

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: P561903

Luminaire Tested: FSR-12-4-LD4-2STD-50-UNV-93-97-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561903
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-93-97-EDD
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6534.0 lumens
Efficiency: N/A
Efficacy: 98.1 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

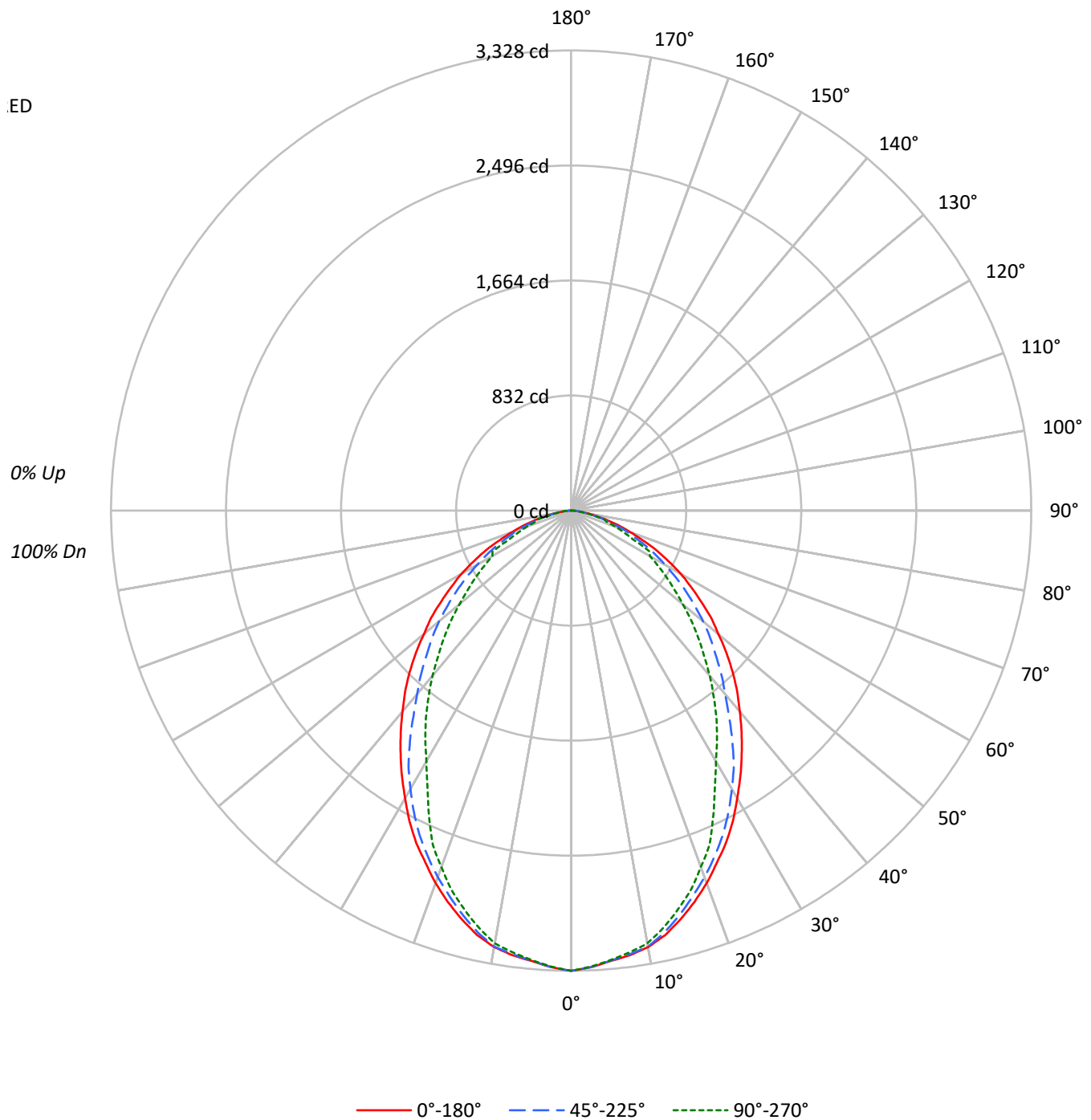
Input Watts (W): 66.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P561903

