

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: P590455

Luminaire Tested: FSR-24-2-LD4-3HI-40-UNV-80-86-EDD

Issue Date: 12/8/2021

Test Information

Test Method: LM-79-2019
Report Number: P590455
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-LD4-3HI-40-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 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

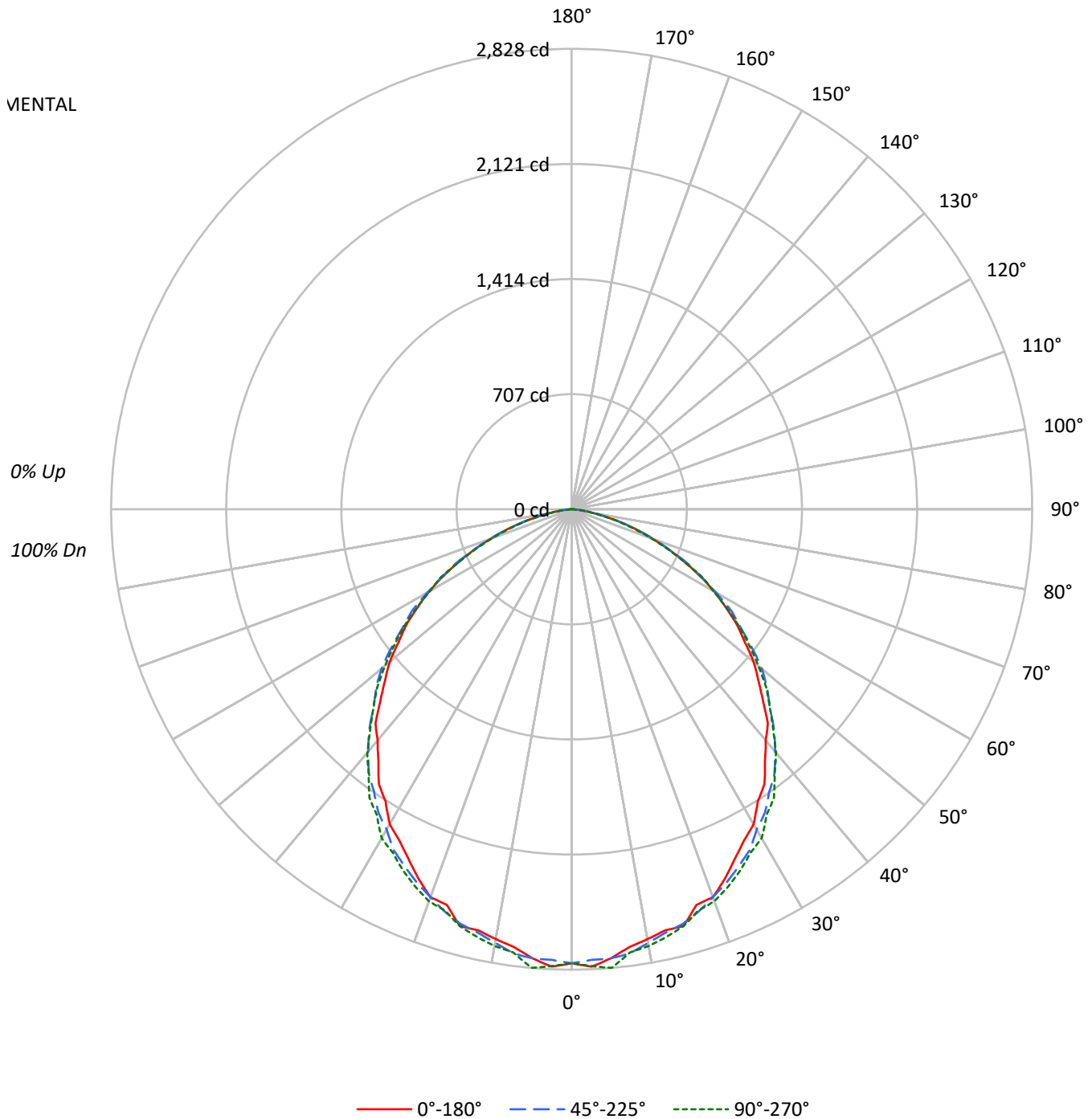
Lumens per Lamp: N/A
Luminaire Lumens: 7027.0 lumens
Efficiency: N/A
Efficacy: 108.4 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 64.8
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: P590455

