

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: P562680

Luminaire Tested: FSR-24-4-LD4-2LO-35-UNV-80-88-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P562680
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-LD4-2LO-35-UNV-80-88-EDD-90
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .500 CLEAR PC ENVIRON
SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4118.0 lumens
Efficiency: N/A
Efficacy: 88.0 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

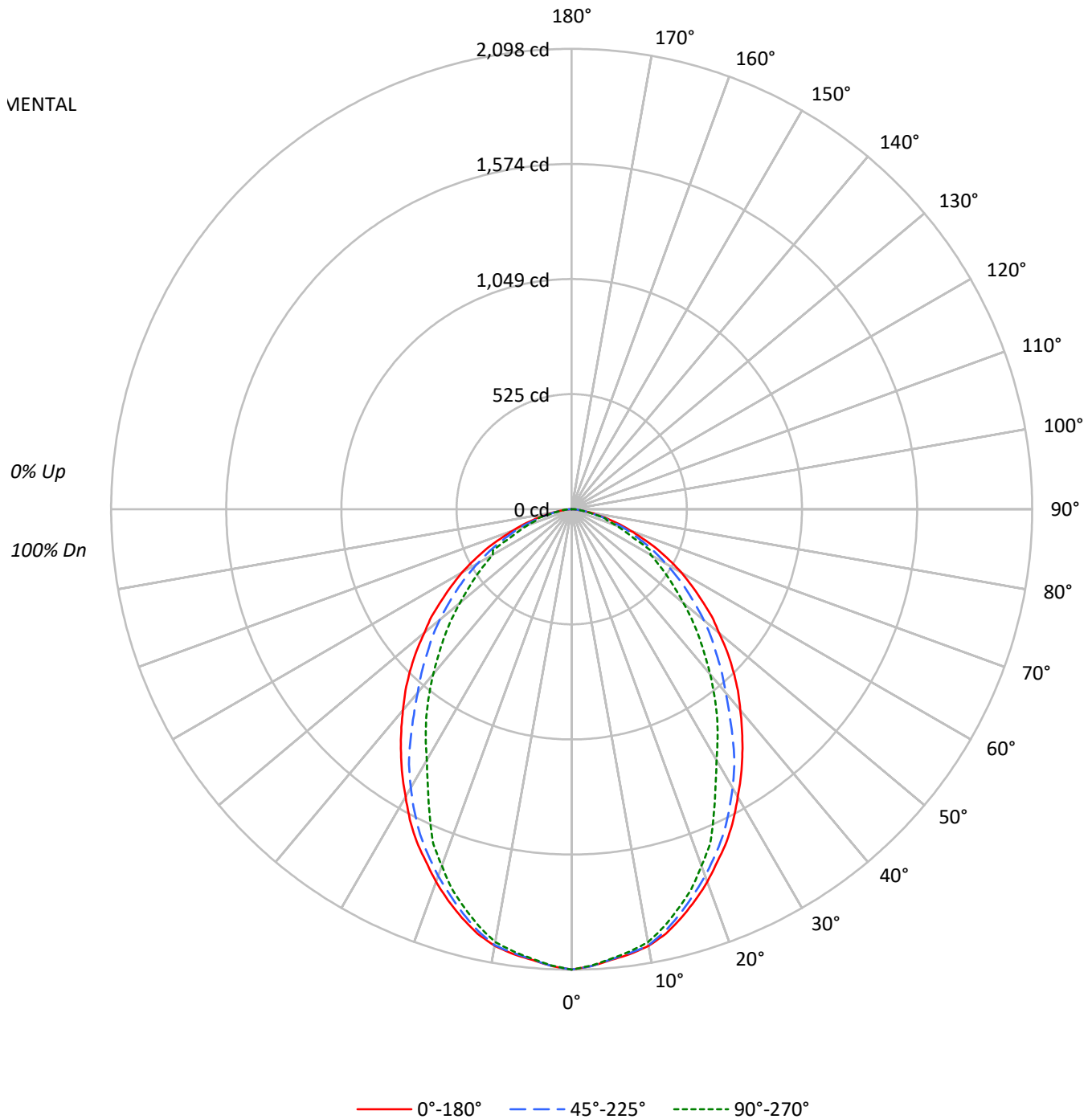
Input Watts (W): 46.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P562680

