLUE
	)	
	)	Opposition No. _____
SHENZHEN 80 CHUANGXIANG ECOMMERCE CO., LTD.	)	
	)	
Applicant.	)	

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing NOTICE OF OPPOSITION was served on Applicant on March 16, 2016 via first class United States mail to:

Shenzhen 80 Chuangxiang Ecommerce Co., Ltd
Nanwan St., Longgang Dist.,
Rm. 1705, Unit 2, Bldg. 4, Taiya Garden,
Shenzhen, Guangdong, CHINA

/hwh/
Counsel for Opposer

CERTIFICATE OF TRANSMITTAL

I hereby certify that a true copy of the foregoing NOTICE OF OPPOSITION is being filed electronically with the TTAB via ESTTA on this day, March 16, 2016.

/hwh/
Counsel for Opposer

EXHIBIT A

Int. Cl.: 9

Prior U.S. Cls.: 21, 23, 26, 36 and 38

United States Patent and Trademark Office

Reg. No. 2,440,530
Registered Apr. 3, 2001

TRADEMARK
PRINCIPAL REGISTER

CREE

CREE, INC. (NORTH CAROLINA CORPORATION)
4600 SILICON DRIVE
DURHAM, NC 277038475 , BY CHANGE OF NAME CREE RESEARCH, INC. (NORTH CAROLINA CORPORATION) DURHAM, NC 27703

FOR: ELECTRONIC DEVICES AND MATERIALS, NAMELY, OPTOELECTRONIC DEVICES, LIGHT EMITTING DIODES, PHOTODIODES, AND SILICON CARBIDE SEMICONDUCTOR WAFERS, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 7-0-1990; IN COMMERCE 7-0-1990.

SEC. 2(F).

SER. NO. 75-861,568, FILED 12-1-1999.

J. TINGLEY, EXAMINING ATTORNEY

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Trademark Status & Document Retrieval (TSDR)

SEARCH MULTI-SEARCH

US Serial, Registration, or Reference No. 75861568 Status Documents

Status results found

STATUS DOCUMENTS MAINTENANCE Download Print Preview

Generated on:	This page was generated by TSDR on 2016-03-15 15:03:44 EDT
Mark:	CREE CREE

US Serial Number:	75861568	**Application Filing Date:**	Dec. 01, 1999
US Registration Number:	2440530	**Registration Date:**	Apr. 03, 2001
Register:	Principal		
Mark Type:	Trademark		
Status:	The registration has been renewed.		
Status Date:	Mar. 29, 2011		
Publication Date:	Jan. 09, 2001		

Mark Information

Expand All

Mark Literal Elements:	CREE
Standard Character Claim:	No
Mark Drawing Type:	1 - TYPESET WORD(S) /LETTER(S) /NUMBER(S)
Acquired Distinctiveness Claim:	In whole

Related Properties Information

Goods and Services

Note:

The following symbols indicate that the registrant/owner has amended the goods/services:

- Brackets [..] indicate deleted goods/services;
- Double parenthesis ((..)) identify any goods/services not claimed in a Section 15 affidavit of incontestability; and
- Asterisks *..* identify additional (new) wording in the goods/services.

For:	electronic devices and materials, namely, optoelectronic devices, light emitting diodes, photodiodes, and silicon carbide semiconductor wafers		
International Class(es):	009 - Primary Class	**U.S Class(es):**	021, 023, 026, 036, 038
Class Status:	ACTIVE		
Basis:	1(a)		
First Use:	Jul. 1990	**Use in Commerce:**	Jul. 1990

Basis Information (Case Level)

Filed Use:	Yes	**Currently Use:**	Yes	**Amended Use:**	No
Filed ITU:	No	**Currently ITU:**	No	**Amended ITU:**	No
Filed 44D:	No	**Currently 44D:**	No	**Amended 44D:**	No
Filed 44E:	No	**Currently 44E:**	No	**Amended 44E:**	No
Filed 66A:	No	**Currently 66A:**	No		

Filed No Basis:	No	**Currently No Basis:**	No

Current Owner(s) Information

Owner Name:	CREE, INC.		
Owner Address:	4600 SILICON DRIVE DURHAM, NORTH CAROLINA UNITED STATES 277038475		
Legal Entity Type:	CORPORATION	**State or Country Where Organized:**	NORTH CAROLINA

Attorney/Correspondence Information

Prosecution History

Maintenance Filings or Post Registration Information

Affidavit of Continued Use:	Section 8 - Accepted
Affidavit of Incontestability:	Section 15 - Accepted
Renewal Date:	Apr. 03, 2011

TM Staff and Location Information

Assignment Abstract Of Title Information

Summary

Total Assignments:	1	**Registrant:**	CREE, INC.

Assignment 1 of 1

Expand All

Conveyance:	CHANGE OF NAME		
Reel/Frame:	2084/0091	**Pages:**	4
Date Recorded:	May 15, 2000		
Supporting Documents:	assignment-tm-2084-0091.pdf		

Assignor

Name:	CREE RESEARCH, INC.	**Execution Date:**	Dec. 07, 1999
Legal Entity Type:	CORPORATION	**State or Country Where Organized:**	NORTH CAROLINA

Assignee

Name:	CREE, INC.		
Legal Entity Type:	CORPORATION	**State or Country Where Organized:**	NORTH CAROLINA
Address:	4600 SILICON DRIVE DURHAM, NORTH CAROLINA 27703-8475		

Correspondent

Correspondent Name:	PHILIP SUMMA, P.A.
Correspondent Address:	13777 BALLANTYNE CORPORATE PLACE SUITE 315 CHARLOTTE, NC 28277

Domestic Representative - Not Found

Proceedings - Click to Load

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If you are the applicant or the applicant's attorney and have questions about this file, please contact the Trademark Assistance Center

Int. Cl.: 9

Prior U.S. Cls.: 21, 23, 26, 36 and 38

United States Patent and Trademark Office

Reg. No. 2,452,761

Registered May 22, 2001

TRADEMARK
PRINCIPAL REGISTER

CREE, INC. (NORTH CAROLINA CORPORATION)
4600 SILICON DRIVE
DURHAM, NC 277038475 , BY CHANGE OF NAME CREE RESEARCH, INC. (NORTH CAROLINA CORPORATION) DURHAM, NC 27703

FOR: ELECTRONIC DEVICES AND MATERIALS, NAMELY, OPTOELECTRONIC DEVICES, LIGHT EMITTING DIODES, PHOTODIODES, AND SILICON CARBIDE SEMICONDUCTOR WAFERS, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 7-0-1990; IN COMMERCE 7-0-1990.

THE LINING SHOWN IN THE DRAWING IS A FEATURE OF THE MARK AND NOT INTENDED TO INDICATE COLOR.

SER. NO. 75-859,449, FILED 11-26-1999.

