

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: P560585

Luminaire Tested: FSR-12-2-LD4-2STD-35-UNV-81-88-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560585
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-LD4-2STD-35-UNV-81-88-EDD
Description: 1X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2447.0 lumens
Efficiency: N/A
Efficacy: 73.5 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

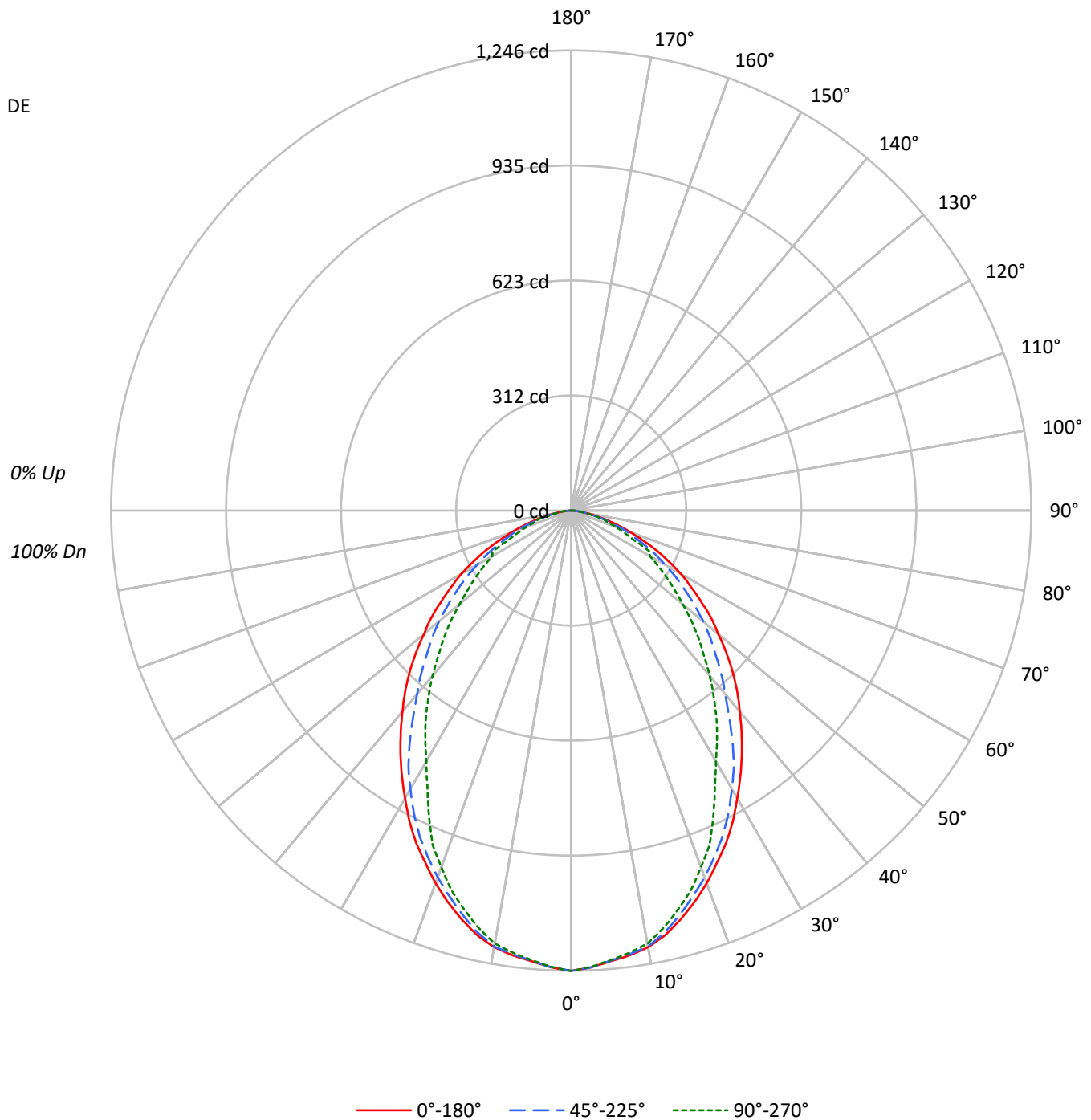
Input Watts (W): 33.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P560585

