



XLamp® High-Power LEDs

Cree® is an industry leader in LED technology, and set the lighting-class standard for LEDs with the XLamp® XR product family in 2006. The introduction of the XP and MC product families further demonstrates Cree's commitment to delivering unprecedented levels of white LED brightness and efficacy along with the white-point stability needed for use in general illumination.



Cree® XLamp® product families:
XP (left), MC (center), XR (right)

Features ▶

- Full portfolio of white and color LEDs
- Correlated color temperature (CCT) from 2,600°K to 10,000°K
- Available with drive currents up to 1,000 mA
- Electrically isolated thermal path
- Tested to the highest standards in the LED industry

Benefits ▶

- Lighting-class brightness and efficacy
- Stable white point over time
- Proven reliability
- Lifetime up to 50,000 hours
- Directional light output

Applications ▶

- Indoor and outdoor general lighting
- Portable lighting
- Architectural lighting
- Transportation lighting
- Emergency vehicle lighting

Product Specifications ▶

Part Number	Package Type	Color	Color Temp. (°K)	Dominant Wavelength (nm)	Max. Current (mA)	Tested Current (mA)	Forward Voltage (V)	Viewing Angle (°)	Luminous Flux (lm)	Luminous Intensity (mcd)	Markets
XPEWHT-L1-0000-XXXXX	XLamp XP-E	Cool white	5,000-10,000	-	700	350	3.2	115	87.4-122	-	CL FL TR BL SI
XPEWHT-L1-0000-XXXXX		Neutral white	3,700-5,000	-	700	350	3.2	115	80.6-107	-	CL FL TR BL SI
XPEWHT-L1-0000-XXXXX		Warm white	2,600-3,700	-	700	350	3.2	115	67.2-93.9	-	CL FL TR BL SI
XPCWHT-L1-0000-XXXXX	XLamp XP-C	Cool white	5,000-10,000	-	500	350	3.4	110	73.9-100	-	CL FL TR BL SI
XPCWHT-L1-0000-XXXXX		Neutral white	3,700-5,000	-	500	350	3.4	110	67.2-87.4	-	CL FL TR BL SI
XPCWHT-L1-0000-XXXXX		Warm white	2,600-3,700	-	500	350	3.4	110	56.8-73.9	-	CL FL TR BL SI
MCE4WT-A2-0000-XXXXXX	XLamp MC-E	Cool white	5,000-10,000	-	700 per die	350 per die	3.2	110	370-490	-	CL FL TR
MCE4WT-A2-0000-XXXXXX		Neutral white	3,700-5,000	-	700 per die	350 per die	3.2	110	320-430	-	CL FL TR
MCE4WT-A2-0000-XXXXXX		Warm white	2,600-3,700	-	700 per die	350 per die	3.2	110	240-370	-	CL FL TR
XREWHT-L1-0000-XXXXX	XLamp XR-E	Cool white	5,000-10,000	-	1,000	350	3.3	90	80.6-114	-	CL FL TR BL SI
XREWHT-L1-0000-XXXXX		Neutral white	3,700-5,000	-	700	350	3.3	90	62-100	-	CL FL TR BL SI
XREWHT-L1-0000-XXXXX		Warm white	2,600-3,700	-	700	350	3.3	90	56.8-87.4	-	CL FL TR BL SI
XREROY-L1-0000-XXXXX		Royal blue	-	450-465	1,000	350	3.3	100	300-500 mW	-	CL TR BL SI
XREBLU-L1-0000-XXXXX		Blue	-	465-485	1,000	350	3.3	100	23.5-39.8	-	CL TR BL SI
XREGRN-L1-0000-XXXXX		Green	-	520-535	700	350	3.3	100	67.2-87.4	-	CL TR BL SI
XRCWHT-L1-0000-XXXXX	XLamp XR-C	Cool white	5,000-10,000	-	500	350	3.5	90	56.8-93.9	-	CL FL TR BL SI
XRCWHT-L1-0000-XXXXX		Neutral white	3,700-5,000	-	500	350	3.5	90	56.8-87.4	-	CL FL TR BL SI
XRCWHT-L1-0000-XXXXX		Warm white	2,600-3,700	-	500	350	3.5	90	45.7-73.9	-	CL FL TR BL SI
XRCROY-L1-0000-XXXXX		Royal blue	-	450-465	500	350	3.5	100	250-350 mW	-	CL TR BL SI
XRCBLU-L1-0000-XXXXX		Blue	-	465-475	500	350	3.5	100	13.9-23.5	-	CL TR BL SI
XRCGRN-L1-0000-XXXXX		Green	-	520-535	500	350	3.7	100	39.8-67.2	-	CL TR BL SI
XRCAMB-L1-0000-XXXXX		Amber	-	585-595	350	350	2.2	90	23.5-51.7	-	CL TR BL SI
XRCRDO-L1-0000-XXXXX		Red orange	-	610-620	700	350	2.2	90	30.6-51.7	-	CL TR BL SI
XRCRED-L1-0000-XXXXX		Red	-	620-630	700	350	2.2	90	23.5-51.7	-	CL TR BL SI

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Choose the Right Cree LED ▶

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Round and Oval High-Brightness LEDs

Cree® offers a range of high-brightness LEDs in a variety of colors, including red, green, blue, white, and amber. They come in 4 mm and 5 mm oval packages with 70° or 110° viewing angles. The 5 mm round packages are available with 15°, 23°, 30°, and other viewing angles. The Screen Master® oval LEDs are designed for monochrome and full-color video screens. They have a very smooth, matched radiation pattern, ensuring superior displayed image quality.



