

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: P558497

Luminaire Tested: FSR-12-1-LD4-1HI-35-UNV-93-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P558497  
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-LD4-1HI-35-UNV-93-84-EDD  
Description: 1X1 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

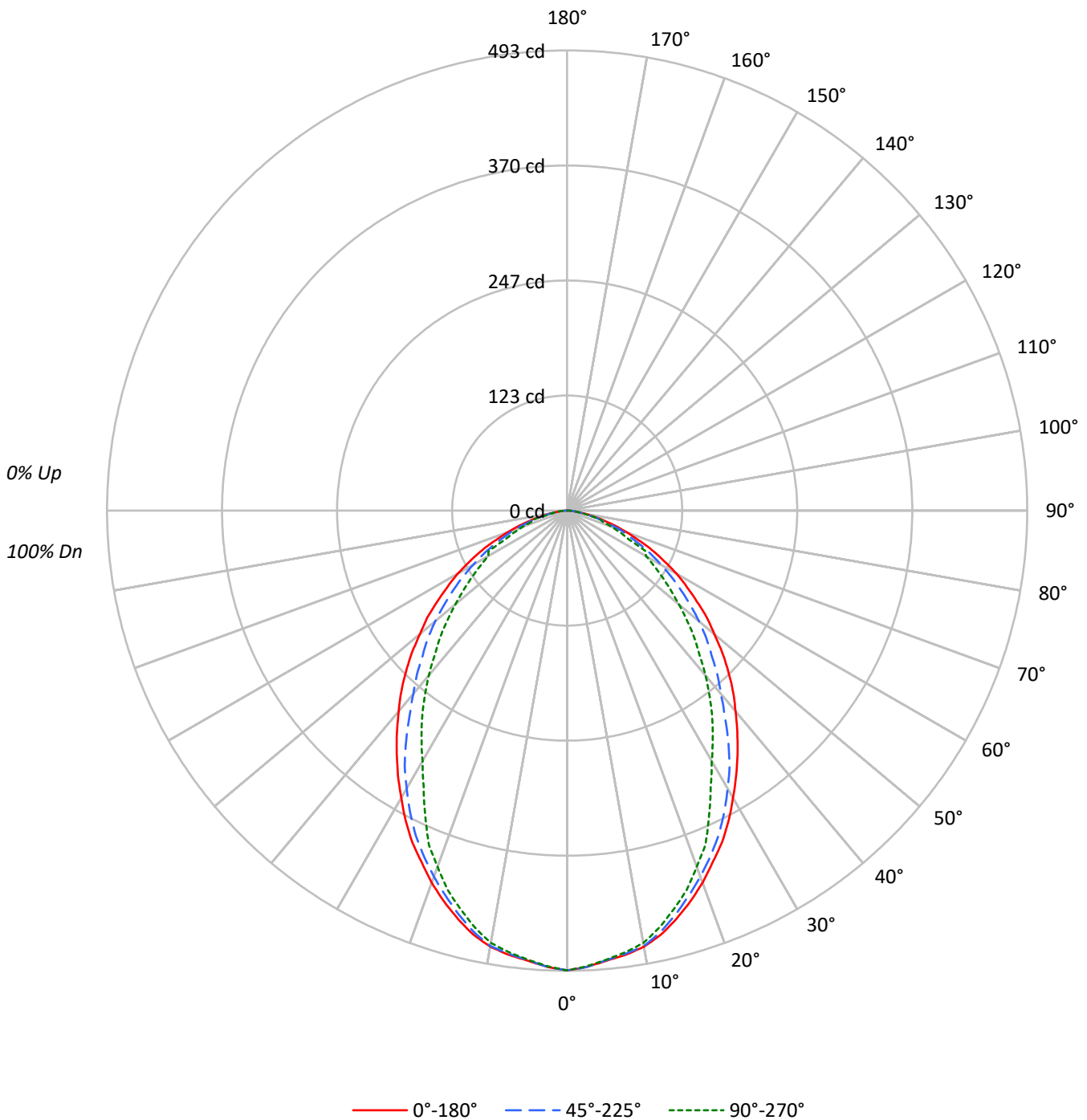
Lumens per Lamp: N/A  
Luminaire Lumens: 967.0 lumens  
Efficiency: N/A  
Efficacy: 89.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 10.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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 | 100 | 100 | 100 | 100 | 100 |  |   |
| 1   | 110 | 106 | 102 | 99  | 108 | 104 | 100 | 97  | 100 | 97  | 94  | 96  | 94  | 91  | 92  | 90  | 89  | 87  | 87  | 87  | 87  | 87  | 87  | 87  |  |   |
| 2   | 101 | 94  | 88  | 83  | 99  | 92  | 87  | 82  | 89  | 84  | 80  | 86  | 82  | 78  | 83  | 79  | 77  | 75  | 75  | 75  | 75  | 75  | 75  | 75  |  |   |
| 3   | 93  | 84  | 77  | 71  | 91  | 82  | 76  | 70  | 79  | 74  | 69  | 77  | 72  | 68  | 74  | 70  | 67  | 65  | 65  | 65  | 65  | 65  | 65  | 65  |  |   |
| 4   | 86  | 75  | 67  | 61  | 84  | 74  | 66  | 61  | 72  | 65  | 60  | 69  | 64  | 59  | 67  | 62  | 58  | 56  | 56  | 56  | 56  | 56  | 56  | 56  |  |   |
| 5   | 80  | 68  | 60  | 54  | 78  | 67  | 59  | 53  | 65  | 58  | 53  | 63  | 57  | 52  | 61  | 56  | 52  | 50  | 50  | 50  | 50  | 50  | 50  | 50  |  |   |
| 6   | 74  | 62  | 53  | 48  | 72  | 61  | 53  | 47  | 59  | 52  | 47  | 57  | 51  | 47  | 56  | 50  | 46  | 44  | 44  | 44  | 44  | 44  | 44  | 44  |  |   |
| 7   | 69  | 56  | 48  | 43  | 67  | 56  | 48  | 42  | 54  | 47  | 42  | 53  | 46  | 42  | 51  | 46  | 42  | 40  | 40  | 40  | 40  | 40  | 40  | 40  |  |   |
| 8   | 65  | 52  | 44  | 38  | 63  | 51  | 44  | 38  | 50  | 43  | 38  | 49  | 42  | 38  | 48  | 42  | 38  | 36  | 36  | 36  | 36  | 36  | 36  | 36  |  |   |
