

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: P560482

Luminaire Tested: FSR-12-2-LD4-2LO-40-UNV-93-85-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560482
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-12-2-LD4-2LO-40-UNV-93-85-EDD-90
Description: 1X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1899.0 lumens
Efficiency: N/A
Efficacy: 81.2 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')
CIE Type: Direct

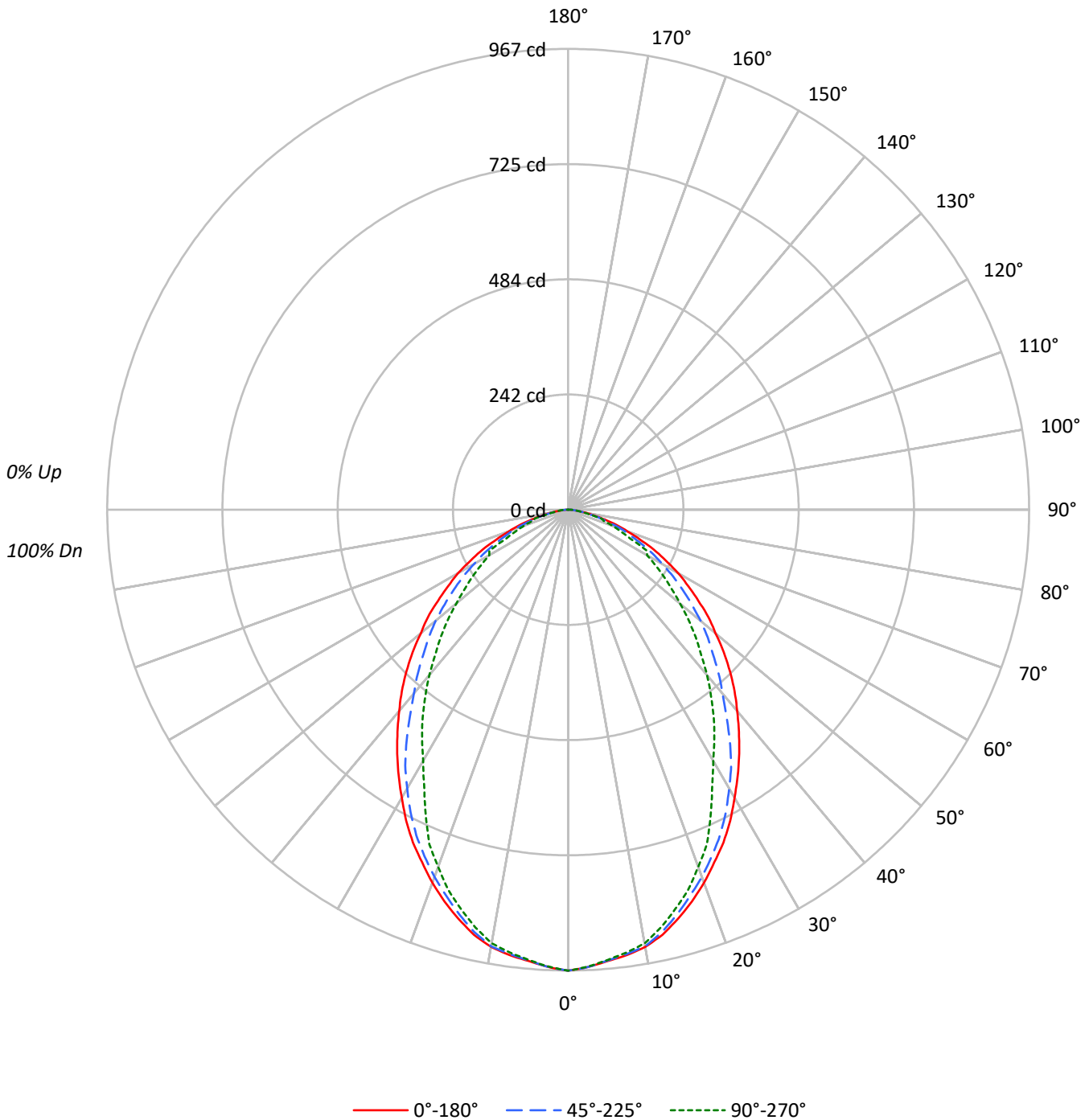
Input Watts (W): 23.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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 | 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 | | | |
| 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° | 5206 | 5206 | 5206 |
| 5° | 5136 | 5129 | 5123 |
| 10° | 5091 | 5085 | 5048 |
| 15° | 4953 | 4904 | 4835 |
| 20° | 4771 | 4695 | 4566 |
| 25° | 4575 | 4476 | 4197 |
| 30° | 4337 | 4198 | 3781 |
| 35° | 4107 | 3880 | 3497 |
| 40° | 3873 | 3535 | 3182 |
| 45° | 3651 | 3268 | 2877 |
| 50° | 3380 | 3033 | 2565 |
| 55° | 3127 | 2749 | 2298 |
| 60° | 2865 | 2455 | 2058 |
| 65° | 2520 | 2151 | 1822 |
| 70° | 2077 | 1884 | 1548 |
| 75° | 1651 | 1441 | 1512 |
| 80° | 1110 | 1038 | 970 |
| 85° | 692 | 827 | 969 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3651 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 90.0 | 4.7 |
| 10°-20° | 247.1 | 13.0 |
| 20°-30° | 342.1 | 18.0 |
| 30°-40° | 364.8 | 19.2 |
| 40°-50° | 332.8 | 17.5 |
| 50°-60° | 260.7 | 13.7 |
| 60°-70° | 169.9 | 8.9 |
| 70°-80° | 75.3 | 4.0 |
| 80°-90° | 16.1 | 0.9 |
| 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° | 679.3 | 35.8 |
| 0°-40° | 1044.1 | 55.0 |
| 0°-60° | 1637.6 | 86.2 |
| 0°-90° | 1899.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1899.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 967 | 967 | 967 | 967 | 967 | |
| 5° | 951 | 949 | 949 | 948 | 948 | 90 |
| 15° | 889 | 889 | 880 | 871 | 868 | 250 |
| 25° | 770 | 766 | 754 | 727 | 707 | 354 |
| 35° | 625 | 621 | 590 | 546 | 532 | 391 |
| 45° | 480 | 470 | 429 | 394 | 378 | 370 |
| 55° | 333 | 323 | 293 | 258 | 245 | 299 |
| 65° | 198 | 187 | 169 | 172 | 143 | 195 |
| 75° | 79 | 74 | 69 | 66 | 73 | 85 |
| 85° | 11 | 12 | 13 | 14 | 16 | 16 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P560482