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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 | 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° | 2822 | 2822 | 2822 |
| 5° | 2784 | 2781 | 2777 |
| 10° | 2760 | 2757 | 2737 |
| 15° | 2685 | 2658 | 2621 |
| 20° | 2587 | 2545 | 2476 |
| 25° | 2480 | 2427 | 2275 |
| 30° | 2351 | 2276 | 2050 |
| 35° | 2227 | 2103 | 1896 |
| 40° | 2100 | 1917 | 1725 |
| 45° | 1979 | 1772 | 1560 |
| 50° | 1832 | 1645 | 1391 |
| 55° | 1695 | 1491 | 1246 |
| 60° | 1553 | 1331 | 1116 |
| 65° | 1366 | 1166 | 988 |
| 70° | 1126 | 1021 | 840 |
| 75° | 895 | 782 | 819 |
| 80° | 601 | 564 | 526 |
| 85° | 375 | 449 | 525 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1979 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 195.3 | 4.7 |
| 10°-20° | 535.9 | 13.0 |
| 20°-30° | 741.9 | 18.0 |
| 30°-40° | 791.1 | 19.2 |
| 40°-50° | 721.7 | 17.5 |
| 50°-60° | 565.4 | 13.7 |
| 60°-70° | 368.5 | 8.9 |
| 70°-80° | 163.3 | 4.0 |
| 80°-90° | 35.1 | 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° | 1473.0 | 35.8 |
| 0°-40° | 2264.1 | 55.0 |
| 0°-60° | 3551.2 | 86.2 |
| 0°-90° | 4118.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4118.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2098 | 2098 | 2098 | 2098 | 2098 | |
| 5° | 2061 | 2059 | 2059 | 2056 | 2056 | 196 |
| 15° | 1928 | 1928 | 1908 | 1889 | 1882 | 542 |
| 25° | 1671 | 1661 | 1634 | 1576 | 1533 | 767 |
| 35° | 1356 | 1346 | 1280 | 1183 | 1154 | 847 |
| 45° | 1040 | 1018 | 931 | 854 | 820 | 801 |
| 55° | 723 | 701 | 635 | 560 | 531 | 648 |
| 65° | 429 | 405 | 366 | 374 | 310 | 423 |
| 75° | 172 | 160 | 150 | 143 | 158 | 185 |
| 85° | 24 | 27 | 29 | 32 | 34 | 34 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P562680

CATALOG NUMBER: FSR-24-4-LD4-2LO-35-UNV-80-88-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2097.7 | 2097.7 | 2097.7 | 2097.7 | 2097.7 |
| 2.5° | 2083.1 | 2083.1 | 2083.1 | 2080.7 | 2080.7 |
| 5° | 2061.3 | 2058.9 | 2058.9 | 2056.4 | 2056.4 |
| 7.5° | 2044.3 | 2041.9 | 2039.5 | 2037.0 | 2032.2 |
| 10° | 2020.1 | 2020.1 | 2017.6 | 2005.5 | 2003.1 |
| 12.5° | 1981.3 | 1978.8 | 1969.1 | 1952.2 | 1947.3 |
| 15° | 1927.9 | 1927.9 | 1908.5 | 1889.1 | 1881.8 |
| 17.5° | 1869.7 | 1867.3 | 1843.0 | 1823.6 | 1813.9 |
| 20° | 1806.7 | 1801.8 | 1777.5 | 1746.0 | 1729.0 |
| 22.5° | 1736.3 | 1736.3 | 1707.2 | 1666.0 | 1649.0 |
| 25° | 1670.8 | 1661.1 | 1634.5 | 1576.3 | 1532.6 |
| 27.5° | 1595.7 | 1581.1 | 1552.0 | 1469.6 | 1418.6 |
| 30° | 1513.2 | 1505.9 | 1464.7 | 1358.0 | 1319.2 |
| 32.5° | 1435.6 | 1423.5 | 1379.8 | 1268.3 | 1236.8 |
| 35° | 1355.6 | 1345.9 | 1280.4 | 1183.4 | 1154.3 |
| 37.5° | 1275.6 | 1263.4 | 1181.0 | 1103.4 | 1067.0 |
| 40° | 1195.5 | 1181.0 | 1091.3 | 1020.9 | 982.1 |
| 42.5° | 1120.4 | 1101.0 | 1013.7 | 938.5 | 894.8 |
| 45° | 1040.3 | 1018.5 | 931.2 | 853.6 | 819.7 |
| 47.5° | 960.3 | 940.9 | 860.9 | 780.9 | 742.1 |
| 50° | 875.4 | 858.5 | 785.7 | 705.7 | 664.5 |
| 52.5° | 805.1 | 778.4 | 708.1 | 628.1 | 594.1 |
| 55° | 722.7 | 700.8 | 635.4 | 560.2 | 531.1 |
| 57.5° | 647.5 | 625.7 | 565.0 | 494.7 | 470.5 |
| 60° | 577.2 | 545.6 | 494.7 | 434.1 | 414.7 |
| 62.5° | 499.6 | 475.3 | 431.7 | 380.7 | 405.0 |
| 65° | 429.2 | 405.0 | 366.2 | 373.5 | 310.4 |
| 67.5° | 351.6 | 339.5 | 305.6 | 271.6 | 261.9 |
| 70° | 286.2 | 271.6 | 259.5 | 223.1 | 213.4 |
| 72.5° | 228.0 | 213.4 | 196.4 | 177.0 | 169.8 |
| 75° | 172.2 | 160.1 | 150.4 | 143.1 | 157.6 |
| 77.5° | 118.8 | 114.0 | 106.7 | 99.4 | 97.0 |
| 80° | 77.6 | 75.2 | 72.8 | 70.3 | 67.9 |
| 82.5° | 46.1 | 46.1 | 46.1 | 46.1 | 46.1 |
| 85° | 24.3 | 26.7 | 29.1 | 31.5 | 34.0 |
| 87.5° | 14.6 | 14.6 | 17.0 | 19.4 | 21.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)