

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: P560539

Luminaire Tested: FSR-12-2-LD4-2LO-50-UNV-82-94-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560539
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-82-94-EDD
Description: 1X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2181.0 lumens
Efficiency: N/A
Efficacy: 93.2 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

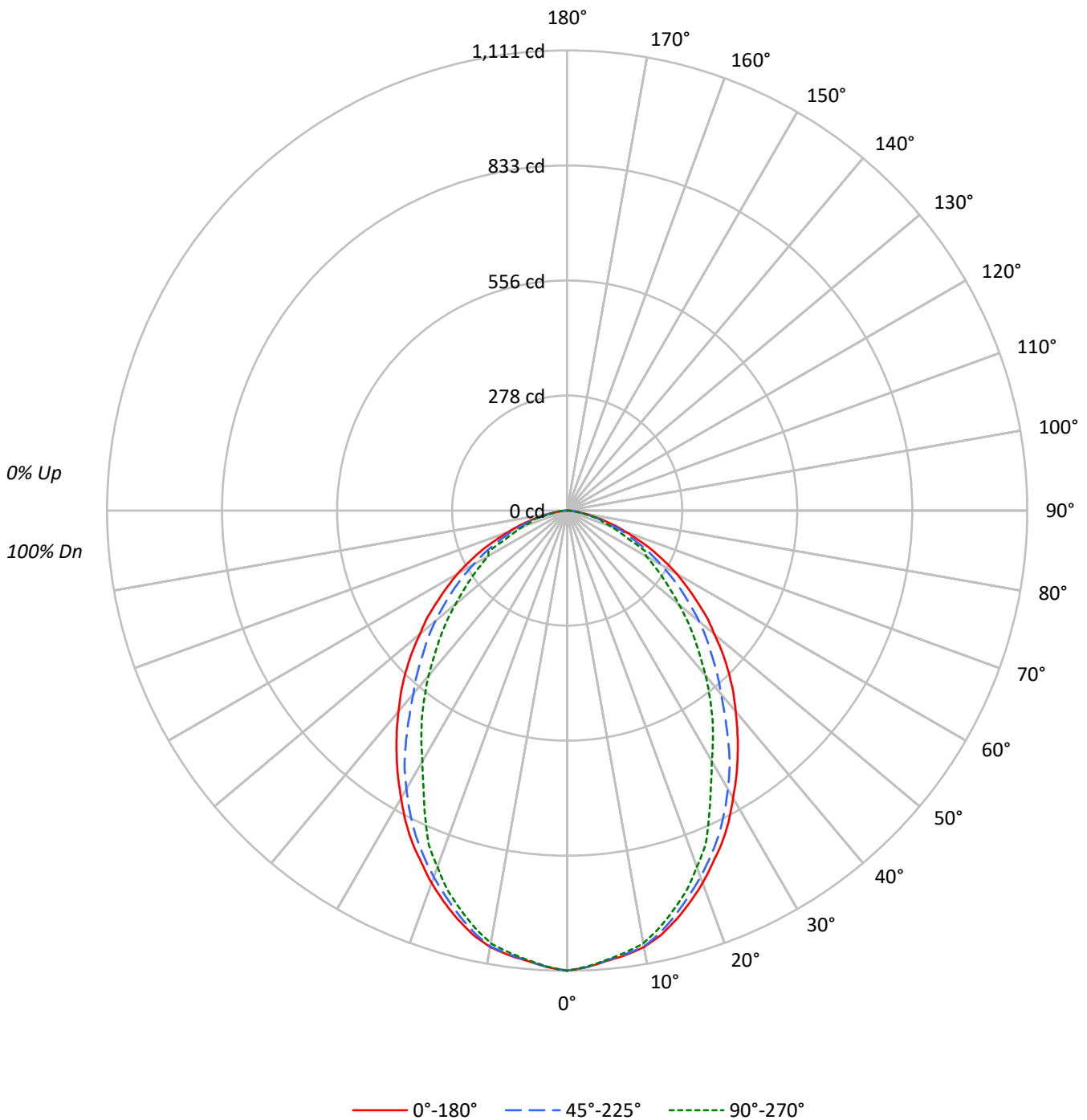
Input Watts (W): 23.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P560539

