

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P558484

Luminaire Tested: FSR-12-1-LD4-1HI-35-UNV-82-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P558484
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)
Test Lab: INNOVATION CENTER
Issue Date: 7/20/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: FSR-12-1-LD4-1HI-35-UNV-82-86-EDD-90
Description: 1X1 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 728.0 lumens
Efficiency: N/A
Efficacy: 67.4 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
CIE Type: Direct

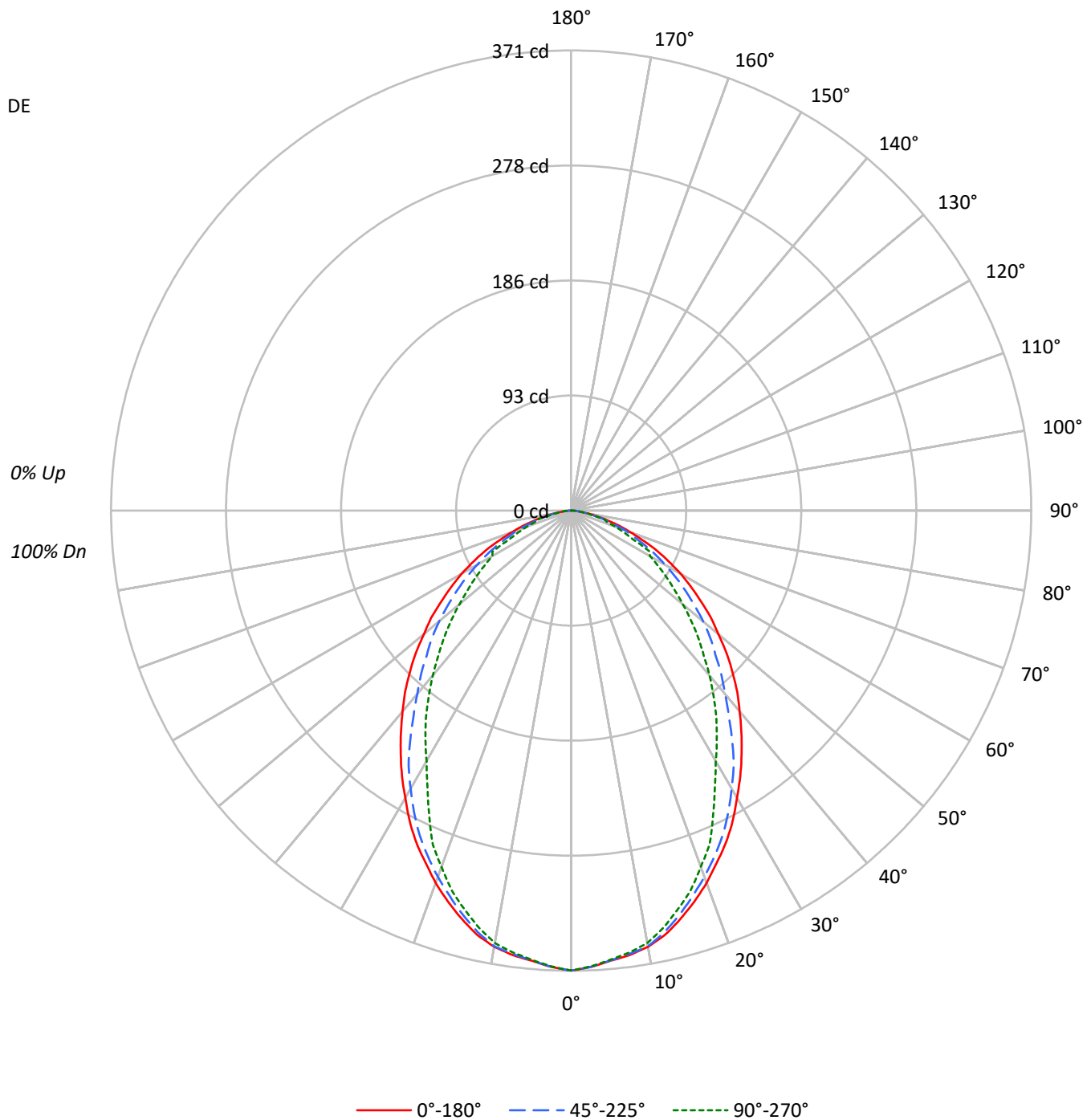
Input Watts (W): 10.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P558484

