

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: P559596

Luminaire Tested: FSR-12-1-LD4-2STD-50-UNV-93-96-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P559596
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-LD4-2STD-50-UNV-93-96-EDD-90
Description: 1X1 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: 1397.0 lumens
Efficiency: N/A
Efficacy: 84.2 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

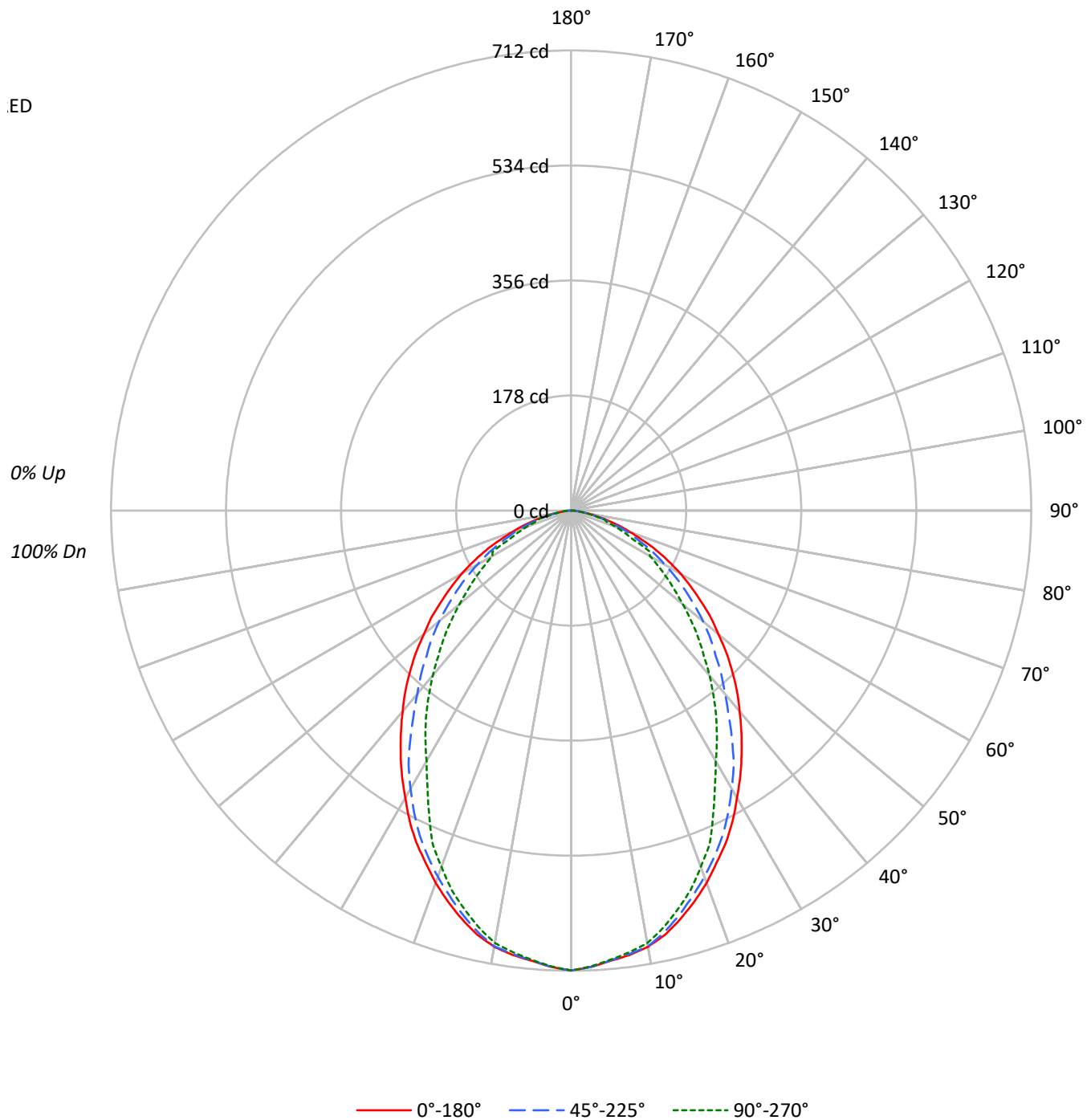
Input Watts (W): 16.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P559596

