

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: P561873

Luminaire Tested: FSR-12-4-LD4-2STD-50-UNV-82-84-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561873
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-12-4-LD4-2STD-50-UNV-82-84-EDD
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6345.0 lumens
Efficiency: N/A
Efficacy: 95.3 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

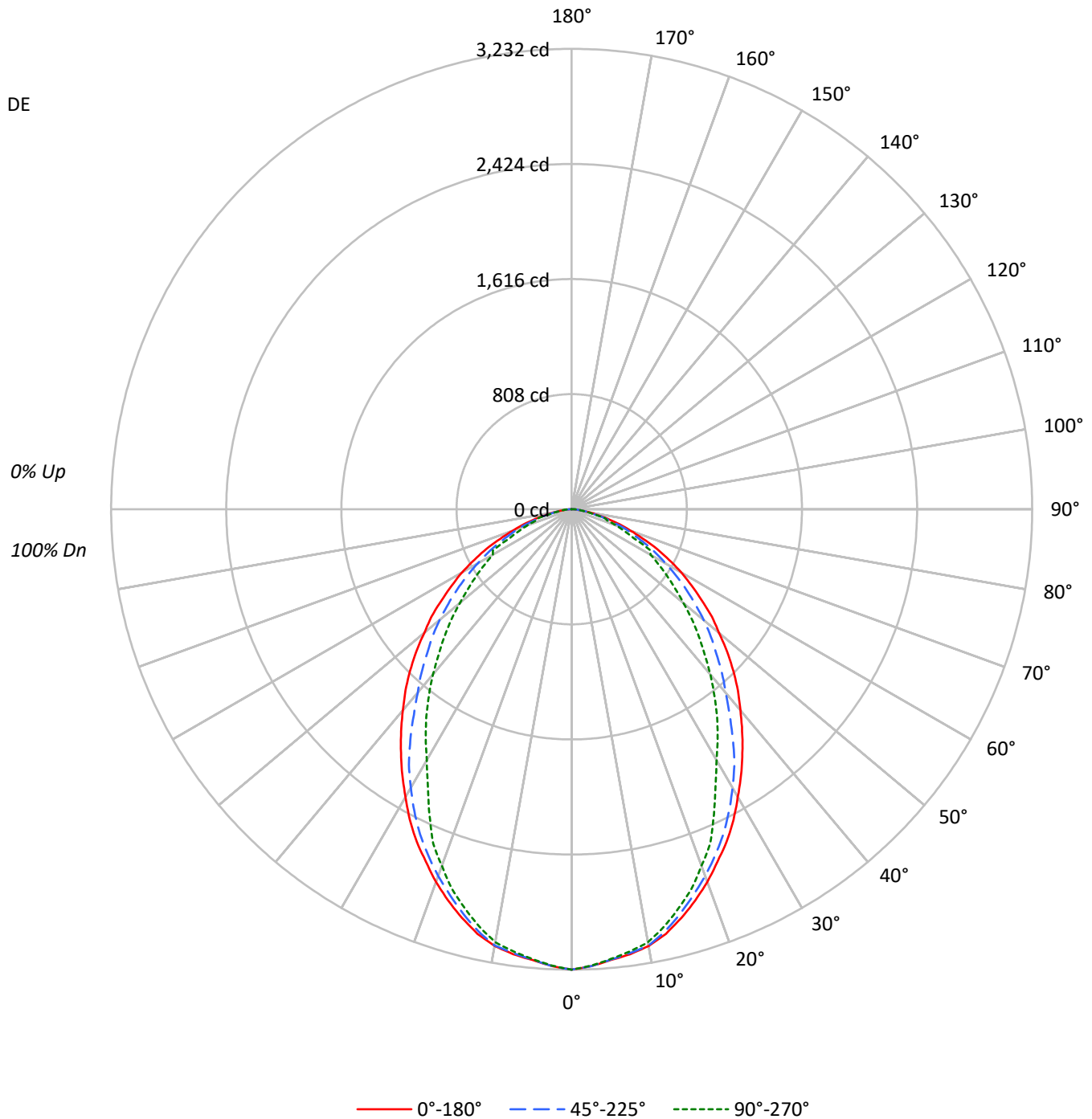
Input Watts (W): 66.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P561873

