

OSRAM

Opto Semiconductors

OSTAR® Lighting and Projection Compact Light Sources (10W-15W Typical)

The OSTAR® family of products is comprised of compact light sources optimized for lighting and projection applications. Utilizing OSRAM's proprietary ThinFilm/ThinGaN® chip technology, these arrays consist of multiple power LED chips on a low-thermal resistance carrier. OSTAR® devices include screw holes for mounting, connectors, and features for precision mounting of secondary optics. Several variations are available with lenses. A variety of mechanical, color, and optical variations provide maximum flexibility.



1,000 lumen OSTAR® Lighting

Features ▶

- High-luminance surface-emitting chips with precise alignment of chips and optics
- Projection: 4-chip square or 6-chip rectangular arrangement in red, green, blue, and RGB
- Lighting: 4 or 6-chip arrays, with or without hemispherical lens, in white, warm white, and daylight white
- Low forward voltage (V_F) and thermal resistance (R_{th})
- Designed for high-lumen density applications—LE UW E3B over 1,000 lm at 1,000 mA

Benefits ▶

- Light couples efficiently into secondary optics
- Simplifies system optical and thermal design
- Provides extreme brightness from a compact area
- Maximum efficiency with less heat generation
- Reduces LED count, board size, and system complexity

Applications ▶

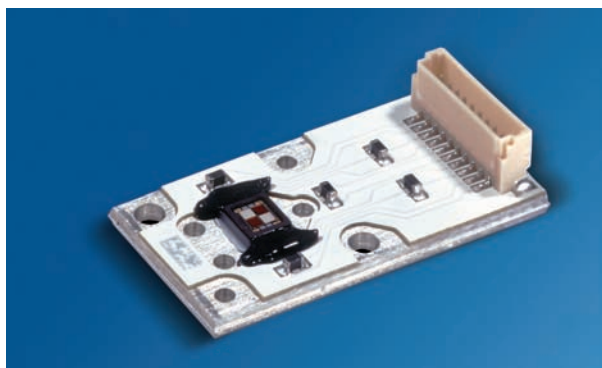
- High-brightness projection systems
- General lighting—downlights, spots, floods, and bulb replacement
- Architectural lighting—RGB color-changing applications
- Outdoor area lighting—street, tunnel, bridge, and parking

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
LE UW E3B	OSTAR® Lighting	Daylight white	6,500	NA	1,000	700	20.8	130	610-1,120	NA	CL FL TR
LE W E3B		White	5,600	NA	1,000	700	20.8	130	330-820	NA	CL FL TR
LE CW E3B		Warm white	4,200/3,500/3,000/2,700	NA	1,000	700	20.8	130	210-610	NA	CL FL TR
LE W E2B		White	5,600	NA	1,000	700	14	130	210	NA	CL FL TR
LE CW E2B		Warm white	4,200/3,500/3,000/2,700	NA	1,000	700	14	130	150-450	NA	CL FL TR
LE W E3A		White	5,600	NA	1,000	700	20.8	120	240-520	NA	CL FL TR
LE CW E3A		Warm white	4,200/3,500/3,000/2,700	NA	1,000	700	20.8	120	150-450	NA	CL FL TR
LE W E2A		White	5,600	NA	1,000	700	14	120	150-390	NA	CL FL TR
LE CW E2A		Warm white	4,200/3,500/3,000/2,700	NA	1,000	700	14	120	112-280	NA	CL FL TR
LE A G3A		OSTAR® Projection	Amber	NA	617	1,000	700	16.8	120	481	NA
LE T G3A	True green		NA	520	1,000	700	24	120	481	NA	CL SI
LE B G3A	Blue		NA	464	1,000	700	24	120	124	NA	CL SI
LE AB G3AB	Amber/blue		NA	617 + 464	1,000	700	11.2 + 8	120	326 + 40	NA	CL SI

MARKETS LEGEND

CL COMMERCIAL LIGHTING FL FLASHLIGHTS TR TRANSPORTATION BL BACKLIGHTING SI SIGNAGE



OSTAR® Projection

Golden DRAGON® Plus, Golden DRAGON®, and Platinum DRAGON® (1W-2.5W Typical)



OSRAM's 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 Platinum 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 500 mA through 1,000 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
- Reflow solderable; 1.8 mm package height; +125°C T_j to +135°C T_j ; 8 K/W R_{th} to 15 K/W R_{th}
- Chip-level phosphor conversion for uniform white color across the radiation pattern

