

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: P590406

Luminaire Tested: FSR-24-2-LD4-2STD-50-UNV-82-85-EDD

Issue Date: 12/8/2021

Test Information

Test Method: LM-79-2019
Report Number: P590406
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)
Test Lab: INNOVATION CENTER
Issue Date: 12/8/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: FSR-24-2-LD4-2STD-50-UNV-82-85-EDD
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3654.0 lumens
Efficiency: N/A
Efficacy: 109.7 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

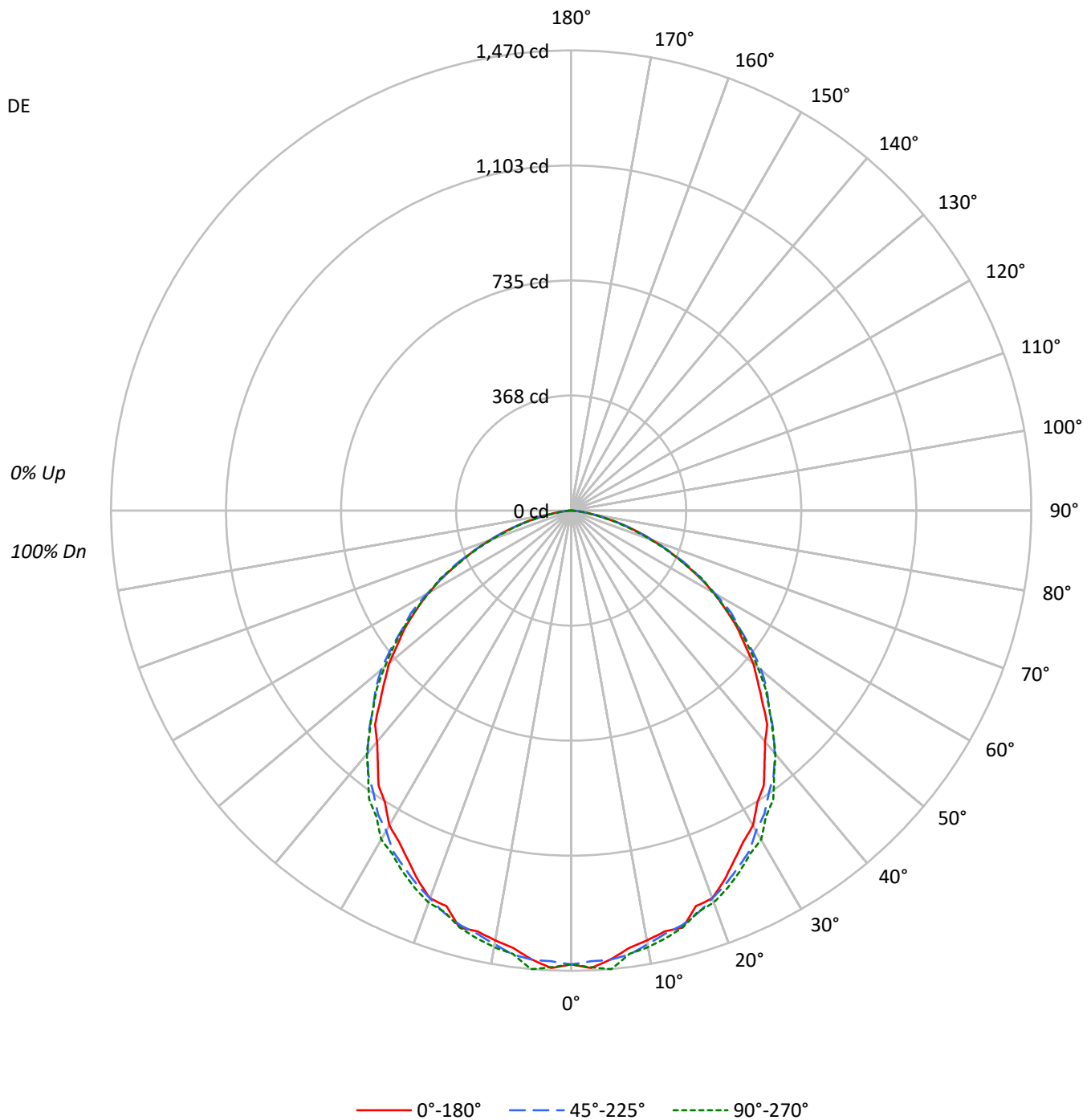
Input Watts (W): 33.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 110 | 105 | 101 | 98 | 107 | 103 | 100 | 96 | 99 | 96 | 93 | 95 | 93 | 90 | 91 | 90 | 88 | 86 |
| 2 | 100 | 93 | 86 | 81 | 98 | 91 | 85 | 80 | 87 | 82 | 78 | 84 | 80 | 76 | 81 | 78 | 75 | 73 |
| 3 | 92 | 82 | 74 | 68 | 89 | 80 | 73 | 67 | 77 | 71 | 66 | 75 | 69 | 65 | 72 | 68 | 64 | 62 |
| 4 | 84 | 73 | 64 | 58 | 82 | 71 | 64 | 58 | 69 | 62 | 57 | 67 | 61 | 56 | 65 | 59 | 55 | 53 |
| 5 | 78 | 65 | 57 | 50 | 76 | 64 | 56 | 50 | 62 | 55 | 49 | 60 | 54 | 49 | 58 | 53 | 48 | 46 |
| 6 | 72 | 59 | 50 | 44 | 70 | 58 | 50 | 44 | 56 | 49 | 43 | 54 | 48 | 43 | 53 | 47 | 43 | 41 |
| 7 | 67 | 53 | 45 | 39 | 65 | 53 | 45 | 39 | 51 | 44 | 39 | 50 | 43 | 38 | 48 | 42 | 38 | 36 |
| 8 | 62 | 49 | 41 | 35 | 61 | 48 | 40 | 35 | 47 | 40 | 34 | 46 | 39 | 34 | 44 | 39 | 34 | 32 |
| 9 | 58 | 45 | 37 | 31 | 57 | 44 | 37 | 31 | 43 | 36 | 31 | 42 | 36 | 31 | 41 | 35 | 31 | 29 |
| 10 | 54 | 41 | 34 | 29 | 53 | 41 | 33 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 3901 | 3901 | 3901 |