J. TINGLEY, EXAMINING ATTORNEY

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Trademark Status & Document Retrieval (TSDR)

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US_APPLICATION 75861568 Status Documents

Status results found

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Mark:	CREE

US Serial Number:	75859449	**Application Filing Date:**	Nov. 26, 1999
US Registration Number:	2452761	**Registration Date:**	May 22, 2001
Register:	Principal		
Mark Type:	Trademark		
Status:	The registration has been renewed.		
Status Date:	Apr. 11, 2011		
Publication Date:	Jan. 09, 2001		

Mark Information

Expand All

Mark Literal Elements:	CREE
Standard Character Claim:	No
Mark Drawing Type:	3 - AN ILLUSTRATION DRAWING WHICH INCLUDES WORD(S)/ LETTER(S)/NUMBER(S)
Lining and Stippling Statement:	The lining shown in the drawing is a feature of the mark and not intended to indicate color.
Design Search Code(s):	26.17.01 - Bands, straight; Bars, straight; Lines, straight; Straight line(s), band(s) or bar(s) 26.17.05 - Bands, horizontal; Bars, horizontal; Horizontal line(s), band(s) or bar(s); Lines, horizontal 26.19.04 - Cubes (geometric)

Related Properties Information

Goods and Services

Note:

The following symbols indicate that the registrant/owner has amended the goods/services:

- Brackets [..] indicate deleted goods/services;
- Double parenthesis ((..)) identify any goods/services not claimed in a Section 15 affidavit of incontestability; and
- Asterisks *..* identify additional (new) wording in the goods/services.

For:	electronic devices and materials, namely, optoelectronic devices, light emitting diodes, photodiodes, and silicon carbide semiconductor wafers		
International Class(es):	009 - Primary Class	**U.S Class(es):**	021, 023, 026, 036, 038
Class Status:	ACTIVE		
Basis:	1(a)		
First Use:	Jul. 1990	**Use in Commerce:**	Jul. 1990

Basis Information (Case Level)

Filed Use:	Yes	**Currently Use:**	Yes	**Amended Use:**	No
Filed ITU:	No	**Currently ITU:**	No	**Amended ITU:**	No
Filed 44D:	No	**Currently 44D:**	No	**Amended 44D:**	No

Filed 44E:	No	**Currently 44E:**	No	**Amended 44E:**	No
Filed 66A:	No	**Currently 66A:**	No		
Filed No Basis:	No	**Currently No Basis:**	No		

Current Owner(s) Information

Owner Name: CREE, INC.

Owner Address: 4600 SILICON DRIVE
DURHAM, NORTH CAROLINA UNITED STATES 277038475

Legal Entity Type:	CORPORATION	**State or Country Where Organized:**	NORTH CAROLINA

Attorney/Correspondence Information

Prosecution History

Maintenance Filings or Post Registration Information

Affidavit of Continued Use: Section 8 - Accepted

Affidavit of Incontestability: Section 15 - Accepted

Renewal Date: May 22, 2011

TM Staff and Location Information

Assignment Abstract Of Title Information

Summary

Total Assignments:	1	**Registrant:**	CREE, INC.

Assignment 1 of 1

Expand All

Conveyance: CHANGE OF NAME

Reel/Frame:	2084/0091	**Pages:**	4

Date Recorded: May 15, 2000

Supporting Documents: assignment-tm-2084-0091.pdf

Assignor

Name:	CREE RESEARCH, INC.	**Execution Date:**	Dec. 07, 1999
Legal Entity Type:	CORPORATION	**State or Country Where Organized:**	NORTH CAROLINA

Assignee

Name: CREE, INC.

Legal Entity Type:	CORPORATION	**State or Country Where Organized:**	NORTH CAROLINA

Address: 4600 SILICON DRIVE
DURHAM, NORTH CAROLINA 27703-8475

Correspondent

Correspondent Name: PHILIP SUMMA, P.A.

Correspondent Address: 13777 BALLANTYNE CORPORATE PLACE
SUITE 315
CHARLOTTE, NC 28277

Domestic Representative - Not Found

Proceedings - Click to Load

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United States of America
United States Patent and Trademark Office

CREE

Reg. No. 3,935,628

Registered Mar. 22, 2011

Int. Cl.: 9

TRADEMARK

PRINCIPAL REGISTER

CREE, INC. (NORTH CAROLINA CORPORATION)
4600 SILICON DRIVE
DURHAM, NC 27703

FOR: DIODES; TRANSISTORS; SEMICONDUCTOR DEVICES; SEMICONDUCTOR CHIPS; SEMICONDUCTOR WAFERS, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 7-0-1990; IN COMMERCE 7-0-1990.

THE MARK CONSISTS OF STANDARD CHARACTERS WITHOUT CLAIM TO ANY PARTICULAR FONT, STYLE, SIZE, OR COLOR.

OWNER OF U.S. REG. NOS. 2,440,530, 3,327,299, AND OTHERS.

SN 77-934,002, FILED 2-11-2010.

SUSAN RICHARDS, EXAMINING ATTORNEY

David J. Kappos

Director of the United States Patent and Trademark Office

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Trademark Status & Document Retrieval (TSDR)

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US_APPLICATION 75861568 Status Documents

Status results found

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Mark:	CREE

CREE

US Serial Number:	77934002	**Application Filing Date:**	Feb. 11, 2010
US Registration Number:	3935628	**Registration Date:**	Mar. 22, 2011
Register:	Principal		
Mark Type:	Trademark		
Status:	Registered. The registration date is used to determine when post-registration maintenance documents are due.		
Status Date:	Mar. 22, 2011		
Publication Date:	May 11, 2010	**Notice of Allowance Date:**	Jul. 06, 2010

Mark Information

Expand All

Mark Literal Elements:	CREE
Standard Character Claim:	Yes. The mark consists of standard characters without claim to any particular font style, size, or color.
Mark Drawing Type:	4 - STANDARD CHARACTER MARK

Related Properties Information

Goods and Services

Note:

The following symbols indicate that the registrant/owner has amended the goods/services:

- Brackets [..] indicate deleted goods/services;
- Double parenthesis ((..)) identify any goods/services not claimed in a Section 15 affidavit of incontestability; and
- Asterisks *..* identify additional (new) wording in the goods/services.

For:	Diodes; transistors; semiconductor devices; semiconductor chips; semiconductor wafers		
International Class(es):	009 - Primary Class	**U.S Class(es):**	021, 023, 026, 036, 038
Class Status:	ACTIVE		
Basis:	1(a)		
First Use:	Jul. 1990	**Use in Commerce:**	Jul. 1990

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Filed ITU:	Yes	**Currently ITU:**	No	**Amended ITU:**	No
Filed 44D:	No	**Currently 44D:**	No	**Amended 44D:**	No
Filed 44E:	No	**Currently 44E:**	No	**Amended 44E:**	No
Filed 66A:	No	**Currently 66A:**	No		
Filed No Basis:	No	**Currently No Basis:**	No		

Current Owner(s) Information

Owner Name:	Cree, Inc.
Owner Address:	4600 Silicon Drive Durham, NORTH CAROLINA UNITED STATES 27703
Legal Entity Type:	CORPORATION
State or Country Where Organized:	NORTH CAROLINA

▲ Attorney/Correspondence Information

▲ Prosecution History

▲ TM Staff and Location Information

▼ Assignment Abstract Of Title Information - None recorded

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United States of America

United States Patent and Trademark Office

CREE

Reg. No. 3,935,630

Registered Mar. 22, 2011

Int. Cl.: 9

TRADEMARK

PRINCIPAL REGISTER

CREE, INC. (NORTH CAROLINA CORPORATION)
4600 SILICON DRIVE
DURHAM, NC 27703

FOR: DIODES; TRANSISTORS; SEMICONDUCTOR DEVICES; SEMICONDUCTOR CHIPS; SEMICONDUCTOR WAFERS, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 7-0-1990; IN COMMERCE 7-0-1990.

