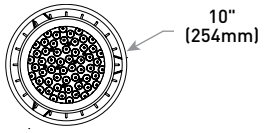
# ESA Series

ESA™ LED Downlight – Cylinder

## Product Description

Ten-inch cylinder downlight luminaire designed for 28, 42, and 56 high output LEDs. Two-piece optical assembly provides a broad, even light distribution, combining low brightness, with maximum visual cutoff and efficiency. Four light distributions available – narrow spot, narrow, medium, and wide. Ten year limited warranty on fixture




## Performance Summary

Patented NanoOptic® Product Technology

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

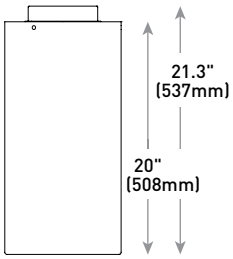
**CRI:** Refer to chart on page 2

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

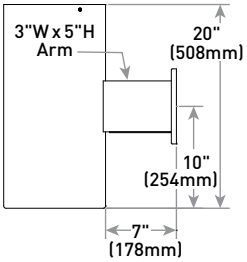
**Limited Warranty†:** 10 years on luminaire

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

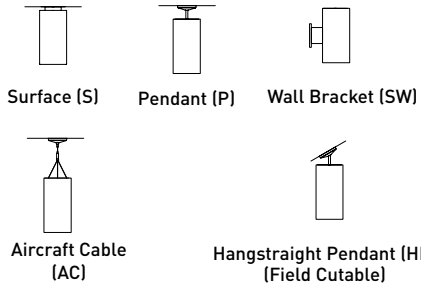
### Surface Mount




### Wall Bracket




### Mounting




## Ordering Information

Example: ESA-C10-NS-S-28-C-U-BK-SSGC-C

| ESA | C10 | | | | C | U | | | C | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Family Name** | **Type** | **Optic** | **Mounting** | **LED Count** | **Series** | **Voltage** | **Color** | **Reflector/ Cone Finish[3]** | **Drive Current** | **Options** Please type additional options in manually on the lines provided below |
| ESA | **C10**<br>10" Cylinder | **NS**<br>Narrrow Spot<br>**ND**<br>Narrow<br>**MD**<br>Medium<br>**WD**<br>Wide | **S**<br>Surface<br>**P**<br>Pendant1<br>**SW**<br>Wall Bracket<br>**HP**<br>Hangstraight Pendant2<br>**AC1**<br>5' Aircraft Cable<br>**AC2**<br>10' Aircraft Cable<br>**AC3**<br>15' Aircraft Cable | **28**<br>**42**<br>**56** | **C** | **U**<br>Universal 120-277V | **BK**<br>Black<br>**BZ**<br>Bronze<br>**CS**<br>Camaro Silver<br>**WH**<br>White | **SSGC**<br>Clear<br>**SSGGR**<br>Graphite<br>**SSGBR**<br>Bronze<br>**SSGCG**<br>Champange Gold<br>**SSGPE**<br>Pewter<br>**SSGWH**<br>Wheat<br>**SSGB**<br>Black<br>**W**<br>White | **C**<br>525mA | **DH** **Dimming**<br>- Optional Lutron® Hi–Lume® driver available<br>**FS** **Fusing**<br>**LM** **Shielding Media**<br>**27K** **2700K[4]**<br>- 90 Nominal CRI<br>**30K** **3000K[4]**<br>- 90+ CRI<br>**40K** **4000K[4]**<br>- 80 + CRI |

1. 24" standard, consult factory for other lengths
2. 24" standard; 45° max slope, field cutable (consult factory for other lengths)
3. SSG = Soft Satin Glow Anti-Iridescent
4. Color temperature per fixture; 3500K Standard

## Product Specifications

**CONSTRUCTION & MATERIALS**

- Luminaire uses 28, 42, and 56 high output LEDs, tolerance to be within a 2-step MacAdam Ellipse
- Axial TIR NanoOptic® on each individual LED to maximize light delivered through aperture
- Provides 45˚ visual cutoff to source
- 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
- Custom extruded aluminum heatsink
- Flow-Thru design to maximize cooling of LEDs
- Heavy wall aluminum housing
- Surface, pendant, wall, or cable mounting
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Bronze, black, white and camaro silver* powder topcoats are available. The finish is covered by our 10 year limited warranty
  *One year warranty