Cree® offers a wide selection of high-performance round and oval LEDs

Features ▶

- Intensity and color binning
- Radiation pattern matching for Screen Master® oval LEDs
- High quality
- Bulk or ammo pack options
- RoHS compliant

Benefits ▶

- Uniform display brightness
- Superior image quality
- Long lifetime
- Automatic machine insertion

Applications ▶

- Full-color video screens
- Gas price signs
- Variable-message signs
- Gaming machines
- Channel letters

Product Specifications ▶												
Part Number	Package Type	Color	Color Temp. (°K)	Dominant Wavelength (nm)	Max. Current (mA)	Tested Current (mA)	Forward Voltage (V)	Viewing Angle (°)	Luminous Flux (lm)	Luminous Intensity (mcd)	Markets	
C503B-WAN	5 mm round	White	6,500-9,000	-	25	20	3.2	15	-	14,400-32,900	FL TR SI	
C535A-WJN		White	6,500-9,000	-	25	20	3.2	110	-	770-3,300	FL SI	
C503B-RAS		Red	-	624	50	20	2.1	15	-	5,860-23,500	TR SI	
C503B-RBS		Red	-	624	50	20	2.1	23	-	3,000-12,000	TR SI	
C503B-RCS		Red	-	624	50	20	2.1	30	-	3,000-12,000	TR SI	
C503B-AAS		Amber	-	591	50	20	2.1	15	-	5,860-23,500	TR SI	
C503B-ABS		Amber	-	591	50	20	2.1	23	-	3,000-12,000	TR SI	
C503B-ACS		Amber	-	591	50	20	2.1	30	-	3,000-8,200	TR SI	
C503B-GAS		Green	-	527	25	20	3.2	15	-	16,800-46,100	TR SI	
C503B-GCS		Green	-	527	25	20	3.2	30	-	5,860-23,500	TR SI	
C503B-BAS		Blue	-	470	25	20	3.2	15	-	5,860-23,500	TR SI	
C503B-BCS		Blue	-	470	25	20	3.2	30	-	2,130-8,200	TR SI	
C4SMF-RJS		4 mm oval	Red	-	621	50	20	2.1	40 x 110	-	1,100-4,180	TR SI
C4SMG-RJS			Red	-	621	50	20	2.1	40 x 110	-	550-2,130	TR SI
C4SMF-GJS	Green		-	527	25	20	3.4	40 x 110	-	2,130-8,200	TR SI	
C4SMG-GJS	Green		-	527	25	20	3.4	40 x 110	-	1,100-4,180	TR SI	
C4SMF-BJS	Blue		-	470	25	20	3.4	40 x 110	-	550-2,130	TR SI	
C4SMG-BJS	Blue		-	470	25	20	3.4	40 x 110	-	390-1,520	TR SI	
C5SME-RJS	5 mm oval	Red	-	621	50	20	2.1	40 x 110	-	770-2,130	TR SI	
C4SMF-RJS		Red	-	621	50	20	2.1	40 x 110	-	1,100-4,180	TR SI	
C5SMF-GJS		Green	-	527	25	20	3.4	40 x 110	-	2,130-8,200	TR SI	
C5SMF-BJS		Blue	-	470	25	20	3.4	40 x 110	-	550-2,130	TR SI	
C566C-RFS		Red	-	621	50	20	2.1	30 x 70	-	1,100-4,180	TR SI	
C566C-AFS		Amber	-	591	50	20	2.1	30 x 70	-	1,520-4,180	TR SI	
C566C-GFS		Green	-	527	25	20	3.4	30 x 70	-	2,130-12,000	TR SI	
C566C-BFS		Blue	-	470	25	20	3.4	30 x 70	-	770-4,180	TR SI	

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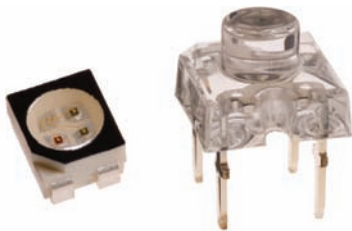
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P4 and SMD High-Brightness LEDs

Cree's high-performance P4 and SMD LEDs demonstrate the company's commitment to providing industry-leading technology in standard, cost-effective packages. Cree's P4 LEDs feature high luminous flux with superior heat dissipation. These LEDs are perfect for use in illumination and accent lighting applications. Cree's high-brightness SMD LEDs provide unique features that benefit a wide range of lighting applications and are available with 2, 4, or 6 leads.