OWNER OF U.S. REG. NOS. 2,440,530, 3,327,299, AND OTHERS.

THE MARK CONSISTS OF THE TERM "CREE" TO THE LEFT OF A DIAMOND-SHAPED DESIGN.

SN 77-934,018, FILED 2-11-2010.

SUSAN RICHARDS, EXAMINING ATTORNEY

UNITED STATES PATENT AND TRADEMARK OFFICE · DEPARTMENT OF COMMERCE

David J. Kappos

Director of the United States Patent and Trademark Office

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US_APPLICATION 75861568 Status Documents

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Mark:	CREE

US Serial Number:	77934018	**Application Filing Date:**	Feb. 11, 2010
US Registration Number:	3935630	**Registration Date:**	Mar. 22, 2011
Register:	Principal		
Mark Type:	Trademark		
Status:	Registered. The registration date is used to determine when post-registration maintenance documents are due.		
Status Date:	Mar. 22, 2011		
Publication Date:	May 11, 2010	**Notice of Allowance Date:**	Jul. 06, 2010

Mark Information

Expand All

Mark Literal Elements:	CREE
Standard Character Claim:	No
Mark Drawing Type:	3 - AN ILLUSTRATION DRAWING WHICH INCLUDES WORD(S)/ LETTER(S)/NUMBER(S)
Description of Mark:	The mark consists of the term "CREE" to the left of a diamond-shaped design.
Color(s) Claimed:	Color is not claimed as a feature of the mark.
Design Search Code(s):	26.07.12 - Diamonds with bars, bands and lines 26.07.21 - Diamonds that are completely or partially shaded 26.17.01 - Lines, straight; Bars, straight; Bands, straight; Straight line(s), band(s) or bar(s) 26.17.05 - Bands, horizontal; Bars, horizontal; Horizontal line(s), band(s) or bar(s); Lines, horizontal 26.19.25 - Geometric solids other than spheres, cylinders, cones, cube, prisms or pyramids

Related Properties Information

Goods and Services

Note:

The following symbols indicate that the registrant/owner has amended the goods/services:

- Brackets [..] indicate deleted goods/services;
- Double parenthesis ((..)) identify any goods/services not claimed in a Section 15 affidavit of incontestability; and
- Asterisks *..* identify additional (new) wording in the goods/services.

For:	Diodes; transistors; semiconductor devices; semiconductor chips; semiconductor wafers		
International Class(es):	009 - Primary Class	**U.S Class(es):**	021, 023, 026, 036, 038
Class Status:	ACTIVE		
Basis:	1(a)		
First Use:	Jul. 1990	**Use in Commerce:**	Jul. 1990

Basis Information (Case Level)

Filed Use:	No	**Currently Use:**	Yes	**Amended Use:**	No
Filed ITU:	Yes	**Currently ITU:**	No	**Amended ITU:**	No

Filed 44D:	No	**Currently 44D:**	No	**Amended 44D:**	No
Filed 44E:	No	**Currently 44E:**	No	**Amended 44E:**	No
Filed 66A:	No	**Currently 66A:**	No		
Filed No Basis:	No	**Currently No Basis:**	No		

Current Owner(s) Information

Owner Name: Cree, Inc.

Owner Address: 4600 Silicon Drive
Durham, NORTH CAROLINA UNITED STATES 27703

Legal Entity Type: CORPORATION

State or Country Where Organized: NORTH CAROLINA

Attorney/Correspondence Information

Prosecution History

TM Staff and Location Information

Assignment Abstract Of Title Information - None recorded

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United States of America
United States Patent and Trademark Office

CREE

Reg. No. 4,234,124

Registered Oct. 30, 2012

Int. Cl.: 9

TRADEMARK

PRINCIPAL REGISTER

CREE, INC. (NORTH CAROLINA CORPORATION)
4600 SILICON DRIVE
DURHAM, NC 27703

FOR: LIGHT EMITTING DIODES; PHOTODIODES; TRANSISTORS; SEMICONDUCTOR DEVICES; SEMICONDUCTOR CHIPS; SEMICONDUCTOR WAFERS, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 3-2-2012; IN COMMERCE 3-2-2012.

OWNER OF U.S. REG. NOS. 2,440,530, 4,099,381 AND OTHERS.

THE MARK CONSISTS OF THE WORD "CREE" NEXT TO A THREE DIMENSIONAL STRIPED DIAMOND.

SER. NO. 85-588,449, FILED 4-4-2012.

GINA FINK, EXAMINING ATTORNEY

UNITED STATES PATENT AND TRADEMARK OFFICE · DEPARTMENT OF COMMERCE

David J. Kappos

Director of the United States Patent and Trademark Office

REQUIREMENTS TO MAINTAIN YOUR FEDERAL TRADEMARK REGISTRATION

WARNING: YOUR REGISTRATION WILL BE CANCELLED IF YOU DO NOT FILE THE DOCUMENTS BELOW DURING THE SPECIFIED TIME PERIODS.

Requirements in the First Ten Years*
What and When to File:

First Filing Deadline: You must file a Declaration of Use (or Excusable Nonuse) between the 5th and 6th years after the registration date. *See* 15 U.S.C. §§1058, 1141k. If the declaration is accepted, the registration will continue in force for the remainder of the ten-year period, calculated from the registration date, unless cancelled by an order of the Commissioner for Trademarks or a federal court.

Second Filing Deadline: You must file a Declaration of Use (or Excusable Nonuse) **and** an Application for Renewal between the 9th and 10th years after the registration date.* *See* 15 U.S.C. §1059.

Requirements in Successive Ten-Year Periods*
What and When to File:

You must file a Declaration of Use (or Excusable Nonuse) **and** an Application for Renewal between every 9th and 10th-year period, calculated from the registration date.*

Grace Period Filings*

The above documents will be accepted as timely if filed within six months after the deadlines listed above with the payment of an additional fee.

The United States Patent and Trademark Office (USPTO) will NOT send you any future notice or reminder of these filing requirements.

***ATTENTION MADRID PROTOCOL REGISTRANTS:** The holder of an international registration with an extension of protection to the United States under the Madrid Protocol must timely file the Declarations of Use (or Excusable Nonuse) referenced above directly with the USPTO. The time periods for filing are based on the U.S. registration date (not the international registration date). The deadlines and grace periods for the Declarations of Use (or Excusable Nonuse) are identical to those for nationally issued registrations. *See* 15 U.S.C. §§1058, 1141k. However, owners of international registrations do not file renewal applications at the USPTO. Instead, the holder must file a renewal of the underlying international registration at the International Bureau of the World Intellectual Property Organization, under Article 7 of the Madrid Protocol, before the expiration of each ten-year term of protection, calculated from the date of the international registration. *See* 15 U.S.C. §1141j. For more information and renewal forms for the international registration, see http://www.wipo.int/madrid/en/.