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
- Backlighting large screen LCDs
- Specialty lighting
- Traffic signals, street and tunnel lighting



Golden DRAGON®

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	
LUW W5AM	Golden DRAGON® Plus	Daylight white	6,500/5,700	NA	1,000	350	3.2	170	71-130	NA	CL FL TR BL SI	
LW W5AM		White	5,600	NA	1,000	350	3.2	170	52-130	NA	CL FL TR BL SI	
LCW W5AM		Warm white	4,500/4,000/3,500/3,000/2,700	NA	1,000	350	3.2	170	39-97	NA	CL FL TR BL SI	
LUW W5SM	Golden DRAGON®	Daylight white	6,500/5,700	NA	500	350	3.2	120	52-97	NA	CL FL TR BL SI	
LW W5SM		White	5,600	NA	500	350	3.2	120	33-82	NA	CL FL TR BL SI	
LCW W5SM		Warm white	4,200/3,500/3,000/2,700	NA	500	350	3.2	120	24-61	NA	CL BL	
LR W5SM		Red	NA	625	500	400	2.2	120	24-61	NA	CL BL SI	
LA W5SM		Amber	NA	617	500	400	2.2	120	28-71	NA	CL TR BL SI	
LY W5SM		Yellow	NA	590	500	400	2.2	120	21-52	NA	CL TR BL SI	
LV W5SG		Verde	NA	505	500	350	3.8	120	18-33	NA	CL BL SI	
LT W5SM		True green	NA	528	500	350	3.2	120	33-71	NA	CL TR BL SI	
LB W5SM		Blue	NA	470	500	350	3.2	120	8.2-24	NA	CL TR BL SI	
LD W5SM		Deep blue	NA	455	500	350	3.2	120	210-355 mW	NA	CL BL	
LW W5SN		Platinum DRAGON®	White	5,600	NA	1,000	700	3.6	120	52-112	NA	CL FL TR BL SI
LCW W5SN			Warm white	4,200/3,500/3,000/2,700	NA	1,000	700	3.6	120	39-97	NA	CL BL
LR W5SN			Red	NA	625	1,000	700	2.5	120	52-97	NA	CL BL SI
LA W5SN	Amber		NA	617	1,000	700	2.5	120	61-112	NA	CL TR BL SI	
LY W5SN	Yellow		NA	590	1,000	700	2.5	120	45-97	NA	CL TR BL SI	
LT W5SN	True green		NA	528	1,000	700	3.6	120	52-112	NA	CL TR BL SI	
LB W5SN	Blue		NA	470	1,000	700	3.6	120	15-52	NA	CL TR BL SI	
LD W5SN	Deep blue		NA	455	1,000	700	3.6	120	280-710 mW	NA	CL BL	

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Diamond DRAGON®

Diamond DRAGON® (5W Typical)

OSRAM's Diamond DRAGON® delivers in the most challenging applications. Providing over 200 lm in white, this device packs extraordinary light into a package that is footprint compatible with the existing DRAGON® line. With low thermal resistance of 2.5 K/W, maximum current of 2.0A, and high-temperature capability of +160 degrees Celsius, Diamond DRAGON® is the solution to your most difficult problems.

Features ▶

- Binned at 1.4A with maximum current ratings of 2.0A
- Available in 2,700°K to 6,500°K white, red, amber, yellow, true green, blue, and deep blue
- Utilizes OSRAM's patented high-efficiency, low V_F , surface-emitting ThinFilm/ThinGaN® die
- Reflow solderable; 4.2 mm package height; +160°C Tj; 2.5 K/W Rth to 3.0 K/W Rth
- Chip-level phosphor conversion for uniform white across the radiation pattern

Benefits ▶

- Allows reduced LED count for smaller, simpler, and more robust light sources
- One common footprint to meet all lighting needs regardless of application
- High luminance plus lower forward voltage means increased efficiency at high-current operation
- Standard manufacturing techniques coupled with easier thermal management enables reduced system cost
- Provides high-quality white light for all general lighting applications

