

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: P560889

Luminaire Tested: FSR-12-4-LD4-1HI-50-UNV-80-88-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560889
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-LD4-1HI-50-UNV-80-88-EDD
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .500 CLEAR PC ENVIRON
SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3533.0 lumens
Efficiency: N/A
Efficacy: 81.8 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

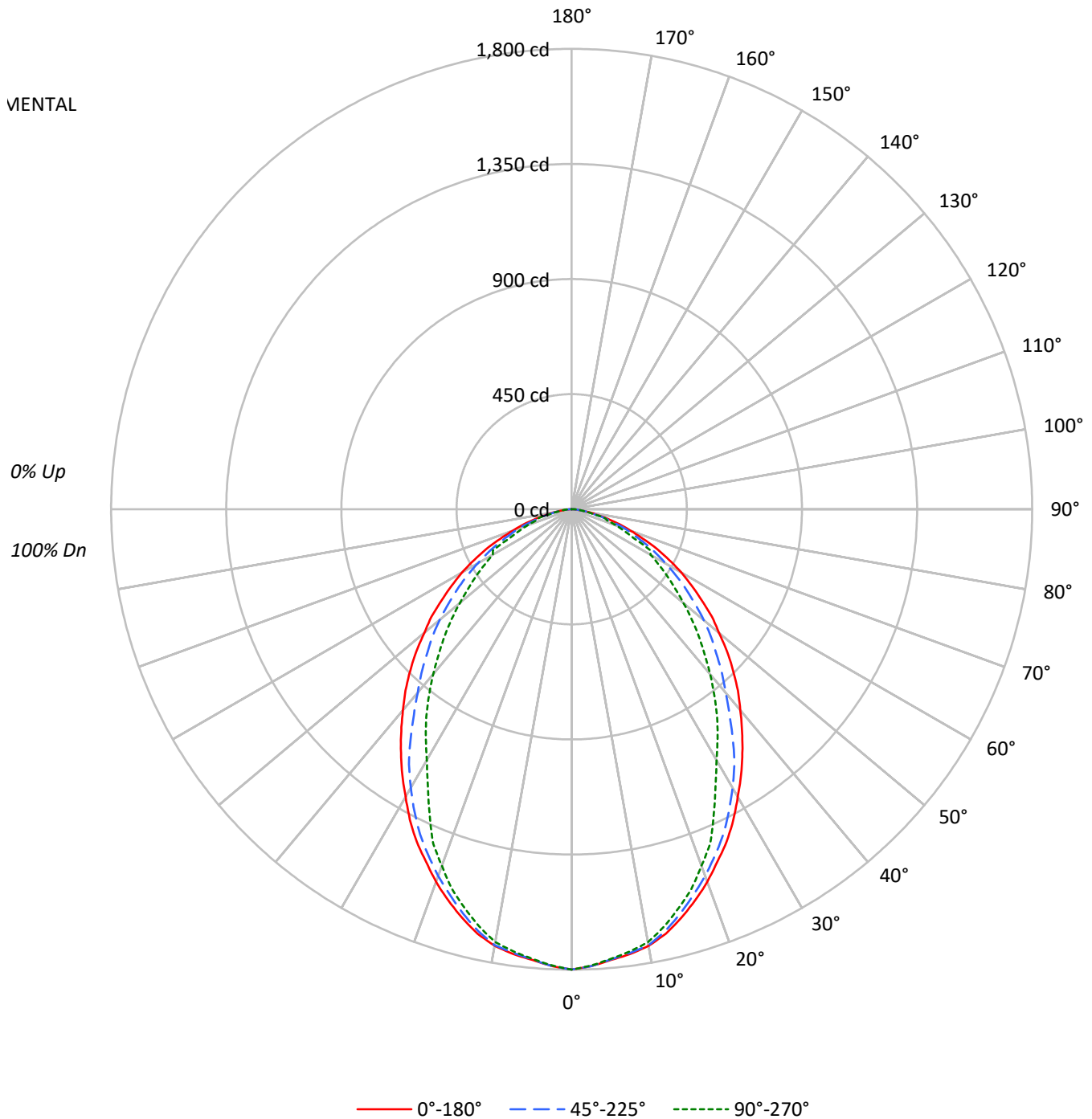
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P560889

CATALOG NUMBER: FSR-12-4-LD4-1HI-50-UNV-80-88-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P560889

CATALOG NUMBER: FSR-12-4-LD4-1HI-50-UNV-80-88-EDD

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 | 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° | 4843 | 4843 | 4843 |
| 5° | 4777 | 4772 | 4766 |
| 10° | 4736 | 4730 | 4696 |
| 15° | 4608 | 4562 | 4498 |
| 20° | 4439 | 4367 | 4248 |
| 25° | 4256 | 4164 | 3904 |
| 30° | 4034 | 3905 | 3517 |
| 35° | 3821 | 3609 | 3253 |
| 40° | 3603 | 3289 | 2960 |
| 45° | 3397 | 3040 | 2676 |
| 50° | 3144 | 2822 | 2387 |
| 55° | 2909 | 2557 | 2137 |
| 60° | 2665 | 2284 | 1915 |
| 65° | 2345 | 2001 | 1696 |
| 70° | 1932 | 1751 | 1441 |
| 75° | 1536 | 1341 | 1406 |
| 80° | 1032 | 967 | 903 |
| 85° | 642 | 772 | 898 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3397 cd/sqm



