

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: P559256

Luminaire Tested: FSR-12-1-LD4-2LO-35-UNV-82-88-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P559256
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-LD4-2LO-35-UNV-82-88-EDD-90
Description: 1X1 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 772.0 lumens
Efficiency: N/A
Efficacy: 66.0 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

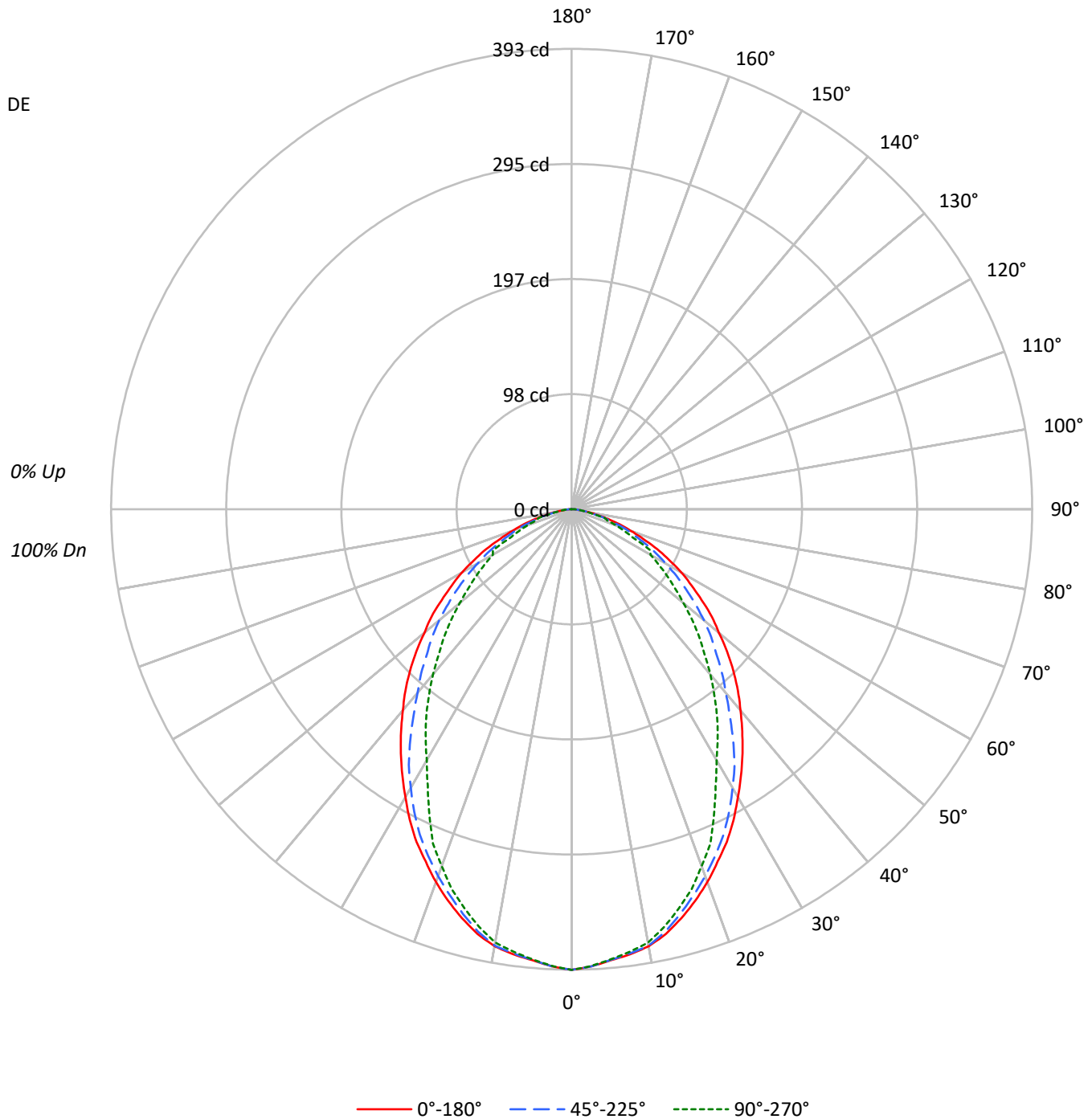
Input Watts (W): 11.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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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 | 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 | 39 | 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° | 4232 | 4232 | 4232 |
| 5° | 4175 | 4171 | 4165 |
| 10° | 4139 | 4134 | 4104 |
| 15° | 4027 | 3987 | 3931 |
| 20° | 3880 | 3817 | 3712 |
| 25° | 3720 | 3639 | 3412 |
| 30° | 3526 | 3413 | 3074 |
| 35° | 3339 | 3154 | 2844 |
| 40° | 3149 | 2875 | 2587 |
| 45° | 2968 | 2658 | 2340 |
| 50° | 2748 | 2467 | 2087 |
| 55° | 2543 | 2235 | 1869 |
| 60° | 2329 | 1996 | 1673 |
| 65° | 2050 | 1747 | 1482 |
| 70° | 1687 | 1530 | 1259 |
| 75° | 1343 | 1173 | 1231 |
| 80° | 899 | 843 | 787 |
| 85° | 556 | 679 | 790 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2968 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 36.6 | 4.7 |
| 10°-20° | 100.5 | 13.0 |
| 20°-30° | 139.1 | 18.0 |
| 30°-40° | 148.3 | 19.2 |
| 40°-50° | 135.3 | 17.5 |
| 50°-60° | 106.0 | 13.7 |
| 60°-70° | 69.1 | 8.9 |
| 70°-80° | 30.6 | 4.0 |
| 80°-90° | 6.6 | 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° | 276.2 | 35.8 |
| 0°-40° | 424.5 | 55.0 |
| 0°-60° | 665.7 | 86.2 |
| 0°-90° | 772.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 772.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 393 | 393 | 393 | 393 | 393 | |
| 5° | 386 | 386 | 386 | 386 | 386 | 37 |
| 15° | 361 | 361 | 358 | 354 | 353 | 102 |
| 25° | 313 | 311 | 306 | 296 | 287 | 144 |
| 35° | 254 | 252 | 240 | 222 | 216 | 159 |
| 45° | 195 | 191 | 175 | 160 | 154 | 150 |
| 55° | 136 | 131 | 119 | 105 | 100 | 122 |
| 65° | 80 | 76 | 69 | 70 | 58 | 79 |
| 75° | 32 | 30 | 28 | 27 | 30 | 35 |
| 85° | 4 | 5 | 6 | 6 | 6 | 6 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P559256

