

ESA Series

ESA™ LED Architectural Downlight – Round 8” Aperture – 28, 42 & 56 LEDs

Product Description

Downlight luminaire with 8” (203mm) square aperture, designed for 56 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

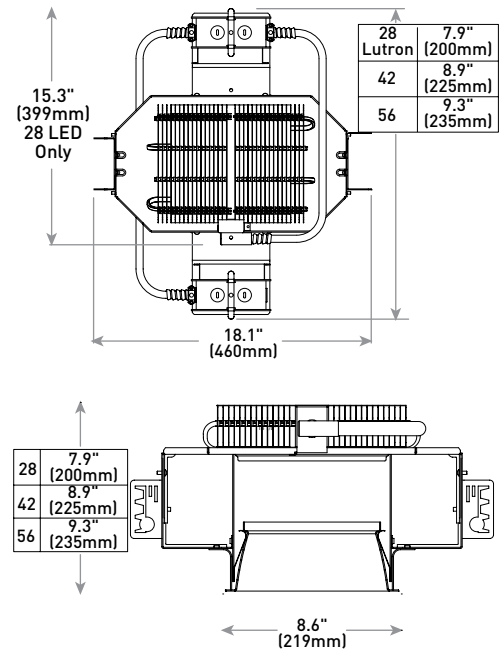
CCT: 2700K, 3000K, 3500K (standard), 4000K

Limited Warranty†: 10 years on luminaire

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

Accessories

Companion Luminaires	
LED Adjustable Downlight ESA-ADR-NDADJ-8-28-D-SSGCFF	LED Lensed Wallwash ESA-ADR-LWW-8-28-D-SGCGF



Ordering Information

Example: ESA-ADR-ND-8-28-D-120-SSGC-FF-C

ESA	ADS	MD	8		D					C	
Family Name	Type	Optic	Aperture Size	LED Count	Series	Voltage	Trim Finish ¹	Flange Finish	Drive Current	Options	
ESA	ADR Architectural Downlight Round	ND Narrow MD Medium WD Wide	8 8 inch	28 42 56	D	120 120V 230 230V 277 277V	SSGC Clear SSGGR Graphite SSGBR 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 ² - 90+ CRI 30K 3000K ² - 90+ CRI 40K 4000K ² - 80+ CRI DH Dimming ³ - 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
3. Available with 28 LED only



US: lighting.cree.com

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

Rev. Date: V2 R1 10/03/2018

Canada: www.cree.com/canada



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

ESA™ LED Architectural Downlight – Round 8" Aperture – 28, 42 & 56 LEDs

Product Specifications


CONSTRUCTION & MATERIALS

- Luminaire uses 28, 42, or 56 high output LEDs, tolerance to be within a 2-step MacAdam Ellipse
- Tilted Axial and/or Axial TIR nano optic 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
- Top access
- 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

PATENTS

- Patented Slideways™ feature for ease of maintenance from below the ceiling

Electrical Data*			
LED Count	System Watts 120-277V	Total Current (A)	
		120V	277V
0-10V Dimming, 525mA			
28	52	0.43	0.19
42	80	0.66	0.29
56	103	0.86	0.37
Lutron® Hi-Lume®, 525mA			
28	55	0.31	0.14
42	N/A	N/A	N/A
56	N/A	N/A	N/A

* 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) ¹					
Ambient	Initial LMF	25K hr Projected ² LMF	50K hr Projected ² LMF	75K hr Calculated ³ LMF	100K hr Calculated ³ 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

¹ 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

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

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 8-1/4" [211mm]



Photometry

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

Narrow Distribution without Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
28	2,123	2,308	3,077
42	3,261	3,545	4,726
56	4,090	4,446	5,928

Narrow Distribution with Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
28	1,887	2,051	2,735
42	2,953	3,209	4,279
56	3,629	3,945	5,260

Medium Distribution without Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
28	2,064	2,244	2,992
42	3,217	3,497	4,662
56	4,033	4,384	5,845

Medium Distribution with Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
28	1,829	1,988	2,650
42	2,908	3,161	4,215
56	3,803	4,133	5,511

Wide Distribution without Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
28	1,976	2,148	2,864
42	3,040	3,305	4,406
56	3,687	40,08	5,344

Wide Distribution with Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
28	1,769	1,923	2,564
42	2,688	2,922	3,896
56	3,168	3,444	4,592

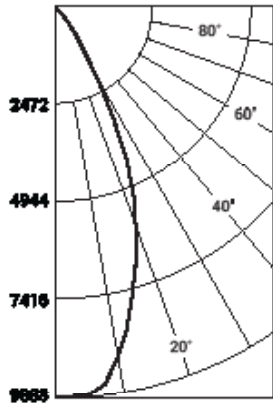
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Photometry