CATALOG NUMBER: FSR-24-2-LD4-3HI-40-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 | 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 | 105 | 101 | 98 | 107 | 103 | 100 | 96 | 99 | 96 | 93 | 95 | 93 | 90 | 91 | 90 | 88 | 86 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 100 | 93 | 86 | 81 | 98 | 91 | 85 | 80 | 87 | 82 | 78 | 84 | 80 | 76 | 81 | 78 | 75 | 73 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 92 | 82 | 74 | 68 | 89 | 80 | 73 | 67 | 77 | 71 | 66 | 75 | 69 | 65 | 72 | 68 | 64 | 62 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 84 | 73 | 64 | 58 | 82 | 71 | 64 | 58 | 69 | 62 | 57 | 67 | 61 | 56 | 65 | 59 | 55 | 53 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 78 | 65 | 57 | 50 | 76 | 64 | 56 | 50 | 62 | 55 | 49 | 60 | 54 | 49 | 58 | 53 | 48 | 46 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | 72 | 59 | 50 | 44 | 70 | 58 | 50 | 44 | 56 | 49 | 43 | 54 | 48 | 43 | 53 | 47 | 43 | 41 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 67 | 53 | 45 | 39 | 65 | 53 | 45 | 39 | 51 | 44 | 39 | 50 | 43 | 38 | 48 | 42 | 38 | 36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 62 | 49 | 41 | 35 | 61 | 48 | 40 | 35 | 47 | 40 | 34 | 46 | 39 | 34 | 44 | 39 | 34 | 32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | 58 | 45 | 37 | 31 | 57 | 44 | 37 | 31 | 43 | 36 | 31 | 42 | 36 | 31 | 41 | 35 | 31 | 29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 54 | 41 | 34 | 29 | 53 | 41 | 33 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 7503 | 7503 | 7503 |
| 5° | 7478 | 7481 | 7638 |
| 10° | 7326 | 7390 | 7442 |
| 15° | 7384 | 7344 | 7385 |
| 20° | 7260 | 7260 | 7337 |
| 25° | 7036 | 7190 | 7269 |
| 30° | 6940 | 7062 | 7250 |
| 35° | 6776 | 6954 | 7110 |
| 40° | 6513 | 6826 | 6857 |
| 45° | 6316 | 6540 | 6550 |
| 50° | 6108 | 6384 | 6262 |
| 55° | 5820 | 5933 | 5891 |
| 60° | 5442 | 5497 | 5398 |
| 65° | 4853 | 4976 | 4818 |
| 70° | 4164 | 4178 | 4061 |
| 75° | 3298 | 3290 | 3163 |
| 80° | 2210 | 2148 | 2064 |
| 85° | 1201 | 1189 | 1112 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 45°
 Luminance: 6709 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 262.3 | 3.7 |
| 10°-20° | 743.3 | 10.6 |
| 20°-30° | 1113.6 | 15.8 |
| 30°-40° | 1319.9 | 18.8 |
| 40°-50° | 1322.3 | 18.8 |
| 50°-60° | 1122.4 | 16.0 |
| 60°-70° | 756.7 | 10.8 |
| 70°-80° | 332.5 | 4.7 |
| 80°-90° | 54.0 | 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° | 2119.2 | 30.2 |
| 0°-40° | 3439.0 | 48.9 |
| 0°-60° | 5883.7 | 83.7 |
| 0°-90° | 7027.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 7027.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2788 | 2788 | 2788 | 2788 | 2788 | |
| 5° | 2768 | 2762 | 2769 | 2761 | 2828 | 261 |
| 15° | 2651 | 2620 | 2636 | 2650 | 2651 | 738 |
| 25° | 2370 | 2383 | 2422 | 2453 | 2448 | 1096 |
| 35° | 2063 | 2069 | 2117 | 2166 | 2164 | 1281 |
| 45° | 1660 | 1690 | 1719 | 1763 | 1721 | 1284 |
| 55° | 1240 | 1232 | 1265 | 1256 | 1256 | 1104 |
| 65° | 762 | 752 | 782 | 752 | 757 | 758 |
| 75° | 317 | 311 | 316 | 294 | 304 | 340 |
| 85° | 39 | 38 | 38 | 37 | 36 | 56 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P590455