| 9   | 61  | 48  | 40  | 35  | 59  | 47  | 40  | 35  | 46  | 39  | 35  | 45  | 39  | 34  | 44  | 38  | 34  | 33  | 33  | 33  | 33  | 33  | 33  | 33  |  |   |
| 10  | 57  | 44  | 37  | 32  | 56  | 44  | 37  | 32  | 43  | 36  | 32  | 42  | 36  | 32  | 41  | 36  | 32  | 30  | 30  | 30  | 30  | 30  | 30  | 30  |  |   |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 5302 | 5302 | 5302 |
| 5°  | 5230 | 5224 | 5218 |
| 10° | 5185 | 5179 | 5141 |
| 15° | 5045 | 4995 | 4924 |
| 20° | 4859 | 4781 | 4651 |
| 25° | 4660 | 4558 | 4274 |
| 30° | 4416 | 4274 | 3851 |
| 35° | 4183 | 3951 | 3562 |
| 40° | 3944 | 3601 | 3240 |
| 45° | 3719 | 3329 | 2930 |
| 50° | 3443 | 3090 | 2612 |
| 55° | 3185 | 2800 | 2340 |
| 60° | 2917 | 2502 | 2097 |
| 65° | 2567 | 2190 | 1857 |
| 70° | 2115 | 1917 | 1577 |
| 75° | 1680 | 1468 | 1539 |
| 80° | 1128 | 1060 | 986  |
| 85° | 704  | 840  | 988  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3719 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 45.9   | 4.7       |
| 10°-20°   | 125.8  | 13.0      |
| 20°-30°   | 174.2  | 18.0      |
| 30°-40°   | 185.8  | 19.2      |
| 40°-50°   | 169.5  | 17.5      |
| 50°-60°   | 132.8  | 13.7      |
| 60°-70°   | 86.5   | 8.9       |
| 70°-80°   | 38.3   | 4.0       |
| 80°-90°   | 8.2    | 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°    | 345.9  | 35.8      |
| 0°-40°    | 531.7  | 55.0      |
| 0°-60°    | 833.9  | 86.2      |
| 0°-90°    | 967.0  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 967.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 493 | 493   | 493 | 493   | 493 |      |
| 5°  | 484 | 484   | 484 | 483   | 483 | 46   |
| 15° | 453 | 453   | 448 | 444   | 442 | 127  |
| 25° | 392 | 390   | 384 | 370   | 360 | 180  |
| 35° | 318 | 316   | 301 | 278   | 271 | 199  |
| 45° | 244 | 239   | 219 | 200   | 192 | 188  |
| 55° | 170 | 165   | 149 | 132   | 125 | 152  |
| 65° | 101 | 95    | 86  | 88    | 73  | 99   |
| 75° | 40  | 38    | 35  | 34    | 37  | 43   |
