

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: P561682

Luminaire Tested: FSR-12-4-LD4-2LO-50-UNV-82-85-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561682
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-12-4-LD4-2LO-50-UNV-82-85-EDD-90
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

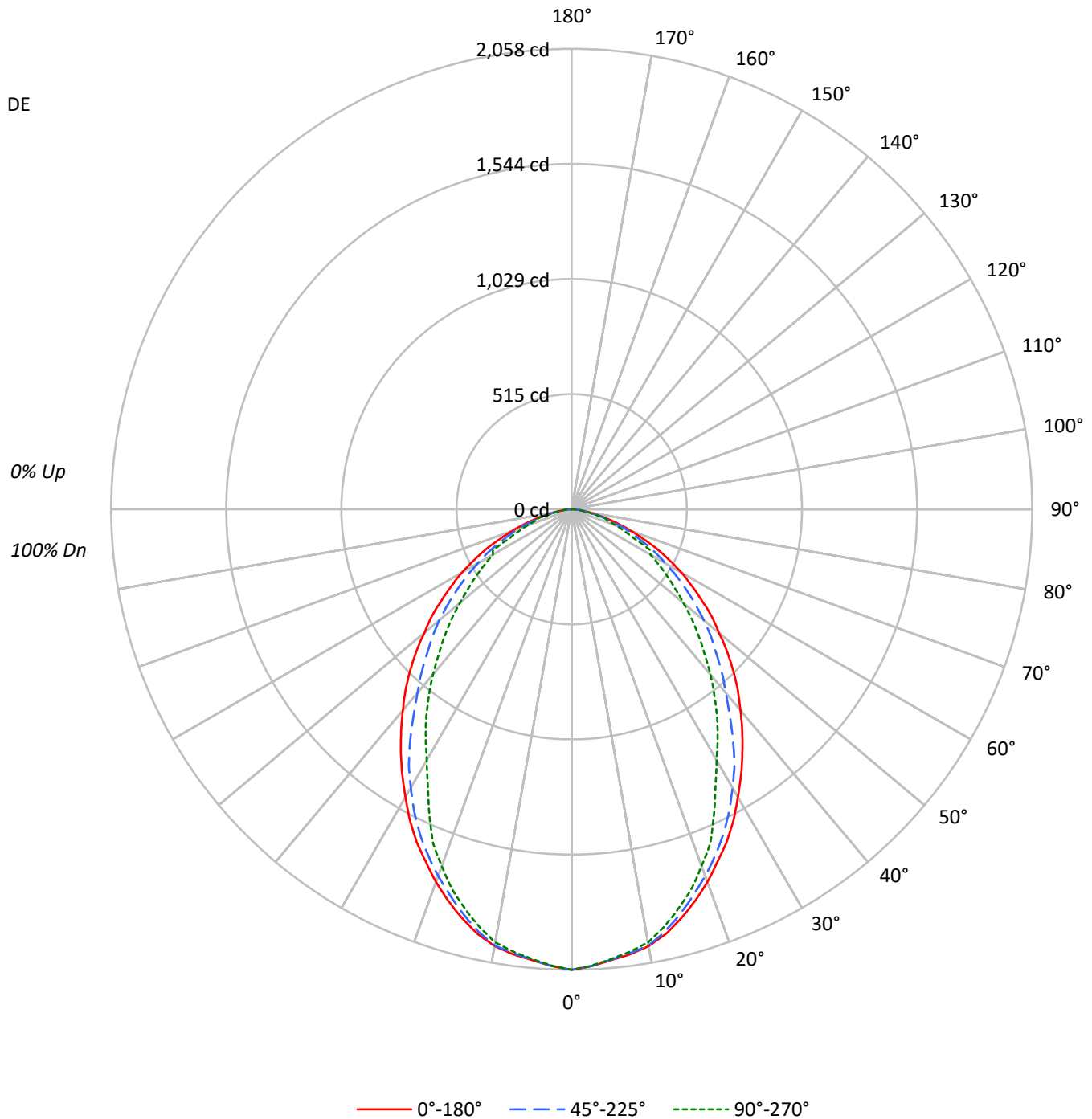
Lumens per Lamp: N/A
Luminaire Lumens: 4041.0 lumens
Efficiency: N/A
Efficacy: 86.3 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 46.8
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: P561682

