

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: P590871

Luminaire Tested: FSR-24-2-LD4-4LO-50-UNV-80-86-EDD

Issue Date: 12/8/2021

Test Information

Test Method: LM-79-2019
Report Number: P590871
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-80-86-EDD
Description: 2X2 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

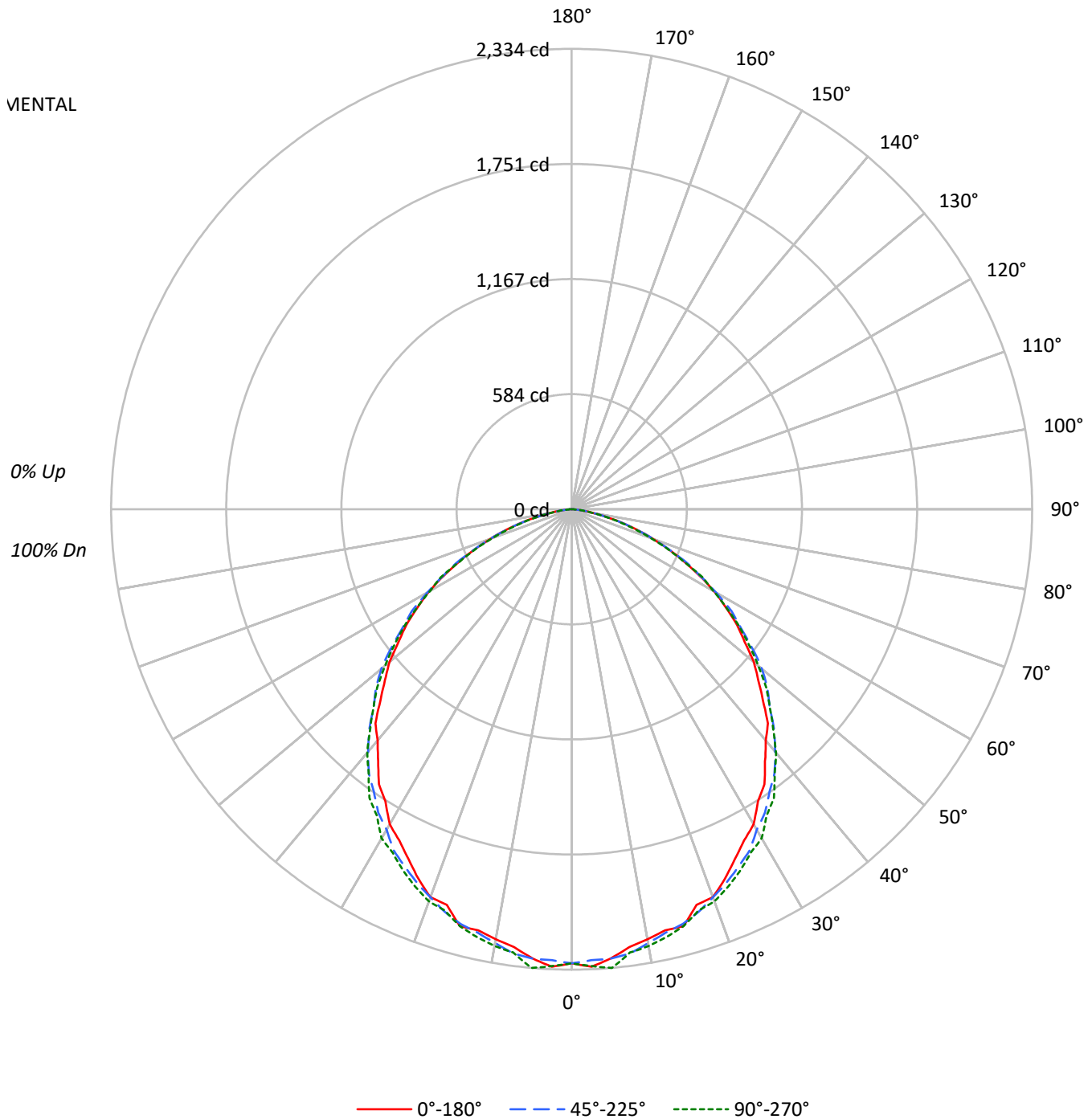
Lumens per Lamp: N/A
Luminaire Lumens: 5801.0 lumens
Efficiency: N/A
Efficacy: 124.0 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

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: P590871
CATALOG NUMBER: FSR-24-2-LD4-4LO-50-UNV-80-86-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P590871

CATALOG NUMBER: FSR-24-2-LD4-4LO-50-UNV-80-86-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 | 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° | 6194 | 6194 | 6194 |
| 5° | 6173 | 6176 | 6306 |
| 10° | 6048 | 6101 | 6144 |
| 15° | 6096 | 6063 | 6097 |
| 20° | 5993 | 5993 | 6057 |
| 25° | 5809 | 5936 | 6001 |
| 30° | 5729 | 5830 | 5985 |
| 35° | 5594 | 5740 | 5869 |
| 40° | 5376 | 5635 | 5660 |
| 45° | 5214 | 5399 | 5407 |
| 50° | 5043 | 5270 | 5169 |
| 55° | 4805 | 4898 | 4863 |
| 60° | 4493 | 4538 | 4456 |
| 65° | 4006 | 4108 | 3978 |
| 70° | 3437 | 3448 | 3353 |
| 75° | 2722 | 2716 | 2611 |
| 80° | 1824 | 1773 | 1705 |
| 85° | 991 | 982 | 917 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 45°
 Luminance: 5538 cd/sqm