P4 and SMD high-brightness LEDs

Features ▶

- Color and intensity binning
- High-brightness
- High quality and reliability
- High performance
- RoHS compliant

Benefits ▶

- Improved LED matching
- Low power consumption
- Reduced maintenance cost
- Long lifetime

Applications ▶

- Gaming machines
- Full-color video screens
- Accent/linear lighting
- Variable-message signs
- Channel letters

Product Specifications ▶

Part Number	Package Type	Color	Color Temp. (°K)	Dominant Wavelength (nm)	Max. Current (mA)	Tested Current (mA)	Forward Voltage (V)	Viewing Angle (°)	Luminous Flux (lm)	Luminous Intensity (mcd)	Markets
CP41B-WES	7.6 x 7.6 P4	White	6,500	-	30	30	3.6	60	3.8-11.0	-	CL TR SI
CP41B-WGS		White	6,500	-	30	30	3.6	90	3.8-11.0	-	CL TR SI
CP41B-RDS		Red	-	624	70	70	2.5	40	4.4-11.0	-	CL TR SI
CP41B-RFS		Red	-	624	70	70	2.5	70	4.4-11.0	-	CL TR SI
CP41B-RHS		Red	-	624	70	70	2.5	100	4.4-13.2	-	CL TR SI
CP41B-ADS		Amber	-	527	70	70	2.5	40	4.4-13.2	-	CL TR SI
CP41B-AFS		Amber	-	527	70	70	2.5	70	5.5-13.2	-	CL TR SI
CP41B-AHS		Amber	-	527	70	70	2.5	100	5.5-13.2	-	CL TR SI
CP43B-RGS		Red	-	624	70	70	2.5	35 x 90	2.1-8.2	-	CL TR SI
CP43B-AGS		Amber	-	527	70	70	2.5	35 x 90	2.1-8.2	-	CL TR SI
CP41B-BFS		Blue	-	470	35	30	3.6	70	1.6-3.3	-	CL TR SI
CP41B-GFS		Green	-	527	35	30	3.6	70	4.4-8.7	-	CL TR SI
CLM1C-WKW		3.2 x 2.7 PLCC2	White	6,800	-	25	20	3.2	120	-	710-1,800
CLM1B-RKW	Red		-	624	50	20	2.1	120	-	450-1,120	TR BL SI
CLM1B-AKW	Amber		-	591	50	20	2.1	120	-	355-900	TR BL SI
CLM1B-GKW	Green		-	527	25	20	3.4	120	-	710-2,240	TR BL SI
CLM1B-BKW	Blue		-	470	25	20	3.4	120	-	280-710	TR BL SI
CLA1A-WKW	3.2 x 2.7 PLCC4	White	5,500	-	35	30	3.6	120	1.8-4.5	-	TR BL SI
CLA1A-MKW		Warm white	3,200	-	35	30	3.6	120	1.1-3.5	-	TR BL SI
CLM4B-RKW		Red	-	624	70	50	2.4	120	-	1,120-2,800	TR BL SI
CLM4B-AKW		Amber	-	591	70	60	2.4	120	-	1,120-2,800	TR BL SI
CLM4B-GKW		Green	-	527	30	30	3.6	120	-	1,400-3,550	TR BL SI
CLM4B-BKW	Blue	-	470	30	30	3.6	120	-	355-900	TR BL SI	
CLP6C-FKB	6.0 x 5.0 3-in-1 full color	RGB	-	R=621/G=527/ B=470	R=50/G=50/ B=50	R=20/G=20/ B=20	R=2.0/G=3.2/ B=3.2	115	-	R=560-1,120/G=1,120-2,240/ B=280-560	TR BL SI
CLV1A-FKB	3.2 x 2.8 3-in-1 full color	RGB	-	R=621/G=527/ B=470	R=50/G=25/ B=25	R=20/G=20/ B=20	R=2.0/G=3.2/ B=3.2	120	-	R=355-900/G=560-1,400/ B=180-450	TR BL SI
CLP6B-WKW	6.0 x 5.0	White	6,800	-	3 x 50	3 x 50	3.8	115	15.0-30.0	7,100-18,000	CL TR
CLN6A-MKW		Warm white	3,200	-	350	300	3.8	115	51.0-85.6	-	CL TR
CLN6A-WKW		White	5,500	-	350	300	3.8	115	60.5-101.8	-	CL TR

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Arrow Electronics Lighting Group

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Golden DRAGON Plus, Golden DRAGON, and Diamond DRAGON (1W-5W Typical)



OSRAM's newly expanded family of DRAGON LEDs offers high-power LED performance from the smallest possible light sources. Featuring proprietary ThinFilm/ThinGaN technology, OSRAM's Golden DRAGON Plus, Golden DRAGON, and Diamond DRAGON LEDs emit maximum light from a small, low-profile package. Reflow solderability, silicone encapsulation for long lifetime, and low thermal resistance provide optimum efficiency in assembly and performance.

Features ▶

- Maximum current ratings of 1,000 mA through 2,000 mA
- Available in 2,700°K to 6,500°K white, red, amber, yellow, true green, verde, blue, and deep blue
- Utilizes OSRAM's patented high-efficiency, low V_F , surface-emitting ThinFilm/ThinGaN die
- Chip-level phosphor conversion for uniform white color across the radiation pattern
- White products available with ANSI-compliant binning

Benefits ▶

- Suitable for ultra high-brightness applications
- Meets a wide variety of application needs; great for multi-color uses
- Saves power and reduces heat while providing more available light
- Low manufacturing cost, reduces depth, survives high temperatures, and transfers heat well
- Ideal radiation pattern for coupling secondary optics

Applications ▶

- General lighting—architectural, decorative, and entertainment
- Transportation lighting—automotive exterior, trucking, and emergency vehicle
- Specialty lighting
- Traffic signals, street and tunnel lighting
- Backlighting large screen LCDs



