

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: P563430

Luminaire Tested: FSR-24-4-LD4-3LO-50-UNV-93-87-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P563430
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-LD4-3LO-50-UNV-93-87-EDD-90
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7340.0 lumens
Efficiency: N/A
Efficacy: 104.6 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

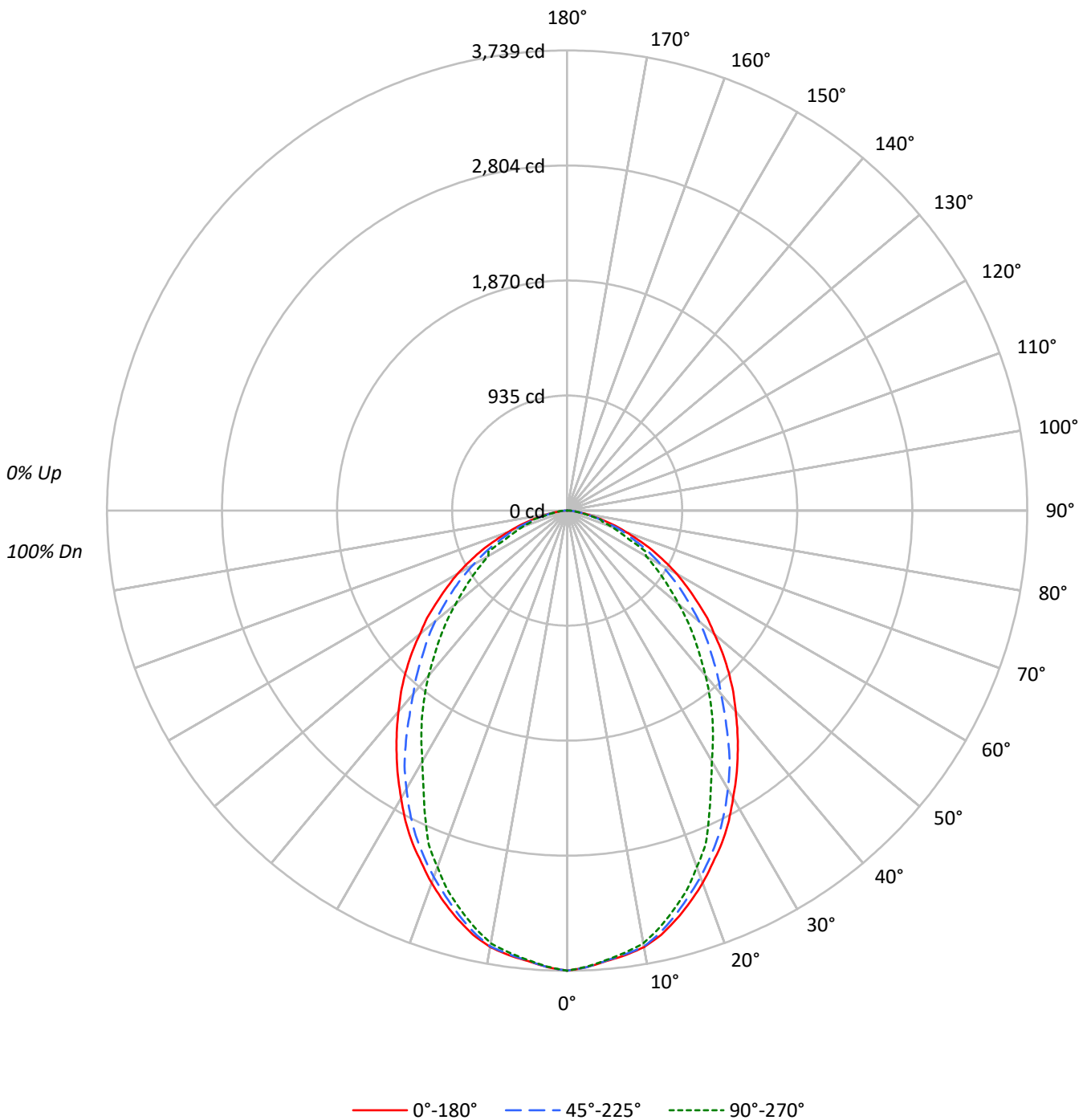
Input Watts (W): 70.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P563430