NOTE: Fees and requirements for maintaining registrations are subject to change. Please check the USPTO website for further information. With the exception of renewal applications for registered extensions of protection, you can file the registration maintenance documents referenced above online at http://www.uspto.gov.

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US_APPLICATION 75861568 Status Documents

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Mark:	CREE

CREE

US Serial Number:	85588449	**Application Filing Date:**	Apr. 04, 2012
US Registration Number:	4234124	**Registration Date:**	Oct. 30, 2012
Register:	Principal		
Mark Type:	Trademark		
Status:	Registered. The registration date is used to determine when post-registration maintenance documents are due.		
Status Date:	Oct. 30, 2012		
Publication Date:	Aug. 14, 2012		

Mark Information

Expand All

Mark Literal Elements:	CREE
Standard Character Claim:	No
Mark Drawing Type:	3 - AN ILLUSTRATION DRAWING WHICH INCLUDES WORD(S)/ LETTER(S)/NUMBER(S)
Description of Mark:	The mark consists of the word "CREE" next to a three dimensional striped diamond.
Color(s) Claimed:	Color is not claimed as a feature of the mark.
Design Search Code(s):	26.07.12 - Diamonds with bars, bands and lines 26.07.21 - Diamonds that are completely or partially shaded

Related Properties Information

Goods and Services

Note:

The following symbols indicate that the registrant/owner has amended the goods/services:

- Brackets [..] indicate deleted goods/services;
- Double parenthesis ((..)) identify any goods/services not claimed in a Section 15 affidavit of incontestability; and
- Asterisks *..* identify additional (new) wording in the goods/services.

For:	Light emitting diodes; photodiodes; transistors; semiconductor devices; semiconductor chips; semiconductor wafers		
International Class(es):	009 - Primary Class	**U.S Class(es):**	021, 023, 026, 036, 038
Class Status:	ACTIVE		
Basis:	1(a)		
First Use:	Mar. 02, 2012	**Use in Commerce:**	Mar. 02, 2012

Basis Information (Case Level)

Filed Use:	Yes	**Currently Use:**	Yes	**Amended Use:**	No
Filed ITU:	No	**Currently ITU:**	No	**Amended ITU:**	No
Filed 44D:	No	**Currently 44D:**	No	**Amended 44D:**	No
Filed 44E:	No	**Currently 44E:**	No	**Amended 44E:**	No
Filed 66A:	No	**Currently 66A:**	No		
Filed No Basis:	No	**Currently No Basis:**	No		

Current Owner(s) Information

Owner Name:	Cree, Inc.		
Owner Address:	4600 Silicon Drive Durham, NORTH CAROLINA UNITED STATES 27703		
Legal Entity Type:	CORPORATION	**State or Country Where Organized:**	NORTH CAROLINA

Attorney/Correspondence Information

Prosecution History

TM Staff and Location Information

Assignment Abstract Of Title Information - None recorded

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United States of America
United States Patent and Trademark Office

CREE

Reg. No. 4,641,937

Registered Nov. 18, 2014

Int. Cl.: 9

TRADEMARK

PRINCIPAL REGISTER

CREE, INC. (NORTH CAROLINA CORPORATION)
4600 SILICON DRIVE
DURHAM, NC 27703

FOR: APPARATUS AND INSTRUMENTS FOR SWITCHING, TRANSFORMING, REGULATING OR CONTROLLING ELECTRICITY; ELECTRICAL INTEGRATED CONTROL SYSTEMS FOR USE IN THE FIELDS OF LIGHTING, LED LIGHTING, AND SECURITY; ELECTRIC SWITCHES, ELECTRICAL CONTROLLERS, ELECTRONIC CIRCUITS AND ELECTRIC COMPONENTS FOR LIGHTING, NAMELY, ELECTRICAL LIGHTING CONTROLLERS, ELECTRIC LIGHT DIMMERS, SENSORS, ELECTRIC TRANSMITTERS AND RECEIVERS FOR LIGHTING; CONTROL SOFTWARE FOR LIGHTING; WIRELESS REMOTE CONTROLS FOR LIGHTING; CALIBRATION EQUIPMENT, NAMELY, SENSORS AND ELECTRICAL CONTROLLERS FOR LIGHTING; POWER SUPPLIES; ELECTRONIC DRIVER CIRCUITS; MODULES, NAMELY, POWER MODULES AND LIGHTING MODULES; NETWORKING HARDWARE, NAMELY, LIGHTING NETWORK HARDWARE, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 3-27-2014; IN COMMERCE 3-27-2014.

THE MARK CONSISTS OF STANDARD CHARACTERS WITHOUT CLAIM TO ANY PARTICULAR FONT, STYLE, SIZE, OR COLOR.

OWNER OF U.S. REG. NOS. 2,440,530, 3,935,628, AND OTHERS.

SN 85-901,135, FILED 4-11-2013.

WON TEAK OH, EXAMINING ATTORNEY

UNITED STATES PATENT AND TRADEMARK OFFICE · DEPARTMENT OF COMMERCE

Michelle K. Lee

Deputy Director of the United States Patent and Trademark Office

REQUIREMENTS TO MAINTAIN YOUR FEDERAL TRADEMARK REGISTRATION

WARNING: YOUR REGISTRATION WILL BE CANCELLED IF YOU DO NOT FILE THE DOCUMENTS BELOW DURING THE SPECIFIED TIME PERIODS.

Requirements in the First Ten Years*
What and When to File:

First Filing Deadline: You must file a Declaration of Use (or Excusable Nonuse) between the 5th and 6th years after the registration date. *See* 15 U.S.C. §§1058, 1141k. If the declaration is accepted, the registration will continue in force for the remainder of the ten-year period, calculated from the registration date, unless cancelled by an order of the Commissioner for Trademarks or a federal court.

Second Filing Deadline: You must file a Declaration of Use (or Excusable Nonuse) **and** an Application for Renewal between the 9th and 10th years after the registration date.* *See* 15 U.S.C. §1059.

Requirements in Successive Ten-Year Periods*
What and When to File:

You must file a Declaration of Use (or Excusable Nonuse) **and** an Application for Renewal between every 9th and 10th-year period, calculated from the registration date.*

Grace Period Filings*

The above documents will be accepted as timely if filed within six months after the deadlines listed above with the payment of an additional fee.

The United States Patent and Trademark Office (USPTO) will NOT send you any future notice or reminder of these filing requirements.

***ATTENTION MADRID PROTOCOL REGISTRANTS:** The holder of an international registration with an extension of protection to the United States under the Madrid Protocol must timely file the Declarations of Use (or Excusable Nonuse) referenced above directly with the USPTO. The time periods for filing are based on the U.S. registration date (not the international registration date). The deadlines and grace periods for the Declarations of Use (or Excusable Nonuse) are identical to those for nationally issued registrations. *See* 15 U.S.C. §§1058, 1141k. However, owners of international registrations do not file renewal applications at the USPTO. Instead, the holder must file a renewal of the underlying international registration at the International Bureau of the World Intellectual Property Organization, under Article 7 of the Madrid Protocol, before the expiration of each ten-year term of protection, calculated from the date of the international registration. *See* 15 U.S.C. §1141j. For more information and renewal forms for the international registration, see http://www.wipo.int/madrid/en/.

