



High Lux Performance White LED Module

Key Features

- Performance equivalent to 50W halogen
- 24VDC
- Fully dimmable
- Available in spot and narrow flood beams
- Precision optics delivering high quality smooth beam pattern
- Powered by LedEngin's highest flux density, ultra reliable 4-chip LED
- Integrated ultra compact form factor
- Multiple mounting options
- Fanless air cooling technology
- RoHS compliant

Benefits

- Payback in less than 18 months through reduced energy costs and maintenance savings
- Excellent for directional applications
- Smooth light gradient eliminates hot spots and rings for uniform illumination throughout beam
- Industry leading lumen maintenance and color point stability
- Maximum design
- Easy to install and operate flexibility
- Cool to the touch for improved safety
- No UV or IR in the beam

Typical Applications

- General Lighting
- Museum Lighting
- Retail & Display Lighting
- Hospitality Lighting
- Accent & Task Lighting
- Architectural Detail Lighting

Description

LuxSpot™ delivers the lighting equivalence of a conventional 50W halogen MR16 lamp in a similar form factor with a 70% power savings and >10 times the service life. The sleek, stylish module combines LedEngin's industry leading high performance LED technology with optical, electrical, and thermal management solutions enable this innovative source replacement, delivering both the performance of a conventional halogen light source and the benefits of solid state lighting. LuxSpot delivers the quality and quantity of light required for a broad range of spot, accent, track and down lighting applications in a standard narrow flood and narrow spot beam patterns. The versatile system design of LuxSpot reduces integration challenges, allowing for rapid incorporation into a variety of lighting systems. The high quality materials and components used in LuxSpot are engineered to optimize light output and minimize stress, resulting in monumental reliability, color point stability and lumen maintenance.

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Typical Operating Characteristics @ T_A = 25°C (Free Air)

Table 1:

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Storage Temperature	T _{stg}	-40	25	85	°C
Input Voltage	V _{IN}	21.6	24	26.4	VDC
PWM input Voltage (Low)	V _{PWM-L}	0		0.2	V
PWM input Voltage (High)	V _{PWM-H}	5		24	V
Power Consumption	P _{IN}		14.5	15	W
LED Power Consumption			12		W
Sound Pressure Level ^[1]	L _p		18	19	dBA
Average Luminous Maintenance ^[2]	L ₇₀		>50		kHrs
Weight			0.182		kg

Notes for Table 1:

1. Sound Pressure Level measured at 1m per ISO 7779.
2. Average Lumen Maintenance > 70% at 50K hours @ T_A = 40°C.

Typical Optical Specifications @ T_A = 25°C (Free Air)

Table 2:

	Part Number	Color Temperature (K)	Illuminance at 1 meter ^{[1][2]} (Lux)	Light Output (Lumens)	Reference LED Efficiency ^[3] (lm/W)	Color Rendering Index (CRI)
Spot 12°	LS17-001W27	Warm White 2700K	4500	350	36	85
	LS17-001W29	Warm White 2900K	4800	375	39	85
	LS17-001W31	Warm White 3100K	5100	400	41	85
	LS17-001N41	Neutral White 4100K	6000	480	49	75
	LS17-001D55	Daylight White 5500K	7100	560	58	75
Wide Spot 19°	LS17-001W27-W	Warm White 2700K	2450	350	36	85
	LS17-001W29-W	Warm White 2900K	2600	375	39	85
	LS17-001W31-W	Warm White 3100K	2700	400	41	85
	LS17-001N41-W	Neutral White 4100K	3200	480	49	75
	LS17-001D55-W	Daylight White 5500K	3700	560	58	75
Narrow Flood 23°	LS17-002W27	Warm White 2700K	1900	350	36	85
	LS17-002W29	Warm White 2900K	2000	375	39	85
	LS17-002W31	Warm White 3100K	2100	400	41	85
	LS17-002N41	Neutral White 4100K	2360	480	49	75
	LS17-002D55	Daylight White 5500K	2760	560	58	75
Flood 37°	LS17-003W27	Warm White 2700K	800	350	36	85
	LS17-003W29	Warm White 2900K	850	375	39	85
	LS17-003W31	Warm White 3100K	950	400	41	85
	LS17-003N41	Neutral White 4100K	1100	480	49	75
	LS17-003D55	Daylight White 5500K	1300	560	58	75