**ELECTRICAL SYSTEM**

- High efficiency constant current drivers 525mA drive current
- **Input Voltage:** 120–277V, 50 / 60Hz, Class 2 drivers
- 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

**Electrical Data***

| LED Count | System Watts 120-277V | Total Current | | | |
|---|---|---|---|---|---|
| | | 120V | 208V | 240V | 277V |
| 0-10V Dimming, 525mA | | | | | |
| 14 | 53 | 0.42 | 0.24 | 0.21 | 0.18 |
| 42 | 75 | 0.63 | 0.36 | 0.31 | 0.28 |
| 56 | 100 | 0.84 | 0.48 | 0.41 | 0.36 |
| Lutron® Hi–Lume®, 525mA | | | | | |
| 14 | 53 | 0.44 | N/A | N/A | 0.20 |
| 42 | | | | | |
| 56 | | | | | |

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

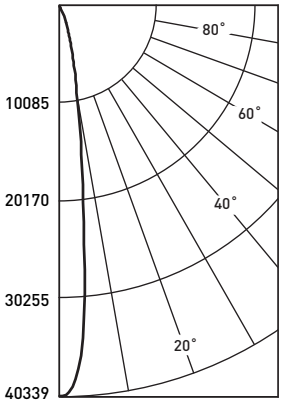
**Color Tolerance**

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

## Photometry

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

### NS




**Configured ITL Test Report #:** ITL71410
ESA-C10-NS-S-42-C-U-WH-D-SSG-C-35K
**Initial Delivered Lumens:** 4,525
**Efficacy:** 60 Lm/W
**S/M:** 0.26

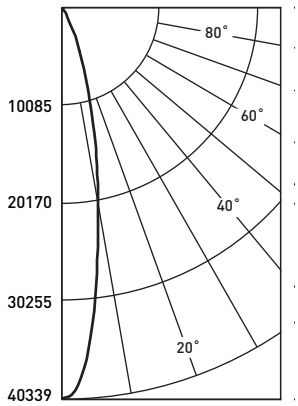
| Candlepower Summary | |
|---|---|
| Angle | Mean CP |
| 0° | 40339 |
| 5° | 29913 |
| 15° | 5540 |
| 25° | 1143 |
| 35° | 204 |
| 45° | 31 |
| 55° | 21 |
| 65° | 10 |
| 75° | 0 |
| 85° | 0 |
| 90° | 0 |

| Cone of Light | | |
|---|---|---|
| Distance from Workplane | Footcandles | Beam Diameter |
| 6' | 1121 | 1.5' |
| 8' | 630 | 2.0' |
| 10' | 403 | 2.5' |
| 12' | 280 | 2.9' |
| 14' | 206 | 3.5' |

| Zonal Lumen Summary | |
|---|---|
| Verticle Angle | Average |
| 45° | 1025 |
| 55° | 851 |
| 65° | 559 |
| 75° | 0 |
| 85° | 0 |

| Narrow Spot Distribution without Lens Media | | | |
|---|---|---|---|
| LED Count | 2700K | 3000K | 3500K/4000K |
| | Initial Delivered Lumens | Initial Delivered Lumens | Initial Delivered Lumens |
| 14 | 2,287 | 2,486 | 3,314 |
| 42 | 3,122 | 3,394 | 4,525 |
| 56 | 3,714 | 4,037 | 5,382 |

### NS LENSED




**Configured ITL Test Report #:** ITL71409
ESA-C10-NS-S-42-C-U-WH-D-SSG-C-35KLM
**Initial Delivered Lumens:** 4,207
**Efficacy:** 56 Lm/W
**S/M:** 0.36

| Candlepower Summary | |
|---|---|
| Angle | Mean CP |
| 0° | 20431 |
| 5° | 17254 |
| 15° | 6366 |
| 25° | 1631 |
| 35° | 360 |
| 45° | 90 |
| 55° | 39 |
| 65° | 17 |
| 75° | 0 |
| 85° | 0 |
| 90° | 0 |

| Cone of Light | | |
|---|---|---|
| Distance from Workplane | Footcandles | Beam Diameter |
| 6' | 567 | 2.3' |
| 8' | 319 | 2.8' |
| 10' | 204 | 3.6' |
| 12' | 142 | 4.2' |
| 14' | 104 | 5.0' |

| Zonal Lumen Summary | |
|---|---|
| Verticle Angle | Average |
| 45° | 2936 |
| 55° | 1571 |
| 65° | 914 |
| 75° | 0 |
| 85° | 0 |

