

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: P560556

Luminaire Tested: FSR-12-2-LD4-2LO-50-UNV-93-96-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560556
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-50-UNV-93-96-EDD-90
Description: 1X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2022.0 lumens
Efficiency: N/A
Efficacy: 86.4 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

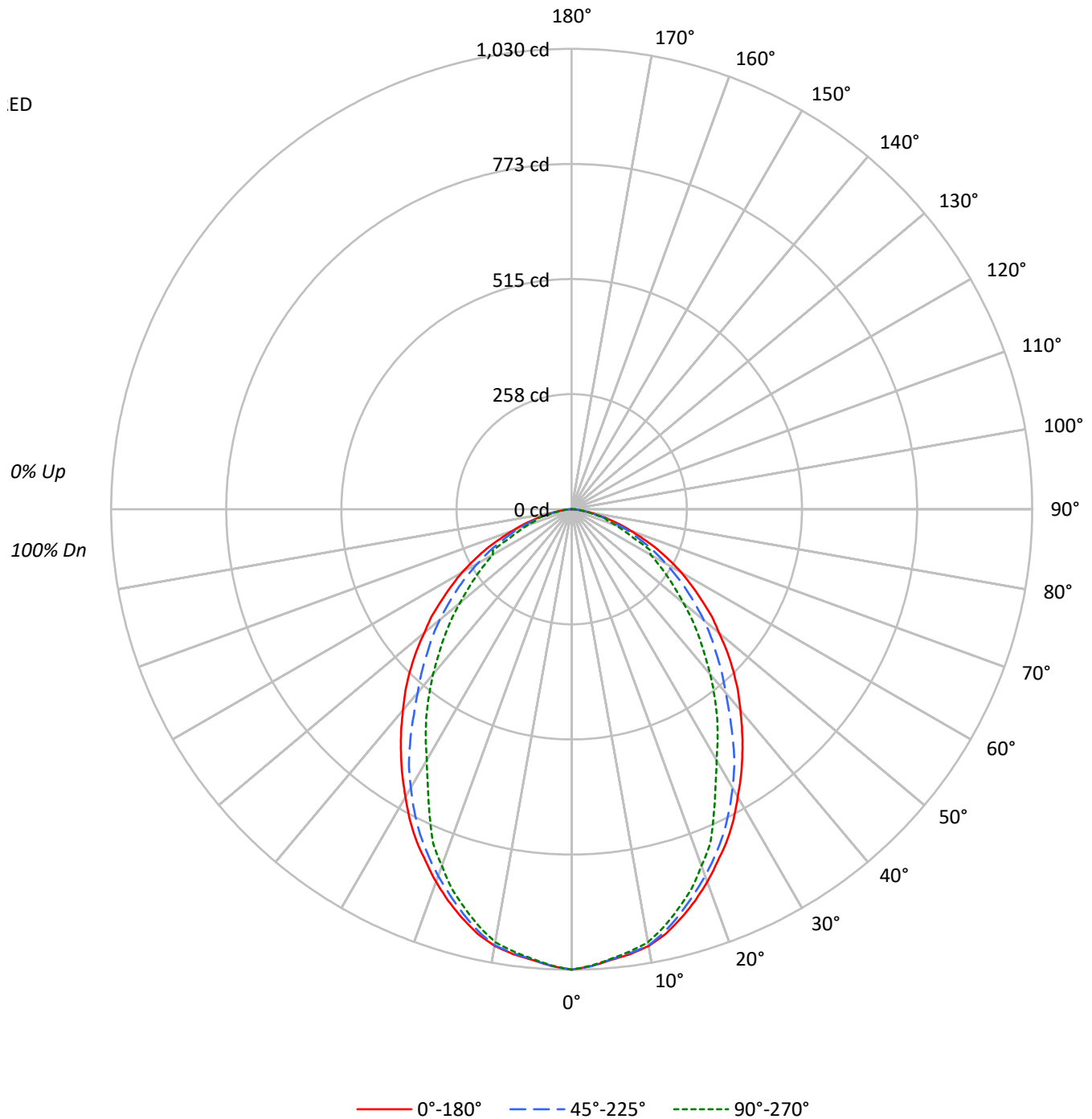
Input Watts (W): 23.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P560556

CATALOG NUMBER: FSR-12-2-LD4-2LO-50-UNV-93-96-EDD-90

Luminous Intensity Polar Plot





TEST NUMBER: P560556

CATALOG NUMBER: FSR-12-2-LD4-2LO-50-UNV-93-96-EDD-90

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° | 5543 | 5543 | 5543 |
| 5° | 5468 | 5461 | 5455 |
| 10° | 5421 | 5414 | 5375 |
| 15° | 5274 | 5221 | 5148 |
| 20° | 5081 | 4999 | 4863 |
| 25° | 4872 | 4766 | 4469 |
| 30° | 4617 | 4470 | 4026 |
| 35° | 4373 | 4131 | 3724 |
| 40° | 4124 | 3764 | 3388 |
| 45° | 3888 | 3480 | 3064 |
| 50° | 3599 | 3230 | 2732 |
| 55° | 3329 | 2928 | 2447 |
| 60° | 3050 | 2615 | 2192 |
| 65° | 2684 | 2290 | 1941 |
| 70° | 2211 | 2005 | 1649 |
| 75° | 1757 | 1535 | 1609 |
| 80° | 1181 | 1106 | 1032 |
| 85° | 735 | 883 | 1031 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3888 cd/sqm



