

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: P590869

Luminaire Tested: FSR-24-2-LD4-4LO-50-UNV-80-84-EDD

Issue Date: 12/8/2021

Test Information

Test Method: LM-79-2019
Report Number: P590869
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)
Test Lab: INNOVATION CENTER
Issue Date: 12/8/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: FSR-24-2-LD4-4LO-50-UNV-80-84-EDD
Description: 2X2 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .125 CLEAR PC ENVIRONM
SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

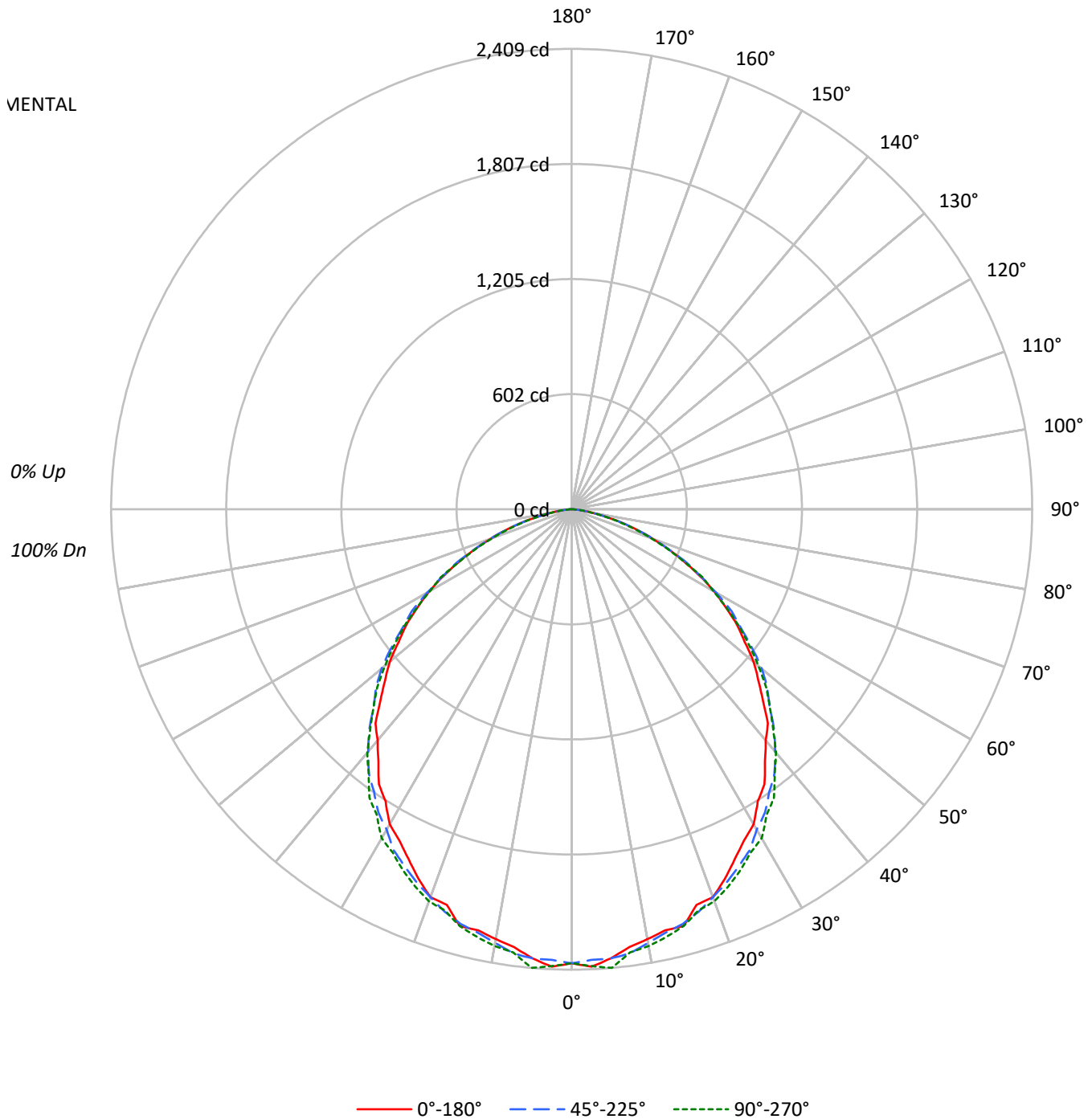
Lumens per Lamp: N/A
Luminaire Lumens: 5986.0 lumens
Efficiency: N/A
Efficacy: 127.9 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

