

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: P562421

Luminaire Tested: FSR-24-4-LD4-1STD-50-UNV-80-86-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P562421
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-LD4-1STD-50-UNV-80-86-EDD
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRON
SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3884.0 lumens
Efficiency: N/A
Efficacy: 116.6 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

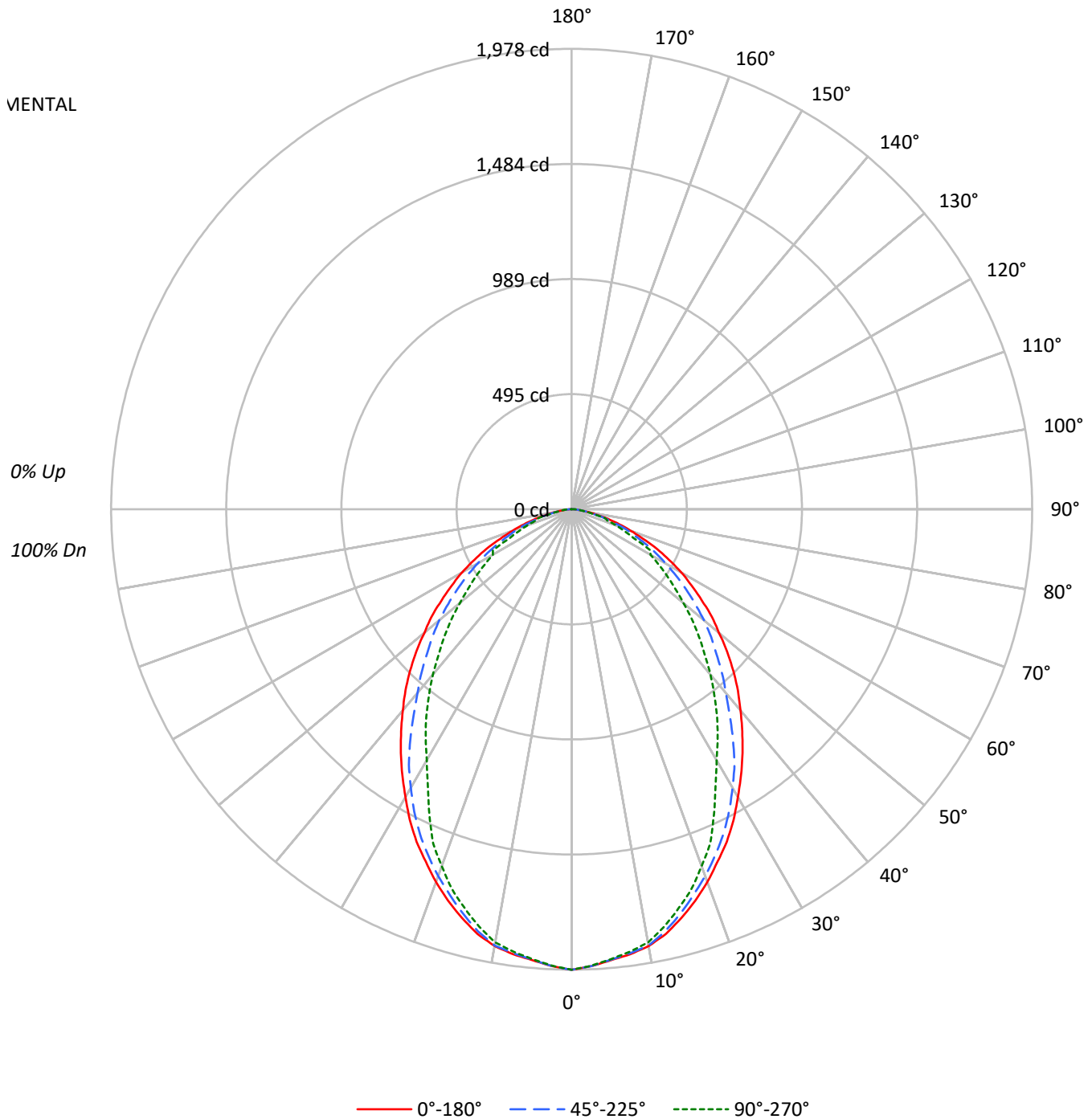
Input Watts (W): 33.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P562421

