

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: P558819

Luminaire Tested: FSR-12-1-LD4-1LO-50-UNV-93-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P558819  
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-50-UNV-93-85-EDD  
Description: 1X1 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

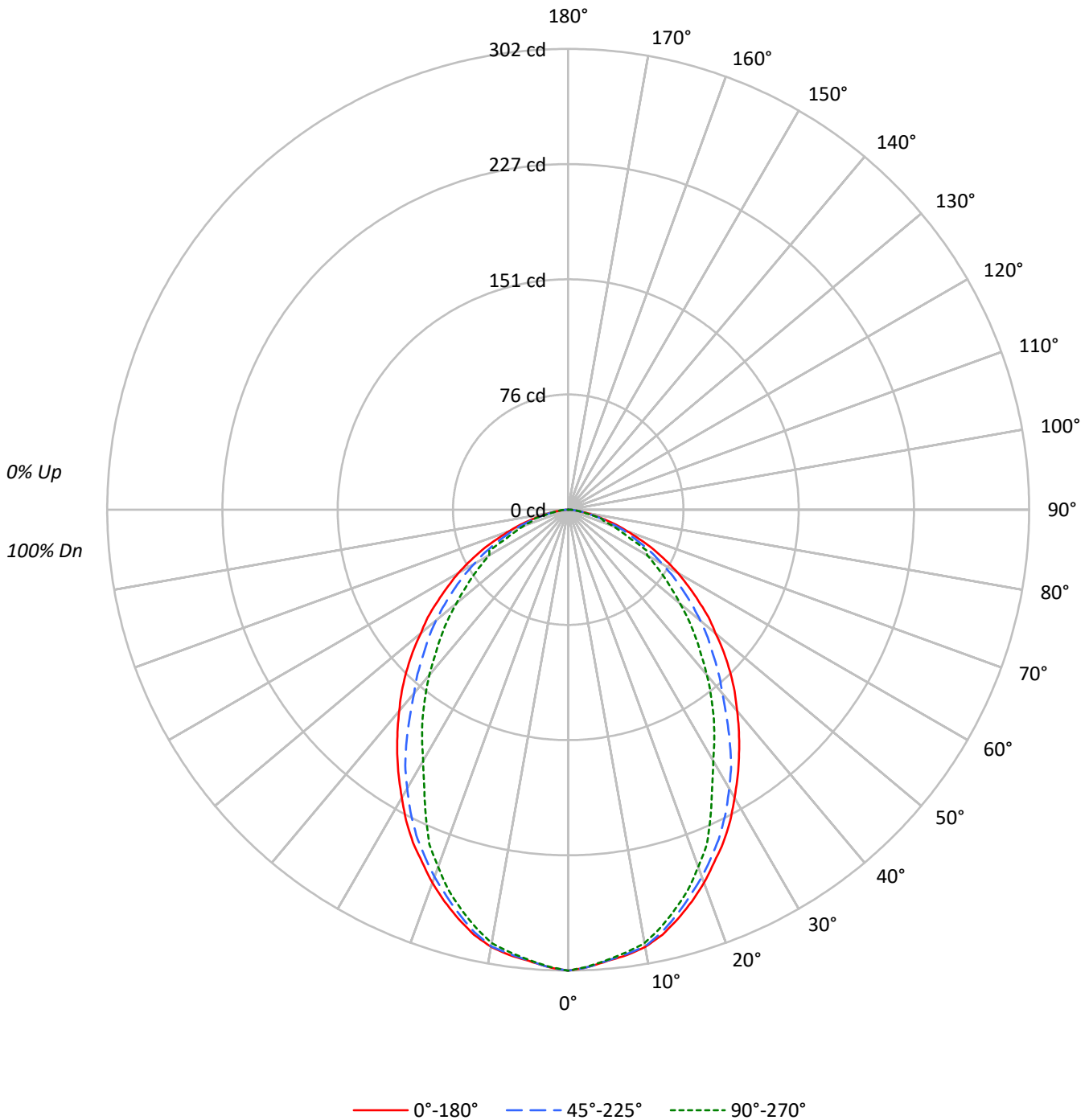
Lumens per Lamp: N/A  
Luminaire Lumens: 593.0 lumens  
Efficiency: N/A  
Efficacy: 102.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 5.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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  | 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  | 39  | 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°  | 3252 | 3252 | 3252 |
| 5°  | 3207 | 3204 | 3199 |
| 10° | 3180 | 3175 | 3152 |
| 15° | 3093 | 3062 | 3020 |
| 20° | 2981 | 2932 | 2852 |
| 25° | 2858 | 2796 | 2621 |
| 30° | 2708 | 2621 | 2362 |
| 35° | 2565 | 2423 | 2184 |
| 40° | 2420 | 2207 | 1987 |
| 45° | 2280 | 2041 | 1796 |
| 50° | 2112 | 1894 | 1603 |
| 55° | 1954 | 1717 | 1436 |
| 60° | 1789 | 1533 | 1285 |
| 65° | 1574 | 1342 | 1138 |
| 70° | 1297 | 1177 | 966  |
| 75° | 1031 | 902  | 944  |
| 80° | 694  | 651  | 607  |
| 85° | 432  | 519  | 605  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2280 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 28.1   | 4.7       |
| 10°-20°   | 77.2   | 13.0      |
| 20°-30°   | 106.8  | 18.0      |
| 30°-40°   | 113.9  | 19.2      |
| 40°-50°   | 103.9  | 17.5      |
| 50°-60°   | 81.4   | 13.7      |
| 60°-70°   | 53.1   | 8.9       |
| 70°-80°   | 23.5   | 4.0       |
| 80°-90°   | 5.0    | 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°    | 212.1  | 35.8      |
| 0°-40°    | 326.0  | 55.0      |
| 0°-60°    | 511.4  | 86.2      |
| 0°-90°    | 593.0  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 593.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 302 | 302   | 302 | 302   | 302 |      |
| 5°  | 297 | 296   | 296 | 296   | 296 | 28   |
| 15° | 278 | 278   | 275 | 272   | 271 | 78   |
| 25° | 241 | 239   | 235 | 227   | 221 | 110  |
| 35° | 195 | 194   | 184 | 170   | 166 | 122  |
| 45° | 150 | 147   | 134 | 123   | 118 | 115  |
| 55° | 104 | 101   | 92  | 81    | 76  | 93   |
| 65° | 62  | 58    | 53  | 54    | 45  | 61   |
| 75° | 25  | 23    | 22  | 21    | 23  | 27   |
| 85° | 4   | 4     | 4   | 4     | 5   | 5    |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



