

# MR16 LED Lamp Specifications

Illumicare Group's new line of LED lamps use some of the most advanced components currently available:

- CREE XR-E LED Chips,
- Proprietary Fully Stepped IC Drivers,
- Advanced Light Optics,
- And Unique Thermal Control Technologies.

Using CREE XR-E chips, our LED MR16 comes packaged in a 6W power rating and are currently available in a wide range of colour temperatures including warm white (3000K) which closely mimics the light output of an incandescent bulb or quality halogen lamp.

## Failure-Resistant

By using an IC driver instead of an electrolytic capacitor, we have eliminated the most problematic part of an LED lamp.



250 - 300 Lumens  
6 Watts  
51.7mm x 49.5mm

## Color Temperatures & Beam Spreads

2700K - 15° & 45°  
3000K - 15°, 30°, & 45°  
4000K - 15° & 45°  
5500K - 15° & 45°

**Up to  
40,000  
Hours**

Illumicare's innovative new fully-stepped LED IC driver is a first for the landscape lighting industry.

When you combine the IC driver and the unique heat sink, this lamp is capable of operating at temperatures well below the heat specifications of most leading LED chips, even when sealed inside weatherproof fixtures.

Our MR16 LED is equipped with optical grade polycarbonate collimators that allow light transmission at 45°, 30° and 15° beam spreads. With our unique optimized driver that was specifically developed to address heat issues, we are able to maximize the light output of the lamp while maintaining a lamp temperature below 45°C.

The unique thermal control also ensures the lamp is safe to the touch and has a life expectancy of over 10 times that of most halogen equivalents.

Illumicare's MR16 LED retrofits into thousands of standard MR16 fixtures and housings, which enables landscape contractors and designers to achieve immediate efficiencies in terms of reduced electrical consumption and maintenance without complicated lighting system upgrades or adjustments.

Illumicare offers a 4-year warranty on all MR16 lamps.

- Over Current Protection
- Reversed Polarity Protection
- Full Solid State Components

## Performance Data

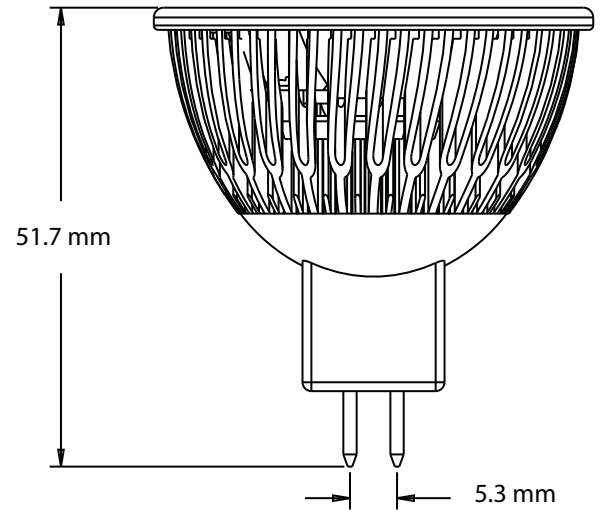
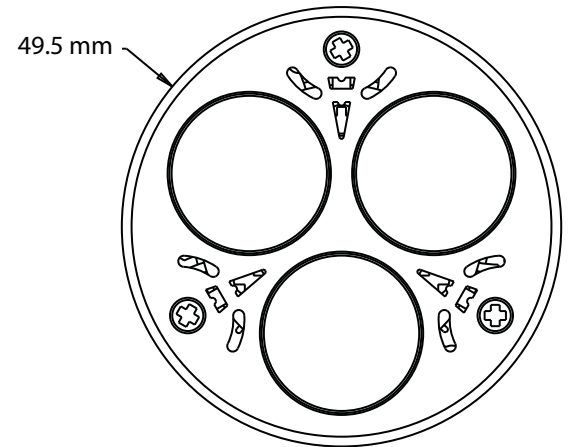
Input Voltage	Output Power	Operating Temperature	Operating Environment	L70
9 - 15V AC/DC	6W	35 - 40°C (95 - 104°F)	-20 to 40°C (-4 - 95°F)	40,000 Hours
Base	Luminous Flux	Color Temperature (CCT)	Beam Spreads	CRI
GU5.3, GX5.3	250lm - 300lm	2700K, 3000K, 4000K	15°, 30°, 45° (depending on CCT)	80 - 85%

