

# ESA Series

ESA™ LED Architectural Downlight – Round 6" Aperture – 14 & 28 LEDs

## Product Description

Downlight luminaire with 6" (152mm) round aperture, designed for 28 high output LEDs maximum. Two piece optical assembly provides a broad, even light distribution, combining low brightness, with maximum visual cutoff and efficiency. Three light distributions available – narrow, medium, and wide.

## Performance Summary

Patented NanoOptic® Product Technology

Made in the U.S.A. of U.S. and imported parts

**CRI:** Refer to chart on page 2

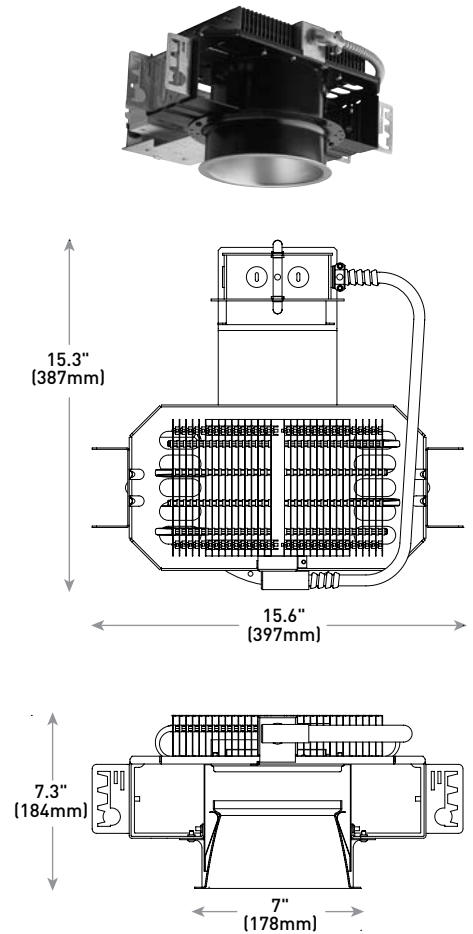
**CCT:** 2700K, 3000K, 3500K (standard) , 4000K

**Limited Warranty†:** 10 years on luminaire

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

## Accessories

Companion Luminaires	
<b>LED Adjustable Downlight</b> ESA-ADR-NDADJ-6-14-D-SSGCFF	<b>LED Lensed Wallwash</b> ESA-ADR-LWW-6-14-D-SGCCFF



## Ordering Information

Example: ESA-ADR-ND-6-14-D-120-SSGC-FF-C

ESA	ADR	MD	6	D					C	
Family Name	Type	Optic	Aperture Size	LED Count	Series	Voltage	Trim Finish <sup>1</sup>	Flange Finish	Drive Current	Options
ESA	ADR Architectural Downlight Round	ND Narrow MD Medium WD Wide	6 6 inch	14 28	D	120 120V 230 230V 277 277V	SSGC Clear SSGGR Graphite SSGGBR Bronze SSGCG Champagne Gold SSGPE Pewter SSGWH Wheat SSGB Black W White Paint	FF Flat Flange WF White Flange XF Custom Color Flange	C 525mA	27K 2700K <sup>2</sup> - 90+ CRI 30K 3000K <sup>2</sup> - 90+ CRI 40K 4000K <sup>2</sup> - 80+ CRI DH Dimming - Optional Lutron® Hi-Lume® driver available ES Flangeless FS Fusing LM Shielding Media SCA Slope Ceiling Adapter MC Mounting Channels

1. SSG = Satin Glow Anti-Iridescent  
2. Color temperature per luminaire; 3500K Standard



US: [lighting.cree.com](http://lighting.cree.com)

T (800) 236-6800 F (262) 504-5415

Rev. Date: V2 R1 10/03/2018

Canada: [www.cree.com/canada](http://www.cree.com/canada)