TEST NUMBER: P558819

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 302.1 | 302.1 | 302.1 | 302.1 | 302.1 |
| 2.5°  | 300.0 | 300.0 | 300.0 | 299.6 | 299.6 |
| 5°    | 296.8 | 296.5 | 296.5 | 296.1 | 296.1 |
| 7.5°  | 294.4 | 294.0 | 293.7 | 293.3 | 292.6 |
| 10°   | 290.9 | 290.9 | 290.5 | 288.8 | 288.4 |
| 12.5° | 285.3 | 285.0 | 283.6 | 281.1 | 280.4 |
| 15°   | 277.6 | 277.6 | 274.8 | 272.0 | 271.0 |
| 17.5° | 269.2 | 268.9 | 265.4 | 262.6 | 261.2 |
| 20°   | 260.2 | 259.5 | 256.0 | 251.4 | 249.0 |
| 22.5° | 250.0 | 250.0 | 245.8 | 239.9 | 237.5 |
| 25°   | 240.6 | 239.2 | 235.4 | 227.0 | 220.7 |
| 27.5° | 229.8 | 227.7 | 223.5 | 211.6 | 204.3 |
| 30°   | 217.9 | 216.9 | 210.9 | 195.6 | 190.0 |
| 32.5° | 206.7 | 205.0 | 198.7 | 182.6 | 178.1 |
| 35°   | 195.2 | 193.8 | 184.4 | 170.4 | 166.2 |
| 37.5° | 183.7 | 181.9 | 170.1 | 158.9 | 153.7 |
| 40°   | 172.2 | 170.1 | 157.1 | 147.0 | 141.4 |
| 42.5° | 161.3 | 158.5 | 146.0 | 135.1 | 128.9 |
| 45°   | 149.8 | 146.7 | 134.1 | 122.9 | 118.0 |
| 47.5° | 138.3 | 135.5 | 124.0 | 112.4 | 106.9 |
| 50°   | 126.1 | 123.6 | 113.1 | 101.6 | 95.7  |
| 52.5° | 115.9 | 112.1 | 102.0 | 90.4  | 85.6  |
| 55°   | 104.1 | 100.9 | 91.5  | 80.7  | 76.5  |
| 57.5° | 93.2  | 90.1  | 81.4  | 71.2  | 67.7  |
| 60°   | 83.1  | 78.6  | 71.2  | 62.5  | 59.7  |
| 62.5° | 71.9  | 68.4  | 62.2  | 54.8  | 58.3  |
| 65°   | 61.8  | 58.3  | 52.7  | 53.8  | 44.7  |
| 67.5° | 50.6  | 48.9  | 44.0  | 39.1  | 37.7  |
| 70°   | 41.2  | 39.1  | 37.4  | 32.1  | 30.7  |
| 72.5° | 32.8  | 30.7  | 28.3  | 25.5  | 24.4  |
| 75°   | 24.8  | 23.0  | 21.7  | 20.6  | 22.7  |
| 77.5° | 17.1  | 16.4  | 15.4  | 14.3  | 14.0  |
| 80°   | 11.2  | 10.8  | 10.5  | 10.1  | 9.8   |
| 82.5° | 6.6   | 6.6   | 6.6   | 6.6   | 6.6   |
| 85°   | 3.5   | 3.8   | 4.2   | 4.5   | 4.9   |
| 87.5° | 2.1   | 2.1   | 2.4   | 2.8   | 3.1   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)