

# KR Series

KR6™ LED Specification Downlight – Round 6"

## Product Description

The KR6™ LED specification downlight features Cree TrueWhite® Technology and delivers beautiful, high-quality light with efficacy up to 76 lumens per watt. Designed for new construction applications, the KR Series is available in a variety of color temperatures, round and square trims with high-quality anodized aluminum reflector finishes, a sloped ceiling adaptor accessory, and a variety of dimming options including Cree Sunset Dimming Technology which provides rich, warm light that transitions from 2700K to 1800K as naturally as an incandescent source.

## Performance Summary

Utilizes Cree TrueWhite® Technology
<b>Initial Delivered Lumens:</b> 700-5,300 lumens; Delivered lumen output is typical when using a SSGC type reflector
<b>Input Power:</b> 13-87 watts
<b>Emergency Performance:</b> Up to 1,210 Lumens; 10W; Minimum 90 Minutes
<b>CRI:</b> 90
<b>CCT:</b> 2700K, 3000K, 3500K, 4000K, 5000K
<b>Controls:</b> Triac, 0/1-10V; See control availability chart on page 3
<b>Limited Warranty*:</b> 10 years on KR6™ luminaire
<b>Limited Warranty Emergency Back Up (EB) Battery:</b> 1 Year Battery Back Up. Test regularly in accordance with local codes

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

## Accessories

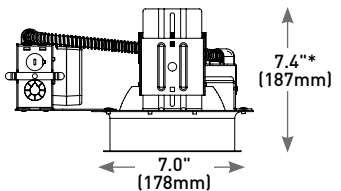
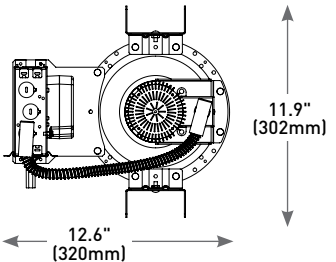
Field-Installed		
<b>Sloped Ceiling Adaptor</b> KRKS6**WW ** 0-35 (order in 5 degree increments)	<b>C-Channel Hanger Bars</b> RBH30C - Pair of 30" [762mm] rigid 3/4" x 1/2" [19mm x 13mm] C-Channel bars RBH24C-1 - Pair of 24" [610mm] x 1-1/2" [38mm] x 1/2" [13mm] standard C-Channel bars	<b>T-Bar Clips</b> RARC7 - Set of four - For use with RBH24C-1 hanger bars <b>Trim Ring</b> KR6TA - White beauty ring to cover pan head fasteners on KR6T reflector

## Ordering Information

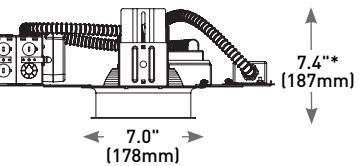
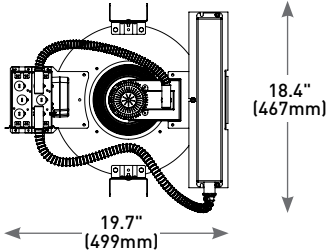
Fully assembled luminaire is composed of two components that must be ordered separately:  
Example: **Housing:** KR6-20L-35K-120V-10V + **Reflector:** KR6T-SSGC-FF

Reflector (Housing must be ordered separately)			
<b>KR6T</b>			
Series	Reflector Finish	Flange Finish	Options
<b>KR6T</b> Standard Trim - Reflector attaches to housing with pan head fasteners and keyhole slots	<b>SSGC</b> Soft Satin Glow, Clear	<b>FF</b> Matches Reflector <b>WF</b> White Paint	<b>WW</b> Wall Wash

Housing (Reflector must be ordered separately)								
Series	Size	Reflector	Initial Delivered Lumens	Optic	CCT	Voltage	Controls	Options
KR	6 inch	Blank Round	<b>9L</b> 13W, 700 Lumens – 54 LPW <b>13L</b> 18W, 1,100 Lumens – 61 LPW <b>20L</b> 30W, 1,700 Lumens – 57 LPW <b>30L</b> 39W, 2,550 Lumens – 65 LPW <b>40L</b> 44W, 3,350 Lumens – 76 LPW <b>60L</b> 87W, 5,300 Lumens – 61 LPW - Available on 120V and 277V only	Blank 70° Beam Angle	<b>27K</b> - 2700K <b>120V</b> 120 Volts <b>277V</b> 277 Volts <b>347V</b> 347 Volts <b>30K</b> 3000K <b>35K</b> 3500K <b>40K</b> 4000K <b>50K</b> 5000K - Available on 40L and 60L only	<b>120V</b> 120 Volts <b>277V</b> 277 Volts <b>347V</b> 347 Volts	<b>Blank</b> - For standard control offering refer to control availability chart on page 3 <b>10V 0/1-10V Dimming</b> - Refer to control availability chart on page 3	<b>WD Sunset Dim</b> - 9L and 13L @ 27K with Triac Dimming only <b>EB7 Emergency Backup</b> - Minimum 90 minutes - 120V, 277V only - Minimum operating temperature: 0°C (32°F)



