

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: P562358

Luminaire Tested: FSR-24-4-LD4-1STD-40-UNV-80-87-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P562358
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-LD4-1STD-40-UNV-80-87-EDD-90
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR PC ENVIRONM
SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3105.0 lumens
Efficiency: N/A
Efficacy: 93.2 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

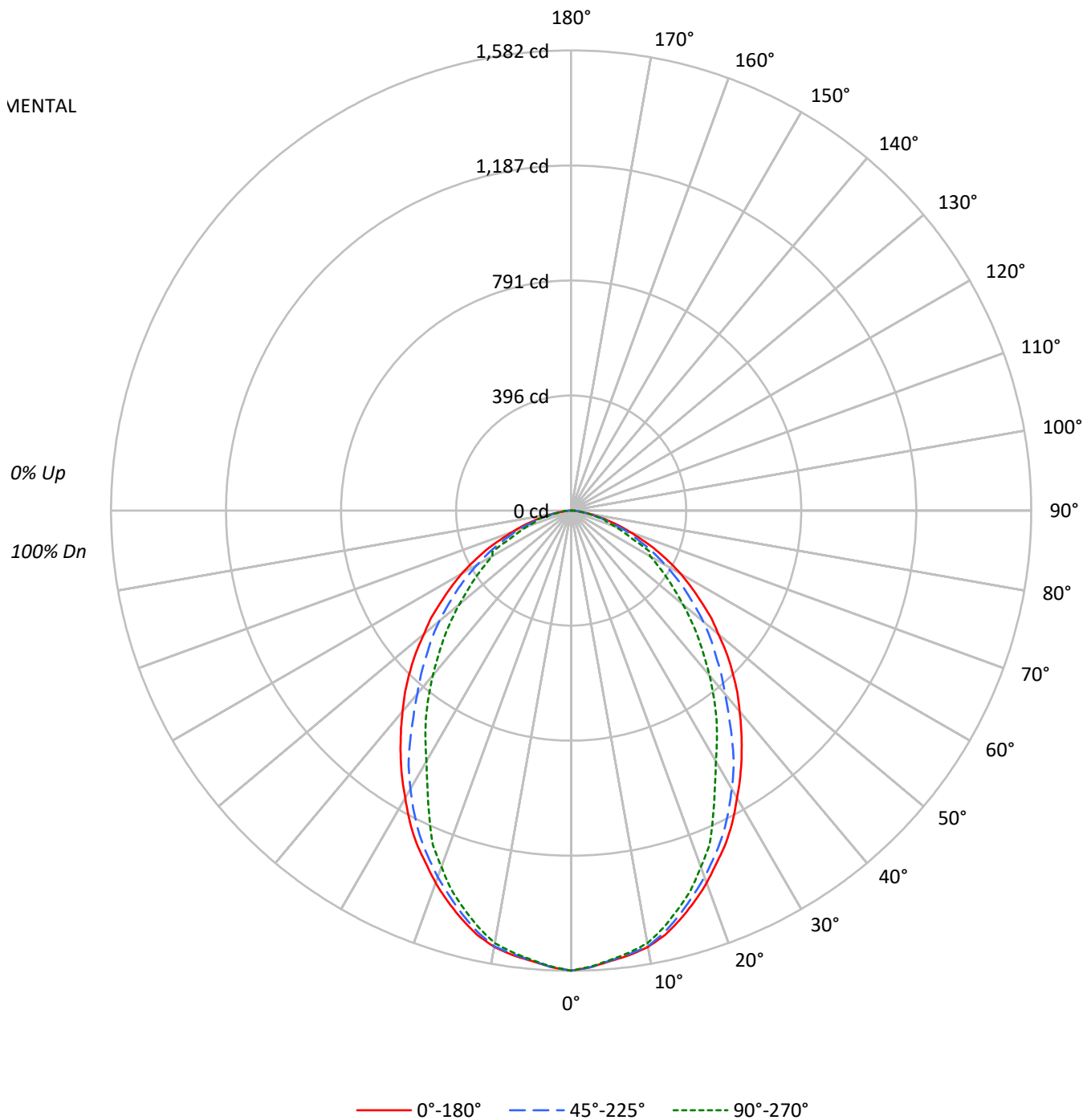
Input Watts (W): 33.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P562358