TEST NUMBER: P590871

CATALOG NUMBER: FSR-24-2-LD4-4LO-50-UNV-80-86-EDD

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 216.5 | 3.7 |
| 10°-20° | 613.6 | 10.6 |
| 20°-30° | 919.3 | 15.8 |
| 30°-40° | 1089.6 | 18.8 |
| 40°-50° | 1091.6 | 18.8 |
| 50°-60° | 926.6 | 16.0 |
| 60°-70° | 624.7 | 10.8 |
| 70°-80° | 274.5 | 4.7 |
| 80°-90° | 44.6 | 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° | 1749.4 | 30.2 |
| 0°-40° | 2839.0 | 48.9 |
| 0°-60° | 4857.2 | 83.7 |
| 0°-90° | 5801.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5801.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2302 | 2302 | 2302 | 2302 | 2302 | |
| 5° | 2285 | 2280 | 2286 | 2279 | 2334 | 215 |
| 15° | 2188 | 2163 | 2176 | 2188 | 2188 | 610 |
| 25° | 1956 | 1967 | 1999 | 2025 | 2021 | 904 |
| 35° | 1703 | 1708 | 1747 | 1788 | 1787 | 1057 |
| 45° | 1370 | 1396 | 1419 | 1455 | 1421 | 1060 |
| 55° | 1024 | 1017 | 1044 | 1037 | 1037 | 911 |
| 65° | 629 | 621 | 645 | 620 | 625 | 626 |
| 75° | 262 | 256 | 261 | 243 | 251 | 281 |
| 85° | 32 | 31 | 32 | 31 | 30 | 47 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P590871

CATALOG NUMBER: FSR-24-2-LD4-4LO-50-UNV-80-86-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2301.7 | 2301.7 | 2301.7 | 2301.7 | 2301.7 |
| 2.5° | 2321.6 | 2304.1 | 2287.7 | 2306.7 | 2318.3 |
| 5° | 2285.3 | 2280.0 | 2286.2 | 2279.4 | 2334.4 |
| 7.5° | 2238.4 | 2258.9 | 2270.8 | 2263.4 | 2266.6 |
| 10° | 2213.4 | 2206.3 | 2232.7 | 2251.2 | 2248.5 |
| 12.5° | 2186.7 | 2197.4 | 2198.9 | 2218.8 | 2220.6 |
| 15° | 2188.2 | 2162.9 | 2176.3 | 2187.6 | 2188.5 |
| 17.5° | 2103.2 | 2130.5 | 2139.7 | 2165.6 | 2133.5 |
| 20° | 2092.8 | 2072.9 | 2092.8 | 2119.2 | 2115.1 |
| 22.5° | 2028.9 | 2006.6 | 2049.4 | 2072.9 | 2071.4 |
| 25° | 1956.4 | 1967.1 | 1999.2 | 2025.3 | 2021.1 |
| 27.5° | 1892.8 | 1905.2 | 1951.0 | 1987.0 | 1963.8 |
| 30° | 1843.7 | 1837.5 | 1876.1 | 1908.2 | 1926.0 |
| 32.5° | 1756.1 | 1778.6 | 1823.8 | 1855.6 | 1838.7 |
| 35° | 1702.9 | 1707.9 | 1747.4 | 1787.9 | 1786.7 |
| 37.5° | 1609.8 | 1633.3 | 1688.9 | 1700.2 | 1689.8 |
| 40° | 1530.5 | 1554.0 | 1604.2 | 1616.4 | 1611.3 |
| 42.5° | 1472.0 | 1476.1 | 1519.2 | 1533.2 | 1510.9 |
| 45° | 1370.0 | 1395.6 | 1418.8 | 1455.3 | 1420.8 |
| 47.5° | 1283.2 | 1295.1 | 1345.1 | 1354.9 | 1336.7 |
| 50° | 1204.5 | 1208.6 | 1258.9 | 1246.7 | 1234.8 |
| 52.5° | 1105.5 | 1123.1 | 1151.3 | 1148.9 | 1134.9 |
| 55° | 1024.1 | 1017.3 | 1044.0 | 1036.9 | 1036.6 |
| 57.5° | 926.3 | 938.2 | 960.2 | 948.9 | 930.8 |
| 60° | 834.8 | 835.1 | 843.1 | 830.3 | 828.0 |
| 62.5° | 732.9 | 736.4 | 738.2 | 722.5 | 748.0 |
| 65° | 629.1 | 620.8 | 645.2 | 620.5 | 624.7 |
| 67.5° | 533.7 | 537.9 | 535.5 | 520.1 | 526.0 |
| 70° | 436.9 | 442.2 | 438.3 | 420.8 | 426.2 |
| 72.5° | 348.3 | 341.8 | 345.9 | 323.9 | 334.0 |
| 75° | 261.8 | 256.5 | 261.2 | 242.8 | 251.1 |
| 77.5° | 178.3 | 182.5 | 179.5 | 169.7 | 175.3 |
| 80° | 117.7 | 114.4 | 114.4 | 108.8 | 110.0 |
| 82.5° | 68.6 | 65.4 | 64.5 | 62.7 | 65.4 |
| 85° | 32.1 | 31.2 | 31.8 | 30.9 | 29.7 |
| 87.5° | 11.6 | 11.9 | 11.9 | 11.3 | 10.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)