NOTE: Fees and requirements for maintaining registrations are subject to change. Please check the USPTO website for further information. With the exception of renewal applications for registered extensions of protection, you can file the registration maintenance documents referenced above online at http://www.uspto.gov.

With respect to a very small number of TSDR documents, the PDF download feature has been temporary suspended. We expect this feature to be fully available again in mid-late March. Documents may still be downloaded from the Trademark Documents list in TSDR by selecting (checking) the document(s) you would like to download, clicking the "Download" button, and selecting "Original" as the file type. The selected documents will be delivered to your computer in their original format in a zip file.

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Mark:	CREE

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US Serial Number:	85901135	**Application Filing Date:**	Apr. 11, 2013
US Registration Number:	4641937	**Registration Date:**	Nov. 18, 2014
Register:	Principal		
Mark Type:	Trademark		
Status:	Registered. The registration date is used to determine when post-registration maintenance documents are due.		
Status Date:	Nov. 18, 2014		
Publication Date:	Jan. 28, 2014	**Notice of Allowance Date:**	Mar. 25, 2014

Mark Information

Expand All

Mark Literal Elements:	CREE
Standard Character Claim:	Yes. The mark consists of standard characters without claim to any particular font style, size, or color.
Mark Drawing Type:	4 - STANDARD CHARACTER MARK

Related Properties Information

Goods and Services

Note:

The following symbols indicate that the registrant/owner has amended the goods/services:

- Brackets [..] indicate deleted goods/services;
- Double parenthesis ((..)) identify any goods/services not claimed in a Section 15 affidavit of incontestability; and
- Asterisks *..* identify additional (new) wording in the goods/services.

For:	Apparatus and instruments for switching, transforming, regulating or controlling electricity; electrical integrated control systems for use in the fields of lighting, LED lighting, and security; electric switches, electrical controllers, electronic circuits and electric components for lighting, namely, electrical lighting controllers, electric light dimmers, sensors, electric transmitters and receivers for lighting; control software for lighting; wireless remote controls for lighting; calibration equipment, namely, sensors and electrical controllers for lighting; power supplies; electronic driver circuits; modules, namely, power modules and lighting modules; networking hardware, namely, lighting network hardware		
International Class(es):	009 - Primary Class	**U.S Class(es):**	021, 023, 026, 036, 038
Class Status:	ACTIVE		
Basis:	1(a)		
First Use:	Mar. 27, 2014	**Use in Commerce:**	Mar. 27, 2014

Basis Information (Case Level)

Filed Use:	No	**Currently Use:**	Yes	**Amended Use:**	No
Filed ITU:	Yes	**Currently ITU:**	No	**Amended ITU:**	No
Filed 44D:	No	**Currently 44D:**	No	**Amended 44D:**	No
Filed 44E:	No	**Currently 44E:**	No	**Amended 44E:**	No

Filed 66A:	No	**Currently 66A:**	No
Filed No Basis:	No	**Currently No Basis:**	No

Current Owner(s) Information

Owner Name:	Cree, Inc.
Owner Address:	4600 Silicon Drive Durham, NORTH CAROLINA UNITED STATES 27703
Legal Entity Type:	CORPORATION
State or Country Where Organized:	NORTH CAROLINA

Attorney/Correspondence Information

Prosecution History

TM Staff and Location Information

Assignment Abstract Of Title Information - None recorded

Proceedings - Click to Load

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If you are the applicant or the applicant's attorney and have questions about this file, please contact the Trademark Assistance Center

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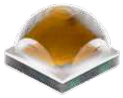
CREE

Recent News



Cree Boosts Performance of Industry-Leading XLamp XP LEDs

March 08, 2016

Cree, Inc. continues to innovate to deliver industry-best performance in its high-power XLamp XP-L and XP-G2 LEDs. By leveraging key elements of Cree's SC5 Technology Platform, the XP-L and XP-G2

READ MORE

Cree Reinvents the LED Residential Streetlight with New RSW Series

March 03, 2016

Cree, Inc. introduces the Cree RSW LED Street Luminaire, the first of a new generation of streetlights that deliver LED energy savings and reliability in a warm color temperature that is preferred in many

READ MORE

Wolfspeed Has Shipped GaN RF Devices Surpassing 1.3 Gigawatts Output Power While Achieving Industry-Leading Reliability

March 02, 2016

Wolfspeed, A Cree Company, announced that as of the end of 2015, it shipped GaN-on-SiC RF power transistors with a combined RF output power of more than 1.3 gigawatts. Wolfspeed achieved this

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Cree LED Bulbs for Consumers

Looks and lights like the light bulb you use today, but reduces energy cost and lasts 25 times longer.

Cree Is Driving LED Lighting

Cree leads the industry in brightness, efficiency and reliability with its XLamp LEDs.

Cree Product Applications

Cree LEDs are application optimized to deliver the best luminaire performance and lower system cost.

LED Light Bulbs

replaces 60w/40w

CREE®

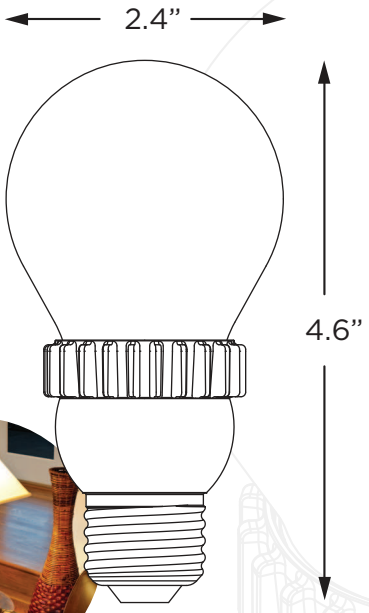
The Biggest Thing Since the Light Bulb.™

Finding an affordable LED bulb that looks and lights like an incandescent can be a challenge. There's weird shapes, bulky sizes and most carry a hefty price tag.

Cree LED bulbs are different. Only Cree LED bulbs look and light like an incandescent and are priced significantly lower than comparable LED lighting.

Made with a glass bulb like an incandescent, the light from Cree® LED bulbs comes on instantly and is omni-directional. That means beautiful all-around light for your home.

Cree LED bulbs: easy on the eyes and your wallet.



Cree LED bulb	Warm White 60-Watt Replacement	Day Light 60-Watt Replacement	Warm White 40-Watt Replacement
Price	$12.97	$13.97	$9.97
Energy Used (Watts)	9.5	9.0	6.0
Lumens	800	800	450
Color Rendering Index	80	80	80
Rated Life (Hours)	25,000	25,000	25,000
Color Temperature (K)	2,700	5,000	2,700
Beam Spread	Omni-directional	Omni-directional	Omni-directional

What makes them great?

- A-type bulb style (*weighs 3.9oz. and uses a standard E26 screw-in base.*)
- Breaks the $10 price barrier.
- Save money now and save money later. Uses at least 84% less energy than an incandescent.
- Built to light and last. Covered by Cree's industry-leading 10-year limited warranty.
- Cree LED Filament Tower™ Technology. The genius idea inside that powers our omni-directional, all-around light.
- 25,000-hour lifetime compared to about 1,000 hours for typical incandescent.
- Perfect for indoor and outdoor lighting. *(Damp Rated)*
- Dimmable with most standard dimmers. Give the electrician the day off.
- Instant-on light.
- Mercury free.