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

MD



ITL Test Report #: ITL76360
 ESA-ADR-MD-8-256-C-120-SSGC-FF-C-35K
 Initial Delivered Lumens: 5,845
 Efficacy: 57 Lm/W
 S/M: 0.74

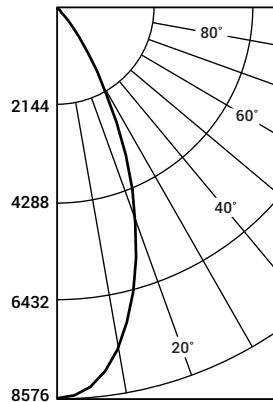
Candlepower Summary	
Angle	Mean CP
0°	9888
5°	9859
15°	7578
25°	4260
35°	1146
45°	127
55°	36
65°	13
75°	4
85°	0
90°	0

Cone of Light		
Distance from Workplane	Footcandles	Beam Diameter
6'	292	4.4'
8'	164	5.8'
10'	105	7.3'
12'	73	8.8'
14'	54	10.0'

Zonal Lumen Summary	
Verticle Angle	Average
45°	9628
55°	3391
65°	1611
75°	752
85°	0

Medium Distribution without Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
28	2,064	2,244	2,992
42	3,217	3,497	4,662
56	4,033	4,384	5,845

MD LENSED



ITL Test Report #: ITL76359
 ESA-ADR-MD-8-56-C-120-SSGC-FF-C-35KLM
 Initial Delivered Lumens: 5,177
 Efficacy: 50 Lm/W
 S/M: 0.72

Candlepower Summary	
Angle	Mean CP
0°	8576
5°	8363
15°	6450
25°	3564
35°	1171
45°	209
55°	51
65°	14
75°	5
85°	0
90°	0

Cone of Light		
Distance from Workplane	Footcandles	Beam Diameter
6'	234	4.3'
8'	132	5.7'
10'	84	7.3'
12'	59	8.5'
14'	43	10.0'

Zonal Lumen Summary	
Verticle Angle	Average
45°	15859
55°	4805
65°	1799
75°	1102
85°	0

Medium Distribution with Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
28	1,829	1,988	2,650
42	2,908	3,161	4,215
56	3,803	4,133	5,511

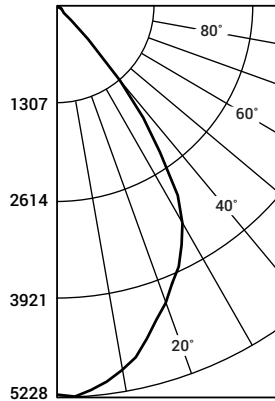
IES Files
 To obtain an IES file specific to your project consult: <http://www.cree.com/lighting/tools-and-support/interior-ies-configuration-tool>



Photometry

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

WD



ITL Test Report #: ITL76362
 ESA-ADR-WD-8-56-C-120-SSGC-FF-C-35K
 Initial Delivered Lumens: 5,344
 Efficacy: 52 Lm/W
 S/M: 1.00

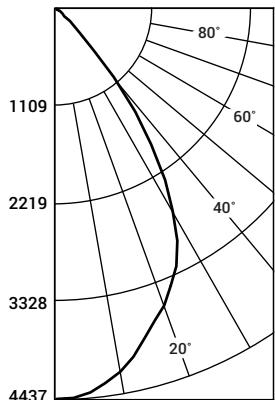
Candlepower Summary	
Angle	Mean CP
0°	5204
5°	5161
15°	4560
25°	3722
35°	2341
45°	272
55°	54
65°	18
75°	5
85°	0
90°	0

Cone of Light		
Distance from Workplane	Footcandles	Beam Diameter
6'	141	6.3'
8'	79	8.5'
10'	51	10.5'
12'	35	12.8'
14'	26	14.8'

Zonal Lumen Summary	
Verticle Angle	Average
45°	20599
55°	5079
65°	2298
75°	1125
85°	0

Wide Distribution without Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
28	1,976	2,148	2,864
42	3,040	3,305	4,406
56	3,687	40,08	5,344

WD LENSED



ITL Test Report #: ITL76361
 ESA-ADR-WD-8-56-C-120-SSGC-FF-C-35KLM
 Initial Delivered Lumens: 4,592
 Efficacy: 45 Lm/W
 S/M: 1.00

Candlepower Summary	
Angle	Mean CP
0°	4437
5°	4380
15°	3882
25°	3229
35°	1883
45°	366
55°	66
65°	20
75°	5
85°	0
90°	0

Cone of Light		
Distance from Workplane	Footcandles	Beam Diameter
6'	119	6.2'
8'	67	8.2'
10'	43	10.3'
12'	30	12.3'
14'	22	14.3'

Zonal Lumen Summary	
Verticle Angle	Average
45°	27790
55°	6141
65°	2632
75°	1074
85°	0

Wide Distribution with Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
28	1,769	1,923	2,564
42	2,688	2,922	3,896
56	3,168	3,444	4,592

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