

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: P558716

Luminaire Tested: FSR-12-1-LD4-1LO-40-UNV-80-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P558716  
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-12-1-LD4-1LO-40-UNV-80-96-EDD-90  
Description: 1X1 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR TEMPERED G ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

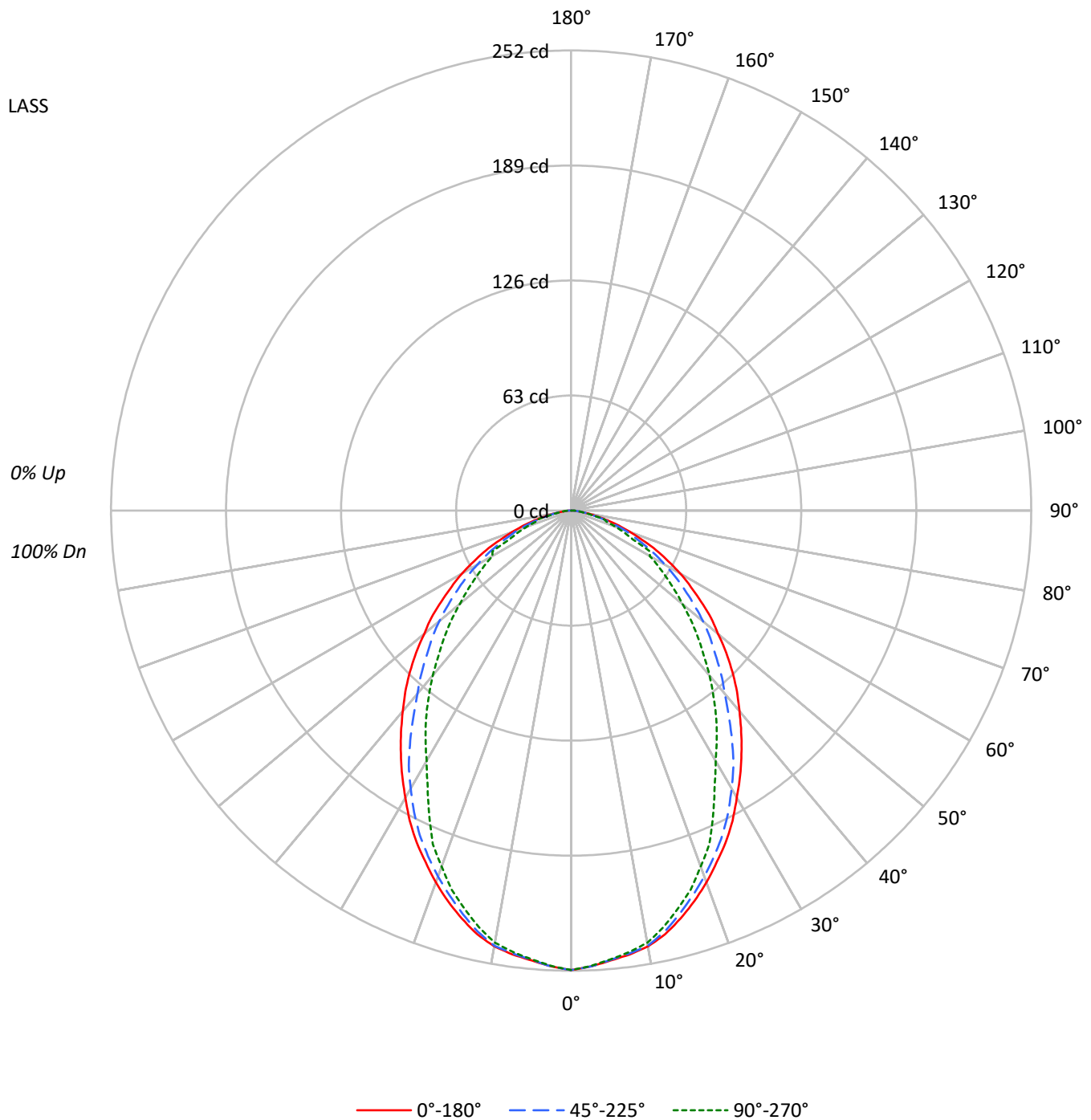
Lumens per Lamp: N/A  
Luminaire Lumens: 494.0 lumens  
Efficiency: N/A  
Efficacy: 85.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 5.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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  | 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°  | 2708 | 2708 | 2708 |
| 5°  | 2672 | 2669 | 2666 |
| 10° | 2648 | 2645 | 2626 |
| 15° | 2578 | 2551 | 2515 |
| 20° | 2482 | 2442 | 2376 |
| 25° | 2380 | 2329 | 2184 |
| 30° | 2256 | 2184 | 1968 |
| 35° | 2137 | 2018 | 1820 |
| 40° | 2015 | 1839 | 1655 |
| 45° | 1900 | 1700 | 1496 |
| 50° | 1758 | 1579 | 1335 |
| 55° | 1627 | 1430 | 1195 |
| 60° | 1490 | 1277 | 1070 |
| 65° | 1312 | 1118 | 947  |
| 70° | 1079 | 979  | 806  |
| 75° | 861  | 749  | 786  |
| 80° | 576  | 539  | 502  |
| 85° | 358  | 432  | 506  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1900 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 23.4   | 4.7       |
| 10°-20°   | 64.3   | 13.0      |
| 20°-30°   | 89.0   | 18.0      |
| 30°-40°   | 94.9   | 19.2      |
| 40°-50°   | 86.6   | 17.5      |
| 50°-60°   | 67.8   | 13.7      |
| 60°-70°   | 44.2   | 8.9       |
| 70°-80°   | 19.6   | 4.0       |
| 80°-90°   | 4.2    | 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°    | 176.7  | 35.8      |
| 0°-40°    | 271.6  | 55.0      |
| 0°-60°    | 426.0  | 86.2      |
| 0°-90°    | 494.0  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 494.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 252 | 252   | 252 | 252   | 252 |      |
| 5°  | 247 | 247   | 247 | 247   | 247 | 23   |
| 15° | 231 | 231   | 229 | 227   | 226 | 65   |
| 25° | 200 | 199   | 196 | 189   | 184 | 92   |
| 35° | 163 | 162   | 154 | 142   | 138 | 102  |