CATALOG NUMBER: FSR-12-4-LD4-2STD-50-UNV-82-84-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 | 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° | 8698 | 8698 | 8698 |
| 5° | 8579 | 8569 | 8559 |
| 10° | 8505 | 8495 | 8433 |
| 15° | 8276 | 8192 | 8078 |
| 20° | 7972 | 7843 | 7629 |
| 25° | 7644 | 7478 | 7012 |
| 30° | 7245 | 7012 | 6316 |
| 35° | 6862 | 6481 | 5843 |
| 40° | 6471 | 5906 | 5316 |
| 45° | 6100 | 5460 | 4806 |
| 50° | 5647 | 5068 | 4286 |
| 55° | 5224 | 4593 | 3839 |
| 60° | 4786 | 4102 | 3439 |
| 65° | 4211 | 3592 | 3046 |
| 70° | 3469 | 3146 | 2587 |
| 75° | 2758 | 2409 | 2525 |
| 80° | 1853 | 1737 | 1621 |
| 85° | 1155 | 1383 | 1615 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6100 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 300.9 | 4.7 |
| 10°-20° | 825.7 | 13.0 |
| 20°-30° | 1143.1 | 18.0 |
| 30°-40° | 1218.9 | 19.2 |
| 40°-50° | 1112.0 | 17.5 |
| 50°-60° | 871.1 | 13.7 |
| 60°-70° | 567.8 | 8.9 |
| 70°-80° | 251.6 | 4.0 |
| 80°-90° | 54.0 | 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° | 2269.7 | 35.8 |
| 0°-40° | 3488.5 | 55.0 |
| 0°-60° | 5471.7 | 86.2 |
| 0°-90° | 6345.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 6345.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 3232 | 3232 | 3232 | 3232 | 3232 | |
| 5° | 3176 | 3172 | 3172 | 3168 | 3168 | 301 |
| 15° | 2970 | 2970 | 2941 | 2911 | 2900 | 835 |
| 25° | 2574 | 2560 | 2518 | 2429 | 2362 | 1182 |
| 35° | 2089 | 2074 | 1973 | 1823 | 1779 | 1306 |
| 45° | 1603 | 1569 | 1435 | 1315 | 1263 | 1235 |
| 55° | 1114 | 1080 | 979 | 863 | 818 | 999 |
| 65° | 661 | 624 | 564 | 575 | 478 | 652 |
| 75° | 265 | 247 | 232 | 220 | 243 | 284 |
| 85° | 37 | 41 | 45 | 49 | 52 | 52 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

TEST NUMBER: P561873

CATALOG NUMBER: FSR-12-4-LD4-2STD-50-UNV-82-84-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 3232.1 | 3232.1 | 3232.1 | 3232.1 | 3232.1 |
| 2.5° | 3209.6 | 3209.6 | 3209.6 | 3205.9 | 3205.9 |
| 5° | 3176.0 | 3172.3 | 3172.3 | 3168.5 | 3168.5 |
| 7.5° | 3149.9 | 3146.1 | 3142.4 | 3138.6 | 3131.2 |
| 10° | 3112.5 | 3112.5 | 3108.8 | 3090.1 | 3086.3 |
| 12.5° | 3052.7 | 3049.0 | 3034.0 | 3007.9 | 3000.4 |
| 15° | 2970.5 | 2970.5 | 2940.6 | 2910.7 | 2899.5 |
| 17.5° | 2880.8 | 2877.1 | 2839.7 | 2809.8 | 2794.9 |
| 20° | 2783.7 | 2776.2 | 2738.8 | 2690.3 | 2664.1 |
| 22.5° | 2675.3 | 2675.3 | 2630.5 | 2567.0 | 2540.8 |
| 25° | 2574.4 | 2559.5 | 2518.4 | 2428.7 | 2361.5 |
| 27.5° | 2458.6 | 2436.2 | 2391.3 | 2264.3 | 2185.8 |
| 30° | 2331.6 | 2320.4 | 2256.8 | 2092.4 | 2032.6 |
| 32.5° | 2212.0 | 2193.3 | 2126.1 | 1954.2 | 1905.6 |
| 35° | 2088.7 | 2073.7 | 1972.9 | 1823.4 | 1778.6 |
| 37.5° | 1965.4 | 1946.7 | 1819.7 | 1700.1 | 1644.1 |
| 40° | 1842.1 | 1819.7 | 1681.4 | 1573.1 | 1513.3 |
| 42.5° | 1726.3 | 1696.4 | 1561.9 | 1446.0 | 1378.8 |
| 45° | 1603.0 | 1569.3 | 1434.8 | 1315.2 | 1262.9 |
| 47.5° | 1479.6 | 1449.8 | 1326.5 | 1203.1 | 1143.4 |
| 50° | 1348.9 | 1322.7 | 1210.6 | 1087.3 | 1023.8 |
| 52.5° | 1240.5 | 1199.4 | 1091.1 | 967.7 | 915.4 |
| 55° | 1113.5 | 1079.8 | 979.0 | 863.1 | 818.3 |
| 57.5° | 997.6 | 964.0 | 870.6 | 762.2 | 724.9 |
| 60° | 889.3 | 840.7 | 762.2 | 668.8 | 638.9 |
| 62.5° | 769.7 | 732.4 | 665.1 | 586.6 | 624.0 |
| 65° | 661.4 | 624.0 | 564.2 | 575.4 | 478.3 |
| 67.5° | 541.8 | 523.1 | 470.8 | 418.5 | 403.5 |
| 70° | 440.9 | 418.5 | 399.8 | 343.8 | 328.8 |
| 72.5° | 351.2 | 328.8 | 302.7 | 272.8 | 261.6 |
| 75° | 265.3 | 246.6 | 231.7 | 220.5 | 242.9 |
| 77.5° | 183.1 | 175.6 | 164.4 | 153.2 | 149.5 |
| 80° | 119.6 | 115.8 | 112.1 | 108.4 | 104.6 |
| 82.5° | 71.0 | 71.0 | 71.0 | 71.0 | 71.0 |
| 85° | 37.4 | 41.1 | 44.8 | 48.6 | 52.3 |
| 87.5° | 22.4 | 22.4 | 26.2 | 29.9 | 33.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)