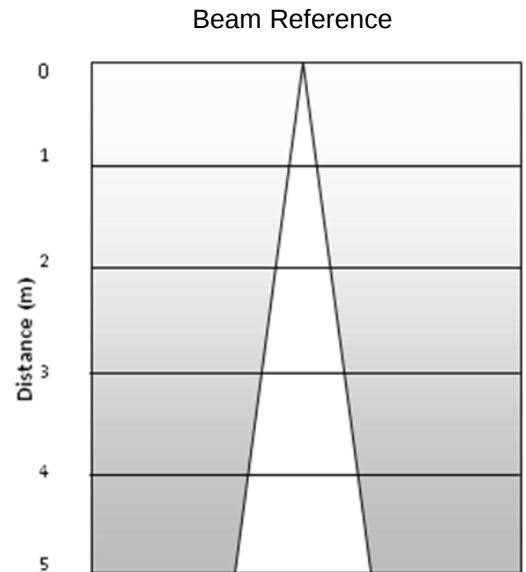
Notes for Table 2:

1. Refers to a typical module's lumen performance at thermal equilibrium @ T_A = 25°C.
2. Lux @ 1m = CBCP (Center Beam Candlepower) measured in cd
3. Efficiency numbers represent LED emitter only (excludes power dissipation from driver, cooler and optics)

Typical Illuminance Specifications @ $T_A = 25^\circ\text{C}$ (Free Air)

Table 3:

Distance (m)		1	2	3	4	5
Beam	Color Temperature	Lux				
Spot 12°	Warm White 2700K	4500	1125	500	281	180
	Warm White 2900K	4800	1200	533	300	192
	Warm White 3100K	5100	1275	567	319	204
	Neutral White 4100K	6000	1500	667	375	240
	Daylight White 5500K	7100	1775	789	444	284
Wide Spot 19°	Warm White 2700K	2450	613	272	153	98
	Warm White 2900K	2600	650	289	163	104
	Warm White 3100K	2700	675	300	169	108
	Neutral White 4100K	3200	800	356	200	128
	Daylight White 5500K	3700	925	411	231	148
Narrow flood 23°	Warm White 2700K	1900	475	211	119	76
	Warm White 2900K	2000	500	222	125	80
	Warm White 3100K	2100	525	233	131	84
	Neutral White 4100K	2360	590	262	148	94
	Daylight White 5500K	2760	690	307	173	110
Flood	Warm White 2700K	800	200	89	50	32
	Warm White 2900K	850	212.5	94	53.125	34
	Warm White 3100K	950	237.5	106	59	38
	Neutral White 4100K	1100	275	122	68.75	44
	Daylight White 5500K	1300	325	144	81.25	52
Illuminated area diameter (m)	Spot	0.2	0.4	0.6	0.9	1.1
	Narrow flood	0.4	0.7	1.1	1.5	1.9
	Flood	0.7	1.4	2.1	2.8	3.5



Typical Radiation Pattern

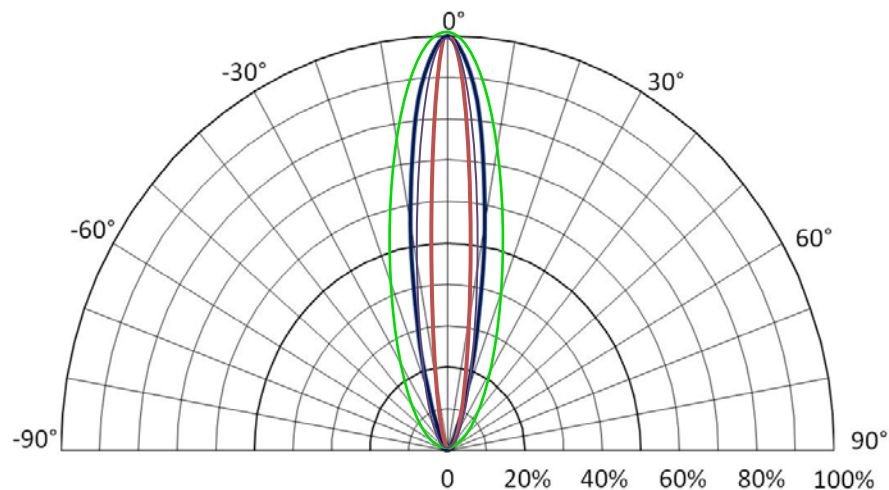


Figure 1: Typical representative radiation pattern.

Red – Spot beam pattern
Violet – Wide spot beam pattern
Blue – Narrow flood beam pattern
Green – Flood beam pattern

Mechanical Dimensions (mm)

