

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: P558904

Luminaire Tested: FSR-12-1-LD4-1STD-40-UNV-80-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P558904  
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-LD4-1STD-40-UNV-80-88-EDD-90  
Description: 1X1 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .500 CLEAR PC ENVIRON  
SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

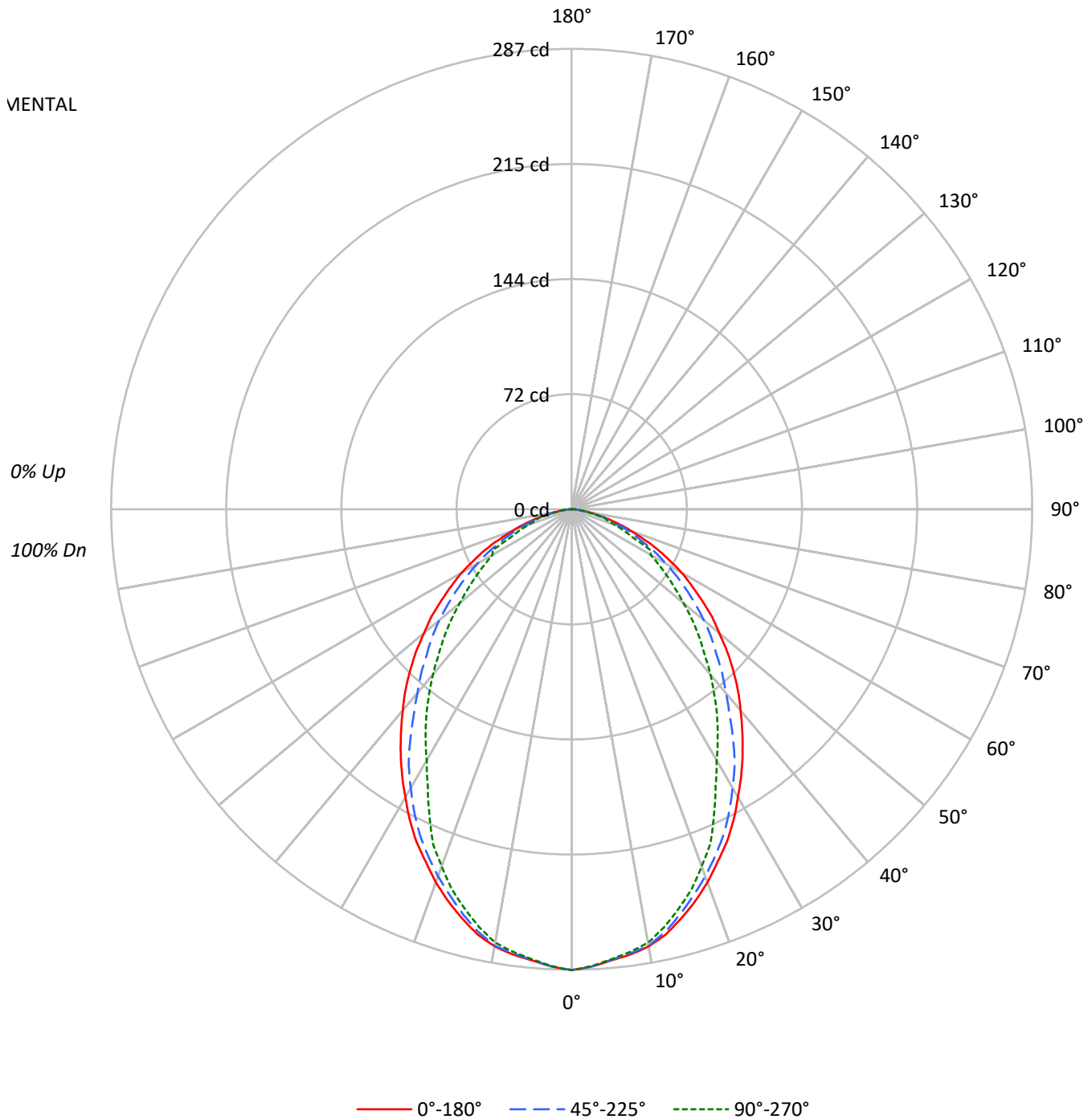
Lumens per Lamp: N/A  
Luminaire Lumens: 564.0 lumens  
Efficiency: N/A  
Efficacy: 68.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 8.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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  | 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°  | 3092 | 3092 | 3092 |
| 5°  | 3050 | 3047 | 3043 |
| 10° | 3024 | 3020 | 2998 |
| 15° | 2942 | 2913 | 2872 |
| 20° | 2834 | 2789 | 2712 |
| 25° | 2717 | 2659 | 2493 |
| 30° | 2577 | 2493 | 2246 |
| 35° | 2440 | 2305 | 2077 |
| 40° | 2300 | 2101 | 1890 |
| 45° | 2169 | 1941 | 1709 |
| 50° | 2008 | 1802 | 1524 |
| 55° | 1858 | 1633 | 1364 |
| 60° | 1701 | 1460 | 1223 |
| 65° | 1498 | 1279 | 1082 |
| 70° | 1234 | 1117 | 919  |
| 75° | 981  | 857  | 898  |
| 80° | 657  | 620  | 576  |
| 85° | 408  | 494  | 568  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2169 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 26.7   | 4.7       |
| 10°-20°   | 73.4   | 13.0      |
| 20°-30°   | 101.6  | 18.0      |
| 30°-40°   | 108.3  | 19.2      |
| 40°-50°   | 98.8   | 17.5      |
| 50°-60°   | 77.4   | 13.7      |
| 60°-70°   | 50.5   | 8.9       |
| 70°-80°   | 22.4   | 4.0       |
| 80°-90°   | 4.8    | 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°    | 201.7  | 35.8      |
| 0°-40°    | 310.1  | 55.0      |
| 0°-60°    | 486.4  | 86.2      |
| 0°-90°    | 564.0  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 564.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 287 | 287   | 287 | 287   | 287 |      |
| 5°  | 282 | 282   | 282 | 282   | 282 | 27   |
| 15° | 264 | 264   | 261 | 259   | 258 | 74   |
| 25° | 229 | 228   | 224 | 216   | 210 | 105  |
