

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: P563617

Luminaire Tested: FSR-24-4-LD4-3STD-50-UNV-93-84-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P563617
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-LD4-3STD-50-UNV-93-84-EDD
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12049.0 lumens
Efficiency: N/A
Efficacy: 120.6 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

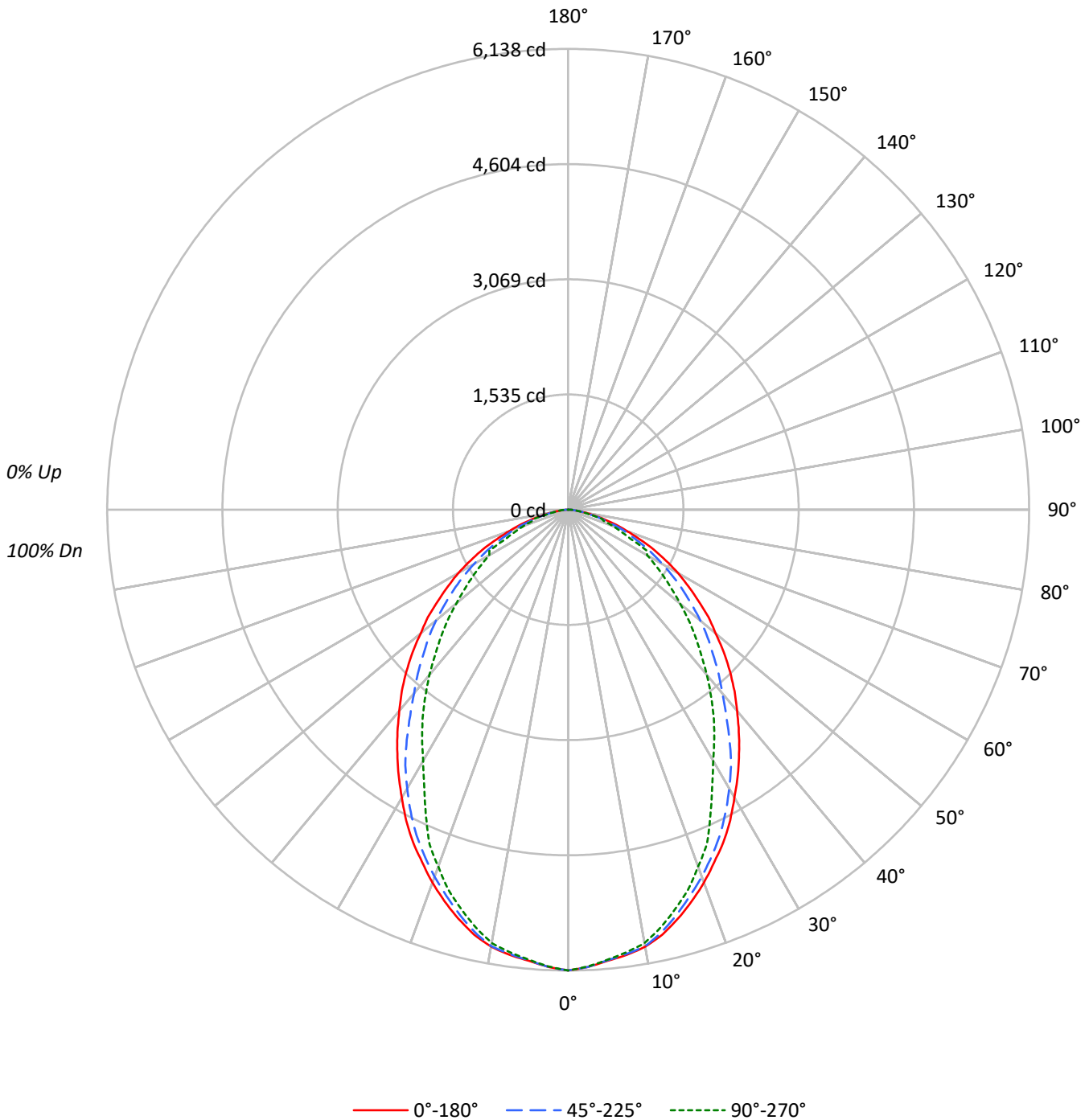
Input Watts (W): 99.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P563617