Available in warm (2700K) and daylight (5000K) color temperatures, Cree LED bulbs can be purchased online or in-store at The Home Depot®.

Great bulb. Great price.

www.creebulb.com

CREE®

866.924.3645 **www.cree.com**

02/13

EZBright™ LED Handling and Packaging Recommendations

This applications note provides the user with a basic understanding of Cree's EZBright LED chips, as well as recommendations on handling and packaging.

Cree's EZBright LEDs are the next generation of solid-state LED emitters that combine highly efficient InGaN materials with Cree's proprietary optical design and device structure technology to deliver superior value for high-intensity LEDs. The optical design maximizes light extraction efficiency and enables a Lambertian radiation pattern. These LEDs are attachable either with conductive adhesive or solder.

EZBright termination metal designs vary by part type:

- EZ290™ and EZR260™ LEDs are available with a Au termination
- EZ1000™ LEDs are available with an 80:20 AuSn termination

EZBright LED Structure

EZ290 LED

A cross-sectional diagram of the EZ290 LED is shown in Figure 1 with nominal dimensions. The EZ290 LED has a vertical structure with a topside 90-µm circular bondpad cathode (-) terminal and a gold-terminated anode (+) on the bottom of the silicon substrate. The LED emitting layer is metallically bonded to the silicon substrate, and the periphery of the emitting mesa is passivated. For more detailed dimensional information and operational characteristics, please consult the EZ290 LED specification document, CPR3CQ, at the Cree website: www.cree.com/products/led_docs.asp.

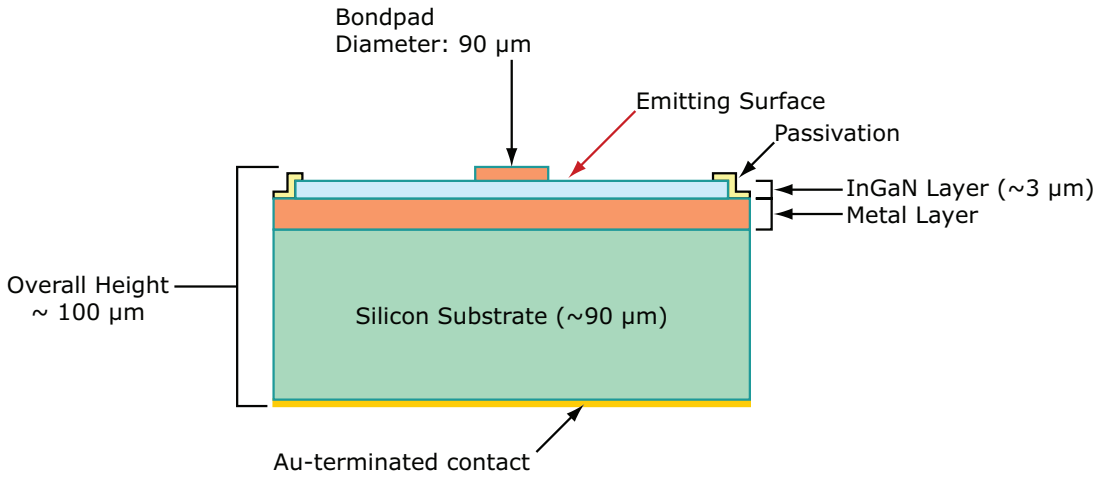


Figure 1: EZ290 LED schematic cross-sectional view [dimensions are nominal]

EZR260 LED

A cross-sectional diagram of the EZR260 LED is shown in Figure 2 with nominal dimensions. The EZR260 LED has a vertical structure with a topside 100 µm wide x 100 µm semicircular bondpad cathode (-) terminal and a gold-terminated anode (+) on the bottom of the silicon substrate. The LED emitting layer is metallically bonded to the silicon substrate, and the periphery of the emitting mesa is passivated. For more detailed dimensional information and operational characteristics, please consult the EZR260 LED specification document, CPR3CG, at the Cree website: www.cree.com/products/led_docs.asp.

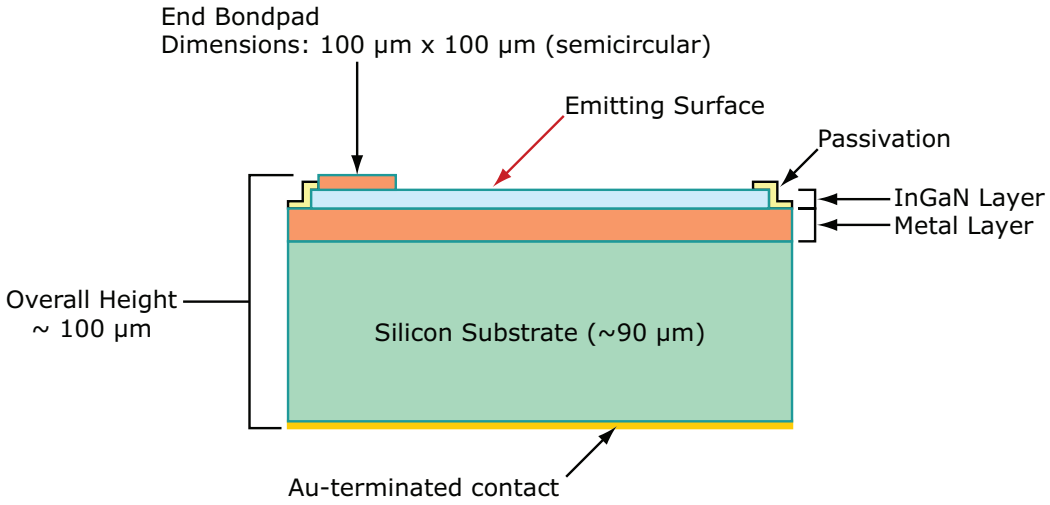


Figure 2: EZR260 LED schematic cross-sectional view [dimensions are nominal]

EZ1000 LED

A cross-sectional diagram of the EZ1000 LED is shown in Figure 3 with nominal dimensions. The EZ1000 LED has a vertical structure with two topside 130 µm wide x 130 µm square bondpad cathode (-) terminals and an 80:20 AuSn-terminated anode (+) on the bottom of the silicon substrate. The LED emitting layer is metallically bonded to the silicon substrate, and the periphery of the emitting mesa is passivated. For more detailed dimensional information and operational characteristics, please consult the EZ1000 LED specification document, CPR3CR, at the Cree website: www.cree.com/products/led_docs.asp.