Golden DRAGON Plus

Product Specifications ▶											
Part Number	Package Type	Color	Color Temp. (°K)	Dominant Wavelength (nm)	Max. Current (mA)	Tested Current (mA)	Forward Voltage (V)	Viewing Angle (°)	Luminous Flux (lm)	Luminous Intensity (mcd)	Markets
LUW W5AM	Golden DRAGON Plus	Daylight white	6,500/5,700	–	1,000	350	3.2	170	82-130	–	CL FL TR BL SI
LW W5AM		White	5,600	–	1,000	350	3.2	170	61-97	–	CL FL TR BL SI
LCW W5AM		Warm white	4,500/4,000/3,500/3,000/2,700	–	1,000	350	3.2	170	45-97	–	CL FL TR BL SI
LR W5AM		Red	–	625	1,000	400	2.2	170	39-71	–	CL BL SI
LA W5AM		Amber	–	617	1,000	400	2.2	170	45-82	–	CL TR BL SI
LY W5AM		Yellow	–	590	1,000	400	2.2	170	39-71	–	CL TR BL SI
LT W5AM		True green	–	528	1,000	350	3.2	170	52-97	–	CL TR BL SI
LB W5AM		Blue	–	470	1,000	350	3.2	170	18-33	–	CL TR BL SI
LD W5AM		Deep blue	–	455	1,000	350	3.2	170	320 mW-500 mW	–	CL BL
LUW W5SM		Golden DRAGON	Daylight white	6,500/5,700	–	1,000	350	3.2	120	61-97	–
LW W5SM	White		5,600	–	1,000	350	3.2	120	52-97	–	CL FL TR BL SI
LCW W5SM	Warm white		4,500/4,000/3,500/3,000/2,700	–	1,000	350	3.2	120	33-82	–	CL BL
LR W5SM	Red		–	625	1,000	400	2.2	120	33-61	–	CL BL SI
LA W5SM	Amber		–	617	1,000	400	2.2	120	39-71	–	CL TR BL SI
LY W5SM	Yellow		–	590	1,000	400	2.2	120	33-61	–	CL TR BL SI
LT W5SM	True green		–	528	1,000	350	3.2	120	45-82	–	CL TR BL SI
LV W5SG	Verde		–	505	500	350	3.8	120	18-33	–	CL BL SI
LB W5SM	Blue		–	470	1,000	350	3.2	120	13-24	–	CL TR BL SI
LD W5SM	Deep blue		–	455	1,000	350	3.2	120	280 mW-450 mW	–	CL BL
LUW W5AP	Diamond DRAGON	Daylight white	6,500/5,700	–	2,000	1,400	3.5	140	210 -390	–	CL FL TR BL SI
LW W5AP		White	5,600	–	2,000	1,400	3.5	140	150-280	–	CL FL TR BL SI
LCW W5AP		Warm white	4,500/4,000/3,500/3,000/2,700	–	2,000	1,400	3.5	140	112-280	–	CL FL TR BL SI
LR W5AP		Red	–	625	2,000	1,400	2.5	140	97-210	–	CL BL SI
LA W5AP		Amber	–	617	2,000	1,400	2.5	140	112-240	–	CL TR BL SI
LY W5AP		Yellow	–	590	2,000	1,400	2.5	140	82-180	–	CL TR BL SI
LT W5AP		True green	–	528	2,000	1,400	3.5	140	130-280	–	CL TR BL SI
LB W5AP		Blue	–	470	2,000	1,400	3.5	140	39-97	–	CL TR BL SI
LD W5AP		Deep blue	–	455	2,000	1,400	3.5	140	900 mW-1,800 mW	–	CL BL

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OSRAM

Opto Semiconductors

Advanced Power TOPLED LEDs (1/2W Typical) and 6-Lead MULTILED

This versatile 6-lead package is the perfect choice for a wide range of applications. Single-color versions feature OSRAM's latest ThinFilm/ThinGaN chips. The MULTILED devices feature three chips in red, green, and blue. Now 50 percent brighter than previous generations, this device offers brightness levels previously available only in higher power LED devices. Silicone encapsulation ensures exceptionally long lifetimes, and the low thermal resistance maximizes brightness and reduces heat. White products available with ANSI-compliant binning.



6-lead MULTILED

Features ▶

- Maximum current ratings of 200 mA to 250 mA for single-color devices, 50 mA or 60 mA for multi-color
- Available in white, four shades of warm white, red, amber, yellow, true green, and blue—plus RGB and AGB versions
- Utilizes OSRAM's patented high-efficiency, low V_F , surface-emitting ThinFilm/ThinGaN die
- Reflow solderable; 1.9 mm package height; +125°C T_j to +150°C T_j
- 120° lambertian radiation pattern

Benefits ▶

- Suitable for high-brightness applications
- Meets a wide variety of application needs; great for multi-color and color-changing applications
- Saves power and reduces heat while providing more available light
- Low manufacturing cost, reduces depth, and survives high temperatures
- Ideal radiation pattern for coupling secondary optics

Applications ▶

- Video walls and displays
- Color-changing and RGB applications
- Automotive, trucking, and transportation applications
- Backlighting medium-sized LCD panels

