

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: P561722

Luminaire Tested: FSR-12-4-LD4-2STD-35-UNV-80-94-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561722
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-35-UNV-80-94-EDD-90
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR TEMPERED G ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5571.0 lumens
Efficiency: N/A
Efficacy: 83.6 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

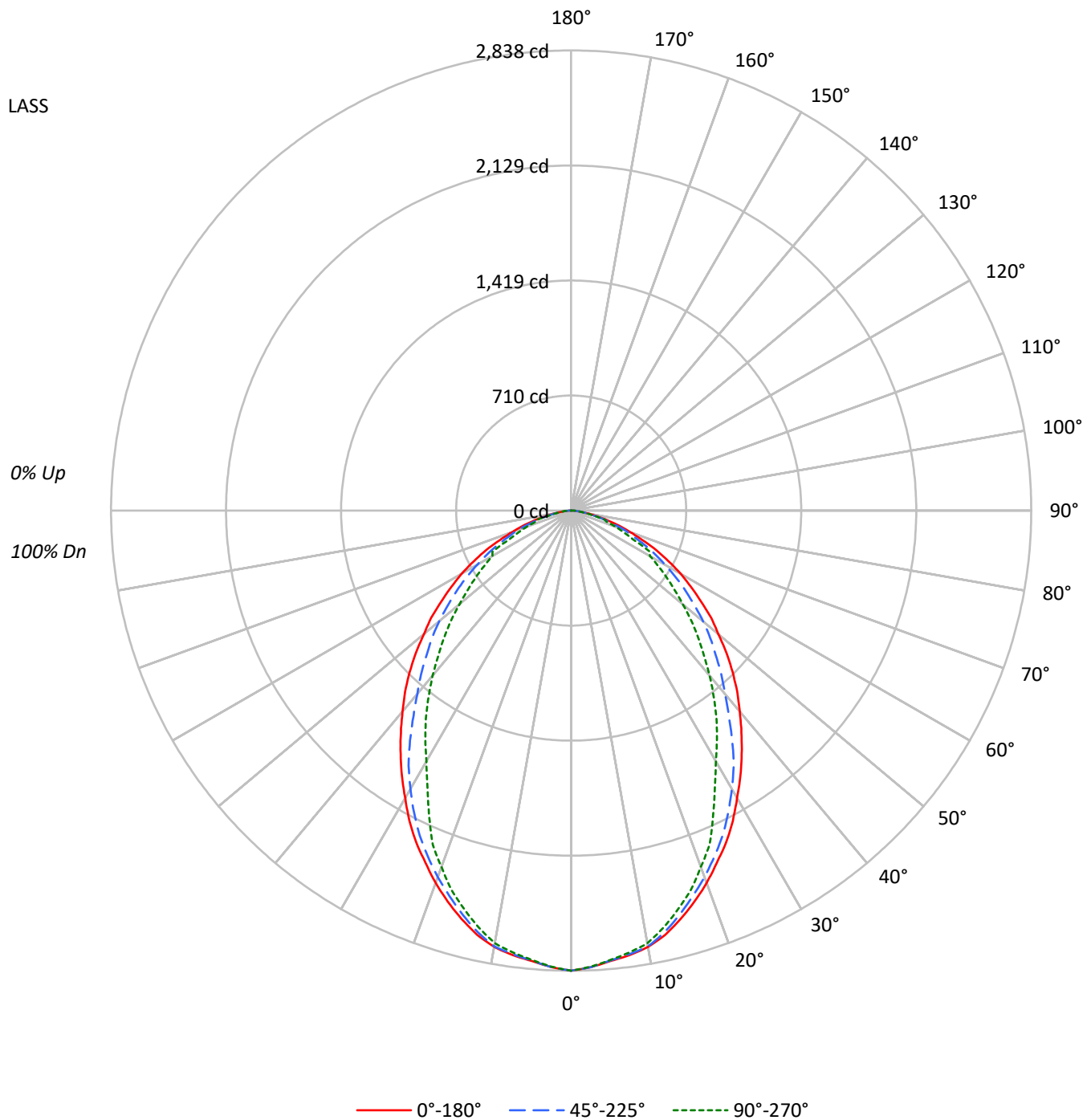
Input Watts (W): 66.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P561722

CATALOG NUMBER: FSR-12-4-LD4-2STD-35-UNV-80-94-EDD-90

Luminous Intensity Polar Plot





TEST NUMBER: P561722

CATALOG NUMBER: FSR-12-4-LD4-2STD-35-UNV-80-94-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 | | | | | | | | | 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° | 7636 | 7636 | 7636 |
| 5° | 7533 | 7524 | 7515 |
| 10° | 7467 | 7458 | 7405 |
| 15° | 7266 | 7193 | 7092 |
| 20° | 6999 | 6886 | 6698 |
| 25° | 6712 | 6565 | 6156 |
| 30° | 6361 | 6157 | 5546 |
| 35° | 6025 | 5690 | 5130 |
| 40° | 5682 | 5186 | 4667 |
| 45° | 5356 | 4794 | 4220 |
| 50° | 4958 | 4450 | 3763 |
| 55° | 4586 | 4032 | 3371 |
| 60° | 4202 | 3602 | 3019 |
| 65° | 3698 | 3154 | 2674 |
| 70° | 3046 | 2762 | 2271 |
| 75° | 2421 | 2115 | 2217 |
| 80° | 1627 | 1525 | 1424 |
| 85° | 1013 | 1216 | 1417 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5356 cd/sqm