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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 | | | | | 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° | 2662 | 2662 | 2662 |
| 5° | 2626 | 2623 | 2620 |
| 10° | 2603 | 2600 | 2581 |
| 15° | 2533 | 2507 | 2472 |
| 20° | 2440 | 2400 | 2335 |
| 25° | 2340 | 2289 | 2146 |
| 30° | 2217 | 2146 | 1933 |
| 35° | 2100 | 1984 | 1788 |
| 40° | 1981 | 1808 | 1627 |
| 45° | 1867 | 1671 | 1471 |
| 50° | 1728 | 1551 | 1312 |
| 55° | 1599 | 1406 | 1175 |
| 60° | 1465 | 1256 | 1052 |
| 65° | 1289 | 1100 | 932 |
| 70° | 1062 | 963 | 792 |
| 75° | 844 | 737 | 773 |
| 80° | 567 | 532 | 496 |
| 85° | 354 | 423 | 494 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1867 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 184.2 | 4.7 |
| 10°-20° | 505.4 | 13.0 |
| 20°-30° | 699.7 | 18.0 |
| 30°-40° | 746.1 | 19.2 |
| 40°-50° | 680.7 | 17.5 |
| 50°-60° | 533.3 | 13.7 |
| 60°-70° | 347.6 | 8.9 |
| 70°-80° | 154.0 | 4.0 |
| 80°-90° | 33.1 | 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° | 1389.3 | 35.8 |
| 0°-40° | 2135.5 | 55.0 |
| 0°-60° | 3349.4 | 86.2 |
| 0°-90° | 3884.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3884.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1978 | 1978 | 1978 | 1978 | 1978 | |
| 5° | 1944 | 1942 | 1942 | 1940 | 1940 | 185 |
| 15° | 1818 | 1818 | 1800 | 1782 | 1775 | 511 |
| 25° | 1576 | 1567 | 1542 | 1487 | 1446 | 723 |
| 35° | 1279 | 1269 | 1208 | 1116 | 1089 | 799 |
| 45° | 981 | 961 | 878 | 805 | 773 | 756 |
| 55° | 682 | 661 | 599 | 528 | 501 | 611 |
| 65° | 405 | 382 | 345 | 352 | 293 | 399 |
| 75° | 162 | 151 | 142 | 135 | 149 | 174 |
| 85° | 23 | 25 | 27 | 30 | 32 | 32 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P562421

CATALOG NUMBER: FSR-24-4-LD4-1STD-50-UNV-80-86-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1978.5 | 1978.5 | 1978.5 | 1978.5 | 1978.5 |
| 2.5° | 1964.7 | 1964.7 | 1964.7 | 1962.4 | 1962.4 |
| 5° | 1944.1 | 1941.9 | 1941.9 | 1939.6 | 1939.6 |
| 7.5° | 1928.1 | 1925.9 | 1923.6 | 1921.3 | 1916.7 |
| 10° | 1905.3 | 1905.3 | 1903.0 | 1891.5 | 1889.3 |
| 12.5° | 1868.7 | 1866.4 | 1857.2 | 1841.2 | 1836.6 |
| 15° | 1818.4 | 1818.4 | 1800.1 | 1781.8 | 1774.9 |
| 17.5° | 1763.5 | 1761.2 | 1738.3 | 1720.0 | 1710.9 |
| 20° | 1704.0 | 1699.4 | 1676.5 | 1646.8 | 1630.8 |
| 22.5° | 1637.7 | 1637.7 | 1610.2 | 1571.3 | 1555.3 |
| 25° | 1575.9 | 1566.8 | 1541.6 | 1486.7 | 1445.5 |
| 27.5° | 1505.0 | 1491.3 | 1463.8 | 1386.1 | 1338.0 |
| 30° | 1427.2 | 1420.4 | 1381.5 | 1280.9 | 1244.3 |
| 32.5° | 1354.0 | 1342.6 | 1301.4 | 1196.2 | 1166.5 |
| 35° | 1278.6 | 1269.4 | 1207.7 | 1116.2 | 1088.7 |
| 37.5° | 1203.1 | 1191.6 | 1113.9 | 1040.7 | 1006.4 |
| 40° | 1127.6 | 1113.9 | 1029.3 | 962.9 | 926.3 |
| 42.5° | 1056.7 | 1038.4 | 956.1 | 885.2 | 844.0 |
| 45° | 981.2 | 960.6 | 878.3 | 805.1 | 773.1 |
| 47.5° | 905.7 | 887.4 | 812.0 | 736.5 | 699.9 |
| 50° | 825.7 | 809.7 | 741.1 | 665.6 | 626.7 |
| 52.5° | 759.4 | 734.2 | 667.9 | 592.4 | 560.4 |
| 55° | 681.6 | 661.0 | 599.3 | 528.4 | 500.9 |
| 57.5° | 610.7 | 590.1 | 532.9 | 466.6 | 443.7 |
| 60° | 544.4 | 514.6 | 466.6 | 409.4 | 391.1 |
| 62.5° | 471.2 | 448.3 | 407.1 | 359.1 | 382.0 |
| 65° | 404.8 | 382.0 | 345.4 | 352.2 | 292.8 |
| 67.5° | 331.6 | 320.2 | 288.2 | 256.2 | 247.0 |
| 70° | 269.9 | 256.2 | 244.7 | 210.4 | 201.3 |
| 72.5° | 215.0 | 201.3 | 185.3 | 167.0 | 160.1 |
| 75° | 162.4 | 151.0 | 141.8 | 134.9 | 148.7 |
| 77.5° | 112.1 | 107.5 | 100.6 | 93.8 | 91.5 |
| 80° | 73.2 | 70.9 | 68.6 | 66.3 | 64.0 |
| 82.5° | 43.5 | 43.5 | 43.5 | 43.5 | 43.5 |
| 85° | 22.9 | 25.2 | 27.4 | 29.7 | 32.0 |
| 87.5° | 13.7 | 13.7 | 16.0 | 18.3 | 20.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)