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

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 7660 | 7660 | 7660 |
| 5° | 7556 | 7547 | 7538 |
| 10° | 7490 | 7482 | 7427 |
| 15° | 7288 | 7214 | 7114 |
| 20° | 7021 | 6907 | 6719 |
| 25° | 6732 | 6586 | 6175 |
| 30° | 6380 | 6176 | 5562 |
| 35° | 6043 | 5708 | 5146 |
| 40° | 5699 | 5202 | 4682 |
| 45° | 5372 | 4809 | 4233 |
| 50° | 4973 | 4463 | 3774 |
| 55° | 4601 | 4044 | 3382 |
| 60° | 4215 | 3612 | 3029 |
| 65° | 3708 | 3163 | 2682 |
| 70° | 3056 | 2769 | 2279 |
| 75° | 2429 | 2121 | 2225 |
| 80° | 1630 | 1531 | 1426 |
| 85° | 1013 | 1223 | 1420 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5372 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 66.2 | 4.7 |
| 10°-20° | 181.8 | 13.0 |
| 20°-30° | 251.7 | 18.0 |
| 30°-40° | 268.4 | 19.2 |
| 40°-50° | 244.8 | 17.5 |
| 50°-60° | 191.8 | 13.7 |
| 60°-70° | 125.0 | 8.9 |
| 70°-80° | 55.4 | 4.0 |
| 80°-90° | 11.9 | 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° | 499.7 | 35.8 |
| 0°-40° | 768.1 | 55.0 |
| 0°-60° | 1204.7 | 86.2 |
| 0°-90° | 1397.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1397.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 712 | 712 | 712 | 712 | 712 | |
| 5° | 699 | 698 | 698 | 698 | 698 | 66 |
| 15° | 654 | 654 | 647 | 641 | 638 | 184 |
| 25° | 567 | 564 | 554 | 535 | 520 | 260 |
| 35° | 460 | 457 | 434 | 402 | 392 | 287 |
| 45° | 353 | 346 | 316 | 290 | 278 | 272 |
| 55° | 245 | 238 | 216 | 190 | 180 | 220 |
| 65° | 146 | 137 | 124 | 127 | 105 | 144 |
| 75° | 58 | 54 | 51 | 48 | 54 | 63 |
| 85° | 8 | 9 | 10 | 11 | 12 | 11 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P559596

CATALOG NUMBER: FSR-12-1-LD4-2STD-50-UNV-93-96-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 711.6 | 711.6 | 711.6 | 711.6 | 711.6 |
| 2.5° | 706.7 | 706.7 | 706.7 | 705.9 | 705.9 |
| 5° | 699.3 | 698.5 | 698.5 | 697.6 | 697.6 |
| 7.5° | 693.5 | 692.7 | 691.9 | 691.0 | 689.4 |
| 10° | 685.3 | 685.3 | 684.5 | 680.4 | 679.5 |
| 12.5° | 672.1 | 671.3 | 668.0 | 662.3 | 660.6 |
| 15° | 654.0 | 654.0 | 647.4 | 640.9 | 638.4 |
| 17.5° | 634.3 | 633.5 | 625.2 | 618.7 | 615.4 |
| 20° | 612.9 | 611.2 | 603.0 | 592.3 | 586.6 |
| 22.5° | 589.0 | 589.0 | 579.2 | 565.2 | 559.4 |
| 25° | 566.8 | 563.5 | 554.5 | 534.7 | 519.9 |
| 27.5° | 541.3 | 536.4 | 526.5 | 498.5 | 481.3 |
| 30° | 513.3 | 510.9 | 496.9 | 460.7 | 447.5 |
| 32.5° | 487.0 | 482.9 | 468.1 | 430.3 | 419.6 |
| 35° | 459.9 | 456.6 | 434.4 | 401.5 | 391.6 |
| 37.5° | 432.7 | 428.6 | 400.6 | 374.3 | 362.0 |
| 40° | 405.6 | 400.6 | 370.2 | 346.3 | 333.2 |
| 42.5° | 380.1 | 373.5 | 343.9 | 318.4 | 303.6 |
| 45° | 352.9 | 345.5 | 315.9 | 289.6 | 278.1 |
| 47.5° | 325.8 | 319.2 | 292.0 | 264.9 | 251.7 |
| 50° | 297.0 | 291.2 | 266.5 | 239.4 | 225.4 |
| 52.5° | 273.1 | 264.1 | 240.2 | 213.1 | 201.6 |
| 55° | 245.2 | 237.8 | 215.5 | 190.0 | 180.2 |
| 57.5° | 219.7 | 212.2 | 191.7 | 167.8 | 159.6 |
| 60° | 195.8 | 185.1 | 167.8 | 147.3 | 140.7 |
| 62.5° | 169.5 | 161.2 | 146.4 | 129.2 | 137.4 |
| 65° | 145.6 | 137.4 | 124.2 | 126.7 | 105.3 |
| 67.5° | 119.3 | 115.2 | 103.7 | 92.1 | 88.8 |
| 70° | 97.1 | 92.1 | 88.0 | 75.7 | 72.4 |
| 72.5° | 77.3 | 72.4 | 66.6 | 60.1 | 57.6 |
| 75° | 58.4 | 54.3 | 51.0 | 48.5 | 53.5 |
| 77.5° | 40.3 | 38.7 | 36.2 | 33.7 | 32.9 |
| 80° | 26.3 | 25.5 | 24.7 | 23.9 | 23.0 |
| 82.5° | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 |
| 85° | 8.2 | 9.0 | 9.9 | 10.7 | 11.5 |
| 87.5° | 4.9 | 4.9 | 5.8 | 6.6 | 7.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)