T (800) 473-1234 F (800) 890-7507

## Product Specifications


### CONSTRUCTION & MATERIALS

- 3500K is supplied with standard fixture when the color is not specified
- Luminaire uses 14 or 28 high output LEDs, tolerance to be within a 2-step MacAdam Ellipse
- Tilted Axial and/or Axial TIR NanoOptic® on each individual LED to maximize light delivered through aperture
- Low brightness parabolic spun Alzak aluminum cone, 0.06" (2mm) thick with polished radius and continuous self-flange
- Soft Satin Glow Clear finish, standard. Precision nickel plated cone retainers assure that the lower cone is held in position
- Formed cone blackout baffle to minimize stray light
- 2" (51mm) aperture throat to accommodate all standard and extra-thick ceilings and provide flexibility in mounting within grid
- Custom heat pipe to optimize cooling of LEDs
- Provided with quick mounting brackets for optional carrying channels
- Light engine, optics, and driver accessible from above or below ceiling

### ELECTRICAL SYSTEM

- High efficiency constant current drivers 525mA drive current
- **Input Voltage:** 120V (50-60Hz), 230V (50Hz), or 277V (50-60Hz)
- 0-10V dimming, standard. 100%-10% full-range continuous dimming
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load

### REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for damp locations
- Meets Buy American requirements within ARRA
-  **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov)

Electrical Data*			
LED Count	System Watts 120-277V	Total Current (A)	
		120V	277V
0-10V Dimming, 525mA			
14	28	0.23	0.10
28	52	0.43	0.19
Lutron® Hi-Lume®, 525mA			
14	30	0.23	0.10
28	55	0.31	0.14

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

ESA Series Lumen Maintenance Factors (LMF) <sup>1</sup>					
Ambient	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)	1.04	1.01	0.99	0.98	0.96
10°C (50°F)	1.03	1.00	0.98	0.97	0.95
15°C (59°F)	1.02	0.99	0.97	0.96	0.94
20°C (68°F)	1.01	0.98	0.96	0.95	0.93
25°C (77°F)	1.00	0.97	0.95	0.94	0.92

<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)

Color Tolerance			
Color	Target CCT	Tolerance	CRI
4000K	3899	+/- 75K	80
3500K	3388	+/- 63K	80
3000K	2993	+/- 50K	90
2700K	2755	+/- 42K	90

### Installation

- Recommended ceiling cutout 6.5" (16mm)



ESA™ LED Architectural Downlight – Round 6" Aperture – 14 & 28 LEDs

**Photometry**

All published luminaire photometric testing performed to IESNA LM-79-08 standards

<b>Narrow Distribution without Lens Media</b>			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	1,110	1,207	1,609
28	2,123	2,308	3,077

<b>Narrow Distribution with Lens Media</b>			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	918	998	1,330
28	1,887	2,051	2,735

<b>Medium Distribution without Lens Media</b>			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	1,081	1,175	1,566
28	2,123	2,308	3,077

<b>Medium Distribution with Lens Media</b>			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	888	965	1,287
28	1,829	1,988	2,650

<b>Wide Distribution without Lens Media</b>			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	1,007	1,094	1,459
28	1,976	2,148	2,864

<b>Wide Distribution with Lens Media</b>			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	814	885	1,180
28	1,769	1,923	2,564

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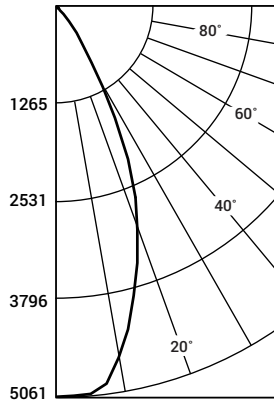


ESA™ LED Architectural Downlight – Round 6" Aperature – 14 & 28 LEDs

**Photometry**

All published luminaire photometric testing performed to IESNA LM-79-08 standards

**MD**



ITL Test Report #: ITL76360  
 ESA-ADR-MD-6-28-C-120-SSGC-FF-C-35K  
 Initial Delivered Lumens: 3,224  
 Efficacy: 63 Lm/W  
 S/M: 0.74

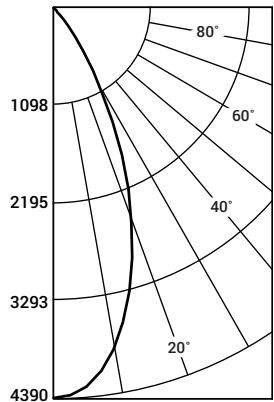
Candlepower Summary	
Angle	Mean CP
0°	5454
5°	5438
15°	4180
25°	2350
35°	632
45°	70
55°	20
65°	7
75°	2
85°	0
90°	0