## Emergency Backup



\* Add 1.5" (38mm) for 60L Initial Delivered Lumens



Rev. Date: V13 02/13/2018



# KR6™ LED Specification Downlight – Round 6"

## 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 & MATERIAL

- 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 3" (76mm) thick ceilings and provide flexibility in mounting within grid
- Provided with quick mounting brackets for optional carrying channels
- Light engine, optics, and driver accessible from below ceiling

### ELECTRICAL SYSTEM

- **Power Factor:** > 0.9 for 120V and 277V
- **Total Harmonic Distortion:** < 20% at full load
- **Input Power:** 120, 277V, or 347V, 50/60Hz
- **Operating Temperature Range:** -18°C - +40°C (0°F - +104°F); minimum operating temperature with EB7 option is 0°C (32°F)
- **10V Source Current:** 9L & 13L: 0.15mA; 20L-40L: 2.2mA; 60L: 0.11mA

### CONTROLS

- For standard control offering refer to control availability chart on page 3
- For use with Class 2 dimming systems only. Reference <http://lighting.cree.com/products/indoor/new-construction-downlights/kr-series> for recommended dimming controls and wiring diagrams

### 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, Subpart B, Class A standards for conducted and radiated emissions
- EnergyStar® certified with the exception of 9L and 13L. Please refer to <https://www.energystar.gov/productfinder/product/certified-light-fixtures/> results for most current information
- RoHS compliant. Consult factory for additional details

KR Series Ambient Adjusted Lumen Maintenance <sup>1</sup>						
Ambient	Initial Delivered Lumens	Initial LMF	25K hr Projected <sup>2</sup> LMF	50K hr Projected <sup>2</sup> LMF	75K hr Calculated <sup>3</sup> LMF	100K hr Calculated <sup>3</sup> LMF
5°C (41°F)	9L and 13L	1.05	1.04	1.03	1.03	1.02
	20L and 30L	1.03	0.99	0.94	0.90	0.86
	40L and 60L	1.03	0.96	0.90	0.83	0.77
10°C (50°F)	9L and 13L	1.04	1.03	1.03	1.02	1.02
	20L and 30L	1.02	0.97	0.93	0.89	0.85
	40L and 60L	1.03	0.95	0.88	0.82	0.76
15°C (59°F)	9L and 13L	1.03	1.02	1.02	1.01	1.01
	20L and 30L	1.01	0.96	0.91	0.88	0.84
	40L and 60L	1.02	0.94	0.87	0.81	0.75
20°C (68°F)	9L and 13L	1.02	1.01	1.00	1.00	0.99
	20L and 30L	1.01	0.95	0.90	0.87	0.83
	40L and 60L	1.01	0.93	0.86	0.80	0.74
25°C (77°F)	9L and 13L	1.00	1.00	0.99	0.99	0.99
	20L and 30L	1.00	0.94	0.89	0.86	0.82
	40L and 60L	1.00	0.92	0.85	0.79	0.74
30°C (86°F)	9L and 13L	0.99	0.99	0.98	0.98	0.98
	20L and 30L	0.97	0.93	0.88	0.85	0.81
	40L and 60L	0.98	0.91	0.84	0.78	0.73
35°C (95°F)	9L and 13L	0.98	0.97	0.97	0.97	0.97
	20L and 30L	0.96	0.92	0.87	0.84	0.80
	40L and 60L	0.96	0.90	0.83	0.77	0.72
40°C (104°F)	9L and 13L	0.97	0.96	0.96	0.96	0.95
	20L and 30L	0.95	0.90	0.86	0.83	0.79
	40L and 60L	0.95	0.88	0.82	0.76	0.71

<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. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors

<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 6.5" (165mm)



**Note:** 30L and 40L versions require marked spacing: 24" (600mm) x 12" (300mm) x 1/2" (12mm), 24" (600mm) luminaire to luminaire, 12" (300mm) luminaire to side wall, 1/2" (12mm) above luminaire  
60L versions require marked spacing: 48" (1219mm) x 24" (600mm) x 1" (25mm), 48" (1219mm) luminaire to luminaire, 24" (600mm) luminaire to side wall, 1" (25mm) above luminaire

