

ESA Series

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

Product Description

Downlight luminaire with 6.5" (165mm) square 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

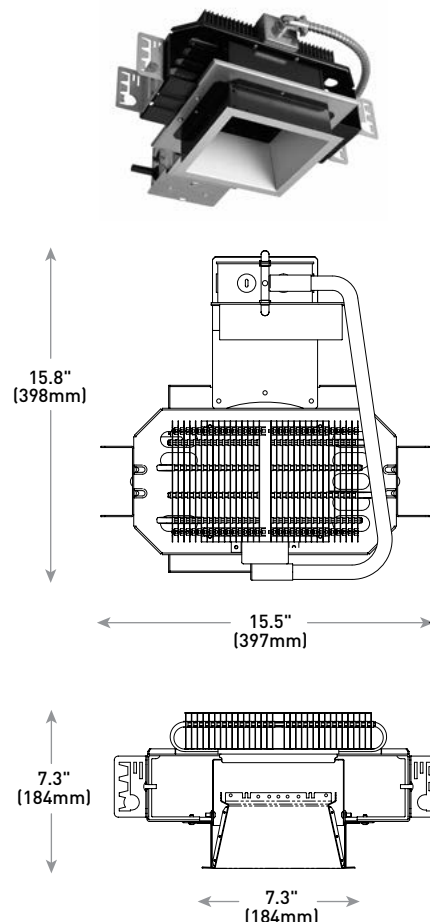
CCT: 2700K, 3000K, 3500K (standard) , 4000K

Limited Warranty*: 10 years on luminaire

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

Accessories

Companion Luminaires	
LED Adjustable Downlight ESA-ADS-NDADJ-6-14-D-SSGCFF	LED Lensed Wallwash ESA-ADS-LWW-6-14-D-SGCFF



Ordering Information

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

ESA	ADS	MD	6		D				C	
Family Name	Type	Optic	Aperture Size	LED Count	Series	Voltage	Trim Finish ¹	Flange Finish	Drive Current	Options
ESA	ADS 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 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 - 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

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 – Square 6" Aperture – 14 & 28 LEDs

Product Specifications


CONSTRUCTION & MATERIALS

- Luminaire uses 14 or 28 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
- 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	L70 Hours• @ 25°C (77°F)	50K Hours Lumen Maintenance Factor* @ 25°C (77°F)
0-10V Dimming, 525mA					
14	28	0.23	0.10	156,000	90%
28	52	0.43	0.19	149,000	90%
Lutron® Hi-Lume®, 525mA					
14	30	0.23	0.10	156,000	90%
28	55	0.31	0.14	149,000	90%

* 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 (IDUT) 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 (IDUT) 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" (165mm) x 6.5" (165mm)



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

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
14	1,140	1,239	1,652
28	2,123	2,308	3,077

Narrow Distribution with Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	992	1,078	1,437
28	1,887	2,051	2,735

Medium Distribution without Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	1,125	1,223	1,631
28	2,064	2,244	2,992

Medium Distribution with Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	933	1,014	1,352
28	1,829	1,988	2,650

Wide Distribution without Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	1,140	1,239	1,652
28	1,976	2,148	2,864

Wide Distribution with Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	992	1,078	1,437
28	1,769	1,923	2,564

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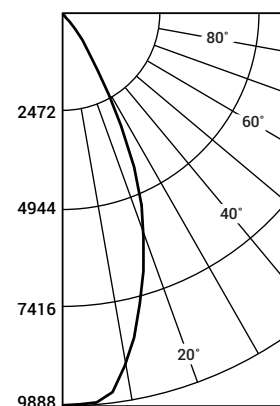
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ESA™ LED Architectural Downlight – Square 6" Aperture – 14 & 28 LEDs

Photometry

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MD



ITL Test Report #: ITL76360
 ESA-ADS-MD-6-28-C-120-SSGC-FF-C-35K
 Initial Delivered Lumens: 2,992
 Efficacy: 58 Lm/W
 S/M: 0.74

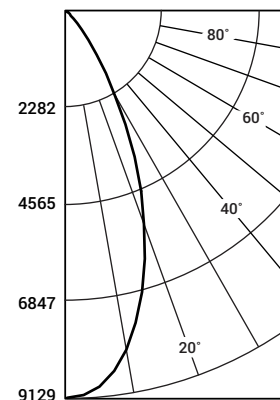
Candlepower Summary	
Angle	Mean CP
0°	5061
5°	5046
15°	3879
25°	2181
35°	586
45°	65
55°	19
65°	6
75°	2
85°	0
90°	0

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°	4931
55°	1777
65°	762
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	1,125	1,223	1,631
28	2,064	2,244	2,992

MD LENSED



ITL Test Report #: ITL76359
 ESA-ADS-MD-6-28-C-120-SSGC-FF-C-35KLM
 Initial Delivered Lumens: 2,650
 Efficacy: 51 Lm/W
 S/M: 0.72

Candlepower Summary	
Angle	Mean CP
0°	4390
5°	4781
15°	3302
25°	1825
35°	599
45°	107
55°	26
65°	7
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°	8118
55°	2432
65°	889
75°	622
85°	0

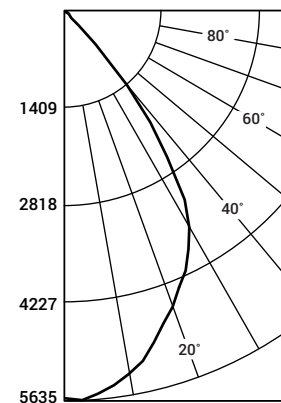
Medium Distribution with Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	933	1,014	1,352
28	1,829	1,988	2,650

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-ADS-WD-6-28-C-120-SSGC-FF-C-35K
 Initial Delivered Lumens: 2,864
 Efficacy: 55 Lm/W
 S/M: 1.00

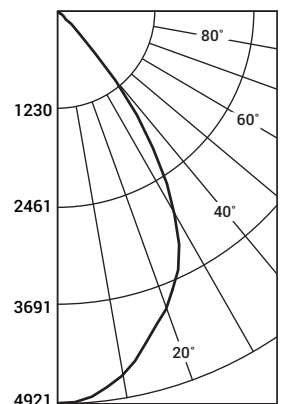
Candlepower Summary	
Angle	Mean CP
0°	2789
5°	2766
15°	2444
25°	1995
35°	1254
45°	146
55°	29
65°	10
75°	3
85°	0
90°	0

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°	11040
55°	2722
65°	1231
75°	603
85°	0

Wide Distribution without Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	1,140	1,239	1,652
28	1,976	2,148	2,864

WD LENSED



ITL Test Report #: ITL76361
 ESA-ADS-WD-6-28-C-120-SSGC-FF-C-35KLM
 Initial Delivered Lumens: 2,564
 Efficacy: 49 Lm/W
 S/M: 1.00

Candlepower Summary	
Angle	Mean CP
0°	2477
5°	2446
15°	2168
25°	1803
35°	1052
45°	205
55°	37
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°	15516
55°	3429
65°	1470
75°	600
85°	0

Wide Distribution with Lens Media			
LED Count	2700K	3000K	3500K/4000K
	Initial Delivered Lumens	Initial Delivered Lumens	Initial Delivered Lumens
14	992	1,078	1,437
28	1,769	1,923	2,564

IES Files

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