

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: P561131

Luminaire Tested: FSR-12-4-LD4-1LO-50-UNV-93-94-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561131
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-LD4-1LO-50-UNV-93-94-EDD
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

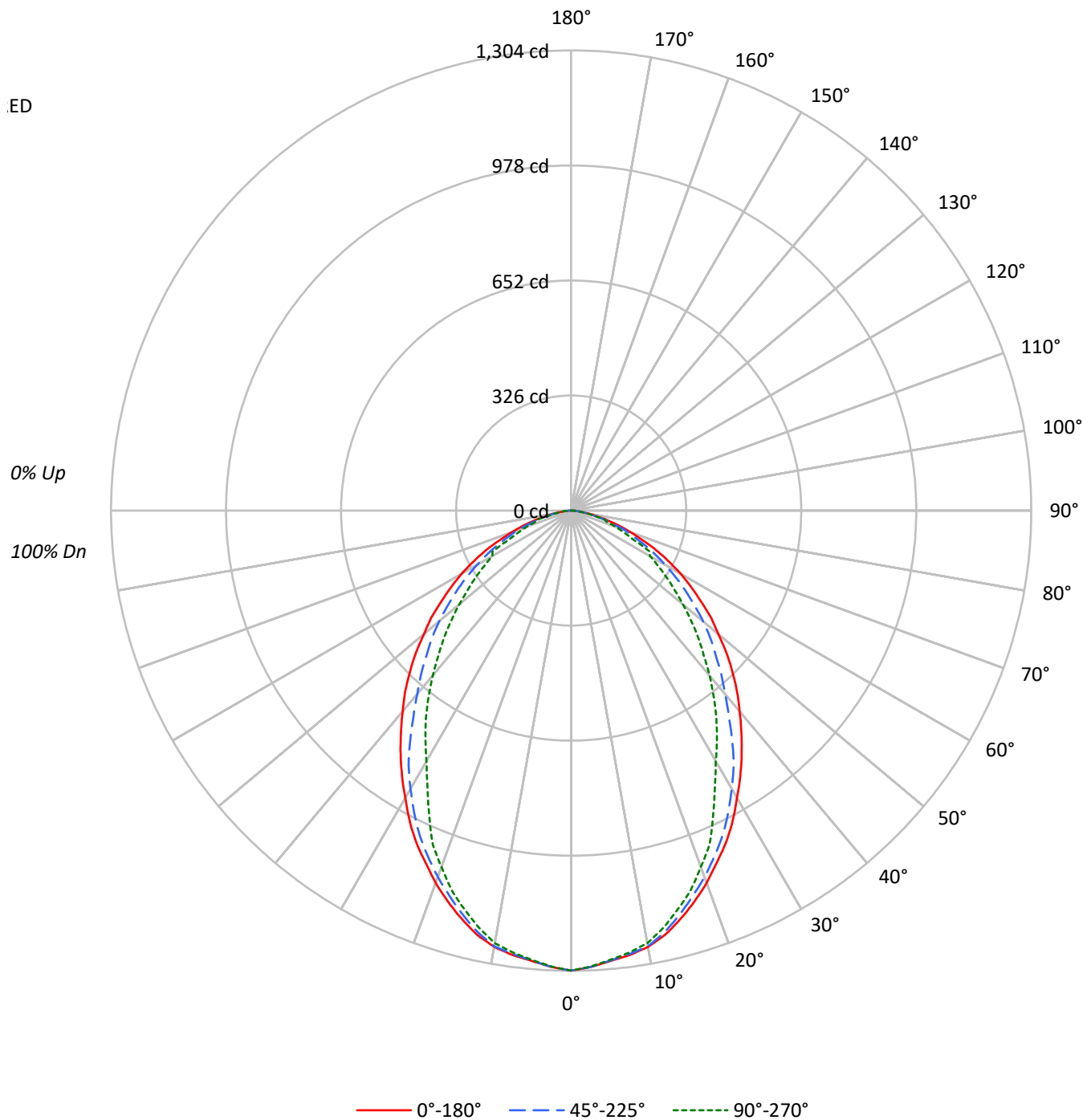
Lumens per Lamp: N/A
Luminaire Lumens: 2559.0 lumens
Efficiency: N/A
Efficacy: 109.4 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 23.4
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: P561131