## Wall Wash

Based on KR6-30L-27K-120V W/KR6T-SSGC-FF-WW Luminaire

Down from Ceiling	2' from Wall				3' from Wall				4' from Wall			
	3' Centers		4' Centers		3' Centers		4' Centers		3' Centers		4' Centers	
	Center Line (FC)	Midpoint (FC)	Center Line (FC)	Midpoint (FC)	Center Line (FC)	Midpoint (FC)	Center Line (FC)	Midpoint (FC)	Center Line (FC)	Midpoint (FC)	Center Line (FC)	Midpoint (FC)
1'	20	20	25	11	10	10	10	7	6	6	5	5
2'	49	40	44	23	27	28	24	19	16	17	13	13
3'	49	44	43	28	29	31	24	22	23	24	18	19
4'	49	51	39	36	30	31	24	23	22	24	18	19
5'	42	44	29	36	34	35	28	27	22	23	18	18
6'	36	36	23	28	34	35	26	28	25	26	20	21
7'	29	30	19	23	31	32	25	26	27	28	22	23
8'	24	25	16	18	27	28	23	23	26	27	21	22
9'	20	22	13	16	24	25	20	20	24	25	20	20
10'	17	18	11	13	20	22	18	18	21	23	18	18

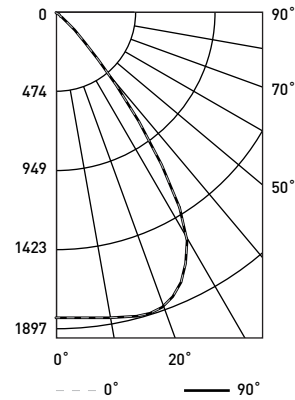


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## Photometry

### KR6-30L-27K-120V W/KR6T-SSGC-FF BASED ON UL REPORT TEST #: 157473

Luminaire photometry has been conducted 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%.



UL Test Report #: 157473  
 KR6-30L-27K-120V  
 w/KR6T-SSGC-FF  
 Initial Delivered Lumens: 2,479  
 Efficacy: 66 LPW  
 S/M: 1.2

Coefficients Of Utilization – Zonal Cavity Method				
RC %:	80			
RW %:	70	50	30	10
RCR: 0	119	119	119	119
1	113	110	108	105
2	107	102	97	94
3	101	94	89	84
4	95	87	81	77
5	90	81	75	70
6	85	75	69	64
7	80	70	64	59
8	76	66	59	55
9	72	61	55	51
10	68	58	51	47

Effective Floor Cavity Reflectance: 20%

Average Luminance Table (cd/m²)			
Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	19,317	19,317	19,317
55°	4,459	4,459	4,459
65°	2,074	2,074	2,074
75°	931	931	931
85°	0	0	0

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	1,527	N/A	61.5%
0-40	2,206	N/A	88.8%
0-60	2,462	N/A	99.1%
0-90	2,483	N/A	100.0%
0-180	2,483	N/A	100.0%

Cone of Light		
Distance from Workplane	Footcandles	Beam Diameter
6' (1.8m)	51	7.3' (2.2m)
8' (2.4m)	29	9.7' (3.0m)
10' (3.0m)	18	12.3' (3.7m)
12' (3.7m)	13	14.5' (4.4m)
14' (4.3m)	9	17.4' (5.3m)

For exact photometric data, please reference our available IES and LM-79 test results at <http://lighting.cree.com/products/indoor/new-construction-downlights/kr-series>

## Application Reference

Based on KR6-30L-27K-120V W/KR6T-SSGC-FF Luminaire

Open Space					
Spacing	Lumens	Wattage	LPW	w/ft²	Average FC
4 x 4	2,550	39	65	2.34	155
6 x 6				1.09	74
8 x 8				0.59	42
10 x 10				0.39	27

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	2,550	39	65	1.63	77
6' on Center				1.11	52
8' on Center				0.78	37
10' on Center				0.65	31

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

## Control Availability Chart

Initial Delivered Lumens	Non Dimming			Triac Dimming to 5%			0/1-10V Dimming to 10%		
	120V	277V	347V	120V	277V	347V	120V	277V	347V
9L	N/A	S - Leave control Blank when ordering	N/A	S - Leave control Blank when ordering	N/A	N/A	0 - Order w/10V	0 - Order w/10V	0 - Order w/10V
13L	N/A	S - Leave control Blank when ordering	N/A	S - Leave control Blank when ordering	N/A	N/A	0 - Order w/10V	0 - Order w/10V	0 - Order w/10V
20L	N/A	N/A	N/A	N/A	N/A	N/A	S - Order w/10V	S - Order w/10V	S - Order w/10V
30L	N/A	N/A	N/A	N/A	N/A	N/A	S - Order w/10V	S - Order w/10V	S - Order w/10V
40L	N/A	N/A	N/A	N/A	N/A	N/A	S - Order w/10V	S - Order w/10V	S - Order w/10V
60L	N/A	N/A	N/A	N/A	N/A	N/A	S - Order w/10V	S - Order w/10V	N/A

S = Standard Offering  
 0 = Optional Offering

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