CATALOG NUMBER: FSR-12-4-LD4-2LO-50-UNV-82-85-EDD-90

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° | 5539 | 5539 | 5539 |
| 5° | 5464 | 5458 | 5451 |
| 10° | 5417 | 5410 | 5371 |
| 15° | 5271 | 5217 | 5144 |
| 20° | 5077 | 4995 | 4859 |
| 25° | 4868 | 4762 | 4466 |
| 30° | 4614 | 4466 | 4023 |
| 35° | 4370 | 4128 | 3721 |
| 40° | 4121 | 3762 | 3386 |
| 45° | 3885 | 3478 | 3061 |
| 50° | 3597 | 3228 | 2730 |
| 55° | 3327 | 2925 | 2445 |
| 60° | 3048 | 2613 | 2190 |
| 65° | 2682 | 2288 | 1940 |
| 70° | 2209 | 2003 | 1648 |
| 75° | 1757 | 1534 | 1608 |
| 80° | 1181 | 1106 | 1032 |
| 85° | 735 | 883 | 1028 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3885 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 191.6 | 4.7 |
| 10°-20° | 525.9 | 13.0 |
| 20°-30° | 728.0 | 18.0 |
| 30°-40° | 776.3 | 19.2 |
| 40°-50° | 708.2 | 17.5 |
| 50°-60° | 554.8 | 13.7 |
| 60°-70° | 361.6 | 8.9 |
| 70°-80° | 160.2 | 4.0 |
| 80°-90° | 34.4 | 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° | 1445.5 | 35.8 |
| 0°-40° | 2221.8 | 55.0 |
| 0°-60° | 3484.8 | 86.2 |
| 0°-90° | 4041.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4041.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2058 | 2058 | 2058 | 2058 | 2058 | |
| 5° | 2023 | 2020 | 2020 | 2018 | 2018 | 192 |
| 15° | 1892 | 1892 | 1873 | 1854 | 1847 | 532 |
| 25° | 1640 | 1630 | 1604 | 1547 | 1504 | 753 |
| 35° | 1330 | 1321 | 1256 | 1161 | 1133 | 832 |
| 45° | 1021 | 1000 | 914 | 838 | 804 | 786 |
| 55° | 709 | 688 | 624 | 550 | 521 | 636 |
| 65° | 421 | 397 | 359 | 366 | 305 | 415 |
| 75° | 169 | 157 | 148 | 140 | 155 | 181 |
| 85° | 24 | 26 | 29 | 31 | 33 | 33 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

TEST NUMBER: P561682

CATALOG NUMBER: FSR-12-4-LD4-2LO-50-UNV-82-85-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2058.4 | 2058.4 | 2058.4 | 2058.4 | 2058.4 |
| 2.5° | 2044.2 | 2044.2 | 2044.2 | 2041.8 | 2041.8 |
| 5° | 2022.7 | 2020.4 | 2020.4 | 2018.0 | 2018.0 |
| 7.5° | 2006.1 | 2003.7 | 2001.3 | 1998.9 | 1994.2 |
| 10° | 1982.3 | 1982.3 | 1979.9 | 1968.0 | 1965.6 |
| 12.5° | 1944.2 | 1941.8 | 1932.3 | 1915.7 | 1910.9 |
| 15° | 1891.9 | 1891.9 | 1872.8 | 1853.8 | 1846.6 |
| 17.5° | 1834.7 | 1832.4 | 1808.6 | 1789.5 | 1780.0 |
| 20° | 1772.9 | 1768.1 | 1744.3 | 1713.4 | 1696.7 |
| 22.5° | 1703.9 | 1703.9 | 1675.3 | 1634.8 | 1618.2 |
| 25° | 1639.6 | 1630.1 | 1603.9 | 1546.8 | 1504.0 |
| 27.5° | 1565.8 | 1551.6 | 1523.0 | 1442.1 | 1392.1 |
| 30° | 1484.9 | 1477.8 | 1437.3 | 1332.6 | 1294.6 |
| 32.5° | 1408.8 | 1396.9 | 1354.0 | 1244.6 | 1213.6 |
| 35° | 1330.2 | 1320.7 | 1256.5 | 1161.3 | 1132.7 |
| 37.5° | 1251.7 | 1239.8 | 1158.9 | 1082.8 | 1047.1 |
| 40° | 1173.2 | 1158.9 | 1070.9 | 1001.8 | 963.8 |
| 42.5° | 1099.4 | 1080.4 | 994.7 | 920.9 | 878.1 |
| 45° | 1020.9 | 999.5 | 913.8 | 837.7 | 804.3 |
| 47.5° | 942.4 | 923.3 | 844.8 | 766.3 | 728.2 |
| 50° | 859.1 | 842.4 | 771.0 | 692.5 | 652.0 |
| 52.5° | 790.1 | 763.9 | 694.9 | 616.3 | 583.0 |
| 55° | 709.1 | 687.7 | 623.5 | 549.7 | 521.2 |
| 57.5° | 635.4 | 614.0 | 554.5 | 485.5 | 461.7 |
| 60° | 566.4 | 535.4 | 485.5 | 426.0 | 406.9 |
| 62.5° | 490.2 | 466.4 | 423.6 | 373.6 | 397.4 |
| 65° | 421.2 | 397.4 | 359.3 | 366.5 | 304.6 |
| 67.5° | 345.1 | 333.2 | 299.8 | 266.5 | 257.0 |
| 70° | 280.8 | 266.5 | 254.6 | 218.9 | 209.4 |
| 72.5° | 223.7 | 209.4 | 192.8 | 173.7 | 166.6 |
| 75° | 169.0 | 157.1 | 147.5 | 140.4 | 154.7 |
| 77.5° | 116.6 | 111.8 | 104.7 | 97.6 | 95.2 |
| 80° | 76.2 | 73.8 | 71.4 | 69.0 | 66.6 |
| 82.5° | 45.2 | 45.2 | 45.2 | 45.2 | 45.2 |
| 85° | 23.8 | 26.2 | 28.6 | 30.9 | 33.3 |
| 87.5° | 14.3 | 14.3 | 16.7 | 19.0 | 21.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)