CATALOG NUMBER: FSR-12-4-LD4-2STD-50-UNV-93-97-EDD

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° | 8956 | 8956 | 8956 |
| 5° | 8835 | 8824 | 8814 |
| 10° | 8758 | 8748 | 8685 |
| 15° | 8522 | 8436 | 8318 |
| 20° | 8209 | 8077 | 7857 |
| 25° | 7872 | 7700 | 7220 |
| 30° | 7461 | 7222 | 6504 |
| 35° | 7066 | 6674 | 6017 |
| 40° | 6664 | 6082 | 5474 |
| 45° | 6282 | 5623 | 4950 |
| 50° | 5815 | 5219 | 4414 |
| 55° | 5379 | 4730 | 3954 |
| 60° | 4929 | 4224 | 3541 |
| 65° | 4337 | 3699 | 3136 |
| 70° | 3572 | 3239 | 2664 |
| 75° | 2840 | 2481 | 2600 |
| 80° | 1908 | 1788 | 1669 |
| 85° | 1189 | 1426 | 1664 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6282 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 309.8 | 4.7 |
| 10°-20° | 850.3 | 13.0 |
| 20°-30° | 1177.2 | 18.0 |
| 30°-40° | 1255.2 | 19.2 |
| 40°-50° | 1145.1 | 17.5 |
| 50°-60° | 897.1 | 13.7 |
| 60°-70° | 584.7 | 8.9 |
| 70°-80° | 259.0 | 4.0 |
| 80°-90° | 55.6 | 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° | 2337.3 | 35.8 |
| 0°-40° | 3592.5 | 55.0 |
| 0°-60° | 5634.7 | 86.2 |
| 0°-90° | 6534.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 6534.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 3328 | 3328 | 3328 | 3328 | 3328 | |
| 5° | 3271 | 3267 | 3267 | 3263 | 3263 | 310 |
| 15° | 3059 | 3059 | 3028 | 2997 | 2986 | 860 |
| 25° | 2651 | 2636 | 2593 | 2501 | 2432 | 1217 |
| 35° | 2151 | 2136 | 2032 | 1878 | 1832 | 1345 |
| 45° | 1651 | 1616 | 1478 | 1354 | 1301 | 1272 |
| 55° | 1147 | 1112 | 1008 | 889 | 843 | 1028 |
| 65° | 681 | 643 | 581 | 593 | 492 | 671 |
| 75° | 273 | 254 | 239 | 227 | 250 | 293 |
| 85° | 38 | 42 | 46 | 50 | 54 | 53 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P561903

CATALOG NUMBER: FSR-12-4-LD4-2STD-50-UNV-93-97-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 3328.3 | 3328.3 | 3328.3 | 3328.3 | 3328.3 |
| 2.5° | 3305.2 | 3305.2 | 3305.2 | 3301.4 | 3301.4 |
| 5° | 3270.6 | 3266.8 | 3266.8 | 3262.9 | 3262.9 |
| 7.5° | 3243.7 | 3239.8 | 3236.0 | 3232.1 | 3224.4 |
| 10° | 3205.2 | 3205.2 | 3201.4 | 3182.1 | 3178.3 |
| 12.5° | 3143.6 | 3139.8 | 3124.4 | 3097.5 | 3089.8 |
| 15° | 3059.0 | 3059.0 | 3028.2 | 2997.4 | 2985.9 |
| 17.5° | 2966.6 | 2962.8 | 2924.3 | 2893.5 | 2878.1 |
| 20° | 2866.6 | 2858.9 | 2820.4 | 2770.4 | 2743.5 |
| 22.5° | 2755.0 | 2755.0 | 2708.8 | 2643.4 | 2616.5 |
| 25° | 2651.1 | 2635.7 | 2593.4 | 2501.1 | 2431.8 |
| 27.5° | 2531.8 | 2508.8 | 2462.6 | 2331.8 | 2251.0 |
| 30° | 2401.0 | 2389.5 | 2324.1 | 2154.8 | 2093.2 |
| 32.5° | 2277.9 | 2258.6 | 2189.4 | 2012.4 | 1962.4 |
| 35° | 2150.9 | 2135.5 | 2031.6 | 1877.7 | 1831.5 |
| 37.5° | 2023.9 | 2004.7 | 1873.9 | 1750.7 | 1693.0 |
| 40° | 1897.0 | 1873.9 | 1731.5 | 1619.9 | 1558.4 |
| 42.5° | 1777.7 | 1746.9 | 1608.4 | 1489.1 | 1419.8 |
| 45° | 1650.7 | 1616.1 | 1477.5 | 1354.4 | 1300.6 |
| 47.5° | 1523.7 | 1492.9 | 1366.0 | 1239.0 | 1177.4 |
| 50° | 1389.0 | 1362.1 | 1246.7 | 1119.7 | 1054.3 |
| 52.5° | 1277.5 | 1235.1 | 1123.6 | 996.6 | 942.7 |
| 55° | 1146.6 | 1112.0 | 1008.1 | 888.8 | 842.7 |
| 57.5° | 1027.4 | 992.7 | 896.5 | 784.9 | 746.5 |
| 60° | 915.8 | 865.8 | 784.9 | 688.8 | 658.0 |
| 62.5° | 792.6 | 754.2 | 684.9 | 604.1 | 642.6 |
| 65° | 681.1 | 642.6 | 581.0 | 592.6 | 492.5 |
| 67.5° | 557.9 | 538.7 | 484.8 | 431.0 | 415.6 |
| 70° | 454.0 | 431.0 | 411.7 | 354.0 | 338.6 |
| 72.5° | 361.7 | 338.6 | 311.7 | 280.9 | 269.3 |
| 75° | 273.2 | 254.0 | 238.6 | 227.0 | 250.1 |
| 77.5° | 188.5 | 180.8 | 169.3 | 157.8 | 153.9 |
| 80° | 123.1 | 119.3 | 115.4 | 111.6 | 107.7 |
| 82.5° | 73.1 | 73.1 | 73.1 | 73.1 | 73.1 |
| 85° | 38.5 | 42.3 | 46.2 | 50.0 | 53.9 |
| 87.5° | 23.1 | 23.1 | 26.9 | 30.8 | 34.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)