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2788.1 | 2788.1 | 2788.1 | 2788.1 | 2788.1 |
| 2.5° | 2812.3 | 2791.0 | 2771.2 | 2794.3 | 2808.3 |
| 5° | 2768.3 | 2761.9 | 2769.4 | 2761.1 | 2827.7 |
| 7.5° | 2711.5 | 2736.3 | 2750.7 | 2741.7 | 2745.7 |
| 10° | 2681.2 | 2672.6 | 2704.6 | 2726.9 | 2723.7 |
| 12.5° | 2648.8 | 2661.8 | 2663.6 | 2687.7 | 2689.9 |
| 15° | 2650.6 | 2620.0 | 2636.2 | 2649.9 | 2651.0 |
| 17.5° | 2547.7 | 2580.8 | 2591.9 | 2623.3 | 2584.4 |
| 20° | 2535.1 | 2510.9 | 2535.1 | 2567.1 | 2562.1 |
| 22.5° | 2457.7 | 2430.7 | 2482.5 | 2510.9 | 2509.1 |
| 25° | 2369.8 | 2382.8 | 2421.7 | 2453.3 | 2448.3 |
| 27.5° | 2292.8 | 2307.9 | 2363.3 | 2406.9 | 2378.8 |
| 30° | 2233.4 | 2225.8 | 2272.6 | 2311.5 | 2333.1 |
| 32.5° | 2127.2 | 2154.6 | 2209.3 | 2247.8 | 2227.3 |
| 35° | 2062.8 | 2068.9 | 2116.8 | 2165.7 | 2164.3 |
| 37.5° | 1950.1 | 1978.5 | 2045.8 | 2059.5 | 2046.9 |
| 40° | 1854.0 | 1882.4 | 1943.2 | 1958.0 | 1951.9 |
| 42.5° | 1783.0 | 1788.1 | 1840.3 | 1857.2 | 1830.2 |
| 45° | 1659.6 | 1690.5 | 1718.6 | 1762.9 | 1721.1 |
| 47.5° | 1554.4 | 1568.8 | 1629.3 | 1641.2 | 1619.2 |
| 50° | 1459.0 | 1464.1 | 1524.9 | 1510.2 | 1495.8 |
| 52.5° | 1339.2 | 1360.4 | 1394.6 | 1391.7 | 1374.8 |
| 55° | 1240.5 | 1232.3 | 1264.7 | 1256.0 | 1255.7 |
| 57.5° | 1122.1 | 1136.5 | 1163.1 | 1149.5 | 1127.5 |
| 60° | 1011.2 | 1011.6 | 1021.3 | 1005.8 | 1002.9 |
| 62.5° | 887.7 | 892.1 | 894.2 | 875.1 | 906.1 |
| 65° | 762.1 | 752.0 | 781.5 | 751.7 | 756.7 |
| 67.5° | 646.5 | 651.6 | 648.7 | 630.0 | 637.2 |
| 70° | 529.2 | 535.7 | 531.0 | 509.7 | 516.2 |
| 72.5° | 421.9 | 414.0 | 419.0 | 392.4 | 404.6 |
| 75° | 317.2 | 310.7 | 316.4 | 294.1 | 304.2 |
| 77.5° | 216.0 | 221.0 | 217.4 | 205.6 | 212.4 |
| 80° | 142.6 | 138.6 | 138.6 | 131.8 | 133.2 |
| 82.5° | 83.2 | 79.2 | 78.1 | 76.0 | 79.2 |
| 85° | 38.9 | 37.8 | 38.5 | 37.4 | 36.0 |
| 87.5° | 14.0 | 14.4 | 14.4 | 13.7 | 13.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)