

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: P560526

Luminaire Tested: FSR-12-2-LD4-2LO-50-UNV-81-97-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560526
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-12-2-LD4-2LO-50-UNV-81-97-EDD-90
Description: 1X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1848.0 lumens
Efficiency: N/A
Efficacy: 79.0 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')
CIE Type: Direct

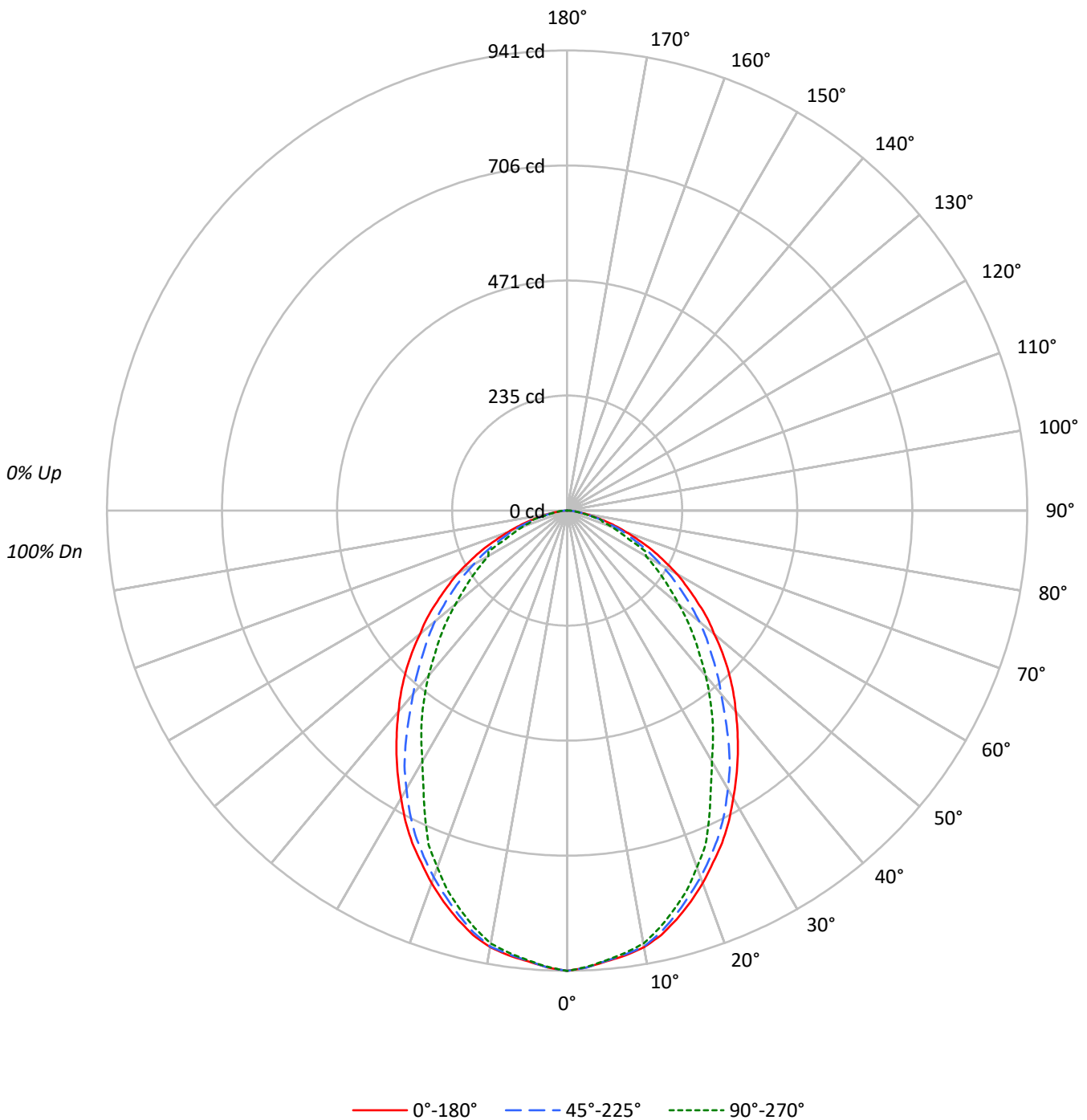
Input Watts (W): 23.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P560526

