

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: P562206

Luminaire Tested: FSR-24-4-LD4-1LO-40-UNV-82-97-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P562206
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-24-4-LD4-1LO-40-UNV-82-97-EDD-90
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2245.0 lumens
Efficiency: N/A
Efficacy: 95.9 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

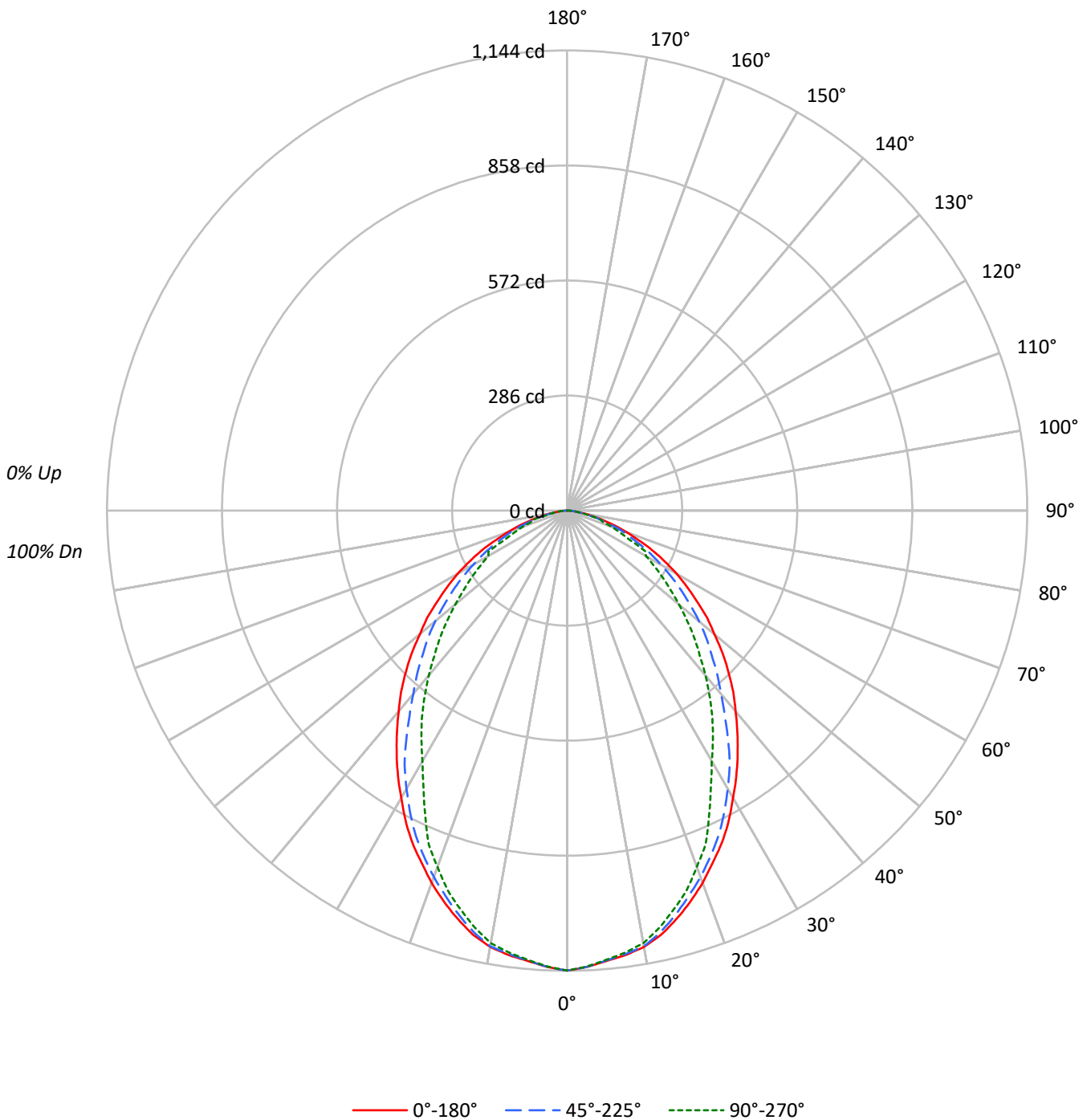
Input Watts (W): 23.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P562206

