

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: P560136

Luminaire Tested: FSR-12-2-LD4-1STD-50-UNV-81-88-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560136
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-LD4-1STD-50-UNV-81-88-EDD-90
Description: 1X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1093.0 lumens
Efficiency: N/A
Efficacy: 65.8 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

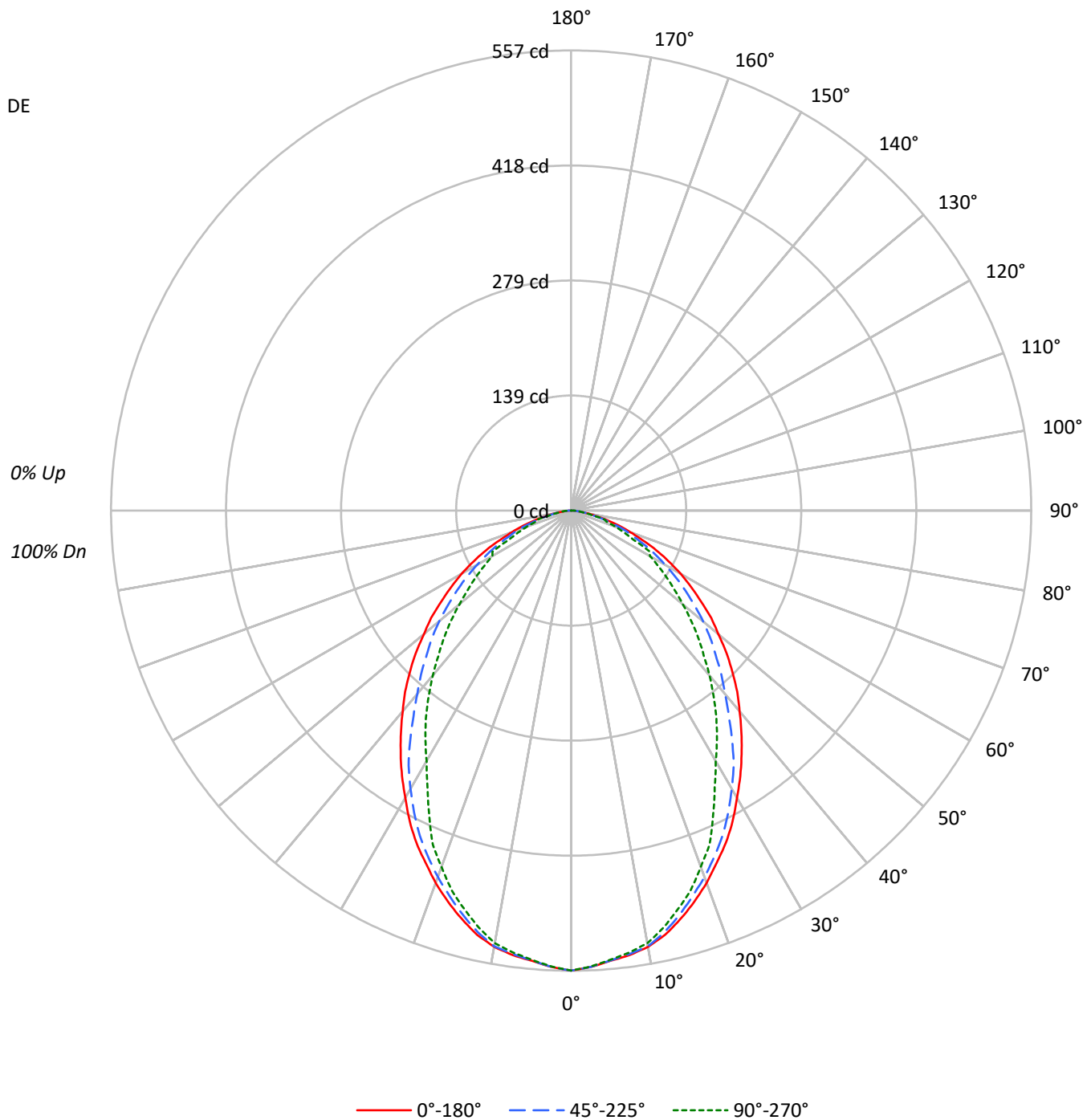
Input Watts (W): 16.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P560136

CATALOG NUMBER: FSR-12-2-LD4-1STD-50-UNV-81-88-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 | 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° | 2997 | 2997 | 2997 |
| 5° | 2956 | 2952 | 2949 |
| 10° | 2930 | 2926 | 2906 |
| 15° | 2851 | 2823 | 2783 |
| 20° | 2746 | 2702 | 2628 |
| 25° | 2634 | 2576 | 2416 |
| 30° | 2496 | 2416 | 2176 |
| 35° | 2364 | 2233 | 2013 |
| 40° | 2229 | 2035 | 1832 |
| 45° | 2101 | 1881 | 1656 |
| 50° | 1946 | 1746 | 1477 |
| 55° | 1800 | 1582 | 1323 |
| 60° | 1649 | 1413 | 1185 |
| 65° | 1450 | 1238 | 1049 |
| 70° | 1196 | 1084 | 891 |
| 75° | 950 | 830 | 869 |
| 80° | 638 | 598 | 558 |
| 85° | 395 | 475 | 556 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2101 cd/sqm

