

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: P563293

Luminaire Tested: FSR-24-4-LD4-3LO-35-UNV-82-96-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P563293
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-35-UNV-82-96-EDD
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8059.0 lumens
Efficiency: N/A
Efficacy: 114.8 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

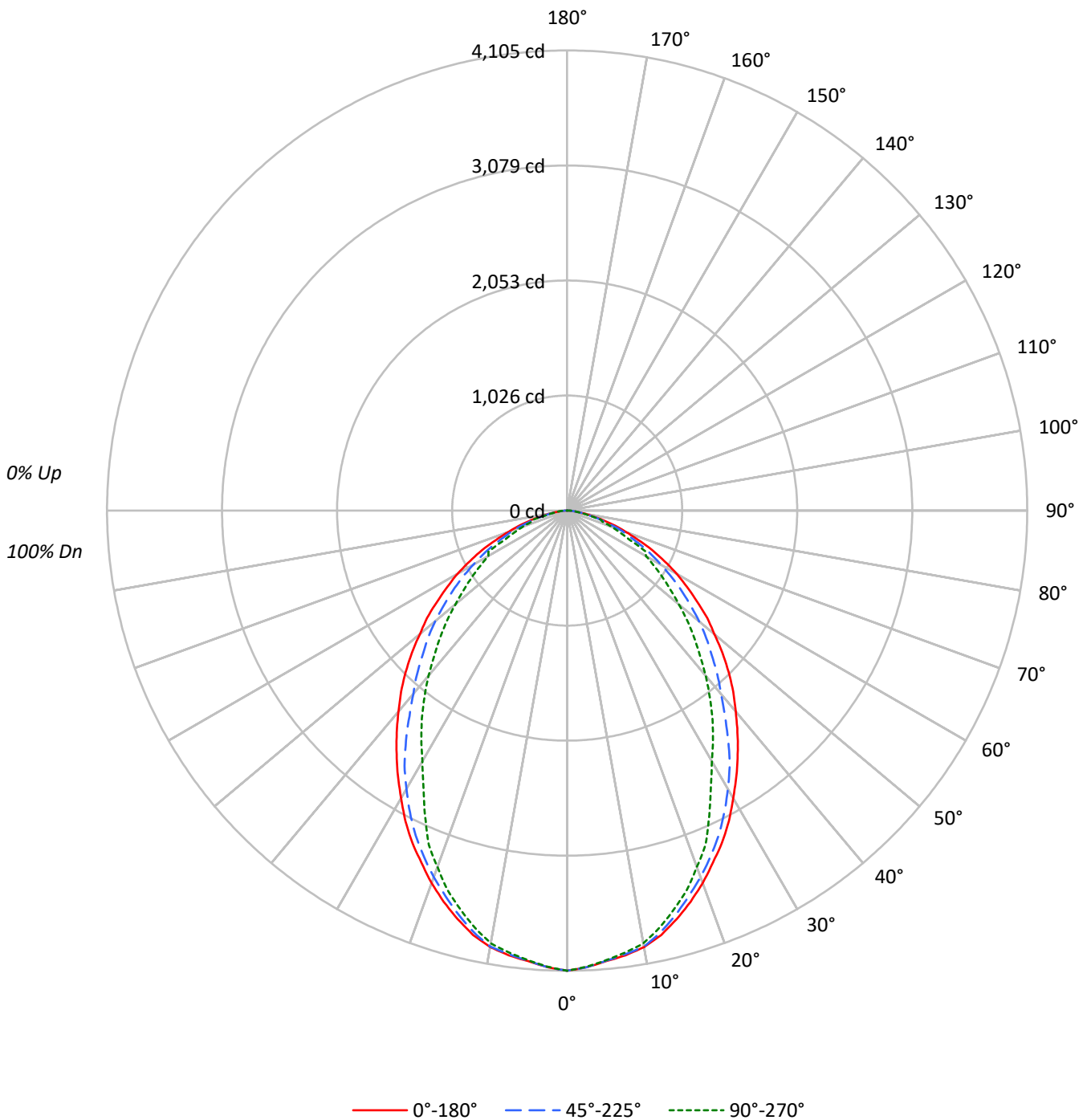
Input Watts (W): 70.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P563293

