

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: P561844

Luminaire Tested: FSR-12-4-LD4-2STD-50-UNV-80-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561844
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-12-4-LD4-2STD-50-UNV-80-86-EDD-90
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRON
SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5753.0 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: 4' x H: 0')
CIE Type: Direct

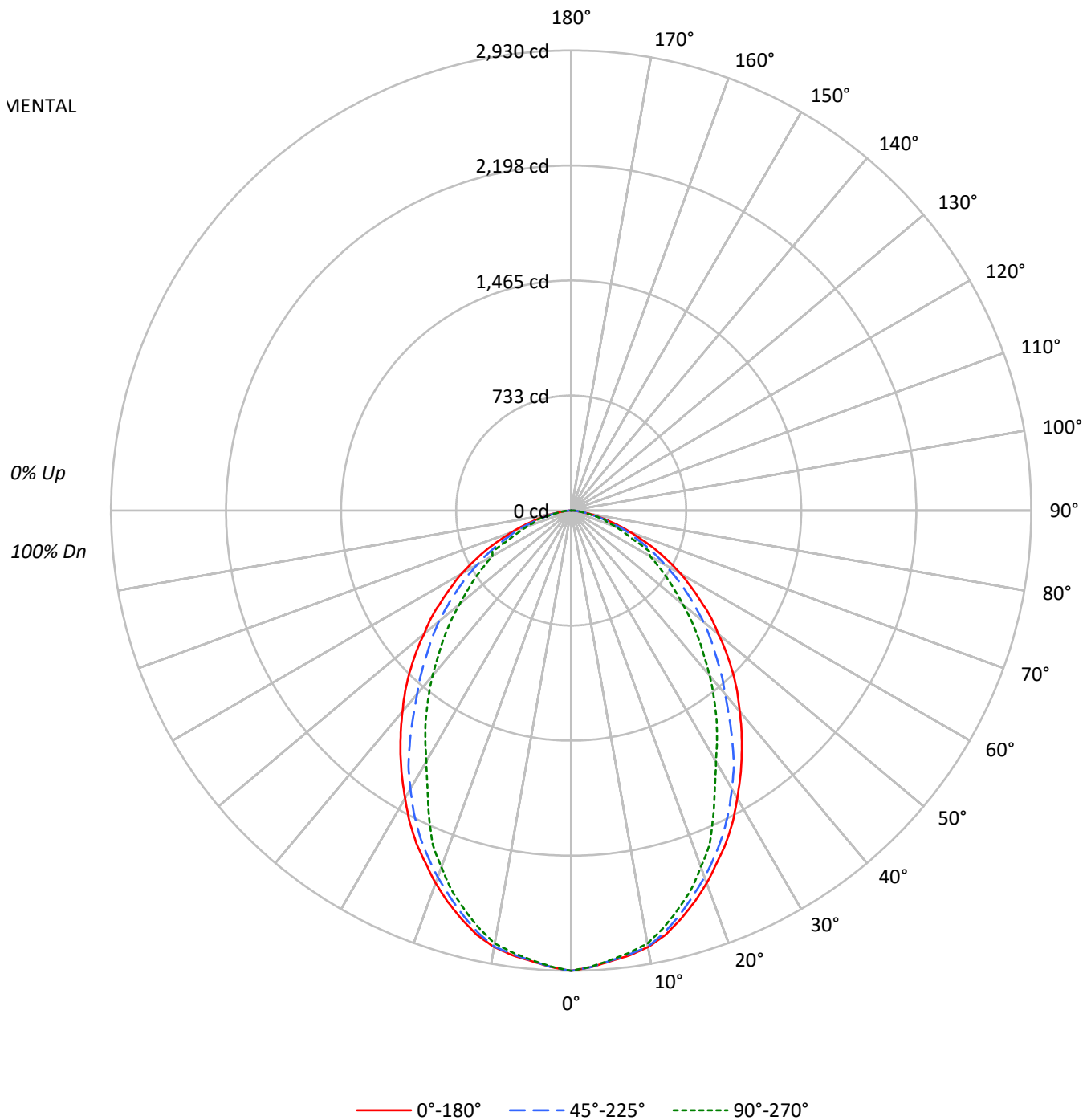
Input Watts (W): 66.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P561844