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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° | 2128 | 2128 | 2128 |
| 5° | 2099 | 2097 | 2094 |
| 10° | 2081 | 2078 | 2063 |
| 15° | 2025 | 2004 | 1976 |
| 20° | 1950 | 1919 | 1867 |
| 25° | 1870 | 1830 | 1716 |
| 30° | 1773 | 1716 | 1545 |
| 35° | 1679 | 1586 | 1430 |
| 40° | 1583 | 1445 | 1301 |
| 45° | 1493 | 1336 | 1176 |
| 50° | 1382 | 1240 | 1049 |
| 55° | 1278 | 1124 | 939 |
| 60° | 1171 | 1004 | 841 |
| 65° | 1030 | 879 | 745 |
| 70° | 849 | 769 | 633 |
| 75° | 675 | 590 | 618 |
| 80° | 453 | 425 | 397 |
| 85° | 283 | 338 | 395 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1493 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 147.2 | 4.7 |
| 10°-20° | 404.1 | 13.0 |
| 20°-30° | 559.4 | 18.0 |
| 30°-40° | 596.5 | 19.2 |
| 40°-50° | 544.2 | 17.5 |
| 50°-60° | 426.3 | 13.7 |
| 60°-70° | 277.9 | 8.9 |
| 70°-80° | 123.1 | 4.0 |
| 80°-90° | 26.4 | 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° | 1110.7 | 35.8 |
| 0°-40° | 1707.2 | 55.0 |
| 0°-60° | 2677.6 | 86.2 |
| 0°-90° | 3105.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3105.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1582 | 1582 | 1582 | 1582 | 1582 | |
| 5° | 1554 | 1552 | 1552 | 1551 | 1551 | 148 |
| 15° | 1454 | 1454 | 1439 | 1424 | 1419 | 409 |
| 25° | 1260 | 1252 | 1232 | 1188 | 1156 | 578 |
| 35° | 1022 | 1015 | 965 | 892 | 870 | 639 |
| 45° | 784 | 768 | 702 | 644 | 618 | 604 |
| 55° | 545 | 528 | 479 | 422 | 400 | 489 |
| 65° | 324 | 305 | 276 | 282 | 234 | 319 |
| 75° | 130 | 121 | 113 | 108 | 119 | 139 |
| 85° | 18 | 20 | 22 | 24 | 26 | 25 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

TEST NUMBER: P562358

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1581.6 | 1581.6 | 1581.6 | 1581.6 | 1581.6 |
| 2.5° | 1570.7 | 1570.7 | 1570.7 | 1568.8 | 1568.8 |
| 5° | 1554.2 | 1552.4 | 1552.4 | 1550.6 | 1550.6 |
| 7.5° | 1541.4 | 1539.6 | 1537.8 | 1535.9 | 1532.3 |
| 10° | 1523.1 | 1523.1 | 1521.3 | 1512.2 | 1510.3 |
| 12.5° | 1493.9 | 1492.0 | 1484.7 | 1471.9 | 1468.3 |
| 15° | 1453.7 | 1453.7 | 1439.0 | 1424.4 | 1418.9 |
| 17.5° | 1409.8 | 1407.9 | 1389.7 | 1375.0 | 1367.7 |
| 20° | 1362.2 | 1358.6 | 1340.3 | 1316.5 | 1303.7 |
| 22.5° | 1309.2 | 1309.2 | 1287.3 | 1256.2 | 1243.4 |
| 25° | 1259.8 | 1252.5 | 1232.4 | 1188.5 | 1155.6 |
| 27.5° | 1203.1 | 1192.2 | 1170.2 | 1108.1 | 1069.7 |
| 30° | 1141.0 | 1135.5 | 1104.4 | 1024.0 | 994.7 |
| 32.5° | 1082.5 | 1073.3 | 1040.4 | 956.3 | 932.5 |
| 35° | 1022.1 | 1014.8 | 965.4 | 892.3 | 870.4 |
| 37.5° | 961.8 | 952.6 | 890.5 | 832.0 | 804.5 |
| 40° | 901.4 | 890.5 | 822.8 | 769.8 | 740.5 |
| 42.5° | 844.8 | 830.1 | 764.3 | 707.6 | 674.7 |
| 45° | 784.4 | 768.0 | 702.1 | 643.6 | 618.0 |
| 47.5° | 724.1 | 709.5 | 649.1 | 588.8 | 559.5 |
| 50° | 660.1 | 647.3 | 592.4 | 532.1 | 501.0 |
| 52.5° | 607.1 | 586.9 | 533.9 | 473.6 | 448.0 |
| 55° | 544.9 | 528.4 | 479.1 | 422.4 | 400.4 |
| 57.5° | 488.2 | 471.8 | 426.0 | 373.0 | 354.7 |
| 60° | 435.2 | 411.4 | 373.0 | 327.3 | 312.7 |
| 62.5° | 376.7 | 358.4 | 325.5 | 287.1 | 305.4 |
| 65° | 323.6 | 305.4 | 276.1 | 281.6 | 234.0 |
| 67.5° | 265.1 | 256.0 | 230.4 | 204.8 | 197.5 |
| 70° | 215.8 | 204.8 | 195.6 | 168.2 | 160.9 |
| 72.5° | 171.9 | 160.9 | 148.1 | 133.5 | 128.0 |
| 75° | 129.8 | 120.7 | 113.4 | 107.9 | 118.9 |
| 77.5° | 89.6 | 85.9 | 80.5 | 75.0 | 73.1 |
| 80° | 58.5 | 56.7 | 54.9 | 53.0 | 51.2 |
| 82.5° | 34.7 | 34.7 | 34.7 | 34.7 | 34.7 |
| 85° | 18.3 | 20.1 | 21.9 | 23.8 | 25.6 |
| 87.5° | 11.0 | 11.0 | 12.8 | 14.6 | 16.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)