

LR Series

LR6™ LED Downlight - 6"

Product Description

The LR6™ downlight is an unparalleled combination of light quality and efficacy – bringing outstanding performance and value to the retrofit downlight space. Delivering up to 1800 lumens of exceptional 90+ CRI light while achieving up to 100 lumens per watt, this breakthrough performance is achieved by combining the high efficacy and high-quality light of Cree TrueWhite® Technology, with an integrated driver and thermal management design. The LR6™ downlight is available in warm or neutral color temperatures, three lumen packages, and offers a variety of trim options.

Applications: Commercial new construction and retrofit

Performance Summary

Utilizes Cree TrueWhite® Technology
Initial Delivered Lumens: 650-1,800 lumens
Input Power: 7.5-22 watts
CRI: 90
CCT: 2700K, 3500K, 4000K
Limited Warranty*: 10 years
L₇₀ Lifetime: > 100,000 hours at 35° C
Dimming: Dimmable to 5%

* See <http://lighting.cree.com/warranty> for warranty terms

Accessories

Field-Installed
GU24-E26 Adapter - Adapter to convert the standard GU24 base on LR6-10L and LR6-18L downlights to an Edison base so they can be used when existing housings have Edison sockets

Housings & Trims

Reference Housing & Trim documents for more details

Housings		
120V GU24 Base Recessed Housings H6-GU24 - Architectural new construction RC6-GU24 - New construction RR6-GU24 - Retrofit	120V GU24 Base Cord Mount Housings SC6-CM-GU24 - Textured white finish SC6-CM-BL-GU24 - Textured black finish	277V Recessed "Pan" Conversion Kit C6-277V-LSA - Less socket adapter
120V GU24 Base Recessed "Pan" Conversion Kit C6-GU24 C6-120V-LSA - Less socket adapter	120V GU24 Base Wall Mount Housings SC6-WM-GU24 - Textured white finish	277V Surface Mount Housings SC6-277V SC6-BL-277V - Textured black finish
120V GU24 Base Surface Mount Housings SC6-GU24 - Textured white finish SC6-BL-GU24 - Textured black finish	277V Recessed Housings H6-277V - Architectural new construction RC6-277V - New construction RR6-277V - Retrofit	277V Cord Mount Housings SC6-CM-277V - Textured white finish SC6-CM-BL-277V - Textured black finish
		277V Wall Mount Housings SC6-WM-277V - Textured white finish
Trims		
LT6A-DR Diffuse anodized reflector w/white flange	LT6AP-DR Pewter diffuse anodized reflector w/white flange	LT6WH-DR Smooth white painted reflector/flange
LT6AW-DR Wheat diffuse anodized reflector w/white flange	LT6AB-DR Black anodized reflector w/white flange	LT6BB-DR Flat black reflector/flange

Ordering Information

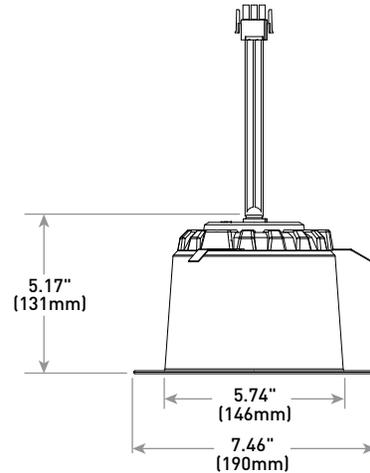
Example: LR6-7L-27K-GU24-E26

LR6	Series	Initial Delivered Lumens*	CCT	Voltage	Base Type
LR6	7L 7.5W, 650 lumens – 87 LPW 10L 10.5W, 1,050 lumens – 100 LPW 18L 22W, 1,800 lumens – 82 LPW	27K 2700K 35K 3500K 40K 4000K	Blank 120 Volts	Blank 277 Volts	GU24 - GU24 base; when Edison base is required for installation, order field-installed GU24-E26 Adapter accessory (see table above) - Available only with LR6-10L and LR6-18L
					GU24-E26 - GU24 base w/Edison adapter - Available only with the LR6-7L
					Blank 277V Connector - Must be used with Cree six-inch 277V housings (see Housings table above)