### Main Features

- > Base: 2 pin GX5.3/GU5.3 (direct replacement for MR16 halogen lamp)
- > Dimensions: 51.7 mm x 49.5 mm
- > Input Voltage: 12V AC or DC (will operate between 9v to 15v AC)
- > Light Source: 3 X 2W CREE XR-E Power LED
- > Output Power: 6W
- > Light Output: 250 to 300 Lumens
- > Lens Beam Angle: 45° Flood, 30° Narrow Flood, or 15° Spot.
- > Colour Temperature: 2700K, 3000K (Warm White), 4000K or 5500K
- > CRI: 80-85%
- > Ambient Operating Temperature: -20°C to 40°C
- > Junction Temperature: 35°C
- > Surface Temperature of Lamp: 33°C
- > L70 Rating (effective lamp life): 40,000 Hours\*
- > Product Standards: CE & ROHS

### Environmental Specifications

- > Environmental Temperature Range Ambient: -20°C to 40°C
- > Humidity Range 0 to 95% non-condensing humidity



### Typical Applications

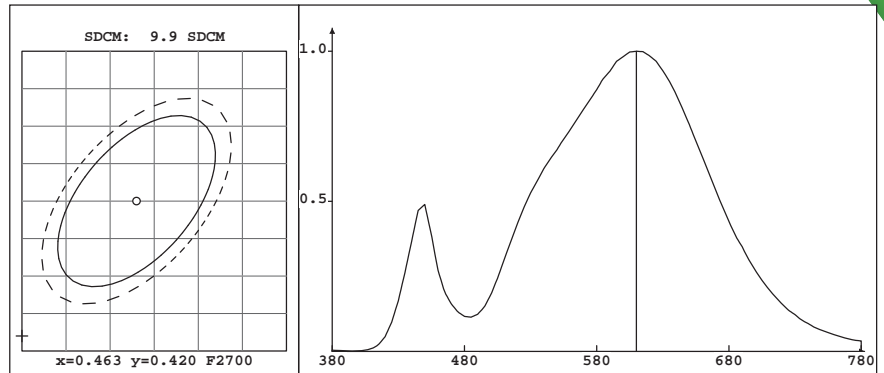
- > Landscape Lighting
- > Architectural Lighting
- > General Interior Lighting
- > Commercial Applications
- > Retail Displays (less heat than halogen)
- > Highlighting Artwork (no damaging UV)

\*LED life is defined as period to 70% lumen maintenance (L70)

# MR16 LED Lamp Chromaticity

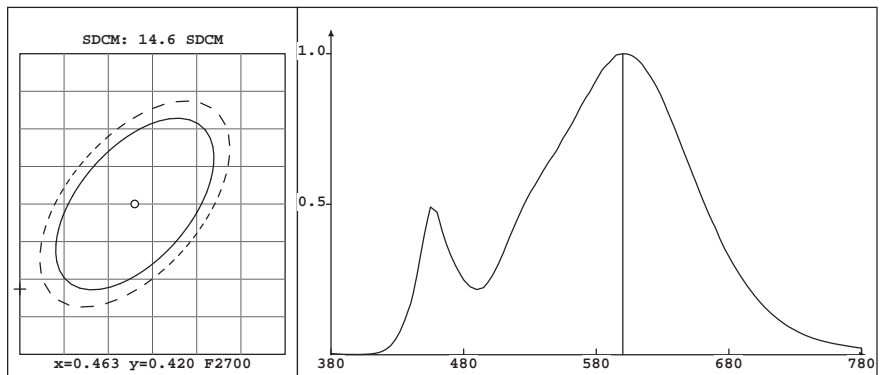
## MR16 45 FL 2700K CIE Color Specification:

- > Chromaticity coordinates:  $x=0.4464$   $y=0.4020$  /  $u=0.2576$   $v=0.3480$
- > Correlated color temperature:  $T_c = 2812K$
- > Dominant Wavelength:  $\lambda_d = 585.3nm$ , Purity: 54.7%
- > Peak Wavelength:  $\lambda_p = 610nm$ , Semibreadth:  $\Delta\lambda_p = 146.4nm$
- > Colorimetric:  $R=25.7\%$   $G=72.8\%$   $B=01.5\%$
- > Color Rendering Index:  $R_a=80.9$
- >  $R_1 = 80$   $R_2 = 87$   $R_3 = 90$   $R_4 = 79$   $R_5 = 78$   $R_6 = 81$   $R_7 = 85$   $R_8 = 66$
- >  $R_9 = 22$   $R_{10} = 67$   $R_{11} = 75$   $R_{12} = 60$   $R_{13} = 81$   $R_{14} = 94$   $R_{15} = 77$
- > Light Efficiency: 48.7 lm/W



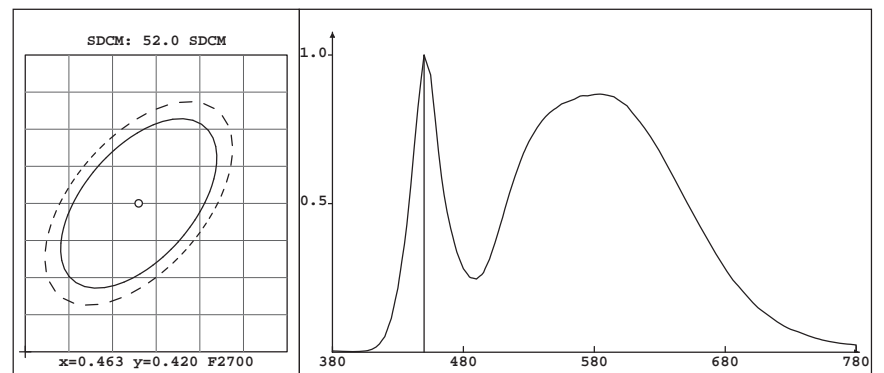
## MR16 45 FL 3000K CIE Color Specification:

- > Chromaticity coordinates:  $x=0.4374$   $y=0.4087$  /  $u=0.2489$   $v=0.3488$
- > Correlated color temperature:  $T_c = 3029K$
- > Dominant Wavelength:  $\lambda_d = 583.1nm$ , Purity: 54.0%
- > Peak Wavelength:  $\lambda_p = 600nm$ , Semibreadth:  $\Delta\lambda_p = 136.1nm$
- > Colorimetric:  $R=23.9\%$   $G=73.7\%$   $B=02.3\%$
- > Color Rendering Index:  $R_a=80.4$
- >  $R_1 = 78$   $R_2 = 89$   $R_3 = 96$   $R_4 = 76$   $R_5 = 77$   $R_6 = 84$   $R_7 = 83$   $R_8 = 59$
- >  $R_9 = 6$   $R_{10} = 73$   $R_{11} = 72$   $R_{12} = 60$   $R_{13} = 81$   $R_{14} = 98$   $R_{15} = 72$
- > Light Efficiency: 52.2 lm/W



