

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: P563785

Luminaire Tested: FSR-24-4-LD4-4HI-50-UNV-81-88-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P563785
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-LD4-4HI-50-UNV-81-88-EDD
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15775.0 lumens
Efficiency: N/A
Efficacy: 91.3 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

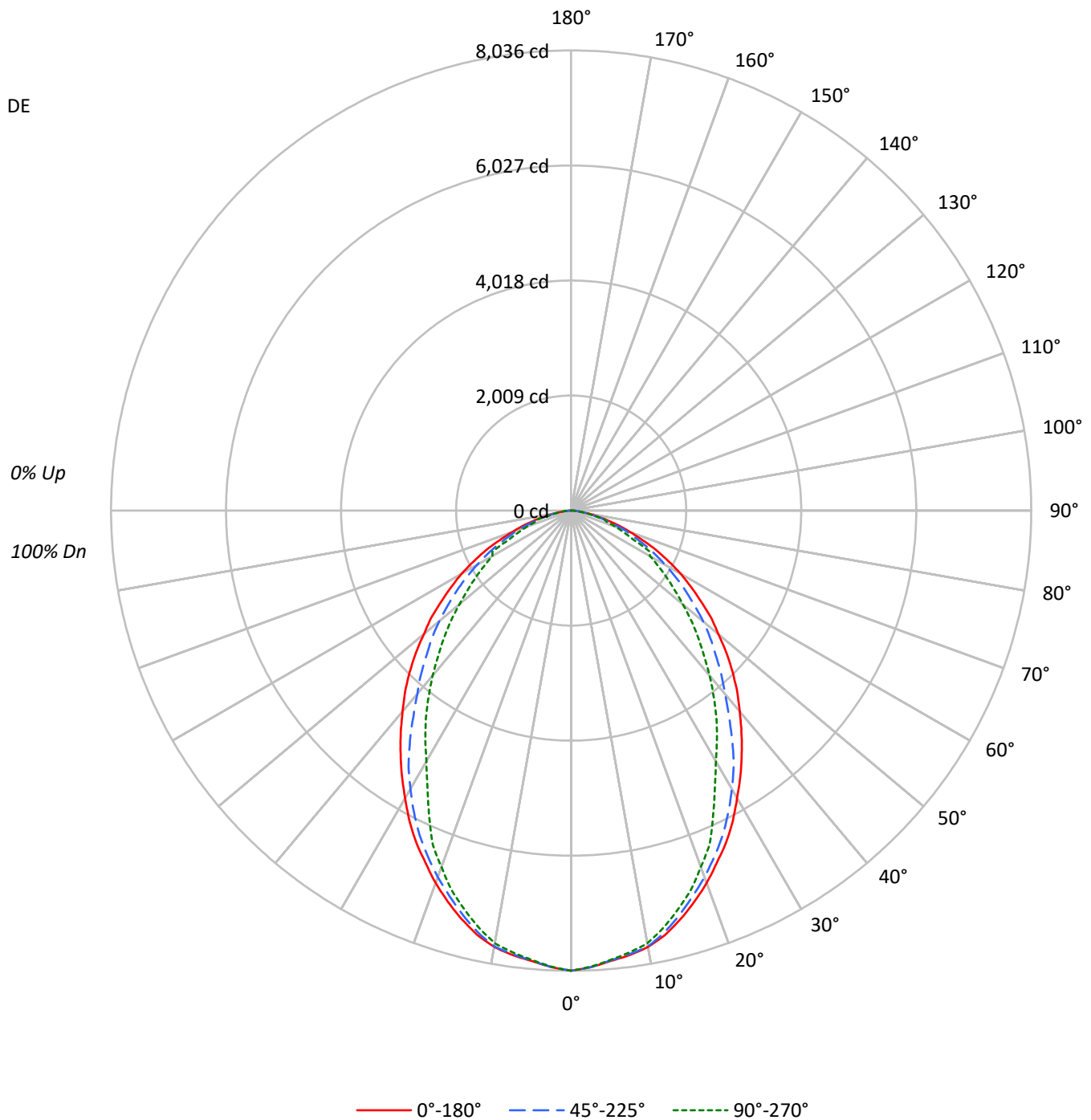
Input Watts (W): 172.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P563785

