

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: P561214

Luminaire Tested: FSR-12-4-LD4-1STD-40-UNV-80-97-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561214
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-LD4-1STD-40-UNV-80-97-EDD-90
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR TEMPERED G ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2694.0 lumens
Efficiency: N/A
Efficacy: 80.9 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

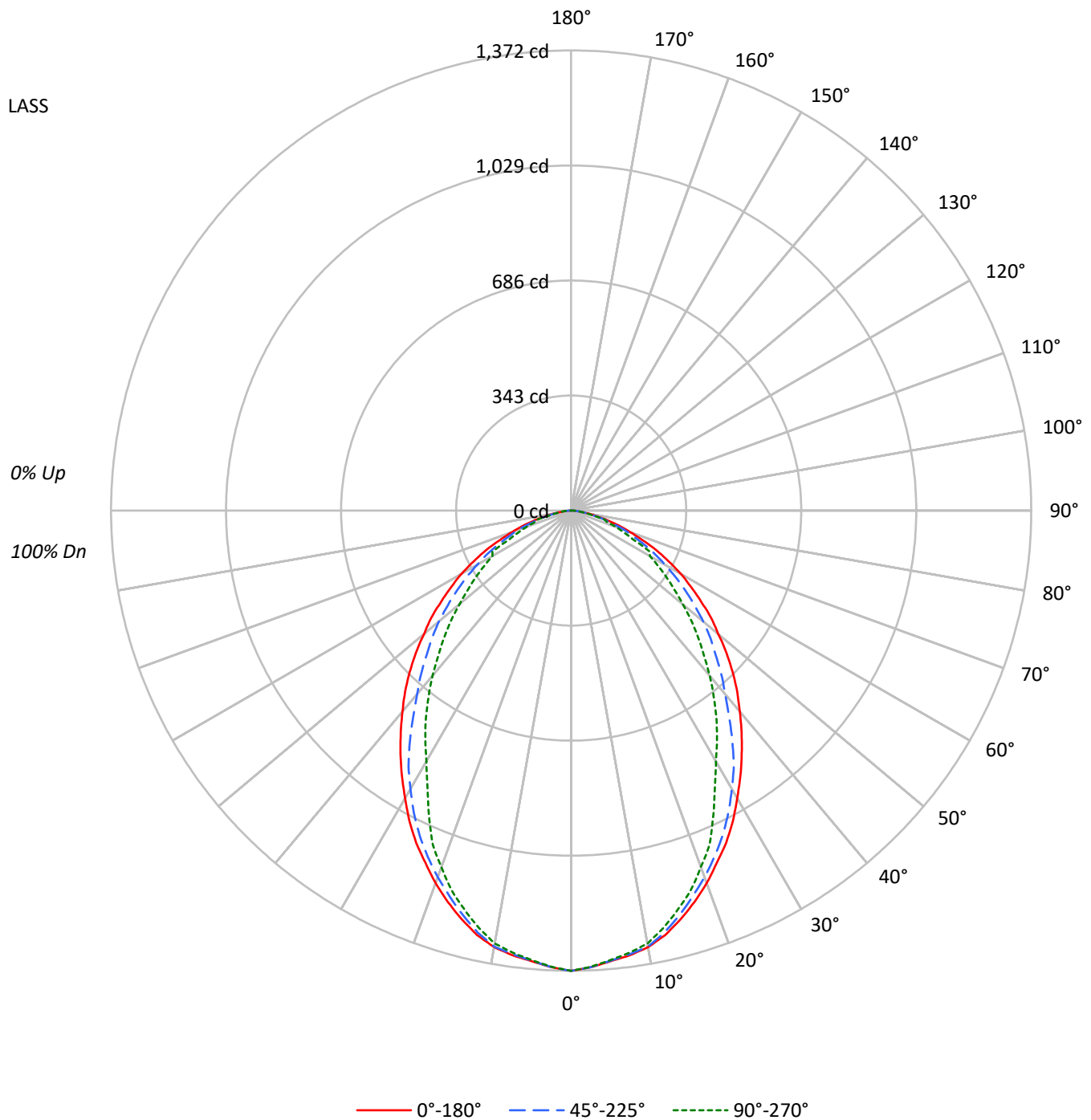
Input Watts (W): 33.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P561214

CATALOG NUMBER: FSR-12-4-LD4-1STD-40-UNV-80-97-EDD-90

Luminous Intensity Polar Plot





TEST NUMBER: P561214

CATALOG NUMBER: FSR-12-4-LD4-1STD-40-UNV-80-97-EDD-90

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° | 3693 | 3693 | 3693 |
| 5° | 3643 | 3638 | 3634 |
| 10° | 3611 | 3607 | 3581 |
| 15° | 3514 | 3478 | 3430 |
| 20° | 3385 | 3330 | 3239 |
| 25° | 3246 | 3175 | 2977 |
| 30° | 3076 | 2977 | 2682 |
| 35° | 2913 | 2752 | 2481 |
| 40° | 2747 | 2508 | 2257 |
| 45° | 2590 | 2318 | 2041 |
| 50° | 2398 | 2152 | 1820 |
| 55° | 2218 | 1950 | 1630 |
| 60° | 2032 | 1742 | 1460 |
| 65° | 1788 | 1526 | 1293 |
| 70° | 1473 | 1336 | 1098 |
| 75° | 1171 | 1023 | 1072 |
| 80° | 787 | 738 | 688 |
| 85° | 491 | 587 | 685 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2590 cd/sqm