CATALOG NUMBER: FSR-12-2-LD4-2LO-50-UNV-81-97-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 | | | | | | | | | | | | | 100 | | | | | | | | | | | | | | | |
| 1 | 110 | 106 | 102 | 99 | 108 | 104 | 100 | 97 | 100 | 97 | 94 | 96 | 94 | 91 | 92 | 90 | 89 | 87 | | | | | | | | | | | | | 87 | | | | | | | | | | | | | | | |
| 2 | 101 | 94 | 88 | 83 | 99 | 92 | 87 | 82 | 89 | 84 | 80 | 86 | 82 | 78 | 83 | 79 | 77 | 75 | | | | | | | | | | | | | 75 | | | | | | | | | | | | | | | |
| 3 | 93 | 84 | 77 | 71 | 91 | 82 | 76 | 70 | 79 | 74 | 69 | 77 | 72 | 68 | 74 | 70 | 67 | 65 | | | | | | | | | | | | | 65 | | | | | | | | | | | | | | | |
| 4 | 86 | 75 | 67 | 61 | 84 | 74 | 66 | 61 | 72 | 65 | 60 | 69 | 64 | 59 | 67 | 62 | 58 | 56 | | | | | | | | | | | | | 56 | | | | | | | | | | | | | | | |
| 5 | 80 | 68 | 60 | 54 | 78 | 67 | 59 | 53 | 65 | 58 | 53 | 63 | 57 | 52 | 61 | 56 | 52 | 50 | | | | | | | | | | | | | 50 | | | | | | | | | | | | | | | |
| 6 | 74 | 62 | 53 | 48 | 72 | 61 | 53 | 47 | 59 | 52 | 47 | 57 | 51 | 47 | 56 | 50 | 46 | 44 | | | | | | | | | | | | | 44 | | | | | | | | | | | | | | | |
| 7 | 69 | 56 | 48 | 43 | 67 | 56 | 48 | 42 | 54 | 47 | 42 | 53 | 46 | 42 | 51 | 46 | 42 | 40 | | | | | | | | | | | | | 40 | | | | | | | | | | | | | | | |
| 8 | 65 | 52 | 44 | 38 | 63 | 51 | 44 | 38 | 50 | 43 | 38 | 49 | 42 | 38 | 48 | 42 | 38 | 36 | | | | | | | | | | | | | 36 | | | | | | | | | | | | | | | |
| 9 | 61 | 48 | 40 | 35 | 59 | 47 | 40 | 35 | 46 | 39 | 35 | 45 | 39 | 34 | 44 | 38 | 34 | 33 | | | | | | | | | | | | | 33 | | | | | | | | | | | | | | | |
| 10 | 57 | 44 | 37 | 32 | 56 | 44 | 37 | 32 | 43 | 36 | 32 | 42 | 36 | 32 | 41 | 36 | 32 | 30 | | | | | | | | | | | | | 30 | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 5066 | 5066 | 5066 |
| 5° | 4997 | 4991 | 4985 |
| 10° | 4954 | 4948 | 4912 |
| 15° | 4821 | 4772 | 4705 |
| 20° | 4644 | 4569 | 4444 |
| 25° | 4453 | 4356 | 4084 |
| 30° | 4220 | 4085 | 3679 |
| 35° | 3997 | 3775 | 3403 |
| 40° | 3769 | 3440 | 3096 |
| 45° | 3554 | 3181 | 2799 |
| 50° | 3290 | 2952 | 2497 |
| 55° | 3043 | 2675 | 2236 |
| 60° | 2788 | 2390 | 2003 |
| 65° | 2453 | 2092 | 1774 |
| 70° | 2020 | 1832 | 1507 |
| 75° | 1607 | 1404 | 1470 |
| 80° | 1079 | 1010 | 945 |
| 85° | 673 | 809 | 939 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3554 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 87.6 | 4.7 |
| 10°-20° | 240.5 | 13.0 |
| 20°-30° | 332.9 | 18.0 |
| 30°-40° | 355.0 | 19.2 |
| 40°-50° | 323.9 | 17.5 |
| 50°-60° | 253.7 | 13.7 |
| 60°-70° | 165.4 | 8.9 |
| 70°-80° | 73.3 | 4.0 |
| 80°-90° | 15.7 | 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° | 661.0 | 35.8 |
| 0°-40° | 1016.1 | 55.0 |
| 0°-60° | 1593.7 | 86.2 |
| 0°-90° | 1848.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1848.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 941 | 941 | 941 | 941 | 941 | |
| 5° | 925 | 924 | 924 | 923 | 923 | 88 |
| 15° | 865 | 865 | 856 | 848 | 844 | 243 |
| 25° | 750 | 746 | 734 | 707 | 688 | 344 |
| 35° | 608 | 604 | 575 | 531 | 518 | 380 |
| 45° | 467 | 457 | 418 | 383 | 368 | 360 |
| 55° | 324 | 314 | 285 | 251 | 238 | 291 |
| 65° | 193 | 182 | 164 | 168 | 139 | 190 |
| 75° | 77 | 72 | 68 | 64 | 71 | 83 |
| 85° | 11 | 12 | 13 | 14 | 15 | 15 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P560526