Product Specifications ▶

Part Number	Package Type	Color	Color Temp. (°K)	Dominant Wavelength (nm)	Max. Current (mA)	Tested Current (mA)	Forward Voltage (V)	Viewing Angle (°)	Luminous Flux (lm)	Luminous Intensity (mcd)	Markets
LW G6SP	Advanced Power TOPLED	White	5,600	–	250	140	3.6	120	25.2 typ.	5,600-11,200	CL FL TR BL SI
LCW G6SP		Warm white	4,500/4,000/3,500/3,000/2,700	–	250	140	3.6	120	22.6 typ.	3,550-11,200	CL TR BL
LR G6SP		Red	–	625	200	140	2.1	120	13.4 typ.	2,800-7,100	CL BL SI
LA G6SP		Amber	–	617	200	140	2.1	120	16.8 typ.	3,550-9,000	CL TR SI
LY G6SP		Yellow	–	590	200	140	2.2	120	12.6 typ.	2,240-7,100	CL TR SI
LT G6SP		True green	–	528	250	140	3.6	120	18.7 typ.	3,550-11,200	CL BL SI
LB G6SP		Blue	–	470	250	140	3.6	120	4.9 typ.	900-2,800	CL BL SI
LRTB G6TG	6-lead MULTILED	Red/true green/blue	–	R=625/TG=528/B=470	70/50/50	20	R=2.1/TG=3.2/B=3.2	120	–	R=280-900/TG=710-1,400/B=180-560	CL TR BL SI
LRTB G6SG		Red/true green/deep blue	–	R=625/TG=528/B=458	70/50/50	20	R=2.1/TG=3.2/B=3.2	120	–	R=280-900/TG=450-1,400/B=112-560	CL TR BL SI
LATB G66B		Amber/true green/blue	–	A=617/TG=528/B=470	70/30/30	20	A=2.0/TG=3.5/B=3.6	120	–	A=180-450/TG=355-1,120/B=71-280	CL TR BL SI
LATB GFTG	6-lead MULTILED INLINE	Red/true green/blue	–	R=625/TG=528/B=470	40/50/50	20	R=2.05/TG=3.2/B=3.2	120	–	R=355-1,800/TG=900-2,240/B=125-630	CL TR BL SI

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Advanced Power TOPLED

Power TOPLED and Power TOPLED with Lens

OSRAM's versatile Power TOPLED and Power TOPLED with Lens are high-brightness surface-mount LEDs featuring OSRAM's ThinFilm/ThinGaN chip technology, now 50 percent brighter than previous versions. With a full color palette and choice of three radiation patterns—plus automotive reliability, SMT manufacturing, high-temperature capability, low thermal resistance, and long lifetimes—Power TOPLED is clearly the right choice. White products available with ANSI-compliant binning.

OSRAM

Opto Semiconductors



Power TOPLED

Features ▶

- Maximum current ratings of 70 mA (50 mA for white, blue, and true green)
- Available in white, five shades of warm white, super red, red, amber, orange, yellow, true green, and blue
- Uses OSRAM's patented high-efficiency, low V_F , surface-emitting ThinFilm and ThinGaN die
- Reflow solderable; 1.9 mm package height (flat top), 3.5 mm to 3.8 mm package height (with lens); +125°C T_j
- 120° lambertian, 30°, and 60° radiation patterns

Benefits ▶

- Suitable for high-brightness applications
- Meets a wide variety of application needs; great for multi-color and color-changing applications
- Saves power and reduces heat while providing more available light
- Low manufacturing cost, reduces depth, survives high temperatures
- Ideal for coupling into secondary optics or as stand alone point sources of light

Applications ▶

- Automotive, trucking, transportation exterior, and signal lighting
- Channel letters, video walls and displays, variable message signs
- Interior lighting for cars, trucks, airplanes, and buildings
- Backlighting (LCD, switches, keys, and displays)
- Color-changing and RGB applications

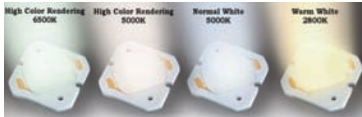
Product Specifications ▶												
Part Number	Package Type	Color	Color Temp. (°K)	Dominant Wavelength (nm)	Max. Current (mA)	Tested Current (mA)	Forward Voltage (V)	Viewing Angle (°)	Luminous Flux (lm)	Luminous Intensity (mcd)	Markets	
LW E6SG	Power TOPLED	Ultra white	6,500/5,700	-	50	30	3.3	120	6.3	1,400-3,550	CL FL TR BL SI	
LW E6SG		White	5,600	-	50	30	3.3	120	4.3	900-1,800	CL FL TR BL SI	
LCW E6SG		Warm white	4,500/4,000/ 3,500/3,000/2,700	-	50	30	3.4	120	3.8	710-2,240	CL TR BL SI	
LS E6SF		Super red	-	633	70	50	2.15	120	4.7	900-2,240	CL BL SI	
LR E6SF		Red	-	625	70	50	2.15	120	4.9	900-2,800	CL BL SI	
LA E6SF		Amber	-	617	70	50	2.15	120	6.4	1,120-3,550	CL TR SI	
LO E6SF		Orange	-	606	70	50	2.15	120	8.8	1,400-4,500	CL TR SI	
LY E6SF		Yellow	-	590	70	50	2.15	120	4.5	900-2,240	CL TR BL SI	
LT E6SG		True green	-	525	50	30	3.4	120	4.0	900-1,800	CL BL SI	
LB E6SG		Blue	-	469	50	30	3.4	120	1.2	224-560	CL TR BL SI	
LS E63F		Power TOPLED with Lens	Super red	-	633	70	50	2.15	30	3.8	5,600-14,000 mlux	CL TR
LS E65F			Super red	-	633	70	50	2.15	60	4.5	2,240-5,600 mlux	CL TR
LA E63F			Amber	-	617	70	50	2.15	30	5.1	7,100-22,400 mlux	CL TR
LA E65F			Amber	-	617	70	50	2.15	60	6.0	2,800-9,000 mlux	CL TR
LY E63F	Yellow		-	590	70	50	2.15	30	3.8	5,600-14,000 mlux	CL TR	
LY E65F	Yellow		-	590	70	50	2.15	60	4.3	2,240-5,600 mlux	CL TR	