| 35° | 186 | 184   | 175 | 162   | 158 | 116  |
| 45° | 142 | 140   | 128 | 117   | 112 | 110  |
| 55° | 99  | 96    | 87  | 77    | 73  | 89   |
| 65° | 59  | 56    | 50  | 51    | 42  | 58   |
| 75° | 24  | 22    | 21  | 20    | 22  | 25   |
| 85° | 3   | 4     | 4   | 4     | 5   | 5    |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 287.3 | 287.3 | 287.3 | 287.3 | 287.3 |
| 2.5°  | 285.3 | 285.3 | 285.3 | 285.0 | 285.0 |
| 5°    | 282.3 | 282.0 | 282.0 | 281.6 | 281.6 |
| 7.5°  | 280.0 | 279.7 | 279.3 | 279.0 | 278.3 |
| 10°   | 276.7 | 276.7 | 276.3 | 274.7 | 274.3 |
| 12.5° | 271.4 | 271.0 | 269.7 | 267.4 | 266.7 |
| 15°   | 264.0 | 264.0 | 261.4 | 258.7 | 257.7 |
| 17.5° | 256.1 | 255.7 | 252.4 | 249.8 | 248.4 |
| 20°   | 247.4 | 246.8 | 243.5 | 239.1 | 236.8 |
| 22.5° | 237.8 | 237.8 | 233.8 | 228.2 | 225.8 |
| 25°   | 228.8 | 227.5 | 223.9 | 215.9 | 209.9 |
| 27.5° | 218.5 | 216.5 | 212.6 | 201.3 | 194.3 |
| 30°   | 207.3 | 206.3 | 200.6 | 186.0 | 180.7 |
| 32.5° | 196.6 | 195.0 | 189.0 | 173.7 | 169.4 |
| 35°   | 185.7 | 184.3 | 175.4 | 162.1 | 158.1 |
| 37.5° | 174.7 | 173.0 | 161.7 | 151.1 | 146.1 |
| 40°   | 163.7 | 161.7 | 149.5 | 139.8 | 134.5 |
| 42.5° | 153.4 | 150.8 | 138.8 | 128.5 | 122.6 |
| 45°   | 142.5 | 139.5 | 127.5 | 116.9 | 112.3 |
| 47.5° | 131.5 | 128.9 | 117.9 | 106.9 | 101.6 |
| 50°   | 119.9 | 117.6 | 107.6 | 96.7  | 91.0  |
| 52.5° | 110.3 | 106.6 | 97.0  | 86.0  | 81.4  |
| 55°   | 99.0  | 96.0  | 87.0  | 76.7  | 72.7  |
| 57.5° | 88.7  | 85.7  | 77.4  | 67.8  | 64.4  |
| 60°   | 79.0  | 74.7  | 67.8  | 59.5  | 56.8  |
| 62.5° | 68.4  | 65.1  | 59.1  | 52.1  | 55.5  |
| 65°   | 58.8  | 55.5  | 50.2  | 51.1  | 42.5  |
| 67.5° | 48.2  | 46.5  | 41.8  | 37.2  | 35.9  |
| 70°   | 39.2  | 37.2  | 35.5  | 30.6  | 29.2  |
| 72.5° | 31.2  | 29.2  | 26.9  | 24.2  | 23.2  |
| 75°   | 23.6  | 21.9  | 20.6  | 19.6  | 21.6  |
| 77.5° | 16.3  | 15.6  | 14.6  | 13.6  | 13.3  |
| 80°   | 10.6  | 10.3  | 10.0  | 9.6   | 9.3   |
| 82.5° | 6.3   | 6.3   | 6.3   | 6.3   | 6.3   |
| 85°   | 3.3   | 3.7   | 4.0   | 4.3   | 4.6   |
| 87.5° | 2.0   | 2.0   | 2.3   | 2.7   | 3.0   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)