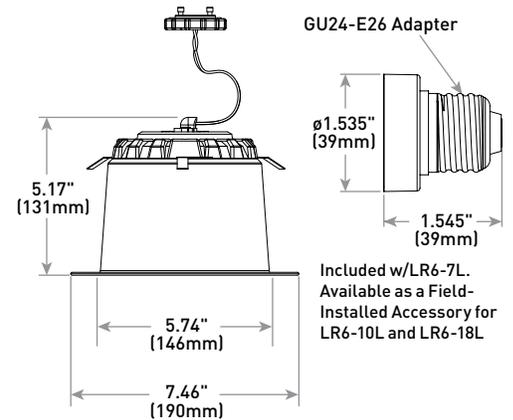
* Actual lumens vary based on color temperature



277V Connector



120V GU24



Product Specifications

CREE TRUEWHITE® TECHNOLOGY

A revolutionary way to generate high-quality white light, Cree TrueWhite® Technology is a patented approach that delivers an exclusive combination of 90+ CRI, beautiful light characteristics, and lifelong color consistency, all while maintaining high luminous efficacy – a true no compromise solution.

CONSTRUCTION & MATERIALS

- Durable aluminum housing protects the light source. Adjustable flip clips provide robust retention for flush ceiling fit
- Thermal management system uses integral heat sink to conduct heat away from LEDs for optimal performance. LED junction temperatures stay below specified maximum even when installed in with worst case installations
- Suitable for insulated and non-insulated ceilings
- One-piece aluminum lower reflector redirects light while also conducting heat away from LEDs. It creates a comfortable visual transition from the lens to the ceiling plane and easily accommodates LT6 snap-in trims 5.5" (140mm) pigtail

OPTICAL SYSTEM

- Unique combination of reflective and refractive optical components achieves a uniform, comfortable appearance while eliminating pixelation, hot spots and minimizing glare
- Components work together to optimize distribution, balancing the delivery of high illuminance levels on horizontal surfaces with an ideal amount of light on walls and vertical surfaces. This increases the perception of spaciousness
- Deep set polycarbonate diffusing lens shields direct view of LEDs and provides greater visual cut-off

ELECTRICAL SYSTEM

- Integral, high-efficiency power supply
- **Power Factor:** minimum 0.9
- **Total Harmonic Distortion:** < 20%
- **Input Voltage:** 120V, 50/60Hz or 277V, 50/60Hz
- 120V is dimmable to 5% with most incandescent dimmers
- 277V is dimmable to 5% with most trailing edge dimmers
- Use only lighting controls with neutral connection or controls intended for use with LED fixtures
- Reference <https://www.creelink.com/exLink.asp?266393510W31E94I48546329> for recommended dimmers
- **Operating Temperature Range:** -20°C - +35°C (-4°F - +95°F)

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Classified
- Suitable for wet locations for covered ceilings only
- ENERGY STAR® certified. Please refer to <https://www.energystar.gov/productfinder/product/certified-light-fixtures/results>
- Meets FCC Part 15, Subpart B, Class B standards for conducted and radiated emissions
- RoHS Compliant. Consult factory for additional details

Electrical Data*			
Initial Delivered Lumens	System Watts 120/277V	Total Current (A)	
		120V	277V
7L	7.5	0.07	0.03
10L	10.5	0.10	0.04
18L	22.0	0.20	0.09

* Electrical data at 25°C (77°F). Actual wattage may differ by +/- 10% when operating 120/277V +/-10%