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|---|----|--|--|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | |
| RC | 80 | | | | | | | | | 70 | | | | | | | | | 50 | | | | | | | | | 30 | | | | | | | | | 10 | | | | | | | | | 0 |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 | | | | | | | | | | | | | | | | | | | |
| RCR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 110 | 106 | 102 | 99 | 108 | 104 | 100 | 97 | 100 | 97 | 94 | 96 | 94 | 91 | 92 | 90 | 89 | 87 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 101 | 94 | 88 | 83 | 99 | 92 | 87 | 82 | 89 | 84 | 80 | 86 | 82 | 78 | 83 | 79 | 77 | 75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 93 | 84 | 77 | 71 | 91 | 82 | 76 | 70 | 79 | 74 | 69 | 77 | 72 | 68 | 74 | 70 | 67 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 86 | 75 | 67 | 61 | 84 | 74 | 66 | 61 | 72 | 65 | 60 | 69 | 64 | 59 | 67 | 62 | 58 | 56 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 80 | 68 | 60 | 54 | 78 | 67 | 59 | 53 | 65 | 58 | 53 | 63 | 57 | 52 | 61 | 56 | 52 | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | 74 | 62 | 53 | 48 | 72 | 61 | 53 | 47 | 59 | 52 | 47 | 57 | 51 | 47 | 56 | 50 | 46 | 44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 69 | 56 | 48 | 43 | 67 | 56 | 48 | 42 | 54 | 47 | 42 | 53 | 46 | 42 | 51 | 46 | 42 | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 65 | 52 | 44 | 38 | 63 | 51 | 44 | 38 | 50 | 43 | 38 | 49 | 42 | 38 | 48 | 42 | 38 | 36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | 61 | 48 | 40 | 35 | 59 | 47 | 40 | 35 | 46 | 39 | 35 | 45 | 39 | 34 | 44 | 38 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 57 | 44 | 37 | 32 | 56 | 44 | 37 | 32 | 43 | 36 | 32 | 42 | 36 | 32 | 41 | 36 | 32 | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 3991 | 3991 | 3991 |
| 5° | 3937 | 3933 | 3928 |
| 10° | 3903 | 3899 | 3870 |
| 15° | 3798 | 3760 | 3707 |
| 20° | 3659 | 3599 | 3502 |
| 25° | 3508 | 3432 | 3217 |
| 30° | 3325 | 3218 | 2898 |
| 35° | 3148 | 2975 | 2682 |
| 40° | 2970 | 2710 | 2439 |
| 45° | 2799 | 2506 | 2206 |
| 50° | 2592 | 2326 | 1968 |
| 55° | 2398 | 2107 | 1762 |
| 60° | 2196 | 1884 | 1578 |
| 65° | 1933 | 1648 | 1398 |
| 70° | 1592 | 1445 | 1186 |
| 75° | 1264 | 1106 | 1160 |
| 80° | 849 | 800 | 744 |
| 85° | 531 | 630 | 741 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2799 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 34.5 | 4.7 |
| 10°-20° | 94.7 | 13.0 |
| 20°-30° | 131.2 | 18.0 |
| 30°-40° | 139.9 | 19.2 |
| 40°-50° | 127.6 | 17.5 |
| 50°-60° | 100.0 | 13.7 |
| 60°-70° | 65.1 | 8.9 |
| 70°-80° | 28.9 | 4.0 |
| 80°-90° | 6.2 | 0.8 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-30° | 260.4 | 35.8 |
| 0°-40° | 400.3 | 55.0 |
| 0°-60° | 627.8 | 86.2 |
| 0°-90° | 728.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 728.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 371 | 371 | 371 | 371 | 371 | |
| 5° | 364 | 364 | 364 | 364 | 364 | 35 |
| 15° | 341 | 341 | 337 | 334 | 333 | 96 |
| 25° | 295 | 294 | 289 | 279 | 271 | 136 |
| 35° | 240 | 238 | 226 | 209 | 204 | 150 |
| 45° | 184 | 180 | 165 | 151 | 145 | 142 |
| 55° | 128 | 124 | 112 | 99 | 94 | 115 |
| 65° | 76 | 72 | 65 | 66 | 55 | 75 |
| 75° | 30 | 28 | 27 | 25 | 28 | 33 |
| 85° | 4 | 5 | 5 | 6 | 6 | 6 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P558484