## MR16 45 FL 4000K CIE Color Specification:

- > Chromaticity coordinates:  $x=0.3709$   $y=0.3712$  /  $u=0.2210$   $v=0.3318$
- > Correlated color temperature:  $T_c = 4233K$
- > Dominant Wavelength:  $\lambda_d = 597.8nm$ , Purity: 22.7%
- > Peak Wavelength:  $\lambda_p = 600nm$ , Semibreadth:  $\Delta\lambda_p = 138.5nm$
- > Colorimetric:  $R=23.5\%$   $G=74.3\%$   $B=02.2\%$
- > Color Rendering Index:  $R_a=80.4$
- >  $R_1 = 79$   $R_2 = 85$   $R_3 = 88$   $R_4 = 79$   $R_5 = 78$   $R_6 = 77$   $R_7 = 88$   $R_8 = 69$
- >  $R_9 = 15$   $R_{10} = 62$   $R_{11} = 75$   $R_{12} = 51$   $R_{13} = 80$   $R_{14} = 93$   $R_{15} = 76$
- > Light Efficiency: 57.9 lm/W



Not for use with electronic low-voltage transformers  
 This product may cause interference with other devices.  
 If interference occurs, change the location of the products involved.

# MR16 LED Lamp Photometrics

Available in SP (Spot), NFL (Narrow Flood), and FL (Flood)

## 6W MR16 CREE 15° Spot

Distance	Spread	Foot Candles		
		2700K	3000K	4000K
2ft	0.53	352.50	402.50	535.00
4ft	1.05	88.13	100.63	133.75
6ft	1.58	39.17	44.72	59.44
8ft	2.11	22.03	25.16	33.44
10ft	2.63	14.10	16.10	21.40
12ft	3.16	9.79	11.18	14.86
14ft	3.69	7.19	8.21	10.92
16ft	4.21	5.51	6.29	8.36
18ft	4.74	4.35	4.97	6.60
20ft	5.27	3.53	4.03	5.35
22ft	5.79	2.91	3.33	4.42
24ft	6.32	2.45	2.80	3.72
26ft	6.85	2.09	2.38	3.17
28ft	7.37	1.80	2.05	2.73
30ft	7.90	1.57	1.79	2.38

## 6W MR16 CREE 30° Narrow Flood\*

Distance	Spread	Foot Candles
		3000K
2ft	1.07	272.50
4ft	2.14	68.13
6ft	3.22	30.28
8ft	4.29	17.03
10ft	5.36	10.90
12ft	6.43	7.57
14ft	7.50	5.56
16ft	8.57	4.26
18ft	9.65	3.36
20ft	10.72	2.73
22ft	11.79	2.25
24ft	12.86	1.89
26ft	13.93	1.61
28ft	15.01	1.39
30ft	16.08	1.21

\*Output equivalent to BAB lamp

## 6W MR16 CREE 45° Flood

Distance	Spread	Foot Candles		
		2700K	3000K	4000K
2ft	1.66	60.00	62.50	72.50
4ft	3.31	15.00	15.63	18.13
6ft	4.97	6.67	6.94	8.06
8ft	6.63	3.75	3.91	4.53
10ft	8.28	2.40	2.50	2.90
12ft	9.94	1.67	1.74	2.01
14ft	11.60	1.22	1.28	1.48
16ft	13.25	0.94	0.98	1.13
18ft	14.91	0.74	0.77	0.90
20ft	16.57	0.60	0.63	0.73
22ft	18.23	0.50	0.52	0.60
24ft	19.88	0.42	0.43	0.50
26ft	21.54	0.36	0.37	0.43
28ft	23.20	0.31	0.32	0.37
30ft	24.85	0.27	0.28	0.32

### Why Illumicare?

Illumicare Group Limited is a privately held LED research and development firm. For over 15 years, Illumicare's lighting professionals have specialized in developing and supplying high-efficiency lighting for commercial and outdoor use.

As a manufacturer of innovative LED products, our focus is eliminating the barriers involved in engineering superior LED lighting technologies and adapting to environmental demands to produce an innovative, energy-efficient lamp for both new and retrofit lighting installations.