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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 | 100 | 100 | 100 | 100 | 100 | | |
| 1 | 110 | 106 | 102 | 99 | 108 | 104 | 100 | 97 | 100 | 97 | 94 | 96 | 94 | 91 | 92 | 90 | 89 | 87 | 87 | 87 | 87 | 87 | 87 | 87 | | |
| 2 | 101 | 94 | 88 | 83 | 99 | 92 | 87 | 82 | 89 | 84 | 80 | 86 | 82 | 78 | 83 | 79 | 77 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | | |
| 3 | 93 | 84 | 77 | 71 | 91 | 82 | 76 | 70 | 79 | 74 | 69 | 77 | 72 | 68 | 74 | 70 | 67 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | | |
| 4 | 86 | 75 | 67 | 61 | 84 | 74 | 66 | 61 | 72 | 65 | 60 | 69 | 64 | 59 | 67 | 62 | 58 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | | |
| 5 | 80 | 68 | 60 | 54 | 78 | 67 | 59 | 53 | 65 | 58 | 53 | 63 | 57 | 52 | 61 | 56 | 52 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | | |
| 6 | 74 | 62 | 53 | 48 | 72 | 61 | 53 | 47 | 59 | 52 | 47 | 57 | 51 | 47 | 56 | 50 | 46 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | | |
| 7 | 69 | 56 | 48 | 43 | 67 | 56 | 48 | 42 | 54 | 47 | 42 | 53 | 46 | 42 | 51 | 46 | 42 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | | |
| 8 | 65 | 52 | 44 | 38 | 63 | 51 | 44 | 38 | 50 | 43 | 38 | 49 | 42 | 38 | 48 | 42 | 38 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | | |
| 9 | 61 | 48 | 40 | 35 | 59 | 47 | 40 | 35 | 46 | 39 | 35 | 45 | 39 | 34 | 44 | 38 | 34 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | | |
| 10 | 57 | 44 | 37 | 32 | 56 | 44 | 37 | 32 | 43 | 36 | 32 | 42 | 36 | 32 | 41 | 36 | 32 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 5523 | 5523 | 5523 |
| 5° | 5448 | 5442 | 5436 |
| 10° | 5401 | 5395 | 5356 |
| 15° | 5255 | 5203 | 5130 |
| 20° | 5062 | 4981 | 4845 |
| 25° | 4854 | 4749 | 4453 |
| 30° | 4601 | 4454 | 4011 |
| 35° | 4357 | 4116 | 3710 |
| 40° | 4109 | 3751 | 3376 |
| 45° | 3874 | 3468 | 3052 |
| 50° | 3586 | 3219 | 2722 |
| 55° | 3318 | 2917 | 2438 |
| 60° | 3039 | 2605 | 2184 |
| 65° | 2674 | 2281 | 1934 |
| 70° | 2203 | 1998 | 1643 |
| 75° | 1752 | 1529 | 1604 |
| 80° | 1177 | 1103 | 1030 |
| 85° | 733 | 880 | 1025 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3874 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 382.1 | 4.7 |
| 10°-20° | 1048.7 | 13.0 |
| 20°-30° | 1451.9 | 18.0 |
| 30°-40° | 1548.2 | 19.2 |
| 40°-50° | 1412.4 | 17.5 |
| 50°-60° | 1106.5 | 13.7 |
| 60°-70° | 721.2 | 8.9 |
| 70°-80° | 319.5 | 4.0 |
| 80°-90° | 68.6 | 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° | 2882.8 | 35.8 |
| 0°-40° | 4430.9 | 55.0 |
| 0°-60° | 6949.8 | 86.2 |
| 0°-90° | 8059.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 8059.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 4105 | 4105 | 4105 | 4105 | 4105 | |
| 5° | 4034 | 4029 | 4029 | 4024 | 4024 | 383 |
| 15° | 3773 | 3773 | 3735 | 3697 | 3683 | 1061 |
| 25° | 3270 | 3251 | 3199 | 3085 | 2999 | 1501 |
| 35° | 2653 | 2634 | 2506 | 2316 | 2259 | 1659 |
| 45° | 2036 | 1993 | 1822 | 1670 | 1604 | 1568 |
| 55° | 1414 | 1372 | 1243 | 1096 | 1039 | 1268 |
| 65° | 840 | 793 | 717 | 731 | 608 | 828 |
| 75° | 337 | 313 | 294 | 280 | 308 | 361 |
| 85° | 48 | 52 | 57 | 62 | 66 | 66 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P563293