TEST NUMBER: P561722

CATALOG NUMBER: FSR-12-4-LD4-2STD-35-UNV-80-94-EDD-90

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 264.2 | 4.7 |
| 10°-20° | 725.0 | 13.0 |
| 20°-30° | 1003.7 | 18.0 |
| 30°-40° | 1070.2 | 19.2 |
| 40°-50° | 976.3 | 17.5 |
| 50°-60° | 764.9 | 13.7 |
| 60°-70° | 498.5 | 8.9 |
| 70°-80° | 220.9 | 4.0 |
| 80°-90° | 47.4 | 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° | 1992.8 | 35.8 |
| 0°-40° | 3063.0 | 55.0 |
| 0°-60° | 4804.2 | 86.2 |
| 0°-90° | 5571.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5571.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2838 | 2838 | 2838 | 2838 | 2838 | |
| 5° | 2789 | 2785 | 2785 | 2782 | 2782 | 265 |
| 15° | 2608 | 2608 | 2582 | 2556 | 2546 | 733 |
| 25° | 2260 | 2247 | 2211 | 2132 | 2073 | 1038 |
| 35° | 1834 | 1821 | 1732 | 1601 | 1562 | 1147 |
| 45° | 1407 | 1378 | 1260 | 1155 | 1109 | 1084 |
| 55° | 978 | 948 | 860 | 758 | 718 | 877 |
| 65° | 581 | 548 | 495 | 505 | 420 | 572 |
| 75° | 233 | 216 | 203 | 194 | 213 | 250 |
| 85° | 33 | 36 | 39 | 43 | 46 | 46 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P561722

CATALOG NUMBER: FSR-12-4-LD4-2STD-35-UNV-80-94-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2837.8 | 2837.8 | 2837.8 | 2837.8 | 2837.8 |
| 2.5° | 2818.1 | 2818.1 | 2818.1 | 2814.8 | 2814.8 |
| 5° | 2788.6 | 2785.3 | 2785.3 | 2782.0 | 2782.0 |
| 7.5° | 2765.6 | 2762.3 | 2759.1 | 2755.8 | 2749.2 |
| 10° | 2732.8 | 2732.8 | 2729.5 | 2713.1 | 2709.8 |
| 12.5° | 2680.3 | 2677.0 | 2663.9 | 2641.0 | 2634.4 |
| 15° | 2608.1 | 2608.1 | 2581.9 | 2555.7 | 2545.8 |
| 17.5° | 2529.4 | 2526.1 | 2493.3 | 2467.1 | 2454.0 |
| 20° | 2444.1 | 2437.5 | 2404.7 | 2362.1 | 2339.1 |
| 22.5° | 2349.0 | 2349.0 | 2309.6 | 2253.8 | 2230.9 |
| 25° | 2260.4 | 2247.3 | 2211.2 | 2132.4 | 2073.4 |
| 27.5° | 2158.7 | 2139.0 | 2099.6 | 1988.1 | 1919.2 |
| 30° | 2047.1 | 2037.3 | 1981.5 | 1837.2 | 1784.7 |
| 32.5° | 1942.2 | 1925.8 | 1866.7 | 1715.8 | 1673.1 |
| 35° | 1833.9 | 1820.8 | 1732.2 | 1601.0 | 1561.6 |
| 37.5° | 1725.6 | 1709.2 | 1597.7 | 1492.7 | 1443.5 |
| 40° | 1617.4 | 1597.7 | 1476.3 | 1381.2 | 1328.7 |
| 42.5° | 1515.7 | 1489.4 | 1371.3 | 1269.6 | 1210.6 |
| 45° | 1407.4 | 1377.9 | 1259.8 | 1154.8 | 1108.9 |
| 47.5° | 1299.2 | 1272.9 | 1164.6 | 1056.4 | 1003.9 |
| 50° | 1184.3 | 1161.4 | 1062.9 | 954.7 | 898.9 |
| 52.5° | 1089.2 | 1053.1 | 958.0 | 849.7 | 803.8 |
| 55° | 977.6 | 948.1 | 859.5 | 757.8 | 718.5 |
| 57.5° | 875.9 | 846.4 | 764.4 | 669.3 | 636.5 |
| 60° | 780.8 | 738.2 | 669.3 | 587.2 | 561.0 |
| 62.5° | 675.8 | 643.0 | 584.0 | 515.1 | 547.9 |
| 65° | 580.7 | 547.9 | 495.4 | 505.2 | 419.9 |
| 67.5° | 475.7 | 459.3 | 413.4 | 367.4 | 354.3 |
| 70° | 387.1 | 367.4 | 351.0 | 301.8 | 288.7 |
| 72.5° | 308.4 | 288.7 | 265.7 | 239.5 | 229.6 |
| 75° | 232.9 | 216.5 | 203.4 | 193.6 | 213.2 |
| 77.5° | 160.8 | 154.2 | 144.4 | 134.5 | 131.2 |
| 80° | 105.0 | 101.7 | 98.4 | 95.1 | 91.9 |
| 82.5° | 62.3 | 62.3 | 62.3 | 62.3 | 62.3 |
| 85° | 32.8 | 36.1 | 39.4 | 42.6 | 45.9 |
| 87.5° | 19.7 | 19.7 | 23.0 | 26.2 | 29.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)