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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 | 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° | 6709 | 6709 | 6709 |
| 5° | 6618 | 6609 | 6602 |
| 10° | 6560 | 6552 | 6505 |
| 15° | 6383 | 6319 | 6230 |
| 20° | 6148 | 6050 | 5884 |
| 25° | 5896 | 5767 | 5408 |
| 30° | 5588 | 5409 | 4872 |
| 35° | 5292 | 4999 | 4506 |
| 40° | 4991 | 4556 | 4100 |
| 45° | 4705 | 4211 | 3707 |
| 50° | 4356 | 3909 | 3306 |
| 55° | 4029 | 3542 | 2961 |
| 60° | 3692 | 3165 | 2652 |
| 65° | 3249 | 2771 | 2348 |
| 70° | 2675 | 2426 | 1995 |
| 75° | 2127 | 1857 | 1948 |
| 80° | 1429 | 1339 | 1249 |
| 85° | 889 | 1068 | 1247 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4705 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 116.0 | 4.7 |
| 10°-20° | 318.4 | 13.0 |
| 20°-30° | 440.9 | 18.0 |
| 30°-40° | 470.1 | 19.2 |
| 40°-50° | 428.8 | 17.5 |
| 50°-60° | 336.0 | 13.7 |
| 60°-70° | 219.0 | 8.9 |
| 70°-80° | 97.0 | 4.0 |
| 80°-90° | 20.8 | 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° | 875.3 | 35.8 |
| 0°-40° | 1345.4 | 55.0 |
| 0°-60° | 2110.2 | 86.2 |
| 0°-90° | 2447.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2447.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1246 | 1246 | 1246 | 1246 | 1246 | |
| 5° | 1225 | 1223 | 1223 | 1222 | 1222 | 116 |
| 15° | 1146 | 1146 | 1134 | 1122 | 1118 | 322 |
| 25° | 993 | 987 | 971 | 937 | 911 | 456 |
| 35° | 806 | 800 | 761 | 703 | 686 | 504 |
| 45° | 618 | 605 | 553 | 507 | 487 | 476 |
| 55° | 429 | 416 | 378 | 333 | 316 | 385 |
| 65° | 255 | 241 | 218 | 222 | 184 | 251 |
| 75° | 102 | 95 | 89 | 85 | 94 | 110 |
| 85° | 14 | 16 | 17 | 19 | 20 | 20 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P560585

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1246.5 | 1246.5 | 1246.5 | 1246.5 | 1246.5 |
| 2.5° | 1237.8 | 1237.8 | 1237.8 | 1236.4 | 1236.4 |
| 5° | 1224.9 | 1223.4 | 1223.4 | 1222.0 | 1222.0 |
| 7.5° | 1214.8 | 1213.3 | 1211.9 | 1210.4 | 1207.6 |
| 10° | 1200.4 | 1200.4 | 1198.9 | 1191.7 | 1190.3 |
| 12.5° | 1177.3 | 1175.9 | 1170.1 | 1160.0 | 1157.1 |
| 15° | 1145.6 | 1145.6 | 1134.1 | 1122.5 | 1118.2 |
| 17.5° | 1111.0 | 1109.6 | 1095.2 | 1083.6 | 1077.9 |
| 20° | 1073.5 | 1070.7 | 1056.3 | 1037.5 | 1027.4 |
| 22.5° | 1031.8 | 1031.8 | 1014.5 | 990.0 | 979.9 |
| 25° | 992.9 | 987.1 | 971.2 | 936.7 | 910.7 |
| 27.5° | 948.2 | 939.5 | 922.2 | 873.2 | 843.0 |
| 30° | 899.2 | 894.9 | 870.4 | 807.0 | 783.9 |
| 32.5° | 853.1 | 845.9 | 819.9 | 753.6 | 734.9 |
| 35° | 805.5 | 799.8 | 760.9 | 703.2 | 685.9 |
| 37.5° | 758.0 | 750.8 | 701.8 | 655.7 | 634.0 |
| 40° | 710.4 | 701.8 | 648.5 | 606.7 | 583.6 |
| 42.5° | 665.7 | 654.2 | 602.3 | 557.7 | 531.7 |
| 45° | 618.2 | 605.2 | 553.3 | 507.2 | 487.1 |
| 47.5° | 570.6 | 559.1 | 511.6 | 464.0 | 440.9 |
| 50° | 520.2 | 510.1 | 466.9 | 419.3 | 394.8 |
| 52.5° | 478.4 | 462.6 | 420.8 | 373.2 | 353.0 |
| 55° | 429.4 | 416.5 | 377.5 | 332.9 | 315.6 |
| 57.5° | 384.7 | 371.8 | 335.8 | 294.0 | 279.6 |
| 60° | 343.0 | 324.2 | 294.0 | 257.9 | 246.4 |
| 62.5° | 296.8 | 282.4 | 256.5 | 226.2 | 240.6 |
| 65° | 255.1 | 240.6 | 217.6 | 221.9 | 184.4 |
| 67.5° | 208.9 | 201.7 | 181.6 | 161.4 | 155.6 |
| 70° | 170.0 | 161.4 | 154.2 | 132.6 | 126.8 |
| 72.5° | 135.5 | 126.8 | 116.7 | 105.2 | 100.9 |
| 75° | 102.3 | 95.1 | 89.3 | 85.0 | 93.7 |
| 77.5° | 70.6 | 67.7 | 63.4 | 59.1 | 57.6 |
| 80° | 46.1 | 44.7 | 43.2 | 41.8 | 40.3 |
| 82.5° | 27.4 | 27.4 | 27.4 | 27.4 | 27.4 |
| 85° | 14.4 | 15.9 | 17.3 | 18.7 | 20.2 |
| 87.5° | 8.6 | 8.6 | 10.1 | 11.5 | 13.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)