Applications ▶

- General lighting—recessed downlights, bulb retrofits, MR and PAR replacements
- Automotive exterior lighting—front and rear turn signals, daytime running lamps, and stop lamps
- Stage and entertainment 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 (deg)	Luminous Flux (lm)	Luminous Intensity (mcd)	Markets
LUW W5AP	Diamond DRAGON®	Daylight white	6,500/5,700	NA	2,000	1,400	3.5	140	260 typ.	NA	CL FL TR BL SI
LW W5AP		White	5,600	NA	2,000	1,400	3.5	140	150-280	NA	CL FL TR BL SI
LCW W5AP		Warm white	4,500/4,000/3,500/3,000/2,700	NA	2,000	1,400	3.5	140	160 typ.	NA	CL FL TR BL SI
LR W5AP		Red	NA	625	2,000	1,400	2.5	140	97-210	NA	CL BL SI
LA W5AP		Amber	NA	617	2,000	1,400	2.5	140	112-240	NA	CL TR BL SI
LY W5AP		Yellow	NA	590	2,000	1,400	2.5	140	82-180	NA	CL TR BL SI
LT W5AP		True green	NA	528	2,000	1,400	3.5	140	130-280	NA	CL TR BL SI
LB W5AP		Blue	NA	470	2,000	1,400	3.5	140	39-97	NA	CL TR BL SI
LD W5AP		Deep blue	NA	455	2,000	1,400	3.5	140	900-1,800 mW	NA	CL BL

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

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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 long lifetimes, and the low thermal resistance maximizes brightness and reduces heat.

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, transportation exterior, and signal lighting
- Interior lighting for cars, trucks, airplanes, and buildings
- Backlighting medium-sized LCD panels



6-Lead MULTILED®

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
LW G6SP	Advanced Power TOPLED®	White	5,600	NA	250	140	3.6	120	18.8 typ.	3,550-9,000	CL FL TR BL SI
LCW G6SP		Warm white	4,200/3,500/3,000/2,700	NA	250	140	3.6	120	16.8 typ.	2,240-9,000	CL TR BL
LR G6SP		Red	NA	625	200	140	2.1	120	13.4 typ.	2,800-7,100	CL BL SI
LA G6SP		Amber	NA	617	200	140	2.1	120	16.8 typ.	3,550-9,000	CL TR SI
LY G6SP		Yellow	NA	590	200	140	2.2	120	12.6 typ.	2,240-7,100	CL TR SI
LT G6SP		True green	NA	528	250	140	3.6	120	18.7 typ.	3,550-11,200	CL BL SI
LB G6SP		Blue	NA	470	250	140	3.6	120	4.9 typ.	900-2,800	CL BL SI
LRTB G6TG	6-Lead MULTILED®	Red/true green/blue	NA	R=625/TG=528/B=470	70/50/50	20	R=2.1/TG=3.2/B=3.2	120	NA	R=280-1,120/TG=710-1,400/B=180-560	CL BL SI
LRTB G6SG		Red/true green/blue	NA	R=625/TG=528/B=458	70/50/50	20	R=2.1/TG=3.2/B=3.2	120	NA	R=280-900/TG=450-1,400/B=112-560	CL BL SI
LATB G66B		Amber/true green/blue	NA	A=617/TG=528/B=470	70/30/30	20	A=2.0/TG=3.5/B=3.6	120	NA	A=180-450/TG=355-1,120/B=71-280	CL BL SI

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Advanced Power TOPLED®

Features ▶

Benefits ▶

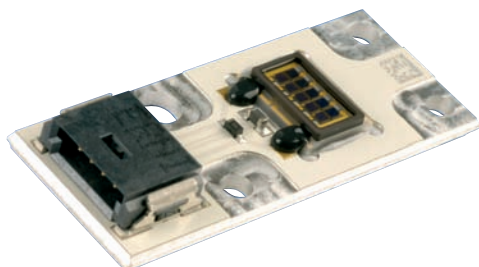
Applications ▶

IR Golden DRAGON®

Product Specifications ▶									
Part Number	Package Type	Dominant Wavelength (nm)	Max Current (mA)	Tested Current (mA)	Forward Voltage (V)	Viewing Angle (deg)	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 4250	Power TOPLED®	850	100	100	1.5	120	40	15	TR
SFH 4255	SIDELED®	850	100	100	1.5	120	40	15	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 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	18	120	3,000	1,000	FL TR
SFH 4740		850	1,000	1,000	18	120	3,600	1,200	FL TR

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OSTAR® Observation