

# KR Series

KR8™ LED Specification Downlights – Round 8"

## Product Description

The KR8™ LED specification downlights feature Cree TrueWhite® Technology and deliver beautiful, high-quality light with efficacy up to 77 lumens per watt and, utilizing Cree WaveMax® Technology, the KR8™ downlight offers unprecedented beam control as tight as 15 degrees. Designed for new construction applications with high ceilings, the KR Series is available in a variety of color temperatures.

## Performance Summary

Utilizes Cree WaveMax® Technology
Utilizes Cree TrueWhite® Technology
Made in the U.S.A. of U.S. and imported parts
<b>Initial Delivered Lumens:</b> 6,000-8,000 lumens; Delivered lumen output is typical when using a SSGC type reflector
<b>Input Power:</b> 78-118 watts
<b>CRI:</b> 90
<b>CCT:</b> 3000K, 3500K, 4000K
<b>Controls:</b> 0/1-10V dimming to 1%
<b>Limited Warranty*:</b> 10 years on KR8™ luminaires

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

## Accessories

Field-Installed	
<b>C-Channel Hanger Bars</b> RBH30C - Pair of 30" (762mm) rigid 3/4" x 1/2" (19mm x 13mm) C-Channel bars RBH24C-1 - Pair of 24" (610mm) x 1-1/2" (38mm) x 1/2" (13mm) standard C-Channel bars	<b>T-Bar Clips</b> RARC7 - Set of four - For use with RBH24C-1 hanger bars

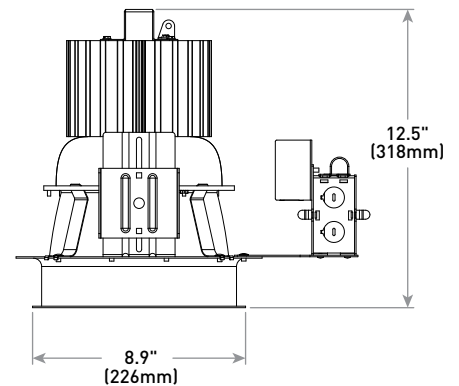
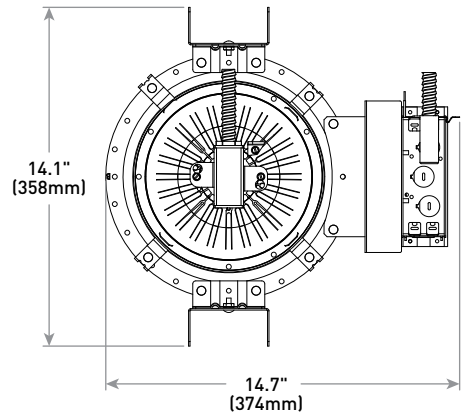
## Ordering Information

Fully assembled luminaire is composed of two components that must be ordered separately:  
Example: **Frame:** KR8-60L-10V-FR + **Light Engine/Trim:** KR8-00L-15D-30K-SSGC-FF

Light Engine/Trim (Frame must be ordered separately)					
KR8	00L				
Series	Initial Delivered Lumens	Optic	CCT	Reflector Finish	Flange Finish
KR8	00L - Used for both 60L and 80L initial delivered lumen packages	15D 15° Beam Angle 25D 25° Beam Angle 40D 40° Beam Angle	30K 3000K 35K 3500K 40K 4000K	SSGC Soft Satin Glow, Clear	FF Matches Reflector WF White Paint

Frame (Light Engine/Trim must be ordered separately)						
KR8					10V	FR
Series	Size	Reflector	Initial Delivered Lumens*	Voltage	Controls	Frame
KR	8 8 inch	Blank Round	60L 78W, 6,000 Lumens – 77 LPW 80L 118W, 8,000 Lumens – 68 LPW	Blank Universal 120-277V	10V 0/1-10V Dimming	FR

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens  
NOTE: Price adder may apply depending on configuration



## KR8™ LED Specification Downlight – Round 8"

### Product Specifications

#### CREE WAVEMAX® TECHNOLOGY

Featuring up to 90% optical efficiency and precise control, Cree WaveMax® Technology provides unmatched comfort and decreased LED source luminance by smoothly spreading brightness over a broader area. When integrated with luminous surfaces made of a polymer medium engineered with DiamondFacet™ optical elements, extremely high efficacy luminaires are the result- ultimately creating more visually comfortable and appealing environments while exceeding illumination performance.

