

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: P559321

Luminaire Tested: FSR-12-1-LD4-2LO-40-UNV-82-88-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P559321
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-40-UNV-82-88-EDD
Description: 1X1 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

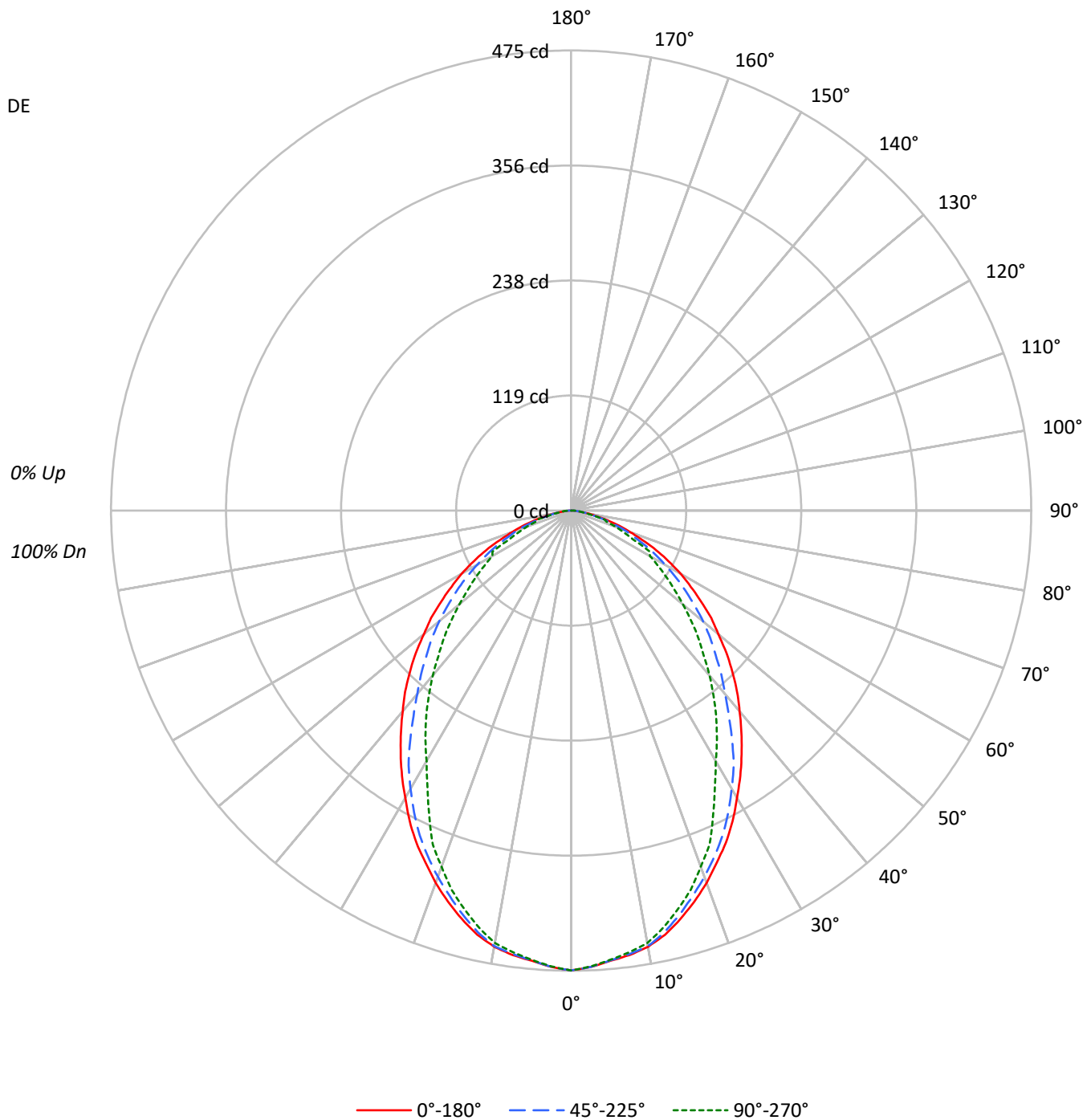
Lumens per Lamp: N/A
Luminaire Lumens: 932.0 lumens
Efficiency: N/A
Efficacy: 79.7 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
CIE Type: Direct

