

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: P560387

Luminaire Tested: FSR-12-2-LD4-2LO-35-UNV-81-85-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560387
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-35-UNV-81-85-EDD
Description: 1X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2121.0 lumens
Efficiency: N/A
Efficacy: 90.6 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

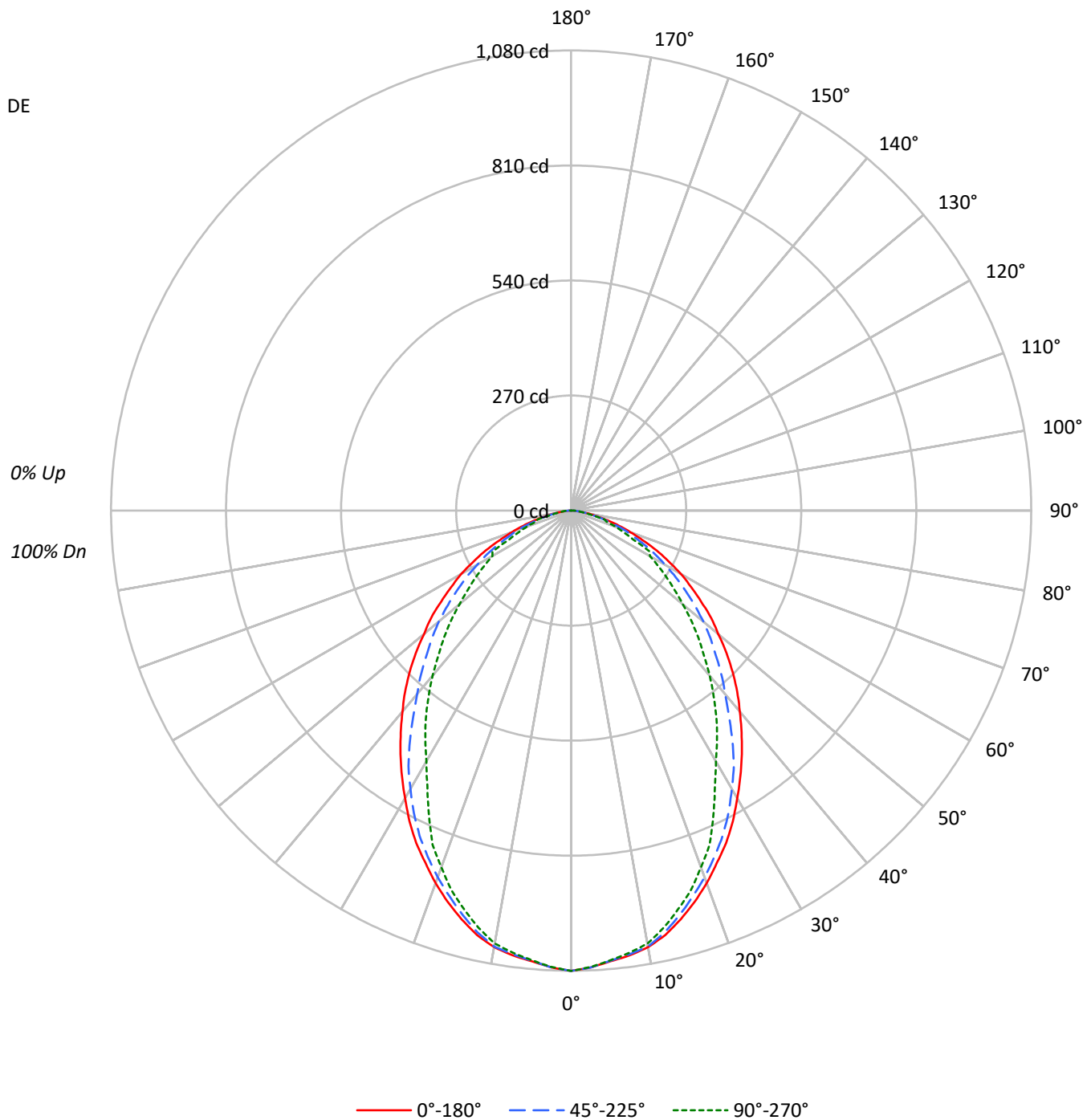
Input Watts (W): 23.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P560387

CATALOG NUMBER: FSR-12-2-LD4-2LO-35-UNV-81-85-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P560387

CATALOG NUMBER: FSR-12-2-LD4-2LO-35-UNV-81-85-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 | 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° | 5815 | 5815 | 5815 |
| 5° | 5736 | 5729 | 5722 |
| 10° | 5686 | 5679 | 5638 |
| 15° | 5533 | 5477 | 5400 |
| 20° | 5329 | 5243 | 5101 |
| 25° | 5111 | 4999 | 4688 |
| 30° | 4844 | 4688 | 4223 |
| 35° | 4587 | 4333 | 3906 |
| 40° | 4326 | 3949 | 3554 |
| 45° | 4078 | 3650 | 3213 |
| 50° | 3775 | 3388 | 2865 |
| 55° | 3492 | 3070 | 2566 |
| 60° | 3200 | 2743 | 2299 |
| 65° | 2816 | 2402 | 2036 |
| 70° | 2319 | 2102 | 1729 |
| 75° | 1844 | 1609 | 1688 |
| 80° | 1240 | 1162 | 1085 |
| 85° | 772 | 926 | 1081 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4078 cd/sqm