#### 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 & MATERIAL

- Initial color within a 4-step MacAdam Ellipse
- Optical grade acrylic optics and lenses
- Low brightness parabolic spun Alzak aluminum cone, 0.06" (2mm) thick with polished radius and continuous self-flange
- Soft Satin Glow Clear finish, standard
- 2" (51mm) aperture throat to accommodate all standard and up to 2" (51mm) thick ceilings and provide flexibility in mounting within grid
- Provided with quick mounting brackets to accommodate rigid conduit, bar stock, wire or C-Channel bar hangers
- Light engine, optics, and driver accessible from below ceiling

#### ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V, 50/60Hz
- **Power Factor:** > 0.9 at 120V and full load
- **Total Harmonic Distortion:** < 20% at full load
- **Operating Temperature Range:** -18°C - +35°C (0°F - +95°F)
- **10V Source Current:** 0.10mA

#### CONTROLS

- Continuous dimming to 1% with 0-10V DC control protocol. Reference <https://www.creelink.com/exLink.asp?259303200C43P94I48511307> for additional details

#### REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for thru-wiring 8#12AWG-90°C
- Suitable for damp locations
- Designed for indoor use
- Thermally protected Type NON-IC in accordance with Article 410 of the NEC and UL 1598
- Meets FCC Part 15 standards for conducted and radiated emissions
- Meets Buy American requirements within ARRA
- EnergyStar® Qualified. Please refer to [www.energystar.gov](http://www.energystar.gov) for most current information
- RoHS compliant. Consult factory for additional details

Recommended KR8 Series Lumen Maintenance Factors (LMF) <sup>1</sup>					
Ambient	Initial LMF	25K hr Projected <sup>2</sup> LMF	50K hr Calculated <sup>3</sup> LMF	75K hr Calculated <sup>3</sup> LMF	100K hr Calculated <sup>3</sup> LMF
5°C (41°F)	1.04	0.97	0.92	0.87	0.82
10°C (50°F)	1.03	0.96	0.91	0.86	0.81
15°C (59°F)	1.02	0.95	0.90	0.85	0.81
20°C (68°F)	1.01	0.94	0.89	0.84	0.80
25°C (77°F)	1.00	0.93	0.88	0.84	0.79
30°C (86°F)	0.99	0.92	0.87	0.83	0.78
35°C (95°F)	0.98	0.91	0.87	0.82	0.77

<sup>1</sup>Lumen maintenance values at 25°C (77°F) are calculated per TM-21 based on LM-80 data and in-situ luminaire testing

<sup>2</sup>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

<sup>3</sup>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

- Recommended ceiling cutout 8.3" (210mm)



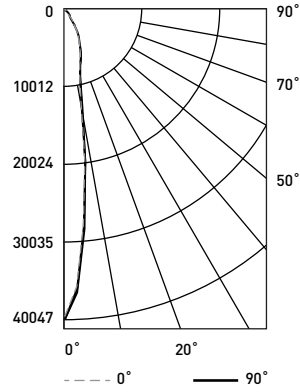
**Note:** Requires marked spacing: 48" (1219mm) x 24" (600mm) x 12" (300mm), 48" (1219mm) luminaire to luminaire, 24" (600mm) luminaire to side wall, 12" (300mm) above luminaire

KR8™ LED Specification Downlight – Round 8"