TEST NUMBER: P560556

CATALOG NUMBER: FSR-12-2-LD4-2LO-50-UNV-93-96-EDD-90

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 95.9 | 4.7 |
| 10°-20° | 263.1 | 13.0 |
| 20°-30° | 364.3 | 18.0 |
| 30°-40° | 388.4 | 19.2 |
| 40°-50° | 354.4 | 17.5 |
| 50°-60° | 277.6 | 13.7 |
| 60°-70° | 180.9 | 8.9 |
| 70°-80° | 80.2 | 4.0 |
| 80°-90° | 17.2 | 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° | 723.3 | 35.8 |
| 0°-40° | 1111.7 | 55.0 |
| 0°-60° | 1743.7 | 86.2 |
| 0°-90° | 2022.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2022.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1030 | 1030 | 1030 | 1030 | 1030 | |
| 5° | 1012 | 1011 | 1011 | 1010 | 1010 | 96 |
| 15° | 947 | 947 | 937 | 928 | 924 | 266 |
| 25° | 820 | 816 | 803 | 774 | 752 | 377 |
| 35° | 666 | 661 | 629 | 581 | 567 | 416 |
| 45° | 511 | 500 | 457 | 419 | 402 | 393 |
| 55° | 355 | 344 | 312 | 275 | 261 | 318 |
| 65° | 211 | 199 | 180 | 183 | 152 | 208 |
| 75° | 84 | 79 | 74 | 70 | 77 | 91 |
| 85° | 12 | 13 | 14 | 16 | 17 | 16 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P560556

CATALOG NUMBER: FSR-12-2-LD4-2LO-50-UNV-93-96-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1030.0 | 1030.0 | 1030.0 | 1030.0 | 1030.0 |
| 2.5° | 1022.8 | 1022.8 | 1022.8 | 1021.6 | 1021.6 |
| 5° | 1012.1 | 1010.9 | 1010.9 | 1009.7 | 1009.7 |
| 7.5° | 1003.8 | 1002.6 | 1001.4 | 1000.2 | 997.8 |
| 10° | 991.9 | 991.9 | 990.7 | 984.7 | 983.5 |
| 12.5° | 972.8 | 971.6 | 966.9 | 958.5 | 956.2 |
| 15° | 946.6 | 946.6 | 937.1 | 927.6 | 924.0 |
| 17.5° | 918.1 | 916.9 | 905.0 | 895.4 | 890.7 |
| 20° | 887.1 | 884.7 | 872.8 | 857.3 | 849.0 |
| 22.5° | 852.6 | 852.6 | 838.3 | 818.0 | 809.7 |
| 25° | 820.4 | 815.6 | 802.6 | 774.0 | 752.5 |
| 27.5° | 783.5 | 776.4 | 762.1 | 721.6 | 696.6 |
| 30° | 743.0 | 739.4 | 719.2 | 666.8 | 647.8 |
| 32.5° | 704.9 | 699.0 | 677.5 | 622.8 | 607.3 |
| 35° | 665.6 | 660.9 | 628.7 | 581.1 | 566.8 |
| 37.5° | 626.3 | 620.4 | 579.9 | 541.8 | 523.9 |
| 40° | 587.0 | 579.9 | 535.8 | 501.3 | 482.2 |
| 42.5° | 550.1 | 540.6 | 497.7 | 460.8 | 439.4 |
| 45° | 510.8 | 500.1 | 457.2 | 419.1 | 402.5 |
| 47.5° | 471.5 | 462.0 | 422.7 | 383.4 | 364.4 |
| 50° | 429.9 | 421.5 | 385.8 | 346.5 | 326.3 |
| 52.5° | 395.3 | 382.2 | 347.7 | 308.4 | 291.7 |
| 55° | 354.8 | 344.1 | 312.0 | 275.1 | 260.8 |
| 57.5° | 317.9 | 307.2 | 277.4 | 242.9 | 231.0 |
| 60° | 283.4 | 267.9 | 242.9 | 213.1 | 203.6 |
| 62.5° | 245.3 | 233.4 | 211.9 | 186.9 | 198.9 |
| 65° | 210.8 | 198.9 | 179.8 | 183.4 | 152.4 |
| 67.5° | 172.7 | 166.7 | 150.0 | 133.4 | 128.6 |
| 70° | 140.5 | 133.4 | 127.4 | 109.5 | 104.8 |
| 72.5° | 111.9 | 104.8 | 96.4 | 86.9 | 83.4 |
| 75° | 84.5 | 78.6 | 73.8 | 70.3 | 77.4 |
| 77.5° | 58.3 | 56.0 | 52.4 | 48.8 | 47.6 |
| 80° | 38.1 | 36.9 | 35.7 | 34.5 | 33.3 |
| 82.5° | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 |
| 85° | 11.9 | 13.1 | 14.3 | 15.5 | 16.7 |
| 87.5° | 7.1 | 7.1 | 8.3 | 9.5 | 10.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)