MARKETS LEGEND

CL COMMERCIAL LIGHTING FL FLASHLIGHTS TR TRANSPORTATION BL BACKLIGHTING SI SIGNAGE

SHARP[®]**MICROELECTRONICS
OF THE AMERICAS****LED Lighting Solutions**

The SHARP Zenigata modules are mounted on ceramic substrates for superior heat transfer—simplifying cooling design. Offered in 3.6W and 6.7W power options, with a selection of color temperatures, these modules are suitable for a variety of lighting applications. In addition, our surface-mount devices (SMD) pack enormous light output into a small package.

**Features** ▶

- High lumen output
- High efficiency
- High CRI
- Long life >40,000 hours
- Color consistency

Benefits ▶

- Small packaging
- High intensity
- Low package thermal resistance
- High efficiency
- Long life and high reliability

Applications ▶

- General lighting
- Architectural highlighting
- Portable illumination
- Indoor and outdoor lighting
- Backlighting

Product Specifications ▶

Part Number	Package Type	Color	Color Temp. (°K)	Dominant Wavelength (nm)	Max. Current (mA)	Tested Current (mA)	Forward Voltage (V)	Viewing Angle (deg)	Luminous Flux (lm)	Luminous Intensity (mcd)	Markets	
GM5BW96385A	PLCC2 SMD	White	5,300	–	30	20	3.2	120	6.3	2,200	CL FL TR BL SI	
GM5BW97330A	PLCC4 SMD	White	5,300	–	80	60	3.2	120	17	6,400	CL FL TR BL SI	
GM5BW97331A		White	5,000	–	80	60	3.2	120	17	7,000	CL FL TR BL SI	
GM5BW97332A		Cool white	6,700	–	80	60	3.2	120	15	5,800	CL FL TR BL SI	
GM5BW97333A		Cool white	11,500	–	80	60	3.2	120	12	5,100	CL FL TR BL SI	
GM5SAE65POA		PLCC2 SMD	Warm white	2,700	–	30	20	3.2	120	5.8	2,000	CL FL TR BL SI
GM5SAE30POA	Warm white		3,000	–	30	20	3.2	120	5.8	2,050	CL FL TR BL SI	
GM5SAE35POA	Warm white		3,500	–	30	20	3.2	120	5.8	2,100	CL FL TR BL SI	
GM5SAE40POA	White		4,000	–	30	20	3.2	120	5.8	2,150	CL FL TR BL SI	
GM5SAE45POA	White		4,500	–	30	20	3.2	120	5.8	2,200	CL FL TR BL SI	
GM5SAE50POA	White		5,000	–	30	20	3.2	120	5.8	2,200	CL FL TR BL SI	
GM5SAE57POA	Cool white		5,700	–	30	20	3.2	120	5.8	2,200	CL FL TR BL SI	
GM5SAE65POA	Cool white		6,500	–	30	20	3.2	120	5.8	2,200	CL FL TR BL SI	
GM5BW05341A	5.0 x 5.0 SMD with lens		Cool white	6,500	–	25/25/25	20/20/20/20	3.2	60	25	10,000	CL FL TR BL SI
GM5BW01300A	6.0 x 5.0 SMD		Cool white	6,500	–	40/40/40	35/35/35	3.4	120	11	4,000	CL FL TR BL SI
GM1BD78140A	Light brick 2.64 x 1.64 SMD	Warm white	2,800	–	200	150	3.5	120	24	5,800	CL FL TR BL SI	
GM1BW78140A		White	5,000	–	200	150	3.5	120	24	5,800	CL FL TR BL SI	
GM5BN72xxxA	Double dome 3.2 x 3.2 x 2.1 SMD	Warm white	3,000	–	150	105	3.4	120	22	–	CL FL TR BL SI	
GM5BN72xxxA		Neutral white	5,300	–	150	105	3.4	120	25	–	CL FL TR BL SI	
GM5BN72xxxA		Cool white	6,500	–	150	105	3.4	120	22	–	CL FL TR BL SI	
GW5BDC15L02	Zenigata 18 mm x 18 mm	Warm white	2,800	–	400	360	10.2	120	200	–	CL FL TR BL SI	
GW5BWC15L02		White	5,000	–	400	360	10.2	120	280	–	CL FL TR BL SI	
GW5BNC15L02		High CRI white	5,000	–	400	360	10.2	120	190	–	CL FL TR BL SI	
GW5BNC15L12		High CRI cool white	6,500	–	400	360	10.2	120	190	–	CL FL TR BL SI	
GW5BDF15L00		Warm white	2,800	–	700	640	10.2	120	400	–	CL FL TR BL SI	
GW5BWF15L00		White	5,000	–	700	640	10.2	120	540	–	CL FL TR BL SI	
GW5BNF15L00		High CRI white	5,000	–	700	640	10.2	120	350	–	CL FL TR BL SI	
GW5BNF15L10		High CRI cool white	6,500	–	700	640	10.2	120	350	–	CL FL TR BL SI	
GM1WA55311A		RGB 1.6 x 1.6 SMD	RGB	–	0.27/0.26 mixed colors	10	5	1.9/3.0/2.9	110	–	20/70/23	CL TR BL SI
GM1WA55321A			RGB	–	0.27/0.26 mixed colors	10	5	2.0/3.0/2.9	110	–	28/75/25	CL TR BL SI
GM4WA25300A	RGB 5.0 x 2.5 SMD	RGB	–	0.27/0.26 mixed colors	30/30/30	20/20/20	2.2/3.3/3.3	110	–	640/1,200/400	CL TR BL SI	
GM5WA94313A	RGB 2.8 x 3.5 SMD	RGB	–	627/523/463	80	20/20/20	2.2/3.3/3.2	110	–	600/1,000/300	CL TR BL SI	
GM5WA94310A		RGB	–	0.27/0.26 mixed colors	80	20/20/7	2.2/3.3/3.2	110	–	620/1,180/270	CL TR BL SI	
GM5WA06256A		RGB 6.0 x 5.0 SMD	RGB	–	0.27/0.26 mixed colors	50/50/50	22/35/13	2.3/3.7/3.7	110	–	470/500/280	CL TR BL SI