Cree, Inc.
4600 Silicon Drive
Durham, NC 27703-8475
USA Tel: +1.919.313.5300
Fax: +1.919.313.5870
www.cree.com/chips

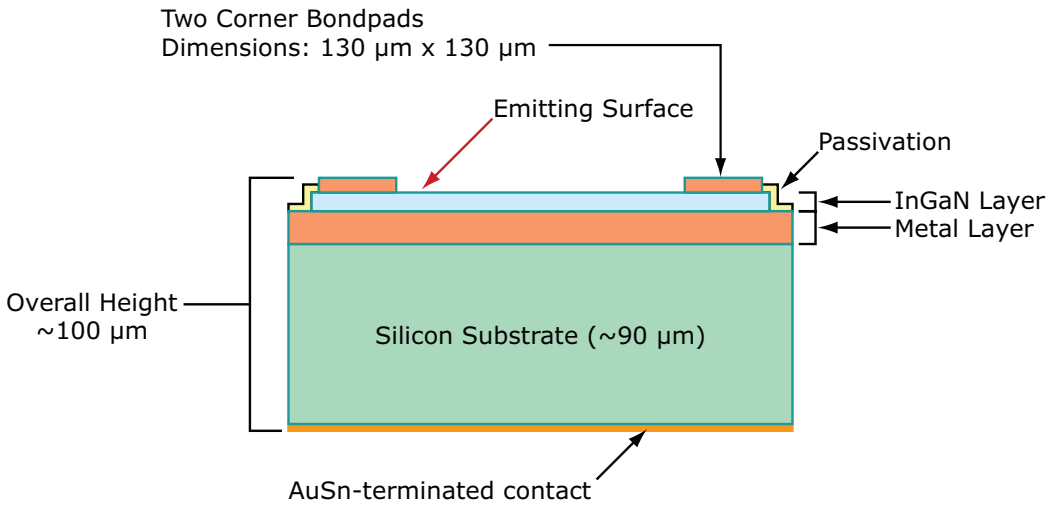


Figure 3: EZ1000 LED schematic cross-sectional view [dimensions are nominal]

EZBright LED Chip Handling

In general, industry-standard handling procedures can be used with the EZBright LED chip. EZBright LED chips are shipped wire bond pad up, not requiring die transfer prior to die attach. Both coaxial and radial lighting sources (ring or fiber lights) are recommended for pattern-recognition systems in automated pick-and-place or bonding processes. Low-angle side lighting may also be used to provide improved contrast.

Several handling guidelines must be followed to maintain optimal performance:

- Minimize contact between metallic fixtures, equipment, tweezers, or other hard objects and the emitting surface or the edge of the junction mesa, as excessive contact force can damage the junction, leading to increased device leakage and reduced optical output.
- If possible, avoid application of tapes or adhesives to the emitting surface. Tape residue can contaminate the textured surface, leading to reduced light extraction efficiency or poor lamp encapsulant adhesion.
- Rubber collets and handling fixtures with hardness in the approximate range of 80 (Shore A), or equivalent, are recommended. Harder plastic collets may also be used, in which case minimization of die placement or bonding parameters (forces) is recommended. The selection of bonding force level should be confirmed through reliability testing. See Table 1 for more information on collet selection.
- Although the use of metal collets is not recommended for processing EZBright LEDs, it may be necessary in situations where no alternative collet materials are available. The selection of bonding parameters should be confirmed through reliability testing.
- It is recommended that ejector pins contacting the backside surface of EZ1000 LEDs during the die pick process have a minimum tip radius of 50 um in order to prevent chip damage.

Collets

A wide variety of rubber and plastic collets are available for use with EZBright LEDs. A selection of collets, sized for

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www.cree.com/chips

use with EZ1000 LED and the smaller EZ290 and EZR260 LED chips, are shown in Table 1. Different collet materials, including Teflon, Vespel, silicone rubber, Viton, etc., are compatible with different temperature ranges. Supplier information is provided following Table 1; customers should contact the collet manufacturer for recommendations on designs specific to their applications and die bonding equipment. Additional suppliers and designs are available; please contact Cree (www.cree.com) for more information.

Some dimensional-critical applications, such as die bonding in narrow-walled side-view SMT packages, will require specialty collets. In this case, a rectangular tipped collet may provide superior performance. One collet design proven successful for this application using EZR260 is the SPT 2102D5-18-HTV-RT -0.23-0.40-0.13. This is a Vespel (high-temperature plastic) collet with rectangular tip geometry. Please contact the collet manufacturer for collet designs compatible with specific package geometries.

Chip Size (µm)	Temperature	Supplier	Material	OD (mm)	ID (mm)	Part #
EZ1000	Low	SPT	Thermoplastic Elastomer	0.76-1.02	0.40-0.50	PCTR-A-series
	Mid	Micro Mechanics	High Temp Rubber	0.75-1.00	0.40-0.50	HTR1A-series
		Micro Mechanics	High Temp Rubber	0.75-1.00	0.40-0.50	HTR3-series
		SPT	High Temp Rubber	0.76-1.02	0.4	HCTR-series
	High	SPT	Vespel	0.76-1.00	0.38-0.50	2151-HTV21-CT-series
		Micro Mechanics	High Temp Plastic	0.75-1.00	0.40-0.50	11-072-series
		Shukwang Mechatric Co.	High Temp Rubber	1	0.4	SKHC-F series
EZ290, EZR260	Low	Micro Mechanics	Rubber	0.25-0.38	0.15	13-124-series
	High	SPT	Vespel	0.25-0.38	0.15	2151-HTV-CT-series
		Micro Mechanics	High Temp Plastic	0.23-0.25	0.13-0.15	PT1-23-series

Table 1: Selected collets identified for evaluation with EZBright LED

Supplier Information

Micro Mechanics
(www.micro-mechanics.com)
Singapore, China, Taiwan, Japan

Small Precision Tools (SPT)
(www.smallprecisiontools.com)
USA, Singapore, China, Japan

Shukwang Mechatric Co., Ltd.
2nd Floor, Buri B/D, 71-15, Oguem-Dong, Songpa Gu, 138-857, Seoul, Korea
Ph: 82-2-4076832

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EZBright LED Die Attach

All EZBright LED chips can be attached using electrically conductive adhesive (e.g. Ag epoxy). The EZ290 LED chip is specifically designed for Ag-epoxy die attach, with a target bond depth of 35 µm and a maximum depth of 50 µm. It is important that the epoxy completely underfill the EZBright LED chip, as this will ensure adequate die adhesion and will provide a rigid support to the chip during subsequent wirebonding.

EZBright LED chips can also be attached using solder. EZ290 LED and EZR260 LED chips are supplied with Au terminations and, therefore, require solder paste or solder preforms to achieve a solder joint. EZ1000 LEDs are supplied with an 80:20 AuSn termination, which enables die attach using a flux eutectic reflow process, in addition to die attach using Ag epoxy or alternate solders. For all solder attach processes, the following guidelines must be observed:

- The maximum reflow process conditions for EZ290 LED and EZR260 LED chips are 270°C for 10 seconds. This process window is adequate for the reflow of a range of solders, including Pb-free solders. It is recommended that temperature profiles be verified by **direct measurement** at the LED chip to ensure that the maximum process limits are not exceeded.
- The maximum reflow process conditions for EZ1000 LEDs are 325°C for 5 seconds. This process window is adequate for the reflow of 80:20 AuSn and a range of other solders, including Pb-free solders. It is recommended that temperature profiles be verified by **direct measurement** at the LED chip to ensure that the maximum process limits are not exceeded.
- Only no-clean fluxes should be used, either in the solder paste or in the flux-eutectic reflow process. Cree suggests the following flux brands:
  - ◇ Alpha Metals UP78 (or UP78-PT equivalent) (U.S.)
  - ◇ Arakawa WHP-002 (Japan/Asia)
  - ◇ Indium TACFlux 007 (U.S./Japan/Asia)

  Alternative fluxes should be evaluated by the customer, as appropriate.
- Flux residue should be cleaned in isopropyl alcohol in an ultrasonic bath for 15 minutes prior to wirebonding and encapsulation. Alternate liquid cleaning processes may be suitable but must be thoroughly evaluated for compatibility with the EZBright LED chip.
- If plasma cleaning is a customer consideration, Cree recommends that the devices not be exposed to hydrogen plasmas. Addition of hydrogen to other types of plasma should be minimized.
- Minimal pressure should be applied to the EZBright chip during the soldering process. Pressure eutectic attach of EZ1000 LEDs is not a Cree-recommended process; however, if the customer elects to use this process, then a maximum bonding force of **50 grams** is recommended.
- Complete solder underfill of the EZBright chip is required to provide a rigid support to the chip for subsequent wirebonding.