**Photometry**

**KR8-00L-15D-35K-SSGC-FF W/KR8-80L-10V-FR BASED ON RESTL REPORT TEST #: PL5795-001B**

Luminaire 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 luminaire efficiency of 100%



RESTL Test Report #: PL5795-001B  
 KR8-00L-15D-35K-SSGC-FF  
 w/KR8-80L-10V-FR  
 Initial Delivered Lumens: 8,249  
 Efficacy: 71.0 LPW  
 S/M: 0.26

Coefficients Of Utilization – Zonal Cavity Method				
RC %:	80			
RW %:	70	50	30	10
RCR: 0	119	119	119	119
1	114	111	109	107
2	109	105	101	98
3	104	98	94	90
4	100	93	88	84
5	96	88	83	79
6	92	84	79	75
7	88	80	75	71
8	85	76	71	68
9	82	73	68	65
10	79	70	65	62

Effective Floor Cavity Reflectance: 20%

Average Luminance Table (cd/m²)			
Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	26,411	26,362	27,522
55°	17,447	17,282	17,979
65°	4,247	4,164	4,263
75°	1,842	1,734	1,706
85°	1,609	1,247	1,247

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	6,449	N/A	78.2%
0-40	7,469	N/A	90.5%
0-60	8,173	N/A	99.1%
0-90	8,249	N/A	100.0%
0-180	8,249	N/A	100.0%

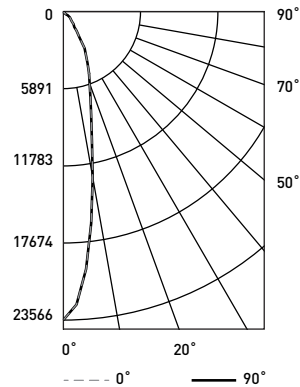
Cone of Light		
Distance from Workplane	Initial Nadir	Beam Diameter
10' (3.0m)	401 fc (4,316 lx)	2.6' (0.8m)
15' (4.6m)	178 fc (1916 lx)	3.9' (1.2m)
20' (6.1m)	100 fc (1076 lx)	5.1' (1.6m)
25' (7.6m)	64 fc (689 lx)	6.5' (2.0m)
30' (9.1m)	45 fc (484 lx)	7.7' (2.3m)

Reference <http://lighting.cree.com/products/indoor/new-construction-downlights/kr-series> for detailed photometric data

**Photometry**

**KR8-00L-25D-35K-SSGC-FF W/KR8-80L-10V-FR BASED ON RESTL REPORT TEST #: PL5950-001B**

Luminaire 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 luminaire efficiency of 100%



RESTL Test Report #: PL5950-001B  
 KR8-00L-25D-35K-SSGC-FF  
 w/KR8-80L-10V-FR  
 Initial Delivered Lumens: 8,218  
 Efficacy: 71.0 LPW  
 S/M: 0.38

Coefficients Of Utilization – Zonal Cavity Method				
RC %:	80			
RW %:	70	50	30	10
RCR: 0	119	119	119	119
1	114	111	109	106
2	108	103	100	96
3	103	97	92	88
4	98	91	85	81
5	94	86	80	76
6	89	81	75	71
7	85	77	71	67
8	82	73	67	63
9	78	69	64	60
10	75	66	61	57

Effective Floor Cavity Reflectance: 20%

Average Luminance Table (cd/m²)			
Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	41,650	41,972	41,466
55°	22,318	22,275	22,214
65°	5,623	5,773	5,648
75°	2,140	2,126	2,086
85°	1,247	925	885

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	6,013	N/A	72.9%
0-40	7,162	N/A	86.8%
0-60	8,152	N/A	98.8%
0-90	8,252	N/A	100.0%
0-180	8,252	N/A	100.0%

Cone of Light		
Distance from Workplane	Initial Nadir	Beam Diameter
10' (3.0m)	236 fc (2,540 lx)	3.7' (1.1m)
15' (4.6m)	105 fc (1,130 lx)	5.6' (1.7m)
20' (6.1m)	59 fc (635 lx)	7.4' (2.3m)
25' (7.6m)	38 fc (409 lx)	9.2' (2.8m)
30' (9.1m)	26 fc (280 lx)	11.2' (3.4m)