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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 51.8 | 4.7 |
| 10°-20° | 142.2 | 13.0 |
| 20°-30° | 196.9 | 18.0 |
| 30°-40° | 210.0 | 19.2 |
| 40°-50° | 191.6 | 17.5 |
| 50°-60° | 150.1 | 13.7 |
| 60°-70° | 97.8 | 8.9 |
| 70°-80° | 43.3 | 4.0 |
| 80°-90° | 9.3 | 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° | 391.0 | 35.8 |
| 0°-40° | 600.9 | 55.0 |
| 0°-60° | 942.6 | 86.2 |
| 0°-90° | 1093.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1093.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 557 | 557 | 557 | 557 | 557 | |
| 5° | 547 | 546 | 546 | 546 | 546 | 52 |
| 15° | 512 | 512 | 507 | 501 | 500 | 144 |
| 25° | 444 | 441 | 434 | 418 | 407 | 204 |
| 35° | 360 | 357 | 340 | 314 | 306 | 225 |
| 45° | 276 | 270 | 247 | 227 | 218 | 213 |
| 55° | 192 | 186 | 169 | 149 | 141 | 172 |
| 65° | 114 | 108 | 97 | 99 | 82 | 112 |
| 75° | 46 | 42 | 40 | 38 | 42 | 49 |
| 85° | 6 | 7 | 8 | 8 | 9 | 9 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CATALOG NUMBER: FSR-12-2-LD4-1STD-50-UNV-81-88-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 556.8 | 556.8 | 556.8 | 556.8 | 556.8 |
| 2.5° | 552.9 | 552.9 | 552.9 | 552.3 | 552.3 |
| 5° | 547.1 | 546.5 | 546.5 | 545.8 | 545.8 |
| 7.5° | 542.6 | 542.0 | 541.3 | 540.7 | 539.4 |
| 10° | 536.2 | 536.2 | 535.5 | 532.3 | 531.7 |
| 12.5° | 525.9 | 525.2 | 522.6 | 518.1 | 516.9 |
| 15° | 511.7 | 511.7 | 506.6 | 501.4 | 499.5 |
| 17.5° | 496.3 | 495.6 | 489.2 | 484.0 | 481.5 |
| 20° | 479.5 | 478.2 | 471.8 | 463.4 | 458.9 |
| 22.5° | 460.9 | 460.9 | 453.1 | 442.2 | 437.7 |
| 25° | 443.5 | 440.9 | 433.8 | 418.4 | 406.8 |
| 27.5° | 423.5 | 419.7 | 411.9 | 390.1 | 376.5 |
| 30° | 401.6 | 399.7 | 388.8 | 360.4 | 350.1 |
| 32.5° | 381.0 | 377.8 | 366.2 | 336.6 | 328.3 |
| 35° | 359.8 | 357.2 | 339.8 | 314.1 | 306.4 |
| 37.5° | 338.6 | 335.3 | 313.5 | 292.9 | 283.2 |
| 40° | 317.3 | 313.5 | 289.6 | 271.0 | 260.7 |
| 42.5° | 297.4 | 292.2 | 269.0 | 249.1 | 237.5 |
| 45° | 276.1 | 270.3 | 247.2 | 226.6 | 217.6 |
| 47.5° | 254.9 | 249.7 | 228.5 | 207.3 | 197.0 |
| 50° | 232.4 | 227.9 | 208.5 | 187.3 | 176.4 |
| 52.5° | 213.7 | 206.6 | 187.9 | 166.7 | 157.7 |
| 55° | 191.8 | 186.0 | 168.6 | 148.7 | 141.0 |
| 57.5° | 171.9 | 166.1 | 150.0 | 131.3 | 124.9 |
| 60° | 153.2 | 144.8 | 131.3 | 115.2 | 110.1 |
| 62.5° | 132.6 | 126.2 | 114.6 | 101.1 | 107.5 |
| 65° | 113.9 | 107.5 | 97.2 | 99.1 | 82.4 |
| 67.5° | 93.3 | 90.1 | 81.1 | 72.1 | 69.5 |
| 70° | 76.0 | 72.1 | 68.9 | 59.2 | 56.6 |
| 72.5° | 60.5 | 56.6 | 52.1 | 47.0 | 45.1 |
| 75° | 45.7 | 42.5 | 39.9 | 38.0 | 41.8 |
| 77.5° | 31.5 | 30.3 | 28.3 | 26.4 | 25.7 |
| 80° | 20.6 | 20.0 | 19.3 | 18.7 | 18.0 |
| 82.5° | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 |
| 85° | 6.4 | 7.1 | 7.7 | 8.4 | 9.0 |
| 87.5° | 3.9 | 3.9 | 4.5 | 5.1 | 5.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)