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



TEST NUMBER: P590869
CATALOG NUMBER: FSR-24-2-LD4-4LO-50-UNV-80-84-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P590869

CATALOG NUMBER: FSR-24-2-LD4-4LO-50-UNV-80-84-EDD

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|-----|----|----|---|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF | 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 | 105 | 101 | 98 | 107 | 103 | 100 | 96 | 99 | 96 | 93 | 95 | 93 | 90 | 91 | 90 | 88 | 86 | | | | | | | | | 86 | | | | | | | | | | | | | | | | | | | |
| 2 | 100 | 93 | 86 | 81 | 98 | 91 | 85 | 80 | 87 | 82 | 78 | 84 | 80 | 76 | 81 | 78 | 75 | 73 | | | | | | | | | 73 | | | | | | | | | | | | | | | | | | | |
| 3 | 92 | 82 | 74 | 68 | 89 | 80 | 73 | 67 | 77 | 71 | 66 | 75 | 69 | 65 | 72 | 68 | 64 | 62 | | | | | | | | | 62 | | | | | | | | | | | | | | | | | | | |
| 4 | 84 | 73 | 64 | 58 | 82 | 71 | 64 | 58 | 69 | 62 | 57 | 67 | 61 | 56 | 65 | 59 | 55 | 53 | | | | | | | | | 53 | | | | | | | | | | | | | | | | | | | |
| 5 | 78 | 65 | 57 | 50 | 76 | 64 | 56 | 50 | 62 | 55 | 49 | 60 | 54 | 49 | 58 | 53 | 48 | 46 | | | | | | | | | 46 | | | | | | | | | | | | | | | | | | | |
| 6 | 72 | 59 | 50 | 44 | 70 | 58 | 50 | 44 | 56 | 49 | 43 | 54 | 48 | 43 | 53 | 47 | 43 | 41 | | | | | | | | | 41 | | | | | | | | | | | | | | | | | | | |
| 7 | 67 | 53 | 45 | 39 | 65 | 53 | 45 | 39 | 51 | 44 | 39 | 50 | 43 | 38 | 48 | 42 | 38 | 36 | | | | | | | | | 36 | | | | | | | | | | | | | | | | | | | |
| 8 | 62 | 49 | 41 | 35 | 61 | 48 | 40 | 35 | 47 | 40 | 34 | 46 | 39 | 34 | 44 | 39 | 34 | 32 | | | | | | | | | 32 | | | | | | | | | | | | | | | | | | | |
| 9 | 58 | 45 | 37 | 31 | 57 | 44 | 37 | 31 | 43 | 36 | 31 | 42 | 36 | 31 | 41 | 35 | 31 | 29 | | | | | | | | | 29 | | | | | | | | | | | | | | | | | | | |
| 10 | 54 | 41 | 34 | 29 | 53 | 41 | 33 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 | | | | | | | | | 26 | | | | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 6391 | 6391 | 6391 |
| 5° | 6370 | 6373 | 6507 |
| 10° | 6241 | 6295 | 6340 |
| 15° | 6290 | 6256 | 6291 |
| 20° | 6184 | 6184 | 6250 |
| 25° | 5994 | 6125 | 6192 |
| 30° | 5912 | 6016 | 6176 |
| 35° | 5773 | 5924 | 6056 |
| 40° | 5548 | 5815 | 5841 |
| 45° | 5380 | 5571 | 5579 |
| 50° | 5203 | 5438 | 5334 |
| 55° | 4958 | 5054 | 5018 |
| 60° | 4636 | 4682 | 4598 |
| 65° | 4134 | 4239 | 4104 |
| 70° | 3547 | 3559 | 3460 |
| 75° | 2809 | 2803 | 2694 |
| 80° | 1881 | 1830 | 1759 |
| 85° | 1022 | 1013 | 948 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 45°
 Luminance: 5715 cd/sqm