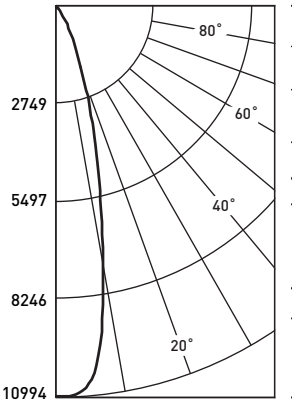
| Narrow Spot Distribution with Lens Media | | | |
|---|---|---|---|
| LED Count | 2700K | 3000K | 3500K/4000K |
| | Initial Delivered Lumens | Initial Delivered Lumens | Initial Delivered Lumens |
| 14 | 2,082 | 2,263 | 3,017 |
| 42 | 2,903 | 3,155 | 4,207 |
| 56 | 3,371 | 3,664 | 4,885 |

**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

**ND**




**Configured ITL Test Report #:** ITL76358
ESA-C10-ND-S-42-C-U-WH-D-SSG-C-35K
**Initial Delivered Lumens:** 4,398
**Efficacy**: 59 Lm/W
**S/M:** 0.46

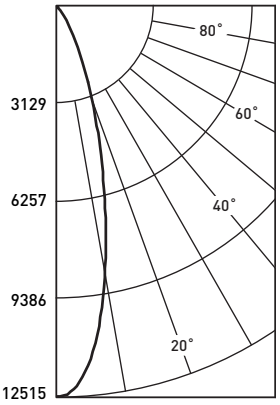
| Candlepower Summary | |
|---|---|
| Angle | Mean CP |
| 0° | 15364 |
| 5° | 14873 |
| 15° | 6356 |
| 25° | 1962 |
| 35° | 509 |
| 45° | 67 |
| 55° | 23 |
| 65° | 6 |
| 75° | 0 |
| 85° | 0 |
| 90° | 0 |

| Cone of Light | | |
|---|---|---|
| Distance from Workplane | Footcandles | Beam Diameter |
| 6' | 400 | 2.8' |
| 8' | 225 | 3.8' |
| 10' | 144 | 4.8' |
| 12' | 100 | 5.7' |
| 14' | 74 | 6.5' |

| Zonal Lumen Summary | |
|---|---|
| Verticle Angle | Average |
| 45° | 5112 |
| 55° | 2186 |
| 65° | 698 |
| 75° | 0 |
| 85° | 0 |

| Narrow Distribution without Lens Media | | | |
|---|---|---|---|
| LED Count | 2700K | 3000K | 3500K/4000K |
| | Initial Delivered Lumens | Initial Delivered Lumens | Initial Delivered Lumens |
| 14 | 2,169 | 2,358 | 3,144 |
| 42 | 3,035 | 3,299 | 4,398 |
| 56 | 3,827 | 4,160 | 5,547 |

**ND LENSED**




**Configured ITL Test Report #:** ITL76357
ESA-C10-ND-S-42-C-U-WH-D-SSG-C-35KLM
**Initial Delivered Lumens:** 3,952
**Efficacy**: 53 Lm/W
**S/M:** 0.48

| Candlepower Summary | |
|---|---|
| Angle | Mean CP |
| 0° | 12515 |
| 5° | 11566 |
| 15° | 5770 |
| 25° | 1970 |
| 35° | 542 |
| 45° | 100 |
| 55° | 29 |
| 65° | 7 |
| 75° | 1 |
| 85° | 0 |
| 90° | 0 |

| Cone of Light | | |
|---|---|---|
| Distance from Workplane | Footcandles | Beam Diameter |
| 6' | 291 | 3.0' |
| 8' | 164 | 4.2' |
| 10' | 105 | 5.3' |
| 12' | 73 | 6.3' |
| 14' | 53 | 7.3' |

| Zonal Lumen Summary | |
|---|---|
| Verticle Angle | Average |
| 45° | 7620 |
| 55° | 2666 |
| 65° | 862 |
| 75° | 281 |
| 85° | 0 |

| Narrow Distribution with Lens Media | | | |
|---|---|---|---|
| LED Count | 2700K | 3000K | 3500K/4000K |
| | Initial Delivered Lumens | Initial Delivered Lumens | Initial Delivered Lumens |
| 14 | 1,964 | 2,135 | 2,847 |
| 42 | 2,727 | 2,964 | 3,952 |
| 56 | 3,485 | 3,788 | 5,051 |