TEST NUMBER: P560387

CATALOG NUMBER: FSR-12-2-LD4-2LO-35-UNV-81-85-EDD

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 100.6 | 4.7 |
| 10°-20° | 276.0 | 13.0 |
| 20°-30° | 382.1 | 18.0 |
| 30°-40° | 407.4 | 19.2 |
| 40°-50° | 371.7 | 17.5 |
| 50°-60° | 291.2 | 13.7 |
| 60°-70° | 189.8 | 8.9 |
| 70°-80° | 84.1 | 4.0 |
| 80°-90° | 18.0 | 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° | 758.7 | 35.8 |
| 0°-40° | 1166.1 | 55.0 |
| 0°-60° | 1829.1 | 86.2 |
| 0°-90° | 2121.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2121.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1080 | 1080 | 1080 | 1080 | 1080 | |
| 5° | 1062 | 1060 | 1060 | 1059 | 1059 | 101 |
| 15° | 993 | 993 | 983 | 973 | 969 | 279 |
| 25° | 861 | 856 | 842 | 812 | 789 | 395 |
| 35° | 698 | 693 | 660 | 610 | 594 | 437 |
| 45° | 536 | 525 | 480 | 440 | 422 | 413 |
| 55° | 372 | 361 | 327 | 288 | 274 | 334 |
| 65° | 221 | 209 | 189 | 192 | 160 | 218 |
| 75° | 89 | 82 | 77 | 74 | 81 | 95 |
| 85° | 12 | 14 | 15 | 16 | 18 | 17 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P560387

CATALOG NUMBER: FSR-12-2-LD4-2LO-35-UNV-81-85-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1080.4 | 1080.4 | 1080.4 | 1080.4 | 1080.4 |
| 2.5° | 1072.9 | 1072.9 | 1072.9 | 1071.7 | 1071.7 |
| 5° | 1061.7 | 1060.4 | 1060.4 | 1059.2 | 1059.2 |
| 7.5° | 1052.9 | 1051.7 | 1050.4 | 1049.2 | 1046.7 |
| 10° | 1040.4 | 1040.4 | 1039.2 | 1032.9 | 1031.7 |
| 12.5° | 1020.5 | 1019.2 | 1014.2 | 1005.5 | 1003.0 |
| 15° | 993.0 | 993.0 | 983.0 | 973.0 | 969.2 |
| 17.5° | 963.0 | 961.8 | 949.3 | 939.3 | 934.3 |
| 20° | 930.5 | 928.0 | 915.5 | 899.3 | 890.6 |
| 22.5° | 894.3 | 894.3 | 879.3 | 858.1 | 849.3 |
| 25° | 860.6 | 855.6 | 841.8 | 811.9 | 789.4 |
| 27.5° | 821.9 | 814.4 | 799.4 | 756.9 | 730.7 |
| 30° | 779.4 | 775.6 | 754.4 | 699.5 | 679.5 |
| 32.5° | 739.4 | 733.2 | 710.7 | 653.2 | 637.0 |
| 35° | 698.2 | 693.2 | 659.5 | 609.5 | 594.5 |
| 37.5° | 657.0 | 650.7 | 608.3 | 568.3 | 549.6 |
| 40° | 615.8 | 608.3 | 562.1 | 525.8 | 505.9 |
| 42.5° | 577.1 | 567.1 | 522.1 | 483.4 | 460.9 |
| 45° | 535.8 | 524.6 | 479.6 | 439.7 | 422.2 |
| 47.5° | 494.6 | 484.6 | 443.4 | 402.2 | 382.2 |
| 50° | 450.9 | 442.2 | 404.7 | 363.5 | 342.2 |
| 52.5° | 414.7 | 400.9 | 364.7 | 323.5 | 306.0 |
| 55° | 372.2 | 361.0 | 327.2 | 288.5 | 273.5 |
| 57.5° | 333.5 | 322.2 | 291.0 | 254.8 | 242.3 |
| 60° | 297.3 | 281.0 | 254.8 | 223.6 | 213.6 |
| 62.5° | 257.3 | 244.8 | 222.3 | 196.1 | 208.6 |
| 65° | 221.1 | 208.6 | 188.6 | 192.4 | 159.9 |
| 67.5° | 181.1 | 174.9 | 157.4 | 139.9 | 134.9 |
| 70° | 147.4 | 139.9 | 133.6 | 114.9 | 109.9 |
| 72.5° | 117.4 | 109.9 | 101.2 | 91.2 | 87.4 |
| 75° | 88.7 | 82.4 | 77.4 | 73.7 | 81.2 |
| 77.5° | 61.2 | 58.7 | 55.0 | 51.2 | 50.0 |
| 80° | 40.0 | 38.7 | 37.5 | 36.2 | 35.0 |
| 82.5° | 23.7 | 23.7 | 23.7 | 23.7 | 23.7 |
| 85° | 12.5 | 13.7 | 15.0 | 16.2 | 17.5 |
| 87.5° | 7.5 | 7.5 | 8.7 | 10.0 | 11.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)