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

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 5979 | 5979 | 5979 |
| 5° | 5898 | 5891 | 5884 |
| 10° | 5847 | 5840 | 5798 |
| 15° | 5689 | 5632 | 5553 |
| 20° | 5480 | 5392 | 5245 |
| 25° | 5255 | 5141 | 4820 |
| 30° | 4980 | 4821 | 4342 |
| 35° | 4717 | 4455 | 4017 |
| 40° | 4449 | 4061 | 3655 |
| 45° | 4194 | 3754 | 3304 |
| 50° | 3882 | 3484 | 2946 |
| 55° | 3591 | 3157 | 2639 |
| 60° | 3291 | 2820 | 2364 |
| 65° | 2895 | 2469 | 2094 |
| 70° | 2386 | 2162 | 1778 |
| 75° | 1896 | 1655 | 1736 |
| 80° | 1274 | 1193 | 1116 |
| 85° | 790 | 951 | 1112 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4194 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 103.4 | 4.7 |
| 10°-20° | 283.8 | 13.0 |
| 20°-30° | 392.9 | 18.0 |
| 30°-40° | 419.0 | 19.2 |
| 40°-50° | 382.2 | 17.5 |
| 50°-60° | 299.4 | 13.7 |
| 60°-70° | 195.1 | 8.9 |
| 70°-80° | 86.5 | 4.0 |
| 80°-90° | 18.6 | 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° | 780.2 | 35.8 |
| 0°-40° | 1199.1 | 55.0 |
| 0°-60° | 1880.8 | 86.2 |
| 0°-90° | 2181.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2181.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1111 | 1111 | 1111 | 1111 | 1111 | |
| 5° | 1092 | 1090 | 1090 | 1089 | 1089 | 104 |
| 15° | 1021 | 1021 | 1011 | 1000 | 997 | 287 |
| 25° | 885 | 880 | 866 | 835 | 812 | 406 |
| 35° | 718 | 713 | 678 | 627 | 611 | 449 |
| 45° | 551 | 539 | 493 | 452 | 434 | 424 |
| 55° | 383 | 371 | 336 | 297 | 281 | 343 |
| 65° | 227 | 214 | 194 | 198 | 164 | 224 |
| 75° | 91 | 85 | 80 | 76 | 84 | 98 |
| 85° | 13 | 14 | 15 | 17 | 18 | 18 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P560539

CATALOG NUMBER: FSR-12-2-LD4-2LO-50-UNV-82-94-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1111.0 | 1111.0 | 1111.0 | 1111.0 | 1111.0 |
| 2.5° | 1103.3 | 1103.3 | 1103.3 | 1102.0 | 1102.0 |
| 5° | 1091.7 | 1090.4 | 1090.4 | 1089.1 | 1089.1 |
| 7.5° | 1082.7 | 1081.4 | 1080.1 | 1078.9 | 1076.3 |
| 10° | 1069.9 | 1069.9 | 1068.6 | 1062.2 | 1060.9 |
| 12.5° | 1049.3 | 1048.0 | 1042.9 | 1033.9 | 1031.3 |
| 15° | 1021.1 | 1021.1 | 1010.8 | 1000.5 | 996.7 |
| 17.5° | 990.2 | 989.0 | 976.1 | 965.8 | 960.7 |
| 20° | 956.8 | 954.3 | 941.4 | 924.7 | 915.7 |
| 22.5° | 919.6 | 919.6 | 904.2 | 882.4 | 873.4 |
| 25° | 884.9 | 879.8 | 865.7 | 834.8 | 811.7 |
| 27.5° | 845.1 | 837.4 | 822.0 | 778.3 | 751.4 |
| 30° | 801.4 | 797.6 | 775.8 | 719.2 | 698.7 |
| 32.5° | 760.3 | 753.9 | 730.8 | 671.7 | 655.0 |
| 35° | 718.0 | 712.8 | 678.1 | 626.8 | 611.4 |
| 37.5° | 675.6 | 669.2 | 625.5 | 584.4 | 565.1 |
| 40° | 633.2 | 625.5 | 578.0 | 540.7 | 520.2 |
| 42.5° | 593.4 | 583.1 | 536.9 | 497.0 | 473.9 |
| 45° | 551.0 | 539.4 | 493.2 | 452.1 | 434.1 |
| 47.5° | 508.6 | 498.3 | 455.9 | 413.6 | 393.0 |
| 50° | 463.7 | 454.7 | 416.1 | 373.7 | 351.9 |
| 52.5° | 426.4 | 412.3 | 375.0 | 332.6 | 314.7 |
| 55° | 382.7 | 371.2 | 336.5 | 296.7 | 281.3 |
| 57.5° | 342.9 | 331.4 | 299.3 | 262.0 | 249.2 |
| 60° | 305.7 | 289.0 | 262.0 | 229.9 | 219.6 |
| 62.5° | 264.6 | 251.7 | 228.6 | 201.6 | 214.5 |
| 65° | 227.3 | 214.5 | 193.9 | 197.8 | 164.4 |
| 67.5° | 186.2 | 179.8 | 161.8 | 143.8 | 138.7 |
| 70° | 151.6 | 143.8 | 137.4 | 118.2 | 113.0 |
| 72.5° | 120.7 | 113.0 | 104.0 | 93.8 | 89.9 |
| 75° | 91.2 | 84.8 | 79.6 | 75.8 | 83.5 |
| 77.5° | 62.9 | 60.4 | 56.5 | 52.7 | 51.4 |
| 80° | 41.1 | 39.8 | 38.5 | 37.2 | 36.0 |
| 82.5° | 24.4 | 24.4 | 24.4 | 24.4 | 24.4 |
| 85° | 12.8 | 14.1 | 15.4 | 16.7 | 18.0 |
| 87.5° | 7.7 | 7.7 | 9.0 | 10.3 | 11.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)