CATALOG NUMBER: FSR-12-2-LD4-2LO-50-UNV-81-97-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 941.3 | 941.3 | 941.3 | 941.3 | 941.3 |
| 2.5° | 934.8 | 934.8 | 934.8 | 933.7 | 933.7 |
| 5° | 925.0 | 923.9 | 923.9 | 922.8 | 922.8 |
| 7.5° | 917.4 | 916.3 | 915.2 | 914.1 | 912.0 |
| 10° | 906.5 | 906.5 | 905.4 | 900.0 | 898.9 |
| 12.5° | 889.1 | 888.0 | 883.7 | 876.1 | 873.9 |
| 15° | 865.2 | 865.2 | 856.5 | 847.8 | 844.5 |
| 17.5° | 839.0 | 838.0 | 827.1 | 818.4 | 814.0 |
| 20° | 810.8 | 808.6 | 797.7 | 783.5 | 775.9 |
| 22.5° | 779.2 | 779.2 | 766.1 | 747.6 | 740.0 |
| 25° | 749.8 | 745.5 | 733.5 | 707.4 | 687.8 |
| 27.5° | 716.1 | 709.5 | 696.5 | 659.5 | 636.6 |
| 30° | 679.1 | 675.8 | 657.3 | 609.4 | 592.0 |
| 32.5° | 644.3 | 638.8 | 619.2 | 569.2 | 555.0 |
| 35° | 608.3 | 604.0 | 574.6 | 531.1 | 518.0 |
| 37.5° | 572.4 | 567.0 | 530.0 | 495.2 | 478.8 |
| 40° | 536.5 | 530.0 | 489.7 | 458.2 | 440.7 |
| 42.5° | 502.8 | 494.1 | 454.9 | 421.2 | 401.6 |
| 45° | 466.9 | 457.1 | 417.9 | 383.1 | 367.8 |
| 47.5° | 431.0 | 422.2 | 386.3 | 350.4 | 333.0 |
| 50° | 392.9 | 385.2 | 352.6 | 316.7 | 298.2 |
| 52.5° | 361.3 | 349.3 | 317.8 | 281.9 | 266.6 |
| 55° | 324.3 | 314.5 | 285.1 | 251.4 | 238.3 |
| 57.5° | 290.6 | 280.8 | 253.6 | 222.0 | 211.1 |
| 60° | 259.0 | 244.9 | 222.0 | 194.8 | 186.1 |
| 62.5° | 224.2 | 213.3 | 193.7 | 170.9 | 181.7 |
| 65° | 192.6 | 181.7 | 164.3 | 167.6 | 139.3 |
| 67.5° | 157.8 | 152.4 | 137.1 | 121.9 | 117.5 |
| 70° | 128.4 | 121.9 | 116.4 | 100.1 | 95.8 |
| 72.5° | 102.3 | 95.8 | 88.1 | 79.4 | 76.2 |
| 75° | 77.3 | 71.8 | 67.5 | 64.2 | 70.7 |
| 77.5° | 53.3 | 51.1 | 47.9 | 44.6 | 43.5 |
| 80° | 34.8 | 33.7 | 32.6 | 31.6 | 30.5 |
| 82.5° | 20.7 | 20.7 | 20.7 | 20.7 | 20.7 |
| 85° | 10.9 | 12.0 | 13.1 | 14.1 | 15.2 |
| 87.5° | 6.5 | 6.5 | 7.6 | 8.7 | 9.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)