Reference <http://lighting.cree.com/products/indoor/new-construction-downlights/kr-series> for detailed photometric data

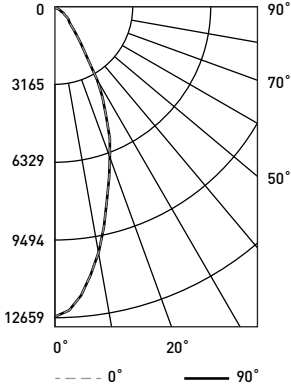


KR8™ LED Specification Downlight – Round 8"

**Photometry**

**KR8-00L-40D-35K-SSGC-FF W/KR8-80L-10V-FR BASED ON RESTL REPORT TEST #: PL6079-001B**

Luminaire 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 luminaire efficiency of 100%



RESTL Test Report #: PL6079-001B  
 KR8-00L-40D-35K-SSGC-FF  
 w/KR8-80L-10V-FR  
 Initial Delivered Lumens: 7,886  
 Efficacy: 68.0 LPW  
 S/M: 0.64

Coefficients Of Utilization – Zonal Cavity Method				
RC %:	80			
RW %:	70	50	30	10
RCR: 0	119	119	119	119
1	113	111	108	106
2	108	103	99	95
3	102	96	91	86
4	97	89	84	79
5	92	84	78	73
6	87	79	73	68
7	83	74	68	64
8	79	70	64	60
9	76	66	60	56
10	72	63	57	53

Effective Floor Cavity Reflectance: 20%

Average Luminance Table (cd/m²)				
		Horizontal Angle		
		0°	45°	90°
Vertical Angle	45°	39,979	40,227	39,944
	55°	22,911	23,192	23,057
	65°	6,121	6,187	6,420
	75°	2,397	2,438	2,560
	85°	1,207	1,207	1,247

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	5,598	N/A	70.8%
0-40	6,826	N/A	86.4%
0-60	7,793	N/A	98.6%
0-90	7,903	N/A	100.0%
0-180	7,903	N/A	100.0%

Cone of Light		
Distance from Workplane	Initial Nadir	Beam Diameter
10' (3.0m)	127 fc (1,367 lx)	6.3' (1.9m)
15' (4.6m)	56 fc (603 lx)	9.5' (2.9m)
20' (6.1m)	32 fc (344 lx)	12.6' (3.8m)
25' (7.6m)	20 fc (215 lx)	16.3' (5.0m)
30' (9.1m)	14 fc (151 lx)	19.1' (5.8m)

Reference <http://lighting.cree.com/products/indoor/new-construction-downlights/kr-series> for detailed photometric data

**Application Reference**

Based on KR8-60L-10V-FR w/KR8-00L-40D-35K-SSGC-FF luminaire

Open Space						
Spacing	Lumens	Wattage	LPW	w/ft²	Average FC	# Luminaires
8 x 8	6,000	78	77	1.3	100	169
10 x 10				0.78	62	100
12 x 12				0.63	46	81
14 x 14				0.38	31	49

20" Ceiling, 80/50/20 Reflectances, 2.5' workplane. LLF: 1.0 Initial. Open Space: 100' x 100' x 20'

Based on KR8-80L-10V-FR w/KR8-00L-25D-35K-SSGC-FF luminaire

Open Space						
Spacing	Lumens	Wattage	LPW	w/ft²	Average FC	# Luminaires
10 x 10	8,000	118	68	0.85	61	100
12 x 12				0.82	54	64
14 x 14				0.63	41	49
16 x 16				0.46	30	36

30" Ceiling, 80/50/20 Reflectances, 2.5' workplane. LLF: 1.0 Initial. Open Space: 96' x 96' x 30'