CATALOG NUMBER: FSR-24-4-LD4-1LO-40-UNV-82-97-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 | 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° | 1539 | 1539 | 1539 |
| 5° | 1518 | 1516 | 1514 |
| 10° | 1505 | 1503 | 1492 |
| 15° | 1464 | 1449 | 1429 |
| 20° | 1410 | 1388 | 1350 |
| 25° | 1352 | 1323 | 1240 |
| 30° | 1282 | 1241 | 1117 |
| 35° | 1214 | 1146 | 1034 |
| 40° | 1145 | 1045 | 940 |
| 45° | 1079 | 966 | 850 |
| 50° | 999 | 897 | 758 |
| 55° | 924 | 813 | 679 |
| 60° | 847 | 726 | 608 |
| 65° | 745 | 635 | 539 |
| 70° | 614 | 557 | 458 |
| 75° | 488 | 426 | 447 |
| 80° | 328 | 308 | 287 |
| 85° | 204 | 245 | 286 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1079 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 106.5 | 4.7 |
| 10°-20° | 292.1 | 13.0 |
| 20°-30° | 404.5 | 18.0 |
| 30°-40° | 431.3 | 19.2 |
| 40°-50° | 393.4 | 17.5 |
| 50°-60° | 308.2 | 13.7 |
| 60°-70° | 200.9 | 8.9 |
| 70°-80° | 89.0 | 4.0 |
| 80°-90° | 19.1 | 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° | 803.1 | 35.8 |
| 0°-40° | 1234.3 | 55.0 |
| 0°-60° | 1936.0 | 86.2 |
| 0°-90° | 2245.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2245.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1144 | 1144 | 1144 | 1144 | 1144 | |
| 5° | 1124 | 1122 | 1122 | 1121 | 1121 | 107 |
| 15° | 1051 | 1051 | 1040 | 1030 | 1026 | 295 |
| 25° | 911 | 906 | 891 | 859 | 836 | 418 |
| 35° | 739 | 734 | 698 | 645 | 629 | 462 |
| 45° | 567 | 555 | 508 | 465 | 447 | 437 |
| 55° | 394 | 382 | 346 | 305 | 290 | 353 |
| 65° | 234 | 221 | 200 | 204 | 169 | 231 |
| 75° | 94 | 87 | 82 | 78 | 86 | 101 |
| 85° | 13 | 14 | 16 | 17 | 18 | 18 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P562206

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1143.6 | 1143.6 | 1143.6 | 1143.6 | 1143.6 |
| 2.5° | 1135.6 | 1135.6 | 1135.6 | 1134.3 | 1134.3 |
| 5° | 1123.7 | 1122.4 | 1122.4 | 1121.1 | 1121.1 |
| 7.5° | 1114.5 | 1113.2 | 1111.8 | 1110.5 | 1107.9 |
| 10° | 1101.3 | 1101.3 | 1099.9 | 1093.3 | 1092.0 |
| 12.5° | 1080.1 | 1078.8 | 1073.5 | 1064.3 | 1061.6 |
| 15° | 1051.0 | 1051.0 | 1040.5 | 1029.9 | 1025.9 |
| 17.5° | 1019.3 | 1018.0 | 1004.8 | 994.2 | 988.9 |
| 20° | 984.9 | 982.3 | 969.1 | 951.9 | 942.6 |
| 22.5° | 946.6 | 946.6 | 930.7 | 908.2 | 899.0 |
| 25° | 910.9 | 905.6 | 891.1 | 859.3 | 835.5 |
| 27.5° | 869.9 | 862.0 | 846.1 | 801.2 | 773.4 |
| 30° | 825.0 | 821.0 | 798.5 | 740.3 | 719.2 |
| 32.5° | 782.7 | 776.0 | 752.2 | 691.4 | 674.2 |
| 35° | 739.0 | 733.7 | 698.0 | 645.2 | 629.3 |
| 37.5° | 695.4 | 688.8 | 643.8 | 601.5 | 581.7 |
| 40° | 651.8 | 643.8 | 594.9 | 556.6 | 535.4 |
| 42.5° | 610.8 | 600.2 | 552.6 | 511.6 | 487.8 |
| 45° | 567.2 | 555.3 | 507.7 | 465.4 | 446.9 |
| 47.5° | 523.5 | 513.0 | 469.3 | 425.7 | 404.5 |
| 50° | 477.3 | 468.0 | 428.3 | 384.7 | 362.2 |
| 52.5° | 438.9 | 424.4 | 386.0 | 342.4 | 323.9 |
| 55° | 394.0 | 382.1 | 346.4 | 305.4 | 289.5 |
| 57.5° | 353.0 | 341.1 | 308.0 | 269.7 | 256.5 |
| 60° | 314.6 | 297.5 | 269.7 | 236.6 | 226.1 |
| 62.5° | 272.3 | 259.1 | 235.3 | 207.6 | 220.8 |
| 65° | 234.0 | 220.8 | 199.6 | 203.6 | 169.2 |
| 67.5° | 191.7 | 185.1 | 166.6 | 148.1 | 142.8 |
| 70° | 156.0 | 148.1 | 141.5 | 121.6 | 116.3 |
| 72.5° | 124.3 | 116.3 | 107.1 | 96.5 | 92.5 |
| 75° | 93.9 | 87.3 | 82.0 | 78.0 | 85.9 |
| 77.5° | 64.8 | 62.1 | 58.2 | 54.2 | 52.9 |
| 80° | 42.3 | 41.0 | 39.7 | 38.3 | 37.0 |
| 82.5° | 25.1 | 25.1 | 25.1 | 25.1 | 25.1 |
| 85° | 13.2 | 14.5 | 15.9 | 17.2 | 18.5 |
| 87.5° | 7.9 | 7.9 | 9.3 | 10.6 | 11.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)