

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: P563070

Luminaire Tested: FSR-24-4-LD4-3HI-35-UNV-80-97-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P563070
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-24-4-LD4-3HI-35-UNV-80-97-EDD-90
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 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: 11483.0 lumens
Efficiency: N/A
Efficacy: 88.6 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

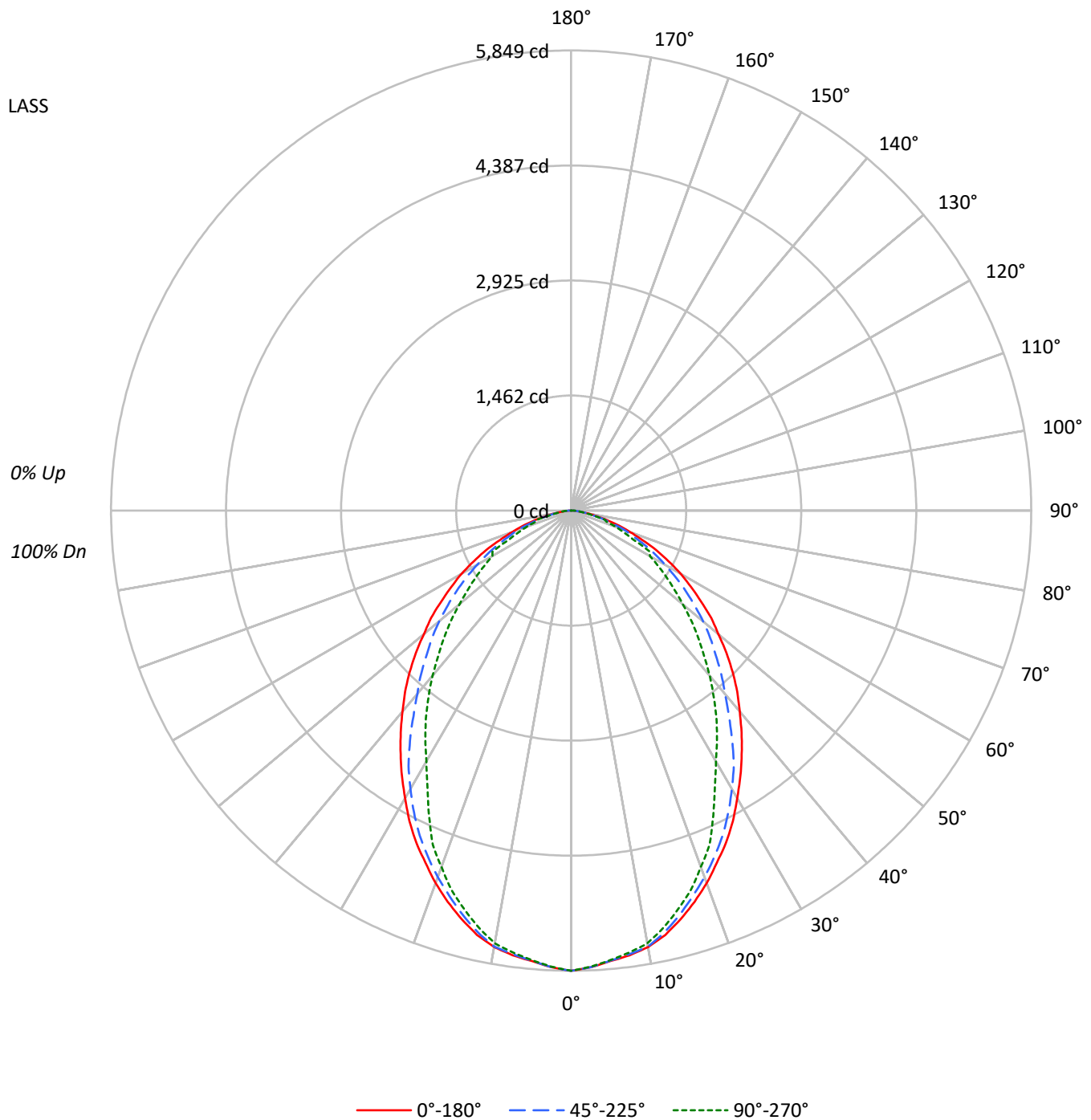
Input Watts (W): 129.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P563070