TEST NUMBER: P560889

CATALOG NUMBER: FSR-12-4-LD4-1HI-50-UNV-80-88-EDD

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 167.5 | 4.7 |
| 10°-20° | 459.8 | 13.0 |
| 20°-30° | 636.5 | 18.0 |
| 30°-40° | 678.7 | 19.2 |
| 40°-50° | 619.2 | 17.5 |
| 50°-60° | 485.1 | 13.7 |
| 60°-70° | 316.1 | 8.9 |
| 70°-80° | 140.1 | 4.0 |
| 80°-90° | 30.1 | 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° | 1263.8 | 35.8 |
| 0°-40° | 1942.5 | 55.0 |
| 0°-60° | 3046.7 | 86.2 |
| 0°-90° | 3533.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3533.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1800 | 1800 | 1800 | 1800 | 1800 | |
| 5° | 1768 | 1766 | 1766 | 1764 | 1764 | 168 |
| 15° | 1654 | 1654 | 1637 | 1621 | 1614 | 465 |
| 25° | 1434 | 1425 | 1402 | 1352 | 1315 | 658 |
| 35° | 1163 | 1155 | 1098 | 1015 | 990 | 727 |
| 45° | 892 | 874 | 799 | 732 | 703 | 688 |
| 55° | 620 | 601 | 545 | 481 | 456 | 556 |
| 65° | 368 | 347 | 314 | 320 | 266 | 363 |
| 75° | 148 | 137 | 129 | 123 | 135 | 158 |
| 85° | 21 | 23 | 25 | 27 | 29 | 29 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P560889

CATALOG NUMBER: FSR-12-4-LD4-1HI-50-UNV-80-88-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1799.7 | 1799.7 | 1799.7 | 1799.7 | 1799.7 |
| 2.5° | 1787.2 | 1787.2 | 1787.2 | 1785.1 | 1785.1 |
| 5° | 1768.5 | 1766.4 | 1766.4 | 1764.3 | 1764.3 |
| 7.5° | 1753.9 | 1751.8 | 1749.7 | 1747.6 | 1743.5 |
| 10° | 1733.1 | 1733.1 | 1731.0 | 1720.6 | 1718.5 |
| 12.5° | 1699.8 | 1697.7 | 1689.4 | 1674.8 | 1670.7 |
| 15° | 1654.0 | 1654.0 | 1637.4 | 1620.7 | 1614.5 |
| 17.5° | 1604.1 | 1602.0 | 1581.2 | 1564.6 | 1556.2 |
| 20° | 1550.0 | 1545.8 | 1525.0 | 1498.0 | 1483.4 |
| 22.5° | 1489.7 | 1489.7 | 1464.7 | 1429.3 | 1414.8 |
| 25° | 1433.5 | 1425.2 | 1402.3 | 1352.3 | 1314.9 |
| 27.5° | 1369.0 | 1356.5 | 1331.5 | 1260.8 | 1217.1 |
| 30° | 1298.3 | 1292.0 | 1256.6 | 1165.1 | 1131.8 |
| 32.5° | 1231.7 | 1221.3 | 1183.8 | 1088.1 | 1061.1 |
| 35° | 1163.0 | 1154.7 | 1098.5 | 1015.3 | 990.3 |
| 37.5° | 1094.4 | 1084.0 | 1013.2 | 946.6 | 915.4 |
| 40° | 1025.7 | 1013.2 | 936.2 | 875.9 | 842.6 |
| 42.5° | 961.2 | 944.6 | 869.7 | 805.2 | 767.7 |
| 45° | 892.5 | 873.8 | 798.9 | 732.3 | 703.2 |
| 47.5° | 823.9 | 807.2 | 738.6 | 669.9 | 636.6 |
| 50° | 751.1 | 736.5 | 674.1 | 605.4 | 570.1 |
| 52.5° | 690.7 | 667.9 | 607.5 | 538.9 | 509.7 |
| 55° | 620.0 | 601.3 | 545.1 | 480.6 | 455.6 |
| 57.5° | 555.5 | 536.8 | 484.8 | 424.4 | 403.6 |
| 60° | 495.2 | 468.1 | 424.4 | 372.4 | 355.8 |
| 62.5° | 428.6 | 407.8 | 370.3 | 326.6 | 347.4 |
| 65° | 368.3 | 347.4 | 314.2 | 320.4 | 266.3 |
| 67.5° | 301.7 | 291.3 | 262.1 | 233.0 | 224.7 |
| 70° | 245.5 | 233.0 | 222.6 | 191.4 | 183.1 |
| 72.5° | 195.6 | 183.1 | 168.5 | 151.9 | 145.6 |
| 75° | 147.7 | 137.3 | 129.0 | 122.8 | 135.2 |
| 77.5° | 101.9 | 97.8 | 91.5 | 85.3 | 83.2 |
| 80° | 66.6 | 64.5 | 62.4 | 60.3 | 58.3 |
| 82.5° | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 |
| 85° | 20.8 | 22.9 | 25.0 | 27.0 | 29.1 |
| 87.5° | 12.5 | 12.5 | 14.6 | 16.6 | 18.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)