| 85° | 6   | 6     | 7   | 7     | 8   | 8    |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 492.6 | 492.6 | 492.6 | 492.6 | 492.6 |
| 2.5°  | 489.2 | 489.2 | 489.2 | 488.6 | 488.6 |
| 5°    | 484.0 | 483.5 | 483.5 | 482.9 | 482.9 |
| 7.5°  | 480.0 | 479.5 | 478.9 | 478.3 | 477.2 |
| 10°   | 474.4 | 474.4 | 473.8 | 470.9 | 470.4 |
| 12.5° | 465.2 | 464.7 | 462.4 | 458.4 | 457.3 |
| 15°   | 452.7 | 452.7 | 448.2 | 443.6 | 441.9 |
| 17.5° | 439.0 | 438.5 | 432.8 | 428.2 | 426.0 |
| 20°   | 424.2 | 423.1 | 417.4 | 410.0 | 406.0 |
| 22.5° | 407.7 | 407.7 | 400.9 | 391.2 | 387.2 |
| 25°   | 392.4 | 390.1 | 383.8 | 370.1 | 359.9 |
| 27.5° | 374.7 | 371.3 | 364.4 | 345.1 | 333.1 |
| 30°   | 355.3 | 353.6 | 343.9 | 318.9 | 309.8 |
| 32.5° | 337.1 | 334.3 | 324.0 | 297.8 | 290.4 |
| 35°   | 318.3 | 316.0 | 300.7 | 277.9 | 271.1 |
| 37.5° | 299.5 | 296.7 | 277.3 | 259.1 | 250.6 |
| 40°   | 280.7 | 277.3 | 256.3 | 239.7 | 230.6 |
| 42.5° | 263.1 | 258.5 | 238.0 | 220.4 | 210.1 |
| 45°   | 244.3 | 239.2 | 218.7 | 200.4 | 192.5 |
| 47.5° | 225.5 | 220.9 | 202.2 | 183.4 | 174.3 |
| 50°   | 205.6 | 201.6 | 184.5 | 165.7 | 156.0 |
| 52.5° | 189.1 | 182.8 | 166.3 | 147.5 | 139.5 |
| 55°   | 169.7 | 164.6 | 149.2 | 131.5 | 124.7 |
| 57.5° | 152.0 | 146.9 | 132.7 | 116.2 | 110.5 |
| 60°   | 135.5 | 128.1 | 116.2 | 101.9 | 97.4  |
| 62.5° | 117.3 | 111.6 | 101.4 | 89.4  | 95.1  |
| 65°   | 100.8 | 95.1  | 86.0  | 87.7  | 72.9  |
| 67.5° | 82.6  | 79.7  | 71.8  | 63.8  | 61.5  |
| 70°   | 67.2  | 63.8  | 60.9  | 52.4  | 50.1  |
| 72.5° | 53.5  | 50.1  | 46.1  | 41.6  | 39.9  |
| 75°   | 40.4  | 37.6  | 35.3  | 33.6  | 37.0  |
| 77.5° | 27.9  | 26.8  | 25.1  | 23.3  | 22.8  |
| 80°   | 18.2  | 17.7  | 17.1  | 16.5  | 15.9  |
| 82.5° | 10.8  | 10.8  | 10.8  | 10.8  | 10.8  |
| 85°   | 5.7   | 6.3   | 6.8   | 7.4   | 8.0   |
| 87.5° | 3.4   | 3.4   | 4.0   | 4.6   | 5.1   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)