LR6™ Ambient Adjusted Lumen Maintenance ¹					
Ambient	Initial LMF	25K hr Projected ² LMF	50K hr Projected ² LMF	75K hr Calculated ³ LMF	100K hr Calculated ³ LMF
0°C (32°F)	1.05	0.99	0.95	0.90	0.86
5°C (41°F)	1.04	0.98	0.94	0.89	0.85
10°C (50°F)	1.03	0.97	0.93	0.89	0.84
15°C (59°F)	1.02	0.96	0.92	0.88	0.84
20°C (68°F)	1.01	0.95	0.91	0.87	0.83
25°C (77°F)	1.00	0.94	0.90	0.86	0.82
30°C (86°F)	0.99	0.94	0.89	0.85	0.81
35°C (95°F)	0.98	0.93	0.88	0.84	0.80

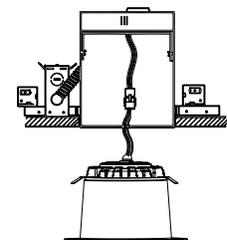
¹ Lumen maintenance values at 25°C are calculated per TM-21 based on LM-80 data and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors

² In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing (DUT) i.e. the packaged LED chip

³ In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing (DUT) i.e. the packaged LED chip

Installation

- Designed to easily install in standard 6" (152mm) downlight housings with minimum depth 6.5" (165mm) and diameter of 5.75" - 6.25" (146mm - 159mm)
- Quick install system utilizes a unique retention feature. Simply attach socket to LR6 downlight. Move light to ready position and slide into housing

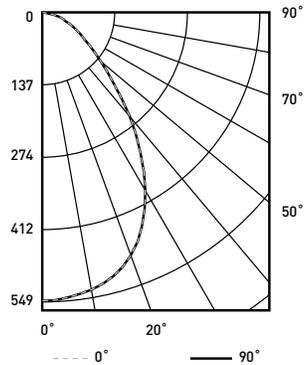


NOTE: Reference <http://lighting.cree.com/products/indoor/retrofit-downlights/lr6-series> for detailed installation instructions

Photometry

LR6-10L-35K-GU24 BASED ON CESTL REPORT TEST #: PL06010-001

Fixture photometry has been conducted by a NVLAP accredited testing laboratory in accordance with IESNA LM-79-08. IESNA LM-79-08 specifies the entire luminaire as the source resulting in a fixture efficiency of 100%.



Coefficients Of Utilization – Zonal Cavity Method				
RC %:	80			
RW %:	70	50	30	10
RCR: 0	119	119	119	119
1	111	107	103	100
2	103	96	90	85
3	95	86	79	74
4	88	78	70	65
5	82	71	63	57
6	77	65	57	51
7	72	60	52	46
8	67	55	47	42
9	63	51	44	39
10	60	48	40	36

Effective Floor Cavity Reflectance: 20%

Reference <http://lighting.cree.com/products/indoor/retrofit-downlights/lr6-series> for detailed photometric data

Average Luminance Table (cd/m²)			
Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	13,215	13,215	13,215
55°	8,204	8,204	8,204
65°	5,541	5,541	5,541
75°	3,834	3,834	3,834
85°	1,165	1,165	1,165

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	403	N/A	41.9%
0-40	605	N/A	62.9%
0-60	854	N/A	88.7%
0-90	962	N/A	100%
0-180	962	N/A	100%

Application Reference

Open Space					
Spacing	Lumens	Wattage	LPW	w/ft²	Average FC
4 x 4	1,050	10.5	100	0.63	62
6 x 6				0.29	29
8 x 8				0.16	16
10 x 10				0.11	11

10' Ceiling, 80/50/20 Reflectances, 2.5 workplane. LLF: 1.0 Initial. Open Space: 50' x 40' x 10'

Corridor					
Spacing	Lumens	Wattage	LPW	w/ft²	Average FC
4' on Center	1,050	10.5	100	0.44	27
6' on Center				0.28	17
8' on Center				0.21	13
10' on Center				0.18	11

10' Ceiling, 80/20/50 Reflectances, Light levels on the ground. LLF: 1.0 Initial. Corridor: 6' Wide x 100' Long