Cone of Light		
Distance from Workplane	Footcandles	Beam Diameter
6'	146	4.5'
8'	82	5.8'
10'	52	7.3'
12'	36	8.8'
14'	27	10.3'

Zonal Lumen Summary	
Verticle Angle	Average
45°	5311
55°	187
65°	889
75°	415
85°	0

Medium Distribution without Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	1,081	1,175	1,566
28	2,123	2,308	3,077

**MD LENSED**



ITL Test Report #: ITL76359  
 ESA-ADR-MD-6-28-C-120-SSGC-FF-C-35KLM  
 Initial Delivered Lumens: 2,922  
 Efficacy: 58 Lm/W  
 S/M: 0.72

Candlepower Summary	
Angle	Mean CP
0°	4841
5°	4721
15°	3641
25°	2012
35°	661
45°	118
55°	29
65°	8
75°	3
85°	0
90°	0

Cone of Light		
Distance from Workplane	Footcandles	Beam Diameter
6'	129	4.3'
8'	73	5.8'
10'	46	7.2'
12'	32	8.6'
14'	24	9.9'

Zonal Lumen Summary	
Verticle Angle	Average
45°	8952
55°	2712
65°	1015
75°	622
85°	0

Medium Distribution with Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	888	965	1,287
28	1,829	1,988	2,650

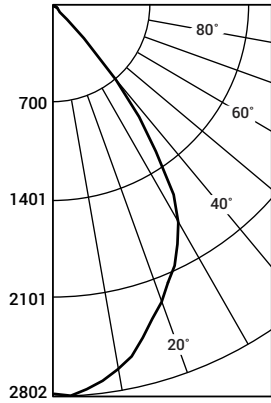
IES Files  
 To obtain an IES file specific to your project consult: <http://www.cree.com/lighting/tools-and-support/interior-ies-configuration-tool>



**Photometry**

All published luminaire photometric testing performed to IESNA LM-79-08 standards

**WD**



ITL Test Report #: ITL76362  
 ESA-ADR-WD-6-28-C-120-SSGC-FF-C-35K  
 Initial Delivered Lumens: 2,952  
 Efficacy: 58 Lm/W  
 S/M: 1.00

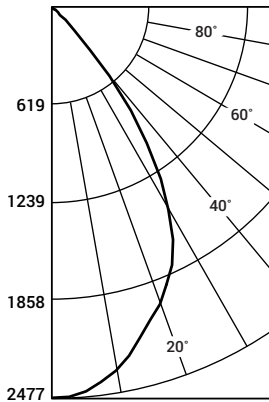
Candlepower Summary	
Angle	Mean CP
0°	2875
5°	2851
15°	2519
25°	2056
35°	1293
45°	150
55°	30
65°	10
75°	3
85°	0
90°	0

Cone of Light		
Distance from Workplane	Footcandles	Beam Diameter
6'	77	6.0'
8'	44	7.8'
10'	28	9.8'
12'	19	12.0'
14'	14	14.0'

Zonal Lumen Summary	
Verticle Angle	Average
45°	11380
55°	2806
65°	1269
75°	622
85°	0

Wide Distribution without Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	1,007	1,094	1,459
28	1,976	2,148	2,864

**WD LENSED**



ITL Test Report #: ITL76361  
 ESA-ADR-WD-6-28-C-120-SSGC-FF-C-35KLM  
 Initial Delivered Lumens: 2,658  
 Efficacy: 52 Lm/W  
 S/M: 1.00

Candlepower Summary	
Angle	Mean CP
0°	2568
5°	2535
15°	2247
25°	1869
35°	1090
45°	212
55°	38
65°	12
75°	3
85°	0
90°	0

Cone of Light		
Distance from Workplane	Footcandles	Beam Diameter
6'	69	6.0'
8'	39	8.0'
10'	25	9.8'
12'	17	12.0'
14'	13	13.5'

Zonal Lumen Summary	
Verticle Angle	Average
45°	16084
55°	3554
65°	1523
75°	622
85°	0

Wide Distribution with Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	814	885	1,180
28	1,769	1,923	2,564

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