TEST NUMBER: P590869

CATALOG NUMBER: FSR-24-2-LD4-4LO-50-UNV-80-84-EDD

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 223.4 | 3.7 |
| 10°-20° | 633.2 | 10.6 |
| 20°-30° | 948.6 | 15.8 |
| 30°-40° | 1124.3 | 18.8 |
| 40°-50° | 1126.4 | 18.8 |
| 50°-60° | 956.1 | 16.0 |
| 60°-70° | 644.6 | 10.8 |
| 70°-80° | 283.3 | 4.7 |
| 80°-90° | 46.0 | 0.8 |
| 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° | 1805.2 | 30.2 |
| 0°-40° | 2929.6 | 48.9 |
| 0°-60° | 5012.1 | 83.7 |
| 0°-90° | 5986.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5986.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2375 | 2375 | 2375 | 2375 | 2375 | |
| 5° | 2358 | 2353 | 2359 | 2352 | 2409 | 222 |
| 15° | 2258 | 2232 | 2246 | 2257 | 2258 | 629 |
| 25° | 2019 | 2030 | 2063 | 2090 | 2086 | 933 |
| 35° | 1757 | 1762 | 1803 | 1845 | 1844 | 1091 |
| 45° | 1414 | 1440 | 1464 | 1502 | 1466 | 1094 |
| 55° | 1057 | 1050 | 1077 | 1070 | 1070 | 940 |
| 65° | 649 | 641 | 666 | 640 | 645 | 646 |
| 75° | 270 | 265 | 270 | 250 | 259 | 290 |
| 85° | 33 | 32 | 33 | 32 | 31 | 48 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

TEST NUMBER: P590869

CATALOG NUMBER: FSR-24-2-LD4-4LO-50-UNV-80-84-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2375.1 | 2375.1 | 2375.1 | 2375.1 | 2375.1 |
| 2.5° | 2395.6 | 2377.5 | 2360.7 | 2380.3 | 2392.3 |
| 5° | 2358.2 | 2352.7 | 2359.1 | 2352.1 | 2408.8 |
| 7.5° | 2309.8 | 2330.9 | 2343.2 | 2335.5 | 2338.9 |
| 10° | 2284.0 | 2276.7 | 2303.9 | 2323.0 | 2320.2 |
| 12.5° | 2256.4 | 2267.5 | 2269.0 | 2289.5 | 2291.4 |
| 15° | 2257.9 | 2231.9 | 2245.7 | 2257.3 | 2258.3 |
| 17.5° | 2170.2 | 2198.5 | 2208.0 | 2234.6 | 2201.5 |
| 20° | 2159.5 | 2139.0 | 2159.5 | 2186.8 | 2182.5 |
| 22.5° | 2093.6 | 2070.6 | 2114.7 | 2139.0 | 2137.4 |
| 25° | 2018.8 | 2029.8 | 2062.9 | 2089.9 | 2085.6 |
| 27.5° | 1953.1 | 1966.0 | 2013.2 | 2050.3 | 2026.4 |
| 30° | 1902.5 | 1896.1 | 1936.0 | 1969.1 | 1987.5 |
| 32.5° | 1812.1 | 1835.4 | 1882.0 | 1914.8 | 1897.3 |
| 35° | 1757.2 | 1762.4 | 1803.2 | 1844.9 | 1843.6 |
| 37.5° | 1661.2 | 1685.4 | 1742.8 | 1754.4 | 1743.7 |
| 40° | 1579.3 | 1603.5 | 1655.4 | 1667.9 | 1662.7 |
| 42.5° | 1518.9 | 1523.2 | 1567.7 | 1582.1 | 1559.1 |
| 45° | 1413.7 | 1440.1 | 1464.0 | 1501.7 | 1466.1 |
| 47.5° | 1324.2 | 1336.4 | 1388.0 | 1398.1 | 1379.4 |
| 50° | 1242.9 | 1247.2 | 1299.0 | 1286.4 | 1274.2 |
| 52.5° | 1140.8 | 1158.9 | 1188.0 | 1185.6 | 1171.1 |
| 55° | 1056.8 | 1049.7 | 1077.3 | 1069.9 | 1069.6 |
| 57.5° | 955.9 | 968.1 | 990.8 | 979.2 | 960.5 |
| 60° | 861.4 | 861.7 | 870.0 | 856.8 | 854.4 |
| 62.5° | 756.2 | 759.9 | 761.7 | 745.5 | 771.9 |
| 65° | 649.2 | 640.6 | 665.8 | 640.3 | 644.6 |
| 67.5° | 550.8 | 555.1 | 552.6 | 536.7 | 542.8 |
| 70° | 450.8 | 456.3 | 452.3 | 434.2 | 439.8 |
| 72.5° | 359.4 | 352.7 | 357.0 | 334.3 | 344.7 |
| 75° | 270.2 | 264.6 | 269.6 | 250.5 | 259.1 |
| 77.5° | 184.0 | 188.3 | 185.2 | 175.1 | 180.9 |
| 80° | 121.4 | 118.1 | 118.1 | 112.2 | 113.5 |
| 82.5° | 70.8 | 67.5 | 66.5 | 64.7 | 67.5 |
| 85° | 33.1 | 32.2 | 32.8 | 31.9 | 30.7 |
| 87.5° | 12.0 | 12.3 | 12.3 | 11.7 | 11.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)