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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° | 7886 | 7886 | 7886 |
| 5° | 7779 | 7770 | 7760 |
| 10° | 7711 | 7702 | 7647 |
| 15° | 7504 | 7428 | 7324 |
| 20° | 7228 | 7111 | 6917 |
| 25° | 6931 | 6780 | 6357 |
| 30° | 6569 | 6358 | 5727 |
| 35° | 6221 | 5876 | 5298 |
| 40° | 5867 | 5355 | 4820 |
| 45° | 5531 | 4951 | 4358 |
| 50° | 5120 | 4595 | 3886 |
| 55° | 4737 | 4164 | 3481 |
| 60° | 4339 | 3719 | 3118 |
| 65° | 3819 | 3258 | 2761 |
| 70° | 3146 | 2852 | 2345 |
| 75° | 2501 | 2183 | 2289 |
| 80° | 1680 | 1574 | 1471 |
| 85° | 1047 | 1257 | 1463 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5531 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 272.8 | 4.7 |
| 10°-20° | 748.7 | 13.0 |
| 20°-30° | 1036.5 | 18.0 |
| 30°-40° | 1105.2 | 19.2 |
| 40°-50° | 1008.2 | 17.5 |
| 50°-60° | 789.9 | 13.7 |
| 60°-70° | 514.8 | 8.9 |
| 70°-80° | 228.1 | 4.0 |
| 80°-90° | 49.0 | 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° | 2057.9 | 35.8 |
| 0°-40° | 3163.1 | 55.0 |
| 0°-60° | 4961.2 | 86.2 |
| 0°-90° | 5753.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5753.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2930 | 2930 | 2930 | 2930 | 2930 | |
| 5° | 2880 | 2876 | 2876 | 2873 | 2873 | 273 |
| 15° | 2693 | 2693 | 2666 | 2639 | 2629 | 757 |
| 25° | 2334 | 2321 | 2283 | 2202 | 2141 | 1072 |
| 35° | 1894 | 1880 | 1789 | 1653 | 1613 | 1184 |
| 45° | 1453 | 1423 | 1301 | 1192 | 1145 | 1120 |
| 55° | 1010 | 979 | 888 | 783 | 742 | 906 |
| 65° | 600 | 566 | 512 | 522 | 434 | 591 |
| 75° | 240 | 224 | 210 | 200 | 220 | 258 |
| 85° | 34 | 37 | 41 | 44 | 47 | 47 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P561844

CATALOG NUMBER: FSR-12-4-LD4-2STD-50-UNV-80-86-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2930.5 | 2930.5 | 2930.5 | 2930.5 | 2930.5 |
| 2.5° | 2910.2 | 2910.2 | 2910.2 | 2906.8 | 2906.8 |
| 5° | 2879.7 | 2876.3 | 2876.3 | 2872.9 | 2872.9 |
| 7.5° | 2856.0 | 2852.6 | 2849.2 | 2845.8 | 2839.0 |
| 10° | 2822.1 | 2822.1 | 2818.7 | 2801.8 | 2798.4 |
| 12.5° | 2767.9 | 2764.5 | 2750.9 | 2727.2 | 2720.5 |
| 15° | 2693.4 | 2693.4 | 2666.2 | 2639.1 | 2629.0 |
| 17.5° | 2612.0 | 2608.7 | 2574.8 | 2547.7 | 2534.1 |
| 20° | 2524.0 | 2517.2 | 2483.3 | 2439.3 | 2415.5 |
| 22.5° | 2425.7 | 2425.7 | 2385.1 | 2327.5 | 2303.7 |
| 25° | 2334.2 | 2320.7 | 2283.4 | 2202.1 | 2141.1 |
| 27.5° | 2229.2 | 2208.9 | 2168.2 | 2053.0 | 1981.9 |
| 30° | 2114.0 | 2103.9 | 2046.3 | 1897.2 | 1843.0 |
| 32.5° | 2005.6 | 1988.7 | 1927.7 | 1771.9 | 1727.8 |
| 35° | 1893.8 | 1880.3 | 1788.8 | 1653.3 | 1612.6 |
| 37.5° | 1782.0 | 1765.1 | 1649.9 | 1541.5 | 1490.7 |
| 40° | 1670.2 | 1649.9 | 1524.5 | 1426.3 | 1372.1 |
| 42.5° | 1565.2 | 1538.1 | 1416.1 | 1311.1 | 1250.1 |
| 45° | 1453.4 | 1422.9 | 1300.9 | 1192.5 | 1145.1 |
| 47.5° | 1341.6 | 1314.5 | 1202.7 | 1090.9 | 1036.7 |
| 50° | 1223.0 | 1199.3 | 1097.7 | 985.9 | 928.3 |
| 52.5° | 1124.8 | 1087.5 | 989.3 | 877.5 | 830.0 |
| 55° | 1009.6 | 979.1 | 887.6 | 782.6 | 741.9 |
| 57.5° | 904.6 | 874.1 | 789.4 | 691.1 | 657.2 |
| 60° | 806.3 | 762.3 | 691.1 | 606.4 | 579.3 |
| 62.5° | 697.9 | 664.0 | 603.0 | 531.9 | 565.8 |
| 65° | 599.7 | 565.8 | 511.6 | 521.7 | 433.6 |
| 67.5° | 491.2 | 474.3 | 426.9 | 379.4 | 365.9 |
| 70° | 399.8 | 379.4 | 362.5 | 311.7 | 298.1 |
| 72.5° | 318.5 | 298.1 | 274.4 | 247.3 | 237.2 |
| 75° | 240.5 | 223.6 | 210.0 | 199.9 | 220.2 |
| 77.5° | 166.0 | 159.2 | 149.1 | 138.9 | 135.5 |
| 80° | 108.4 | 105.0 | 101.6 | 98.2 | 94.9 |
| 82.5° | 64.4 | 64.4 | 64.4 | 64.4 | 64.4 |
| 85° | 33.9 | 37.3 | 40.7 | 44.0 | 47.4 |
| 87.5° | 20.3 | 20.3 | 23.7 | 27.1 | 30.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)