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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 | | | | |
| 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° | 7870 | 7870 | 7870 |
| 5° | 7763 | 7754 | 7745 |
| 10° | 7696 | 7687 | 7631 |
| 15° | 7488 | 7413 | 7310 |
| 20° | 7213 | 7097 | 6903 |
| 25° | 6917 | 6766 | 6345 |
| 30° | 6556 | 6346 | 5715 |
| 35° | 6209 | 5865 | 5287 |
| 40° | 5856 | 5345 | 4810 |
| 45° | 5520 | 4941 | 4349 |
| 50° | 5110 | 4586 | 3878 |
| 55° | 4727 | 4156 | 3474 |
| 60° | 4331 | 3712 | 3112 |
| 65° | 3811 | 3251 | 2756 |
| 70° | 3139 | 2847 | 2341 |
| 75° | 2496 | 2180 | 2285 |
| 80° | 1677 | 1572 | 1467 |
| 85° | 1044 | 1252 | 1462 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5520 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 544.5 | 4.7 |
| 10°-20° | 1494.3 | 13.0 |
| 20°-30° | 2068.8 | 18.0 |
| 30°-40° | 2205.9 | 19.2 |
| 40°-50° | 2012.4 | 17.5 |
| 50°-60° | 1576.6 | 13.7 |
| 60°-70° | 1027.5 | 8.9 |
| 70°-80° | 455.2 | 4.0 |
| 80°-90° | 97.7 | 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° | 4107.6 | 35.8 |
| 0°-40° | 6313.5 | 55.0 |
| 0°-60° | 9902.5 | 86.2 |
| 0°-90° | 11483.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 11483.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 5849 | 5849 | 5849 | 5849 | 5849 | |
| 5° | 5748 | 5741 | 5741 | 5734 | 5734 | 546 |
| 15° | 5376 | 5376 | 5322 | 5268 | 5248 | 1511 |
| 25° | 4659 | 4632 | 4558 | 4395 | 4274 | 2139 |
| 35° | 3780 | 3753 | 3570 | 3300 | 3219 | 2363 |
| 45° | 2901 | 2840 | 2597 | 2380 | 2286 | 2235 |
| 55° | 2015 | 1954 | 1772 | 1562 | 1481 | 1807 |
| 65° | 1197 | 1129 | 1021 | 1041 | 866 | 1180 |
| 75° | 480 | 446 | 419 | 399 | 440 | 515 |
| 85° | 68 | 74 | 81 | 88 | 95 | 94 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P563070

CATALOG NUMBER: FSR-24-4-LD4-3HI-35-UNV-80-97-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 5849.3 | 5849.3 | 5849.3 | 5849.3 | 5849.3 |
| 2.5° | 5808.7 | 5808.7 | 5808.7 | 5802.0 | 5802.0 |
| 5° | 5747.9 | 5741.1 | 5741.1 | 5734.3 | 5734.3 |
| 7.5° | 5700.5 | 5693.8 | 5687.0 | 5680.2 | 5666.7 |
| 10° | 5632.9 | 5632.9 | 5626.1 | 5592.3 | 5585.6 |
| 12.5° | 5524.7 | 5517.9 | 5490.9 | 5443.6 | 5430.0 |
| 15° | 5375.9 | 5375.9 | 5321.8 | 5267.7 | 5247.5 |
| 17.5° | 5213.6 | 5206.9 | 5139.3 | 5085.2 | 5058.1 |
| 20° | 5037.8 | 5024.3 | 4956.7 | 4868.8 | 4821.4 |
| 22.5° | 4841.7 | 4841.7 | 4760.6 | 4645.6 | 4598.3 |
| 25° | 4659.1 | 4632.1 | 4557.7 | 4395.4 | 4273.7 |
| 27.5° | 4449.5 | 4408.9 | 4327.8 | 4097.9 | 3955.9 |
| 30° | 4219.6 | 4199.3 | 4084.4 | 3786.8 | 3678.6 |
| 32.5° | 4003.2 | 3969.4 | 3847.7 | 3536.6 | 3448.7 |
| 35° | 3780.1 | 3753.0 | 3570.4 | 3299.9 | 3218.8 |
| 37.5° | 3556.9 | 3523.1 | 3293.2 | 3076.8 | 2975.4 |
| 40° | 3333.8 | 3293.2 | 3043.0 | 2846.9 | 2738.7 |
| 42.5° | 3124.1 | 3070.0 | 2826.6 | 2617.0 | 2495.2 |
| 45° | 2901.0 | 2840.1 | 2596.7 | 2380.3 | 2285.6 |
| 47.5° | 2677.8 | 2623.7 | 2400.6 | 2177.4 | 2069.2 |
| 50° | 2441.1 | 2393.8 | 2190.9 | 1967.8 | 1852.8 |
| 52.5° | 2245.0 | 2170.7 | 1974.6 | 1751.4 | 1656.7 |
| 55° | 2015.1 | 1954.3 | 1771.7 | 1562.1 | 1480.9 |
| 57.5° | 1805.5 | 1744.6 | 1575.6 | 1379.5 | 1311.9 |
| 60° | 1609.4 | 1521.5 | 1379.5 | 1210.4 | 1156.3 |
| 62.5° | 1393.0 | 1325.4 | 1203.7 | 1061.7 | 1129.3 |
| 65° | 1196.9 | 1129.3 | 1021.1 | 1041.4 | 865.6 |
| 67.5° | 980.5 | 946.7 | 852.0 | 757.4 | 730.3 |
| 70° | 797.9 | 757.4 | 723.6 | 622.1 | 595.1 |
| 72.5° | 635.6 | 595.1 | 547.7 | 493.6 | 473.4 |
| 75° | 480.1 | 446.3 | 419.3 | 399.0 | 439.5 |
| 77.5° | 331.3 | 317.8 | 297.5 | 277.2 | 270.5 |
| 80° | 216.4 | 209.6 | 202.9 | 196.1 | 189.3 |
| 82.5° | 128.5 | 128.5 | 128.5 | 128.5 | 128.5 |
| 85° | 67.6 | 74.4 | 81.1 | 87.9 | 94.7 |
| 87.5° | 40.6 | 40.6 | 47.3 | 54.1 | 60.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)