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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° | 10812 | 10812 | 10812 |
| 5° | 10665 | 10652 | 10640 |
| 10° | 10572 | 10560 | 10484 |
| 15° | 10287 | 10184 | 10042 |
| 20° | 9909 | 9750 | 9484 |
| 25° | 9502 | 9295 | 8716 |
| 30° | 9006 | 8717 | 7851 |
| 35° | 8530 | 8057 | 7263 |
| 40° | 8044 | 7343 | 6608 |
| 45° | 7583 | 6788 | 5975 |
| 50° | 7020 | 6300 | 5328 |
| 55° | 6494 | 5709 | 4772 |
| 60° | 5949 | 5100 | 4275 |
| 65° | 5235 | 4466 | 3786 |
| 70° | 4312 | 3910 | 3216 |
| 75° | 3429 | 2994 | 3139 |
| 80° | 2304 | 2159 | 2015 |
| 85° | 1434 | 1721 | 2008 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 7583 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 748.0 | 4.7 |
| 10°-20° | 2052.8 | 13.0 |
| 20°-30° | 2842.0 | 18.0 |
| 30°-40° | 3030.4 | 19.2 |
| 40°-50° | 2764.6 | 17.5 |
| 50°-60° | 2165.9 | 13.7 |
| 60°-70° | 1411.6 | 8.9 |
| 70°-80° | 625.4 | 4.0 |
| 80°-90° | 134.3 | 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° | 5642.8 | 35.8 |
| 0°-40° | 8673.3 | 55.0 |
| 0°-60° | 13603.7 | 86.2 |
| 0°-90° | 15775.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 15775.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 8036 | 8036 | 8036 | 8036 | 8036 | |
| 5° | 7896 | 7887 | 7887 | 7878 | 7878 | 750 |
| 15° | 7385 | 7385 | 7311 | 7237 | 7209 | 2076 |
| 25° | 6401 | 6363 | 6261 | 6038 | 5871 | 2939 |
| 35° | 5193 | 5156 | 4905 | 4533 | 4422 | 3247 |
| 45° | 3985 | 3902 | 3567 | 3270 | 3140 | 3070 |
| 55° | 2768 | 2685 | 2434 | 2146 | 2034 | 2483 |
| 65° | 1644 | 1551 | 1403 | 1431 | 1189 | 1620 |
| 75° | 660 | 613 | 576 | 548 | 604 | 707 |
| 85° | 93 | 102 | 112 | 121 | 130 | 129 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P563785

CATALOG NUMBER: FSR-24-4-LD4-4HI-50-UNV-81-88-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 8035.6 | 8035.6 | 8035.6 | 8035.6 | 8035.6 |
| 2.5° | 7979.8 | 7979.8 | 7979.8 | 7970.5 | 7970.5 |
| 5° | 7896.2 | 7886.9 | 7886.9 | 7877.6 | 7877.6 |
| 7.5° | 7831.2 | 7821.9 | 7812.6 | 7803.3 | 7784.8 |
| 10° | 7738.3 | 7738.3 | 7729.0 | 7682.6 | 7673.3 |
| 12.5° | 7589.7 | 7580.4 | 7543.2 | 7478.2 | 7459.6 |
| 15° | 7385.3 | 7385.3 | 7311.0 | 7236.7 | 7208.8 |
| 17.5° | 7162.3 | 7153.1 | 7060.2 | 6985.8 | 6948.7 |
| 20° | 6920.8 | 6902.2 | 6809.3 | 6688.6 | 6623.5 |
| 22.5° | 6651.4 | 6651.4 | 6539.9 | 6382.0 | 6317.0 |
| 25° | 6400.6 | 6363.4 | 6261.2 | 6038.3 | 5871.1 |
| 27.5° | 6112.6 | 6056.9 | 5945.4 | 5629.5 | 5434.5 |
| 30° | 5796.8 | 5768.9 | 5611.0 | 5202.2 | 5053.6 |
| 32.5° | 5499.5 | 5453.0 | 5285.8 | 4858.5 | 4737.7 |
| 35° | 5192.9 | 5155.8 | 4905.0 | 4533.4 | 4421.9 |
| 37.5° | 4886.4 | 4839.9 | 4524.1 | 4226.8 | 4087.5 |
| 40° | 4579.8 | 4524.1 | 4180.4 | 3911.0 | 3762.3 |
| 42.5° | 4291.8 | 4217.5 | 3883.1 | 3595.1 | 3427.9 |
| 45° | 3985.3 | 3901.7 | 3567.2 | 3270.0 | 3139.9 |
| 47.5° | 3678.7 | 3604.4 | 3297.8 | 2991.3 | 2842.6 |
| 50° | 3353.6 | 3288.5 | 3009.9 | 2703.3 | 2545.4 |
| 52.5° | 3084.2 | 2982.0 | 2712.6 | 2406.0 | 2276.0 |
| 55° | 2768.3 | 2684.7 | 2433.9 | 2145.9 | 2034.4 |
| 57.5° | 2480.3 | 2396.7 | 2164.5 | 1895.1 | 1802.2 |
| 60° | 2210.9 | 2090.2 | 1895.1 | 1662.9 | 1588.5 |
| 62.5° | 1913.7 | 1820.8 | 1653.6 | 1458.5 | 1551.4 |
| 65° | 1644.3 | 1551.4 | 1402.7 | 1430.6 | 1189.1 |
| 67.5° | 1347.0 | 1300.6 | 1170.5 | 1040.4 | 1003.3 |
| 70° | 1096.2 | 1040.4 | 994.0 | 854.7 | 817.5 |
| 72.5° | 873.2 | 817.5 | 752.5 | 678.1 | 650.3 |
| 75° | 659.6 | 613.1 | 576.0 | 548.1 | 603.8 |
| 77.5° | 455.2 | 436.6 | 408.7 | 380.9 | 371.6 |
| 80° | 297.3 | 288.0 | 278.7 | 269.4 | 260.1 |
| 82.5° | 176.5 | 176.5 | 176.5 | 176.5 | 176.5 |
| 85° | 92.9 | 102.2 | 111.5 | 120.8 | 130.1 |
| 87.5° | 55.7 | 55.7 | 65.0 | 74.3 | 83.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)