TEST NUMBER: P561214

CATALOG NUMBER: FSR-12-4-LD4-1STD-40-UNV-80-97-EDD-90

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 127.7 | 4.7 |
| 10°-20° | 350.6 | 13.0 |
| 20°-30° | 485.3 | 18.0 |
| 30°-40° | 517.5 | 19.2 |
| 40°-50° | 472.1 | 17.5 |
| 50°-60° | 369.9 | 13.7 |
| 60°-70° | 241.1 | 8.9 |
| 70°-80° | 106.8 | 4.0 |
| 80°-90° | 22.9 | 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° | 963.7 | 35.8 |
| 0°-40° | 1481.2 | 55.0 |
| 0°-60° | 2323.2 | 86.2 |
| 0°-90° | 2694.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2694.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1372 | 1372 | 1372 | 1372 | 1372 | |
| 5° | 1348 | 1347 | 1347 | 1345 | 1345 | 128 |
| 15° | 1261 | 1261 | 1248 | 1236 | 1231 | 355 |
| 25° | 1093 | 1087 | 1069 | 1031 | 1003 | 502 |
| 35° | 887 | 880 | 838 | 774 | 755 | 554 |
| 45° | 681 | 666 | 609 | 558 | 536 | 524 |
| 55° | 473 | 458 | 416 | 366 | 347 | 424 |
| 65° | 281 | 265 | 240 | 244 | 203 | 277 |
| 75° | 113 | 105 | 98 | 94 | 103 | 121 |
| 85° | 16 | 18 | 19 | 21 | 22 | 22 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P561214

CATALOG NUMBER: FSR-12-4-LD4-1STD-40-UNV-80-97-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1372.3 | 1372.3 | 1372.3 | 1372.3 | 1372.3 |
| 2.5° | 1362.8 | 1362.8 | 1362.8 | 1361.2 | 1361.2 |
| 5° | 1348.5 | 1346.9 | 1346.9 | 1345.3 | 1345.3 |
| 7.5° | 1337.4 | 1335.8 | 1334.2 | 1332.6 | 1329.5 |
| 10° | 1321.5 | 1321.5 | 1319.9 | 1312.0 | 1310.4 |
| 12.5° | 1296.1 | 1294.6 | 1288.2 | 1277.1 | 1273.9 |
| 15° | 1261.2 | 1261.2 | 1248.5 | 1235.9 | 1231.1 |
| 17.5° | 1223.2 | 1221.6 | 1205.7 | 1193.0 | 1186.7 |
| 20° | 1181.9 | 1178.7 | 1162.9 | 1142.3 | 1131.1 |
| 22.5° | 1135.9 | 1135.9 | 1116.9 | 1089.9 | 1078.8 |
| 25° | 1093.1 | 1086.7 | 1069.3 | 1031.2 | 1002.6 |
| 27.5° | 1043.9 | 1034.4 | 1015.3 | 961.4 | 928.1 |
| 30° | 990.0 | 985.2 | 958.2 | 888.4 | 863.0 |
| 32.5° | 939.2 | 931.3 | 902.7 | 829.7 | 809.1 |
| 35° | 886.8 | 880.5 | 837.7 | 774.2 | 755.2 |
| 37.5° | 834.5 | 826.5 | 772.6 | 721.8 | 698.0 |
| 40° | 782.1 | 772.6 | 713.9 | 667.9 | 642.5 |
| 42.5° | 732.9 | 720.3 | 663.1 | 614.0 | 585.4 |
| 45° | 680.6 | 666.3 | 609.2 | 558.4 | 536.2 |
| 47.5° | 628.2 | 615.5 | 563.2 | 510.8 | 485.5 |
| 50° | 572.7 | 561.6 | 514.0 | 461.7 | 434.7 |
| 52.5° | 526.7 | 509.3 | 463.2 | 410.9 | 388.7 |
| 55° | 472.8 | 458.5 | 415.7 | 366.5 | 347.4 |
| 57.5° | 423.6 | 409.3 | 369.6 | 323.6 | 307.8 |
| 60° | 377.6 | 357.0 | 323.6 | 284.0 | 271.3 |
| 62.5° | 326.8 | 310.9 | 282.4 | 249.1 | 264.9 |
| 65° | 280.8 | 264.9 | 239.6 | 244.3 | 203.1 |
| 67.5° | 230.0 | 222.1 | 199.9 | 177.7 | 171.3 |
| 70° | 187.2 | 177.7 | 169.8 | 146.0 | 139.6 |
| 72.5° | 149.1 | 139.6 | 128.5 | 115.8 | 111.1 |
| 75° | 112.6 | 104.7 | 98.4 | 93.6 | 103.1 |
| 77.5° | 77.7 | 74.6 | 69.8 | 65.0 | 63.5 |
| 80° | 50.8 | 49.2 | 47.6 | 46.0 | 44.4 |
| 82.5° | 30.1 | 30.1 | 30.1 | 30.1 | 30.1 |
| 85° | 15.9 | 17.5 | 19.0 | 20.6 | 22.2 |
| 87.5° | 9.5 | 9.5 | 11.1 | 12.7 | 14.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)