| 5° | 3888 | 3890 | 3972 |
| 10° | 3810 | 3843 | 3870 |
| 15° | 3840 | 3819 | 3840 |
| 20° | 3775 | 3775 | 3815 |
| 25° | 3659 | 3739 | 3780 |
| 30° | 3608 | 3672 | 3770 |
| 35° | 3524 | 3616 | 3697 |
| 40° | 3386 | 3550 | 3566 |
| 45° | 3284 | 3401 | 3406 |
| 50° | 3176 | 3320 | 3256 |
| 55° | 3027 | 3085 | 3063 |
| 60° | 2830 | 2858 | 2807 |
| 65° | 2523 | 2588 | 2506 |
| 70° | 2165 | 2172 | 2112 |
| 75° | 1714 | 1710 | 1645 |
| 80° | 1148 | 1117 | 1074 |
| 85° | 624 | 618 | 577 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 45°
 Luminance: 3489 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 136.4 | 3.7 |
| 10°-20° | 386.5 | 10.6 |
| 20°-30° | 579.1 | 15.8 |
| 30°-40° | 686.3 | 18.8 |
| 40°-50° | 687.6 | 18.8 |
| 50°-60° | 583.7 | 16.0 |
| 60°-70° | 393.5 | 10.8 |
| 70°-80° | 172.9 | 4.7 |
| 80°-90° | 28.1 | 0.8 |
| 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° | 1102.0 | 30.2 |
| 0°-40° | 1788.3 | 48.9 |
| 0°-60° | 3059.5 | 83.7 |
| 0°-90° | 3654.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3654.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1450 | 1450 | 1450 | 1450 | 1450 | |
| 5° | 1440 | 1436 | 1440 | 1436 | 1470 | 136 |
| 15° | 1378 | 1362 | 1371 | 1378 | 1378 | 384 |
| 25° | 1232 | 1239 | 1259 | 1276 | 1273 | 570 |
| 35° | 1073 | 1076 | 1101 | 1126 | 1125 | 666 |
| 45° | 863 | 879 | 894 | 917 | 895 | 668 |
| 55° | 645 | 641 | 658 | 653 | 653 | 574 |
| 65° | 396 | 391 | 406 | 391 | 394 | 394 |
| 75° | 165 | 162 | 164 | 153 | 158 | 177 |
| 85° | 20 | 20 | 20 | 20 | 19 | 29 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