MARKETS LEGEND

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Arrow Electronics Lighting Group

1.888.9LIGHT1

<http://lighting.arrow.com>

LED Modules

TT electronics/OPTEK Technology offers decades of experience in custom product development and manufacturing capability. Our expertise extends from die placement through finished product assembly and testing. OPTEK has the experience and the facilities to accommodate the most stringent assembly requirements.



A subsidiary of TT electronics plc

Features ▶

Product Design

- From concept through characterization to design

Product Assembly

- Full manufacturing capability for a wide variety of circuit configurations

Thermal Management

- Optek OptoTherm™, a superior thermal management substrate

Benefits ▶

Product Design

- On-shore design, production engineering, and product support

Product Assembly

- Full integration of all board-level components

Thermal Management

- Multiple thermal management solutions available, including OptoTherm™

Applications ▶

- Architectural
- Transportation
- Flashlights
- Backlighting
- Signage



Product Specifications ▶												
Part Number	Type	Color	Color Temp. (°K)	Wavelength (nm)	Voltage (V)	Power Consumption (W)	Lens Type	Viewing Angle (°)	Luminous Flux (lm)	Luminous Intensity (Lux @ 1m)	Markets	
OPA729W	Light engines*	White	4,500-10,000	–	18	12.6	Flat	120/lambertian	480	–	CL FL TR BL SI	
OPA729WD		White	4,500-10,000	–	18	12.6	Domed	40	480	–	CL FL TR BL SI	
OPA730W		White	4,500-10,000	–	21.6	12.6	Flat	120/lambertian	576	–	CL FL TR SI	
OPA730WD		White	4,500-10,000	–	21.6	12.6	Domed	40	576	–	CL FL TR SI	
OPA731W		White	4,500-10,000	–	18	25.2	Flat	120/lambertian	960	–	CL FL TR BL SI	
OPA731WD		White	4,500-10,000	–	18	25.2	Domed	40	960	–	CL FL TR BL SI	
OPA733W		White	4,500-10,000	–	3.6	1.26	Flat	120/lambertian	48	–	CL FL TR BL SI	
OPA733WD		White	4,500-10,000	–	3.6	1.26	Domed	40	48	–	CL FL TR BL SI	
OPA739W		White	4,500-10,000	–	10.8	3.78	Flat	120/lambertian	144	–	CL FL TR BL SI	
OPA739WD		White	4,500-10,000	–	10.8	3.78	Domed	40	144	–	CL FL TR BL SI	
OPA740W-23		White	4,500-10,000	–	18	12.6	Secondary	23/lambertian	408	–	CL FL TR BL SI	
OPA741W-23		White	4,500-10,000	–	21.6	12.6	Secondary	23/lambertian	490	–	CL FL TR BL SI	
OPA742W-23		White	4,500-10,000	–	3.6	1.26	Secondary	23/lambertian	41	–	CL FL TR BL SI	
OVTLZ1LGAx**		Optimal I Star	Various	–	Various	2.6-3.4	1	Flat	135	12-60	–	CL FL TR BL SI
OVTLZ1LGAW			Cool white	7,000	–	3.4	1	Flat	135	65	–	CL FL TR BL SI
OVTLZ1LGAWD	Daylight white		5,800	–	3.4	1	Flat	135	60	–	CL FL TR BL SI	
OVTLZ1LGAWW	Warm white		3,500	–	3.4	1	Flat	135	50	–	CL FL TR BL SI	
OPAKIT100	Design kit	RGBYW	Various	Various	3.6-21.6	1.26-25.2	Various	23/40/120/lambertian	41-960	–	CL FL TR BL SI	
OVPL5W3K	Power line design kit	White	4,500-10,000	–	15	1.9	Flat	120/lambertian	250	–	CL TR BL SI	
OPA773	Power line light strip	White	4,500-10,000	–	14-16	1.9	Flat	120/lambertian	50	–	CL TR BL SI	
OPA775		White	4,500-10,000	–	14-16	1.9	Flat	120/lambertian	50	–	CL TR BL SI	
OPA776		White	4,500-10,000	–	24-26	3.8	Flat	120/lambertian	100	–	CL TR BL SI	
OV4ZRGBA	Optimal IV	RGBA	–	625/530/460/590	2.5-3.9	4	Domed	60	35/30/5/36	–	CL FL TR BL SI	
OV4Zxxx	Optimal IV–monocolor	Various	Various	625-530/460/590	8.6-13.1	4	Domed	60	29-73	–	CL FL TR BL SI	
OV4ZW		Cool white	6,000-8,000	–	12.6	4	Domed	60	165	–	CL FL TR BL SI	
OV4ZWD		Daylight white	4,750-6,000	–	12.6	4	Domed	60	162	–	CL FL TR BL SI	
OV4ZWW		Warm white	2,760-3,800	–	12.6	4	Domed	60	150	–	CL FL TR BL SI	
OVQ12S30x7**	Flexible strip	RYGBW/WW	5,500/3,300	625/590/525/470	12	1.8	Flat	120/lambertian	20-68 lux	–	CL TR SI	
OVM12F3x7**	3 LED module	RYGB/WD	5,000-7,000	625/590/525/470	12	0.3-0.5	Flat	120/lambertian	6-20 lux	–	CL TR SI	
OVM18F4x7**	4 LED module	RYGB/WD	5,000-7,000	625/590/525/470	18	0.4-0.8	Flat	120/lambertian	8-24 lux	–	CL TR SI	