**IES Files**
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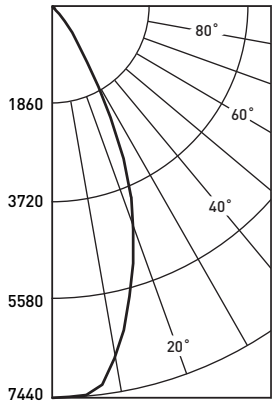
## Photometry

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

**MD**




**Configured ITL Test Report #:** ITL76360
ESA-C10-MD-S-42-C-U-WH-D-SSG-C-35K
**Initial Delivered Lumens:** 4,398
**Efficacy:** 59 Lm/W
**S/M:** 0.74

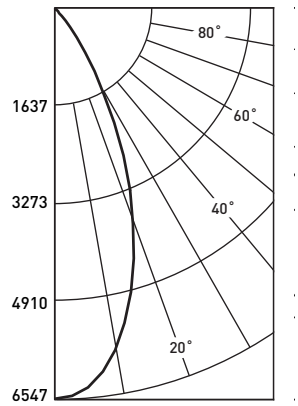
| Candlepower Summary | |
|---|---|
| Angle | Mean CP |
| 0° | 7440 |
| 5° | 7418 |
| 15° | 5702 |
| 25° | 3206 |
| 35° | 862 |
| 45° | 95 |
| 55° | 27 |
| 65° | 10 |
| 75° | 3 |
| 85° | 0 |
| 90° | 0 |

| Cone of Light | | |
|---|---|---|
| Distance from Workplane | Footcandles | Beam Diameter |
| 6' | 205 | 4.4' |
| 8' | 115 | 5.9' |
| 10' | 74 | 7.3' |
| 12' | 51 | 8.8' |
| 14' | 38 | 10.3' |

| Zonal Lumen Summary | |
|---|---|
| Verticle Angle | Average |
| 45° | 7244 |
| 55° | 2552 |
| 65° | 1212 |
| 75° | 565 |
| 85° | 0 |

| Medium Distribution without Lens Media | | | |
|---|---|---|---|
| LED Count | 2700K | 3000K | 3500K/4000K |
| | Initial Delivered Lumens | Initial Delivered Lumens | Initial Delivered Lumens |
| 14 | 2,140 | 2,327 | 3,102 |
| 42 | 3,035 | 3,299 | 4,398 |
| 56 | 3,827 | 4,160 | 5,547 |

**MD LENSED**




**Configured ITL Test Report #:** ITL76359
ESA-C10-MD-S-42-C-U-WH-D-SSG-C-35KLM
**Initial Delivered Lumens:** 3,952
**Efficacy:** 53 Lm/W
**S/M:** 0.72

| Candlepower Summary | |
|---|---|
| Angle | Mean CP |
| 0° | 6547 |
| 5° | 6384 |
| 15° | 4924 |
| 25° | 2721 |
| 35° | 894 |
| 45° | 160 |
| 55° | 39 |
| 65° | 11 |
| 75° | 4 |
| 85° | 0 |
| 90° | 0 |

| Cone of Light | | |
|---|---|---|
| Distance from Workplane | Footcandles | Beam Diameter |
| 6' | 177 | 4.3' |
| 8' | 100 | 5.8' |
| 10' | 64 | 7.2' |
| 12' | 44 | 8.5' |
| 14' | 33 | 9.8' |

| Zonal Lumen Summary | |
|---|---|
| Verticle Angle | Average |
| 45° | 12106 |
| 55° | 3668 |
| 65° | 1373 |
| 75° | 841 |
| 85° | 0 |