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 370.8 | 370.8 | 370.8 | 370.8 | 370.8 |
| 2.5° | 368.3 | 368.3 | 368.3 | 367.8 | 367.8 |
| 5° | 364.4 | 364.0 | 364.0 | 363.5 | 363.5 |
| 7.5° | 361.4 | 361.0 | 360.5 | 360.1 | 359.3 |
| 10° | 357.1 | 357.1 | 356.7 | 354.5 | 354.1 |
| 12.5° | 350.3 | 349.8 | 348.1 | 345.1 | 344.3 |
| 15° | 340.8 | 340.8 | 337.4 | 334.0 | 332.7 |
| 17.5° | 330.5 | 330.1 | 325.8 | 322.4 | 320.7 |
| 20° | 319.4 | 318.5 | 314.2 | 308.7 | 305.7 |
| 22.5° | 307.0 | 307.0 | 301.8 | 294.5 | 291.5 |
| 25° | 295.4 | 293.7 | 289.0 | 278.7 | 270.9 |
| 27.5° | 282.1 | 279.5 | 274.4 | 259.8 | 250.8 |
| 30° | 267.5 | 266.2 | 258.9 | 240.1 | 233.2 |
| 32.5° | 253.8 | 251.7 | 243.9 | 224.2 | 218.6 |
| 35° | 239.6 | 237.9 | 226.4 | 209.2 | 204.1 |
| 37.5° | 225.5 | 223.4 | 208.8 | 195.1 | 188.6 |
| 40° | 211.4 | 208.8 | 192.9 | 180.5 | 173.6 |
| 42.5° | 198.1 | 194.6 | 179.2 | 165.9 | 158.2 |
| 45° | 183.9 | 180.1 | 164.6 | 150.9 | 144.9 |
| 47.5° | 169.8 | 166.3 | 152.2 | 138.0 | 131.2 |
| 50° | 154.8 | 151.8 | 138.9 | 124.8 | 117.5 |
| 52.5° | 142.3 | 137.6 | 125.2 | 111.0 | 105.0 |
| 55° | 127.8 | 123.9 | 112.3 | 99.0 | 93.9 |
| 57.5° | 114.5 | 110.6 | 99.9 | 87.5 | 83.2 |
| 60° | 102.0 | 96.5 | 87.5 | 76.7 | 73.3 |
| 62.5° | 88.3 | 84.0 | 76.3 | 67.3 | 71.6 |
| 65° | 75.9 | 71.6 | 64.7 | 66.0 | 54.9 |
| 67.5° | 62.2 | 60.0 | 54.0 | 48.0 | 46.3 |
| 70° | 50.6 | 48.0 | 45.9 | 39.4 | 37.7 |
| 72.5° | 40.3 | 37.7 | 34.7 | 31.3 | 30.0 |
| 75° | 30.4 | 28.3 | 26.6 | 25.3 | 27.9 |
| 77.5° | 21.0 | 20.1 | 18.9 | 17.6 | 17.1 |
| 80° | 13.7 | 13.3 | 12.9 | 12.4 | 12.0 |
| 82.5° | 8.1 | 8.1 | 8.1 | 8.1 | 8.1 |
| 85° | 4.3 | 4.7 | 5.1 | 5.6 | 6.0 |
| 87.5° | 2.6 | 2.6 | 3.0 | 3.4 | 3.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)