CATALOG NUMBER: FSR-12-1-LD4-2LO-35-UNV-82-88-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 393.2 | 393.2 | 393.2 | 393.2 | 393.2 |
| 2.5° | 390.5 | 390.5 | 390.5 | 390.1 | 390.1 |
| 5° | 386.4 | 386.0 | 386.0 | 385.5 | 385.5 |
| 7.5° | 383.2 | 382.8 | 382.3 | 381.9 | 381.0 |
| 10° | 378.7 | 378.7 | 378.2 | 376.0 | 375.5 |
| 12.5° | 371.4 | 371.0 | 369.2 | 366.0 | 365.1 |
| 15° | 361.4 | 361.4 | 357.8 | 354.1 | 352.8 |
| 17.5° | 350.5 | 350.1 | 345.5 | 341.9 | 340.1 |
| 20° | 338.7 | 337.8 | 333.2 | 327.3 | 324.1 |
| 22.5° | 325.5 | 325.5 | 320.1 | 312.3 | 309.1 |
| 25° | 313.2 | 311.4 | 306.4 | 295.5 | 287.3 |
| 27.5° | 299.1 | 296.4 | 291.0 | 275.5 | 266.0 |
| 30° | 283.7 | 282.3 | 274.6 | 254.6 | 247.3 |
| 32.5° | 269.1 | 266.9 | 258.7 | 237.8 | 231.9 |
| 35° | 254.1 | 252.3 | 240.0 | 221.9 | 216.4 |
| 37.5° | 239.1 | 236.9 | 221.4 | 206.9 | 200.0 |
| 40° | 224.1 | 221.4 | 204.6 | 191.4 | 184.1 |
| 42.5° | 210.0 | 206.4 | 190.0 | 175.9 | 167.8 |
| 45° | 195.0 | 190.9 | 174.6 | 160.0 | 153.7 |
| 47.5° | 180.0 | 176.4 | 161.4 | 146.4 | 139.1 |
| 50° | 164.1 | 160.9 | 147.3 | 132.3 | 124.6 |
| 52.5° | 150.9 | 145.9 | 132.7 | 117.7 | 111.4 |
| 55° | 135.5 | 131.4 | 119.1 | 105.0 | 99.6 |
| 57.5° | 121.4 | 117.3 | 105.9 | 92.7 | 88.2 |
| 60° | 108.2 | 102.3 | 92.7 | 81.4 | 77.7 |
| 62.5° | 93.7 | 89.1 | 80.9 | 71.4 | 75.9 |
| 65° | 80.5 | 75.9 | 68.6 | 70.0 | 58.2 |
| 67.5° | 65.9 | 63.6 | 57.3 | 50.9 | 49.1 |
| 70° | 53.6 | 50.9 | 48.6 | 41.8 | 40.0 |
| 72.5° | 42.7 | 40.0 | 36.8 | 33.2 | 31.8 |
| 75° | 32.3 | 30.0 | 28.2 | 26.8 | 29.6 |
| 77.5° | 22.3 | 21.4 | 20.0 | 18.6 | 18.2 |
| 80° | 14.5 | 14.1 | 13.6 | 13.2 | 12.7 |
| 82.5° | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 |
| 85° | 4.5 | 5.0 | 5.5 | 5.9 | 6.4 |
| 87.5° | 2.7 | 2.7 | 3.2 | 3.6 | 4.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)