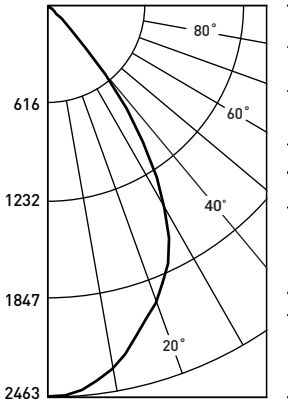
| Medium Distribution with Lens Media | | | |
|---|---|---|---|
| LED Count | 2700K | 3000K | 3500K/4000K |
| | Initial Delivered Lumens | Initial Delivered Lumens | Initial Delivered Lumens |
| 14 | 1,935 | 2,103 | 2,804 |
| 42 | 2,727 | 2,964 | 3,952 |
| 56 | 3,485 | 3,788 | 5,051 |

**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




**Configured ITL Test Report #:** ITL76362
ESA-C10-WD-S-42-C-U-WH-D-SSG-C-35K
**Initial Delivered Lumens:** 4,079
**Efficacy**: 54 Lm/W
**S/M:** 1.00

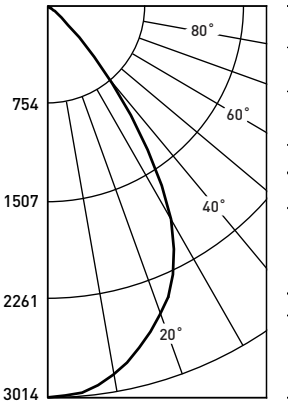
| Candlepower Summary | |
|---|---|
| Angle | Mean CP |
| 0° | 3972 |
| 5° | 3939 |
| 15° | 3480 |
| 25° | 2841 |
| 35v | 1786 |
| 45v | 207 |
| 55° | 41 |
| 65° | 14 |
| 75° | 4 |
| 85° | 0 |
| 90° | 0 |

| Cone of Light | | |
|---|---|---|
| Distance from Workplane | Footcandles | Beam Diameter |
| 6' | 104 | 6.4' |
| 8' | 59 | 8.5' |
| 10' | 37 | 10.8' |
| 12' | 26 | 12.8' |
| 14' | 19 | 15.0' |

| Zonal Lumen Summary | |
|---|---|
| Verticle Angle | Average |
| 45° | 15723 |
| 55° | 3877 |
| 65° | 1754 |
| 75° | 859 |
| 85° | 0 |

| Wide Distribution without Lens Media | | | |
|---|---|---|---|
| LED Count | 2700K | 3000K | 3500K/4000K |
| | Initial Delivered Lumens | Initial Delivered Lumens | Initial Delivered Lumens |
| 14 | 1,993 | 2,167 | 2,889 |
| 42 | 2,815 | 3,059 | 4,079 |
| 56 | 3,599 | 3,912 | 5,216 |

### WD LENSED




**Configured ITL Test Report #:** ITL76361
ESA-C10-ND-S-42-C-U-WH-D-SSG-C-35KLM
**Initial Delivered Lumens:** 3,505
**Efficacy**: 47 Lm/W
**S/M:** 1.00

| Candlepower Summary | |
|---|---|
| Angle | Mean CP |
| 0° | 3387 |
| 5° | 3343 |
| 15° | 2963 |
| 25° | 2465 |
| 35° | 1438 |
| 45° | 280 |
| 55° | 50 |
| 65° | 16 |
| 75° | 4 |
| 85° | 0 |
| 90° | 0 |

| Cone of Light | | |
|---|---|---|
| Distance from Workplane | Footcandles | Beam Diameter |
| 6' | 89 | 6.2' |
| 8' | 50 | 8.3' |
| 10' | 32 | 10.3' |
| 12' | 22 | 12.5' |
| 14' | 16 | 14.5' |

| Zonal Lumen Summary | |
|---|---|
| Verticle Angle | Average |
| 45° | 21211 |
| 55° | 4687 |
| 65° | 2009 |
| 75° | 820 |
| 85° | 0 |

| Wide Distribution with Lens Media | | | |
|---|---|---|---|
| LED Count | 2700K | 3000K | 3500K/4000K |
| | Initial Delivered Lumens | Initial Delivered Lumens | Initial Delivered Lumens |
| 14 | 1,759 | 1,912 | 2,549 |
| 42 | 2,418 | 2,629 | 3,505 |
| 56 | 3,085 | 3,353 | 4,471 |

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



**US: lighting.cree.com/lighting** T (800) 236-6800 F (262) 504-5415 **Canada: www.cree.com/canada** T (800) 473-1234 F (800) 890-7507