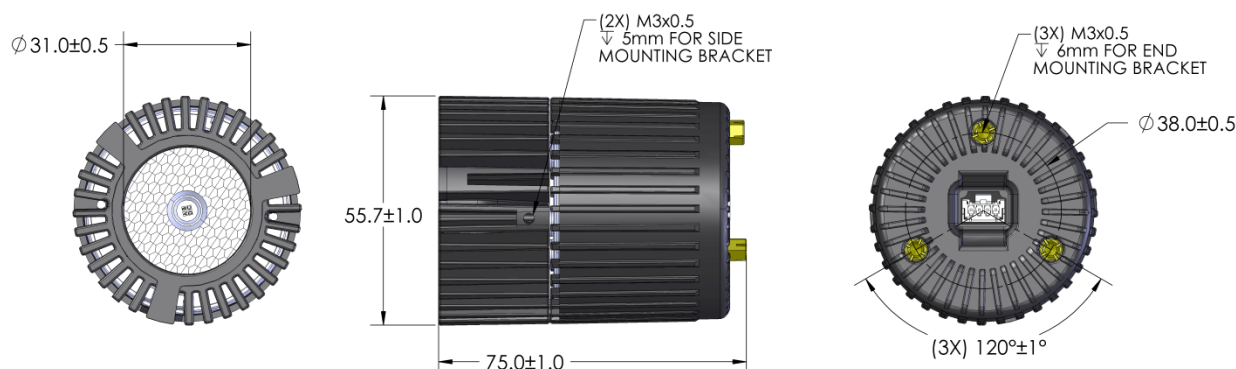


Figure 2: Package outline drawing.

Notes for Figure 2:

1. Connector part number: Molex 35362-0450.

Cable Harness Option

Table 4:

LuxSpot TM Cable Harness Part No.	Cable Harness Length (m)	Molex Connector Part No. ^[1]	Termination
LC4-03121	1	35507-0400	stripped

The diagram illustrates the assembly of the LuxSpot Cable Harness. It shows a Molex P/N 35507-0400 connector (4-pin) connected to a cable harness. The cable harness has a length of 1000 mm. The cable is labeled as 24AWG 11/0.16 STRANDED DIA 0.61 UL 94V-0. The cable is terminated with a Molex connector. The diagram also shows the cable's outer diameter as Ø3.60 and the length of the stripped section as 8 mm. The cable is labeled as UL 94V-0. The diagram includes a table for Pin Out:

Pin Out		
Pin	Color	Function
1	Red	+24VDC
2	Yellow	PWM
3	Black	Ground
4	White	Ground

PRE-CUT INSULATION

Figure 3: Cable Harness drawing.

Notes for Figure 3:

1. Cable Harness connector:
 - a. Molex Housing: Part Number 35507-0400 or equivalent.
 - b. Molex Terminal Pins: Part Number 50212-8000 (reel), 50212-8100 (bag) or equivalent.
2. If not using PWM dimming, connect Pin 2 (Yellow) and Pin 4 (White) together to prevent potential flickering.
3. Please contact LedEngin or authorized Distributor for more information.

LuxSpot™ Installation Considerations

- **Track / Fixture mounting**
 - 2 M3x0.5 5mm mounting screw holes on sides of module for U-bracket mounting
 - 3 M3x0.5 6mm mounting screw holes on back of module for adapter plate mounting
 - Clamp ring around plastic end cap; do not put clamp ring around the aluminum finned heat sink
- **Recessed Can / Ceiling mounting**
 - Minimum opening in recessed can: provide 60.0mm diameter / 30.0mm deep opening to allow for proper airflow around the cooler.
 - Additional vents for airflow inside recessed can are recommended.

Footnotes for LuxSpot™

- **Warning!** LuxSpot™ does not have any user serviceable parts inside. To avoid unforeseen injuries such as electrical shock or skin burns, do not disassemble the module when it is connected to supply voltages in excess of LuxSpot's nominal supply voltage.
- 24VDC LuxSpot™ should be powered by 24VDC power supply; 24VDC LuxSpot cannot be driven with constant current source or low voltage electronic or magnetic transformer.
- LuxSpot™ is not intended for wet or damp locations. Do not expose to spray water or submerge. Use only in dry locations.
- LuxSpot™ is not designed for use in fully enclosed fixtures. Operate only in fixtures that provide free flow of air around the heat sink. Temperature of finned aluminum heat sink should not exceed 80°C.
- Make sure not to reverse bias supply lines (or inputs)

Company Information

LedEngin is a global market leader in advanced high-power LED emitters and light-source modules. LedEngin provides total solutions from 3W to 15W in single packages with ultra-small footprints in all colors from Cool White, Warm White, Neutral White, Red, Green, Blue, Amber, RGB, RGBA, Dental Blue and UV. LedEngin supports customers to generate solid-state lighting designs that conserve natural resources. LedEngin is focused on differentiated Ultra High-Brightness LED solutions for diverse global markets using its patent-pending package designs and manufacturing processes. LedEngin offers catalog as well as full custom solutions to enable flexible system designs for its customers. LedEngin is dedicated to long-term win-win partnering with its customers and suppliers. LedEngin is located in Santa Clara, CA in the heart of Silicon Valley.

LedEngin reserves the right to make changes to improve performance without notice.

Please contact info@ledengin.com or (408) 492-0620 for more information or visit us @ www.LuxSpot.net or www.ledengin.com.