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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 | 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° | 5031 | 5031 | 5031 |
| 5° | 4962 | 4956 | 4951 |
| 10° | 4919 | 4913 | 4878 |
| 15° | 4787 | 4738 | 4672 |
| 20° | 4611 | 4536 | 4413 |
| 25° | 4421 | 4325 | 4056 |
| 30° | 4190 | 4056 | 3653 |
| 35° | 3969 | 3749 | 3380 |
| 40° | 3743 | 3416 | 3075 |
| 45° | 3528 | 3158 | 2780 |
| 50° | 3266 | 2932 | 2479 |
| 55° | 3022 | 2657 | 2221 |
| 60° | 2768 | 2373 | 1989 |
| 65° | 2436 | 2078 | 1762 |
| 70° | 2006 | 1819 | 1496 |
| 75° | 1595 | 1393 | 1461 |
| 80° | 1072 | 1005 | 938 |
| 85° | 667 | 801 | 934 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3528 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 348.0 | 4.7 |
| 10°-20° | 955.2 | 13.0 |
| 20°-30° | 1322.4 | 18.0 |
| 30°-40° | 1410.0 | 19.2 |
| 40°-50° | 1286.4 | 17.5 |
| 50°-60° | 1007.8 | 13.7 |
| 60°-70° | 656.8 | 8.9 |
| 70°-80° | 291.0 | 4.0 |
| 80°-90° | 62.5 | 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° | 2625.6 | 35.8 |
| 0°-40° | 4035.6 | 55.0 |
| 0°-60° | 6329.7 | 86.2 |
| 0°-90° | 7340.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 7340.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 3739 | 3739 | 3739 | 3739 | 3739 | |
| 5° | 3674 | 3670 | 3670 | 3665 | 3665 | 349 |
| 15° | 3436 | 3436 | 3402 | 3367 | 3354 | 966 |
| 25° | 2978 | 2961 | 2913 | 2810 | 2732 | 1367 |
| 35° | 2416 | 2399 | 2282 | 2109 | 2058 | 1511 |
| 45° | 1854 | 1815 | 1660 | 1522 | 1461 | 1428 |
| 55° | 1288 | 1249 | 1132 | 998 | 947 | 1155 |
| 65° | 765 | 722 | 653 | 666 | 553 | 754 |
| 75° | 307 | 285 | 268 | 255 | 281 | 329 |
| 85° | 43 | 48 | 52 | 56 | 60 | 60 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 3738.9 | 3738.9 | 3738.9 | 3738.9 | 3738.9 |
| 2.5° | 3713.0 | 3713.0 | 3713.0 | 3708.6 | 3708.6 |
| 5° | 3674.1 | 3669.7 | 3669.7 | 3665.4 | 3665.4 |
| 7.5° | 3643.8 | 3639.5 | 3635.2 | 3630.8 | 3622.2 |
| 10° | 3600.6 | 3600.6 | 3596.3 | 3574.6 | 3570.3 |
| 12.5° | 3531.4 | 3527.1 | 3509.8 | 3479.6 | 3470.9 |
| 15° | 3436.3 | 3436.3 | 3401.7 | 3367.2 | 3354.2 |
| 17.5° | 3332.6 | 3328.3 | 3285.0 | 3250.5 | 3233.2 |
| 20° | 3220.2 | 3211.6 | 3168.3 | 3112.1 | 3081.9 |
| 22.5° | 3094.9 | 3094.9 | 3043.0 | 2969.5 | 2939.2 |
| 25° | 2978.2 | 2960.9 | 2913.3 | 2809.6 | 2731.8 |
| 27.5° | 2844.2 | 2818.2 | 2766.4 | 2619.4 | 2528.6 |
| 30° | 2697.2 | 2684.2 | 2610.7 | 2420.6 | 2351.4 |
| 32.5° | 2558.9 | 2537.3 | 2459.5 | 2260.6 | 2204.4 |
| 35° | 2416.2 | 2398.9 | 2282.2 | 2109.3 | 2057.5 |
| 37.5° | 2273.6 | 2252.0 | 2105.0 | 1966.7 | 1901.9 |
| 40° | 2131.0 | 2105.0 | 1945.1 | 1819.7 | 1750.6 |
| 42.5° | 1997.0 | 1962.4 | 1806.8 | 1672.8 | 1595.0 |
| 45° | 1854.3 | 1815.4 | 1659.8 | 1521.5 | 1461.0 |
| 47.5° | 1711.7 | 1677.1 | 1534.5 | 1391.8 | 1322.7 |
| 50° | 1560.4 | 1530.1 | 1400.5 | 1257.8 | 1184.3 |
| 52.5° | 1435.0 | 1387.5 | 1262.1 | 1119.5 | 1059.0 |
| 55° | 1288.1 | 1249.2 | 1132.5 | 998.5 | 946.6 |
| 57.5° | 1154.1 | 1115.2 | 1007.1 | 881.8 | 838.6 |
| 60° | 1028.7 | 972.5 | 881.8 | 773.7 | 739.1 |
| 62.5° | 890.4 | 847.2 | 769.4 | 678.6 | 721.8 |
| 65° | 765.1 | 721.8 | 652.7 | 665.7 | 553.3 |
| 67.5° | 626.8 | 605.1 | 544.6 | 484.1 | 466.8 |
| 70° | 510.0 | 484.1 | 462.5 | 397.7 | 380.4 |
| 72.5° | 406.3 | 380.4 | 350.1 | 315.5 | 302.6 |
| 75° | 306.9 | 285.3 | 268.0 | 255.0 | 281.0 |
| 77.5° | 211.8 | 203.2 | 190.2 | 177.2 | 172.9 |
| 80° | 138.3 | 134.0 | 129.7 | 125.4 | 121.0 |
| 82.5° | 82.1 | 82.1 | 82.1 | 82.1 | 82.1 |
| 85° | 43.2 | 47.5 | 51.9 | 56.2 | 60.5 |
| 87.5° | 25.9 | 25.9 | 30.3 | 34.6 | 38.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)