| 45° | 125 | 122   | 112 | 102   | 98  | 96   |
| 55° | 87  | 84    | 76  | 67    | 64  | 78   |
| 65° | 52  | 49    | 44  | 45    | 37  | 51   |
| 75° | 21  | 19    | 18  | 17    | 19  | 22   |
| 85° | 3   | 3     | 4   | 4     | 4   | 4    |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 251.6 | 251.6 | 251.6 | 251.6 | 251.6 |
| 2.5°  | 249.9 | 249.9 | 249.9 | 249.6 | 249.6 |
| 5°    | 247.3 | 247.0 | 247.0 | 246.7 | 246.7 |
| 7.5°  | 245.2 | 244.9 | 244.7 | 244.4 | 243.8 |
| 10°   | 242.3 | 242.3 | 242.0 | 240.6 | 240.3 |
| 12.5° | 237.7 | 237.4 | 236.2 | 234.2 | 233.6 |
| 15°   | 231.3 | 231.3 | 228.9 | 226.6 | 225.7 |
| 17.5° | 224.3 | 224.0 | 221.1 | 218.8 | 217.6 |
| 20°   | 216.7 | 216.1 | 213.2 | 209.5 | 207.4 |
| 22.5° | 208.3 | 208.3 | 204.8 | 199.9 | 197.8 |
| 25°   | 200.4 | 199.3 | 196.1 | 189.1 | 183.9 |
| 27.5° | 191.4 | 189.7 | 186.2 | 176.3 | 170.2 |
| 30°   | 181.5 | 180.7 | 175.7 | 162.9 | 158.3 |
| 32.5° | 172.2 | 170.8 | 165.5 | 152.1 | 148.4 |
| 35°   | 162.6 | 161.5 | 153.6 | 142.0 | 138.5 |
| 37.5° | 153.0 | 151.6 | 141.7 | 132.4 | 128.0 |
| 40°   | 143.4 | 141.7 | 130.9 | 122.5 | 117.8 |
| 42.5° | 134.4 | 132.1 | 121.6 | 112.6 | 107.3 |
| 45°   | 124.8 | 122.2 | 111.7 | 102.4 | 98.3  |
| 47.5° | 115.2 | 112.9 | 103.3 | 93.7  | 89.0  |
| 50°   | 105.0 | 103.0 | 94.3  | 84.7  | 79.7  |
| 52.5° | 96.6  | 93.4  | 84.9  | 75.3  | 71.3  |
| 55°   | 86.7  | 84.1  | 76.2  | 67.2  | 63.7  |
| 57.5° | 77.7  | 75.1  | 67.8  | 59.3  | 56.4  |
| 60°   | 69.2  | 65.5  | 59.3  | 52.1  | 49.7  |
| 62.5° | 59.9  | 57.0  | 51.8  | 45.7  | 48.6  |
| 65°   | 51.5  | 48.6  | 43.9  | 44.8  | 37.2  |
| 67.5° | 42.2  | 40.7  | 36.7  | 32.6  | 31.4  |
| 70°   | 34.3  | 32.6  | 31.1  | 26.8  | 25.6  |
| 72.5° | 27.3  | 25.6  | 23.6  | 21.2  | 20.4  |
| 75°   | 20.7  | 19.2  | 18.0  | 17.2  | 18.9  |
| 77.5° | 14.3  | 13.7  | 12.8  | 11.9  | 11.6  |
| 80°   | 9.3   | 9.0   | 8.7   | 8.4   | 8.1   |
| 82.5° | 5.5   | 5.5   | 5.5   | 5.5   | 5.5   |
| 85°   | 2.9   | 3.2   | 3.5   | 3.8   | 4.1   |
| 87.5° | 1.7   | 1.7   | 2.0   | 2.3   | 2.6   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)