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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 | 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° | 3508 | 3508 | 3508 |
| 5° | 3460 | 3456 | 3452 |
| 10° | 3430 | 3426 | 3401 |
| 15° | 3338 | 3304 | 3258 |
| 20° | 3215 | 3163 | 3077 |
| 25° | 3083 | 3016 | 2828 |
| 30° | 2922 | 2828 | 2547 |
| 35° | 2767 | 2614 | 2356 |
| 40° | 2610 | 2382 | 2144 |
| 45° | 2460 | 2202 | 1939 |
| 50° | 2277 | 2044 | 1729 |
| 55° | 2107 | 1852 | 1548 |
| 60° | 1931 | 1654 | 1387 |
| 65° | 1698 | 1449 | 1228 |
| 70° | 1399 | 1268 | 1043 |
| 75° | 1112 | 971 | 1019 |
| 80° | 747 | 700 | 654 |
| 85° | 466 | 559 | 651 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2460 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 121.3 | 4.7 |
| 10°-20° | 333.0 | 13.0 |
| 20°-30° | 461.0 | 18.0 |
| 30°-40° | 491.6 | 19.2 |
| 40°-50° | 448.5 | 17.5 |
| 50°-60° | 351.3 | 13.7 |
| 60°-70° | 229.0 | 8.9 |
| 70°-80° | 101.5 | 4.0 |
| 80°-90° | 21.8 | 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° | 915.4 | 35.8 |
| 0°-40° | 1407.0 | 55.0 |
| 0°-60° | 2206.8 | 86.2 |
| 0°-90° | 2559.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2559.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1304 | 1304 | 1304 | 1304 | 1304 | |
| 5° | 1281 | 1279 | 1279 | 1278 | 1278 | 122 |
| 15° | 1198 | 1198 | 1186 | 1174 | 1169 | 337 |
| 25° | 1038 | 1032 | 1016 | 980 | 952 | 477 |
| 35° | 842 | 836 | 796 | 735 | 717 | 527 |
| 45° | 646 | 633 | 579 | 530 | 509 | 498 |
| 55° | 449 | 436 | 395 | 348 | 330 | 403 |
| 65° | 267 | 252 | 228 | 232 | 193 | 263 |
| 75° | 107 | 100 | 93 | 89 | 98 | 115 |
| 85° | 15 | 17 | 18 | 20 | 21 | 21 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P561131

CATALOG NUMBER: FSR-12-4-LD4-1LO-50-UNV-93-94-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1303.5 | 1303.5 | 1303.5 | 1303.5 | 1303.5 |
| 2.5° | 1294.5 | 1294.5 | 1294.5 | 1293.0 | 1293.0 |
| 5° | 1280.9 | 1279.4 | 1279.4 | 1277.9 | 1277.9 |
| 7.5° | 1270.4 | 1268.9 | 1267.4 | 1265.8 | 1262.8 |
| 10° | 1255.3 | 1255.3 | 1253.8 | 1246.3 | 1244.7 |
| 12.5° | 1231.2 | 1229.7 | 1223.7 | 1213.1 | 1210.1 |
| 15° | 1198.0 | 1198.0 | 1186.0 | 1173.9 | 1169.4 |
| 17.5° | 1161.9 | 1160.4 | 1145.3 | 1133.2 | 1127.2 |
| 20° | 1122.7 | 1119.7 | 1104.6 | 1085.0 | 1074.5 |
| 22.5° | 1079.0 | 1079.0 | 1060.9 | 1035.3 | 1024.7 |
| 25° | 1038.3 | 1032.3 | 1015.7 | 979.5 | 952.4 |
| 27.5° | 991.6 | 982.5 | 964.5 | 913.2 | 881.6 |
| 30° | 940.3 | 935.8 | 910.2 | 843.9 | 819.8 |
| 32.5° | 892.1 | 884.6 | 857.5 | 788.1 | 768.5 |
| 35° | 842.4 | 836.4 | 795.7 | 735.4 | 717.3 |
| 37.5° | 792.7 | 785.1 | 733.9 | 685.7 | 663.1 |
| 40° | 742.9 | 733.9 | 678.1 | 634.4 | 610.3 |
| 42.5° | 696.2 | 684.2 | 629.9 | 583.2 | 556.1 |
| 45° | 646.5 | 632.9 | 578.7 | 530.4 | 509.4 |
| 47.5° | 596.8 | 584.7 | 535.0 | 485.2 | 461.1 |
| 50° | 544.0 | 533.5 | 488.3 | 438.5 | 412.9 |
| 52.5° | 500.3 | 483.7 | 440.0 | 390.3 | 369.2 |
| 55° | 449.1 | 435.5 | 394.8 | 348.1 | 330.0 |
| 57.5° | 402.4 | 388.8 | 351.1 | 307.4 | 292.4 |
| 60° | 358.7 | 339.1 | 307.4 | 269.7 | 257.7 |
| 62.5° | 310.4 | 295.4 | 268.2 | 236.6 | 251.7 |
| 65° | 266.7 | 251.7 | 227.6 | 232.1 | 192.9 |
| 67.5° | 218.5 | 211.0 | 189.9 | 168.8 | 162.8 |
| 70° | 177.8 | 168.8 | 161.2 | 138.6 | 132.6 |
| 72.5° | 141.7 | 132.6 | 122.1 | 110.0 | 105.5 |
| 75° | 107.0 | 99.5 | 93.4 | 88.9 | 98.0 |
| 77.5° | 73.8 | 70.8 | 66.3 | 61.8 | 60.3 |
| 80° | 48.2 | 46.7 | 45.2 | 43.7 | 42.2 |
| 82.5° | 28.6 | 28.6 | 28.6 | 28.6 | 28.6 |
| 85° | 15.1 | 16.6 | 18.1 | 19.6 | 21.1 |
| 87.5° | 9.0 | 9.0 | 10.5 | 12.1 | 13.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)