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





TEST NUMBER: P559321

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

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 5110 | 5110 | 5110 |
| 5° | 5041 | 5035 | 5029 |
| 10° | 4997 | 4991 | 4955 |
| 15° | 4862 | 4813 | 4746 |
| 20° | 4684 | 4608 | 4482 |
| 25° | 4492 | 4393 | 4120 |
| 30° | 4257 | 4120 | 3711 |
| 35° | 4031 | 3808 | 3432 |
| 40° | 3802 | 3471 | 3124 |
| 45° | 3585 | 3209 | 2824 |
| 50° | 3317 | 2977 | 2519 |
| 55° | 3070 | 2699 | 2256 |
| 60° | 2812 | 2411 | 2021 |
| 65° | 2473 | 2111 | 1791 |
| 70° | 2039 | 1847 | 1520 |
| 75° | 1622 | 1414 | 1485 |
| 80° | 1091 | 1023 | 955 |
| 85° | 679 | 815 | 951 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3585 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 44.2 | 4.7 |
| 10°-20° | 121.3 | 13.0 |
| 20°-30° | 167.9 | 18.0 |
| 30°-40° | 179.0 | 19.2 |
| 40°-50° | 163.3 | 17.5 |
| 50°-60° | 128.0 | 13.7 |
| 60°-70° | 83.4 | 8.9 |
| 70°-80° | 37.0 | 4.0 |
| 80°-90° | 7.9 | 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° | 333.4 | 35.8 |
| 0°-40° | 512.4 | 55.0 |
| 0°-60° | 803.7 | 86.2 |
| 0°-90° | 932.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 932.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 475 | 475 | 475 | 475 | 475 | |
| 5° | 466 | 466 | 466 | 465 | 465 | 44 |
| 15° | 436 | 436 | 432 | 428 | 426 | 123 |
| 25° | 378 | 376 | 370 | 357 | 347 | 174 |
| 35° | 307 | 305 | 290 | 268 | 261 | 192 |
| 45° | 236 | 230 | 211 | 193 | 186 | 181 |
| 55° | 164 | 159 | 144 | 127 | 120 | 147 |
| 65° | 97 | 92 | 83 | 84 | 70 | 96 |
| 75° | 39 | 36 | 34 | 32 | 36 | 42 |
| 85° | 6 | 6 | 7 | 7 | 8 | 8 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P559321

CATALOG NUMBER: FSR-12-1-LD4-2LO-40-UNV-82-88-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 474.7 | 474.7 | 474.7 | 474.7 | 474.7 |
| 2.5° | 471.5 | 471.5 | 471.5 | 470.9 | 470.9 |
| 5° | 466.5 | 466.0 | 466.0 | 465.4 | 465.4 |
| 7.5° | 462.7 | 462.1 | 461.6 | 461.0 | 459.9 |
| 10° | 457.2 | 457.2 | 456.6 | 453.9 | 453.3 |
| 12.5° | 448.4 | 447.9 | 445.7 | 441.8 | 440.7 |
| 15° | 436.3 | 436.3 | 431.9 | 427.5 | 425.9 |
| 17.5° | 423.2 | 422.6 | 417.1 | 412.7 | 410.5 |
| 20° | 408.9 | 407.8 | 402.3 | 395.2 | 391.3 |
| 22.5° | 393.0 | 393.0 | 386.4 | 377.1 | 373.2 |
| 25° | 378.2 | 376.0 | 369.9 | 356.7 | 346.9 |
| 27.5° | 361.1 | 357.8 | 351.3 | 332.6 | 321.1 |
| 30° | 342.5 | 340.8 | 331.5 | 307.4 | 298.6 |
| 32.5° | 324.9 | 322.2 | 312.3 | 287.0 | 279.9 |
| 35° | 306.8 | 304.6 | 289.8 | 267.8 | 261.2 |
| 37.5° | 288.7 | 285.9 | 267.3 | 249.7 | 241.5 |
| 40° | 270.6 | 267.3 | 247.0 | 231.1 | 222.3 |
| 42.5° | 253.6 | 249.2 | 229.4 | 212.4 | 202.5 |
| 45° | 235.5 | 230.5 | 210.8 | 193.2 | 185.5 |
| 47.5° | 217.3 | 213.0 | 194.8 | 176.7 | 167.9 |
| 50° | 198.1 | 194.3 | 177.8 | 159.7 | 150.4 |
| 52.5° | 182.2 | 176.2 | 160.3 | 142.2 | 134.5 |
| 55° | 163.6 | 158.6 | 143.8 | 126.8 | 120.2 |
| 57.5° | 146.5 | 141.6 | 127.9 | 112.0 | 106.5 |
| 60° | 130.6 | 123.5 | 112.0 | 98.2 | 93.9 |
| 62.5° | 113.1 | 107.6 | 97.7 | 86.2 | 91.7 |
| 65° | 97.1 | 91.7 | 82.9 | 84.5 | 70.3 |
| 67.5° | 79.6 | 76.8 | 69.2 | 61.5 | 59.3 |
| 70° | 64.8 | 61.5 | 58.7 | 50.5 | 48.3 |
| 72.5° | 51.6 | 48.3 | 44.5 | 40.1 | 38.4 |
| 75° | 39.0 | 36.2 | 34.0 | 32.4 | 35.7 |
| 77.5° | 26.9 | 25.8 | 24.1 | 22.5 | 22.0 |
| 80° | 17.6 | 17.0 | 16.5 | 15.9 | 15.4 |
| 82.5° | 10.4 | 10.4 | 10.4 | 10.4 | 10.4 |
| 85° | 5.5 | 6.0 | 6.6 | 7.1 | 7.7 |
| 87.5° | 3.3 | 3.3 | 3.8 | 4.4 | 4.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)