Additional information about flux eutectic die attach of Cree LED chips can be found in Applications Guide CPR3-AN03; all of the handling and process guidelines described in this document must be observed for die attach of EZBright LEDs.

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EZBright LED Wire Bonding

EZBright LED chips are designed for Au-ball wirebonding. It is important that the entire ball bond remain within the confines of the bondpad area and that no metal contact the emitting surface. Care must also be taken to prevent the wire capillary fixture from contacting the emitting surface as this can damage the LED junction.

Customers experienced with Cree's SiC-based chips may have developed wirebonding parameters suitable to the very rigid and hard characteristics of the SiC substrate. These existing parameters may need to be re-evaluated for the EZBright LED, which is constructed on a lower-rigidity silicon substrate. If the customer suspects that the wirebonding process is damaging the EZBright chip, then the following should be considered:

- Wirebonding force and ultrasonic power should be minimized
- Capillary geometry should be changed to minimize the force required for ball formation
- Wirebonding process temperatures may be increased to reduce the required bonding forces/powers
- Use softer Au wire

Absolute bonding parameters for EZBright LED chips cannot be specified since bonding equipment and materials vary greatly. Table 2 lists target parameters that may be used as a guideline for wirebond development. Customer are advised to optimize bonding parameters on their specific equipment.

Wirebonding Parameter*	Target Value
Contact Force	50 g-force
Bond Time	9-12 ms
Bond Force	35-40 g-force
Ultrasonic Power	100 mW
* Parameters based on settings for ASM Eagle 60 Au-ball bonder using 1.0 and 1.2 mil Au wire at 160°C bonding temperature, Gaiser 1572-17-437GM-20D capillary, 138 kHz ultrasonic frequency.	

Table 2: Target wirebonding parameters

The EZ290 LED chip (Figure 4) features a centered circular Au bondpad, nominally 90 µm in diameter. A maximum wire diameter of 1 mil (25 µm) is recommended in order to remain within the 90-µm diameter bondpad region.

The EZR260 LED (Figure 5) features a Au bondpad located at the narrow end of the chip, nominally 100 µm wide and 100 µm to the apex of the semicircular geometry. A wire diameter of 1 mil (25 µm) is recommended in order to remain within the 100-µm diameter bondpad region.

The EZ1000 LED (Figure 6) features two 130-µm square Au bondpads located in adjacent corners. This two-bondpad configuration allows the option of either single-or double-wirebonding, though double wirebonding is recommended for optimal performance. Wire diameters up to 1.25 mil (30 µm) are recommended, but caution must be observed for larger wires in maintaining the bond within the pad area.

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Important: Both the EZ1000 Led and the EZR260 LED chips feature bondpads adjacent to the edge of the junction mesa. Care must be taken to prevent any wirebond metal from exceeding the bondpad geometry confines and lapping over the edge of the mesa as this could lead to shunting leakage and/or junction damage.

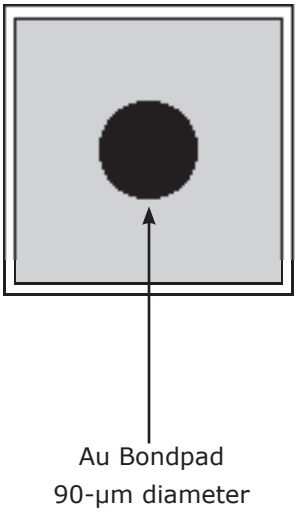

Figure 4: EZ290 LED

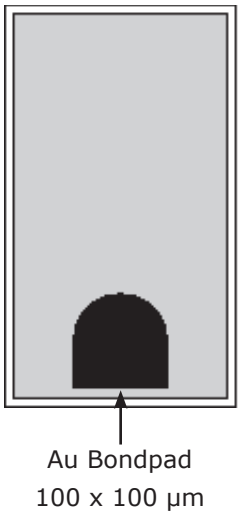

Figure 5: EZR260 LED

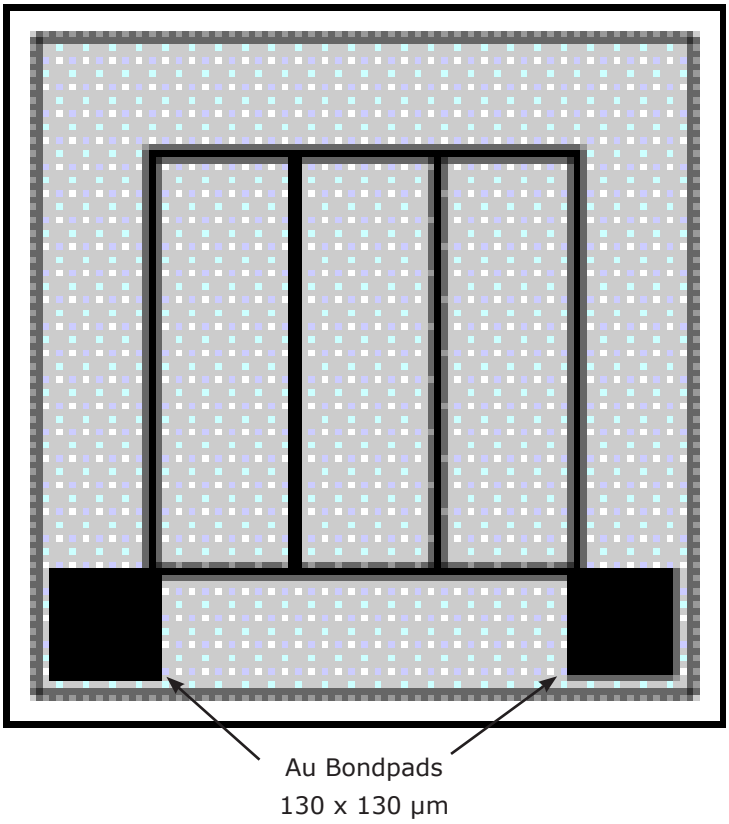

Figure 6: EZ1000 LED

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replacement
uses only 9.5 Watts
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Brightness
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lumens
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Energy Cost
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per year
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lumens
Estimated
Energy Cost
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per year
Dimmable
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uses only 9.5 Watts
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800
lumens
Estimated
Energy Cost
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per year


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per year
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Lighting Facts
Brightness 815 lumens
Estimated Yearly Energy Cost $1.32
Life 22.8 years
Light Appearance
Energy Used 11 watts
120 V~ / 60 Hz / 95 mA
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