MARKETS LEGEND

CL COMMERCIAL LIGHTING FL FLASHLIGHTS TR TRANSPORTATION BL BACKLIGHTING SI SIGNAGE

*Light engines are also available in red, yellow, blue, and green

**x: R=red, B=blue, G=green, A=amber, Y=yellow



OVPL5W3K power line kit

OSRAM

Opto Semiconductors



IR Golden DRAGON

High-Efficiency and Ultra High-Power Infrared LEDs

OSRAM offers one of the largest selections of 850 nm and 940 nm infrared LEDs. OSRAM's unique ThinFilm technology enables very high efficiency and output powers of up to 3.6W. Designed specifically for CCTV applications and for use in night vision equipment, they deliver a wavelength specially adapted to CMOS/CCD camera systems. These LEDs are offered in thru-hole packages and a variety of surface-mount packages such as TOPLED, Power TOPLED, MIDLED, Golden DRAGON, and OSTAR Observation. OSTAR Observation is the optimum choice when long distances and extensive areas need to be covered and monitored with infrared light, especially in applications that require continuous operation and/or high ambient temperatures.

Features ▶

- Small dimensions, big performance
- 50 mW output power from 0.3 mm x 0.3 mm die and 500 mW from 1 mm x 1 mm die
- Low forward voltage of 1.8V
- Maximum DC current of 1A
- High forward currents allowed at high temperatures

Benefits ▶

- High optical IR output, even in continuous operation
- Exceptionally low thermal resistance for optimum thermal management
- Certified for automotive applications at temperatures up to +125°C
- Easy design for external lenses
- Low forward voltage provides longer life in battery operated devices

Applications ▶

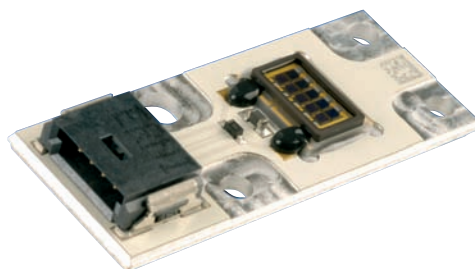
- Infrared illumination for CMOS cameras
- Surveillance systems
- Automotive—driver assistance systems
- Machine vision
- IR data transmission

Product Specifications ▶

Part Number	Package Type	Dominant Wavelength (nm)	Max Current (mA)	Tested Current (mA)	Forward Voltage (V)	Viewing Angle (°)	Radiant Flux (mW)	Radiant Intensity (mW/sr)	Markets
SFH 4050	SmartLED	850	100	100	1.5	160	50	7	TR
SFH 4230	Golden DRAGON	850	1,000	1,000	1.8	120	440	170	FL TR
SFH 4231		940	1,000	1,000	1.8	120	1,000	200	FL TR
SFH 4250	Power TOPLED	850	100	100	1.5	120	40	15	TR
SFH 4240		940	100	100	1.5	120	45	15	FL TR
SFH 4243		940	70	50	1.5	120	33	11	TR
SFH 4255	SIDELED	850	100	100	1.5	120	40	15	TR
SFH 4244		940	70	50	1.5	120	33	11	TR
SFH 4257	TOPLED	850	100	100	1.5	120	18	7	TR
SFH 4252		850	100	100	1.5	120	40	16	TR
SFH 4258	Power TOPLED with Lens	850	100	100	1.5	30	45	90	TR
SFH 4259		850	100	100	1.5	50	45	55	TR
SFH 4248		940	100	100	1.5	30	50	100	TR
SFH 4249		940	100	100	1.5	50	50	55	TR
SFH 4350	3 mm (T1)	850	100	100	1.5	26	50	70	TR
SFH 4550	5 mm (T1 3/4)	850	100	100	1.5	6	50	700	TR
SFH 4650	MIDLED	850	100	100	1.5	40	40	40	TR
SFH 4655		850	100	100	1.5	40	40	40	TR
SFH 4730	OSTAR Observation	850	1,000	1,000	1.8	120	3,000	1,000	FL TR
SFH 4740		850	1,000	1,000	1.8	120	3,600	1,200	FL TR

MARKETS LEGEND

CL COMMERCIAL LIGHTING FL FLASHLIGHTS TR TRANSPORTATION EL BACKLIGHTING SI SIGNAGE



OSTAR Observation