CATALOG NUMBER: FSR-24-4-LD4-3LO-35-UNV-82-96-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 4105.1 | 4105.1 | 4105.1 | 4105.1 | 4105.1 |
| 2.5° | 4076.7 | 4076.7 | 4076.7 | 4071.9 | 4071.9 |
| 5° | 4034.0 | 4029.2 | 4029.2 | 4024.5 | 4024.5 |
| 7.5° | 4000.7 | 3996.0 | 3991.2 | 3986.5 | 3977.0 |
| 10° | 3953.3 | 3953.3 | 3948.5 | 3924.8 | 3920.1 |
| 12.5° | 3877.3 | 3872.6 | 3853.6 | 3820.4 | 3810.9 |
| 15° | 3772.9 | 3772.9 | 3735.0 | 3697.0 | 3682.8 |
| 17.5° | 3659.0 | 3654.3 | 3606.8 | 3568.9 | 3549.9 |
| 20° | 3535.6 | 3526.2 | 3478.7 | 3417.0 | 3383.8 |
| 22.5° | 3398.0 | 3398.0 | 3341.1 | 3260.4 | 3227.2 |
| 25° | 3269.9 | 3250.9 | 3198.7 | 3084.8 | 2999.4 |
| 27.5° | 3122.8 | 3094.3 | 3037.3 | 2876.0 | 2776.3 |
| 30° | 2961.4 | 2947.2 | 2866.5 | 2657.7 | 2581.7 |
| 32.5° | 2809.5 | 2785.8 | 2700.4 | 2482.1 | 2420.4 |
| 35° | 2652.9 | 2633.9 | 2505.8 | 2316.0 | 2259.0 |
| 37.5° | 2496.3 | 2472.6 | 2311.2 | 2159.4 | 2088.2 |
| 40° | 2339.7 | 2311.2 | 2135.6 | 1998.0 | 1922.1 |
| 42.5° | 2192.6 | 2154.6 | 1983.8 | 1836.6 | 1751.2 |
| 45° | 2036.0 | 1993.3 | 1822.4 | 1670.5 | 1604.1 |
| 47.5° | 1879.4 | 1841.4 | 1684.8 | 1528.2 | 1452.2 |
| 50° | 1713.2 | 1680.0 | 1537.7 | 1381.0 | 1300.4 |
| 52.5° | 1575.6 | 1523.4 | 1385.8 | 1229.2 | 1162.7 |
| 55° | 1414.3 | 1371.5 | 1243.4 | 1096.3 | 1039.3 |
| 57.5° | 1267.1 | 1224.4 | 1105.8 | 968.2 | 920.7 |
| 60° | 1129.5 | 1067.8 | 968.2 | 849.5 | 811.5 |
| 62.5° | 977.6 | 930.2 | 844.8 | 745.1 | 792.6 |
| 65° | 840.0 | 792.6 | 716.6 | 730.9 | 607.5 |
| 67.5° | 688.1 | 664.4 | 598.0 | 531.5 | 512.6 |
| 70° | 560.0 | 531.5 | 507.8 | 436.6 | 417.6 |
| 72.5° | 446.1 | 417.6 | 384.4 | 346.4 | 332.2 |
| 75° | 337.0 | 313.2 | 294.2 | 280.0 | 308.5 |
| 77.5° | 232.5 | 223.1 | 208.8 | 194.6 | 189.8 |
| 80° | 151.9 | 147.1 | 142.4 | 137.6 | 132.9 |
| 82.5° | 90.2 | 90.2 | 90.2 | 90.2 | 90.2 |
| 85° | 47.5 | 52.2 | 57.0 | 61.7 | 66.4 |
| 87.5° | 28.5 | 28.5 | 33.2 | 38.0 | 42.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)