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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 | 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° | 8258 | 8258 | 8258 |
| 5° | 8146 | 8136 | 8127 |
| 10° | 8075 | 8065 | 8007 |
| 15° | 7858 | 7779 | 7670 |
| 20° | 7569 | 7447 | 7244 |
| 25° | 7258 | 7100 | 6657 |
| 30° | 6879 | 6658 | 5997 |
| 35° | 6515 | 6154 | 5548 |
| 40° | 6144 | 5608 | 5047 |
| 45° | 5792 | 5185 | 4564 |
| 50° | 5362 | 4812 | 4070 |
| 55° | 4960 | 4361 | 3645 |
| 60° | 4544 | 3895 | 3265 |
| 65° | 3998 | 3411 | 2891 |
| 70° | 3294 | 2987 | 2456 |
| 75° | 2619 | 2287 | 2398 |
| 80° | 1760 | 1650 | 1540 |
| 85° | 1096 | 1314 | 1533 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5792 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 571.3 | 4.7 |
| 10°-20° | 1568.0 | 13.0 |
| 20°-30° | 2170.7 | 18.0 |
| 30°-40° | 2314.6 | 19.2 |
| 40°-50° | 2111.6 | 17.5 |
| 50°-60° | 1654.3 | 13.7 |
| 60°-70° | 1078.2 | 8.9 |
| 70°-80° | 477.7 | 4.0 |
| 80°-90° | 102.6 | 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° | 4310.0 | 35.8 |
| 0°-40° | 6624.7 | 55.0 |
| 0°-60° | 10390.6 | 86.2 |
| 0°-90° | 12049.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 12049.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 6138 | 6138 | 6138 | 6138 | 6138 | |
| 5° | 6031 | 6024 | 6024 | 6017 | 6017 | 572 |
| 15° | 5641 | 5641 | 5584 | 5527 | 5506 | 1586 |
| 25° | 4889 | 4860 | 4782 | 4612 | 4484 | 2244 |
| 35° | 3966 | 3938 | 3746 | 3463 | 3378 | 2480 |
| 45° | 3044 | 2980 | 2725 | 2498 | 2398 | 2345 |
| 55° | 2114 | 2051 | 1859 | 1639 | 1554 | 1897 |
| 65° | 1256 | 1185 | 1071 | 1093 | 908 | 1238 |
| 75° | 504 | 468 | 440 | 419 | 461 | 540 |
| 85° | 71 | 78 | 85 | 92 | 99 | 98 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P563617

CATALOG NUMBER: FSR-24-4-LD4-3STD-50-UNV-93-84-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 6137.6 | 6137.6 | 6137.6 | 6137.6 | 6137.6 |
| 2.5° | 6095.0 | 6095.0 | 6095.0 | 6087.9 | 6087.9 |
| 5° | 6031.2 | 6024.1 | 6024.1 | 6017.0 | 6017.0 |
| 7.5° | 5981.5 | 5974.4 | 5967.3 | 5960.2 | 5946.0 |
| 10° | 5910.5 | 5910.5 | 5903.4 | 5868.0 | 5860.9 |
| 12.5° | 5797.0 | 5789.9 | 5761.5 | 5711.9 | 5697.7 |
| 15° | 5640.9 | 5640.9 | 5584.2 | 5527.4 | 5506.1 |
| 17.5° | 5470.6 | 5463.5 | 5392.6 | 5335.8 | 5307.4 |
| 20° | 5286.1 | 5271.9 | 5201.0 | 5108.8 | 5059.1 |
| 22.5° | 5080.4 | 5080.4 | 4995.2 | 4874.6 | 4824.9 |
| 25° | 4888.8 | 4860.4 | 4782.4 | 4612.1 | 4484.4 |
| 27.5° | 4668.8 | 4626.3 | 4541.1 | 4299.9 | 4150.9 |
| 30° | 4427.6 | 4406.3 | 4285.7 | 3973.5 | 3859.9 |
| 32.5° | 4200.5 | 4165.1 | 4037.3 | 3710.9 | 3618.7 |
| 35° | 3966.4 | 3938.0 | 3746.4 | 3462.6 | 3377.5 |
| 37.5° | 3732.2 | 3696.8 | 3455.5 | 3228.4 | 3122.0 |
| 40° | 3498.1 | 3455.5 | 3193.0 | 2987.2 | 2873.7 |
| 42.5° | 3278.1 | 3221.4 | 2965.9 | 2746.0 | 2618.2 |
| 45° | 3044.0 | 2980.1 | 2724.7 | 2497.6 | 2398.3 |
| 47.5° | 2809.8 | 2753.1 | 2518.9 | 2284.7 | 2171.2 |
| 50° | 2561.5 | 2511.8 | 2298.9 | 2064.8 | 1944.2 |
| 52.5° | 2355.7 | 2277.7 | 2071.9 | 1837.7 | 1738.4 |
| 55° | 2114.5 | 2050.6 | 1859.0 | 1639.1 | 1553.9 |
| 57.5° | 1894.5 | 1830.6 | 1653.2 | 1447.5 | 1376.5 |
| 60° | 1688.7 | 1596.5 | 1447.5 | 1270.1 | 1213.3 |
| 62.5° | 1461.7 | 1390.7 | 1263.0 | 1114.0 | 1184.9 |
| 65° | 1255.9 | 1184.9 | 1071.4 | 1092.7 | 908.2 |
| 67.5° | 1028.8 | 993.4 | 894.0 | 794.7 | 766.3 |
| 70° | 837.3 | 794.7 | 759.2 | 652.8 | 624.4 |
| 72.5° | 667.0 | 624.4 | 574.7 | 518.0 | 496.7 |
| 75° | 503.8 | 468.3 | 439.9 | 418.6 | 461.2 |
| 77.5° | 347.7 | 333.5 | 312.2 | 290.9 | 283.8 |
| 80° | 227.1 | 220.0 | 212.9 | 205.8 | 198.7 |
| 82.5° | 134.8 | 134.8 | 134.8 | 134.8 | 134.8 |
| 85° | 71.0 | 78.1 | 85.1 | 92.2 | 99.3 |
| 87.5° | 42.6 | 42.6 | 49.7 | 56.8 | 63.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)