CATALOG NUMBER: FSR-12-2-LD4-2LO-40-UNV-93-85-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 967.3 | 967.3 | 967.3 | 967.3 | 967.3 |
| 2.5° | 960.6 | 960.6 | 960.6 | 959.5 | 959.5 |
| 5° | 950.6 | 949.4 | 949.4 | 948.3 | 948.3 |
| 7.5° | 942.7 | 941.6 | 940.5 | 939.4 | 937.1 |
| 10° | 931.5 | 931.5 | 930.4 | 924.8 | 923.7 |
| 12.5° | 913.6 | 912.5 | 908.1 | 900.2 | 898.0 |
| 15° | 889.0 | 889.0 | 880.1 | 871.2 | 867.8 |
| 17.5° | 862.2 | 861.1 | 849.9 | 841.0 | 836.5 |
| 20° | 833.1 | 830.9 | 819.7 | 805.2 | 797.3 |
| 22.5° | 800.7 | 800.7 | 787.3 | 768.3 | 760.4 |
| 25° | 770.5 | 766.0 | 753.7 | 726.9 | 706.8 |
| 27.5° | 735.8 | 729.1 | 715.7 | 677.7 | 654.2 |
| 30° | 697.8 | 694.5 | 675.5 | 626.2 | 608.4 |
| 32.5° | 662.0 | 656.4 | 636.3 | 584.9 | 570.3 |
| 35° | 625.1 | 620.7 | 590.5 | 545.7 | 532.3 |
| 37.5° | 588.2 | 582.6 | 544.6 | 508.8 | 492.0 |
| 40° | 551.3 | 544.6 | 503.2 | 470.8 | 452.9 |
| 42.5° | 516.7 | 507.7 | 467.4 | 432.8 | 412.7 |
| 45° | 479.7 | 469.7 | 429.4 | 393.6 | 378.0 |
| 47.5° | 442.8 | 433.9 | 397.0 | 360.1 | 342.2 |
| 50° | 403.7 | 395.9 | 362.3 | 325.4 | 306.4 |
| 52.5° | 371.3 | 359.0 | 326.5 | 289.6 | 274.0 |
| 55° | 333.3 | 323.2 | 293.0 | 258.3 | 244.9 |
| 57.5° | 298.6 | 288.5 | 260.6 | 228.1 | 216.9 |
| 60° | 266.2 | 251.6 | 228.1 | 200.2 | 191.2 |
| 62.5° | 230.4 | 219.2 | 199.1 | 175.6 | 186.8 |
| 65° | 197.9 | 186.8 | 168.9 | 172.2 | 143.1 |
| 67.5° | 162.2 | 156.6 | 140.9 | 125.2 | 120.8 |
| 70° | 132.0 | 125.2 | 119.7 | 102.9 | 98.4 |
| 72.5° | 105.1 | 98.4 | 90.6 | 81.6 | 78.3 |
| 75° | 79.4 | 73.8 | 69.3 | 66.0 | 72.7 |
| 77.5° | 54.8 | 52.6 | 49.2 | 45.9 | 44.7 |
| 80° | 35.8 | 34.7 | 33.5 | 32.4 | 31.3 |
| 82.5° | 21.2 | 21.2 | 21.2 | 21.2 | 21.2 |
| 85° | 11.2 | 12.3 | 13.4 | 14.5 | 15.7 |
| 87.5° | 6.7 | 6.7 | 7.8 | 8.9 | 10.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)