TEST NUMBER: P590406

CATALOG NUMBER: FSR-24-2-LD4-2STD-50-UNV-82-85-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1449.8 | 1449.8 | 1449.8 | 1449.8 | 1449.8 |
| 2.5° | 1462.4 | 1451.3 | 1441.0 | 1453.0 | 1460.3 |
| 5° | 1439.5 | 1436.1 | 1440.1 | 1435.8 | 1470.4 |
| 7.5° | 1409.9 | 1422.9 | 1430.3 | 1425.7 | 1427.7 |
| 10° | 1394.2 | 1389.7 | 1406.4 | 1418.0 | 1416.3 |
| 12.5° | 1377.4 | 1384.1 | 1385.0 | 1397.6 | 1398.7 |
| 15° | 1378.3 | 1362.4 | 1370.8 | 1377.9 | 1378.5 |
| 17.5° | 1324.8 | 1342.0 | 1347.8 | 1364.1 | 1343.9 |
| 20° | 1318.2 | 1305.7 | 1318.2 | 1334.9 | 1332.3 |
| 22.5° | 1278.0 | 1263.9 | 1290.9 | 1305.7 | 1304.7 |
| 25° | 1232.3 | 1239.0 | 1259.3 | 1275.7 | 1273.1 |
| 27.5° | 1192.2 | 1200.1 | 1228.9 | 1251.6 | 1237.0 |
| 30° | 1161.3 | 1157.4 | 1181.8 | 1202.0 | 1213.2 |
| 32.5° | 1106.1 | 1120.4 | 1148.8 | 1168.8 | 1158.2 |
| 35° | 1072.6 | 1075.8 | 1100.7 | 1126.2 | 1125.4 |
| 37.5° | 1014.0 | 1028.8 | 1063.8 | 1070.9 | 1064.4 |
| 40° | 964.0 | 978.8 | 1010.5 | 1018.1 | 1015.0 |
| 42.5° | 927.2 | 929.8 | 956.9 | 965.7 | 951.7 |
| 45° | 863.0 | 879.1 | 893.7 | 916.7 | 895.0 |
| 47.5° | 808.3 | 815.8 | 847.2 | 853.4 | 842.0 |
| 50° | 758.7 | 761.3 | 793.0 | 785.3 | 777.8 |
| 52.5° | 696.4 | 707.4 | 725.2 | 723.7 | 714.9 |
| 55° | 645.1 | 640.8 | 657.6 | 653.1 | 652.9 |
| 57.5° | 583.5 | 591.0 | 604.8 | 597.7 | 586.3 |
| 60° | 525.8 | 526.0 | 531.1 | 523.0 | 521.5 |
| 62.5° | 461.6 | 463.9 | 465.0 | 455.1 | 471.2 |
| 65° | 396.3 | 391.0 | 406.4 | 390.9 | 393.5 |
| 67.5° | 336.2 | 338.8 | 337.3 | 327.6 | 331.3 |
| 70° | 275.2 | 278.5 | 276.1 | 265.1 | 268.4 |
| 72.5° | 219.4 | 215.3 | 217.9 | 204.0 | 210.4 |
| 75° | 164.9 | 161.5 | 164.5 | 152.9 | 158.2 |
| 77.5° | 112.3 | 114.9 | 113.1 | 106.9 | 110.4 |
| 80° | 74.1 | 72.1 | 72.1 | 68.5 | 69.3 |
| 82.5° | 43.2 | 41.2 | 40.6 | 39.5 | 41.2 |
| 85° | 20.2 | 19.7 | 20.0 | 19.5 | 18.7 |
| 87.5° | 7.3 | 7.5 | 7.5 | 7.1 | 6.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)