

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: P558950

Luminaire Tested: FSR-12-1-LD4-1STD-40-UNV-93-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P558950  
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-93-87-EDD-90  
Description: 1X1 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

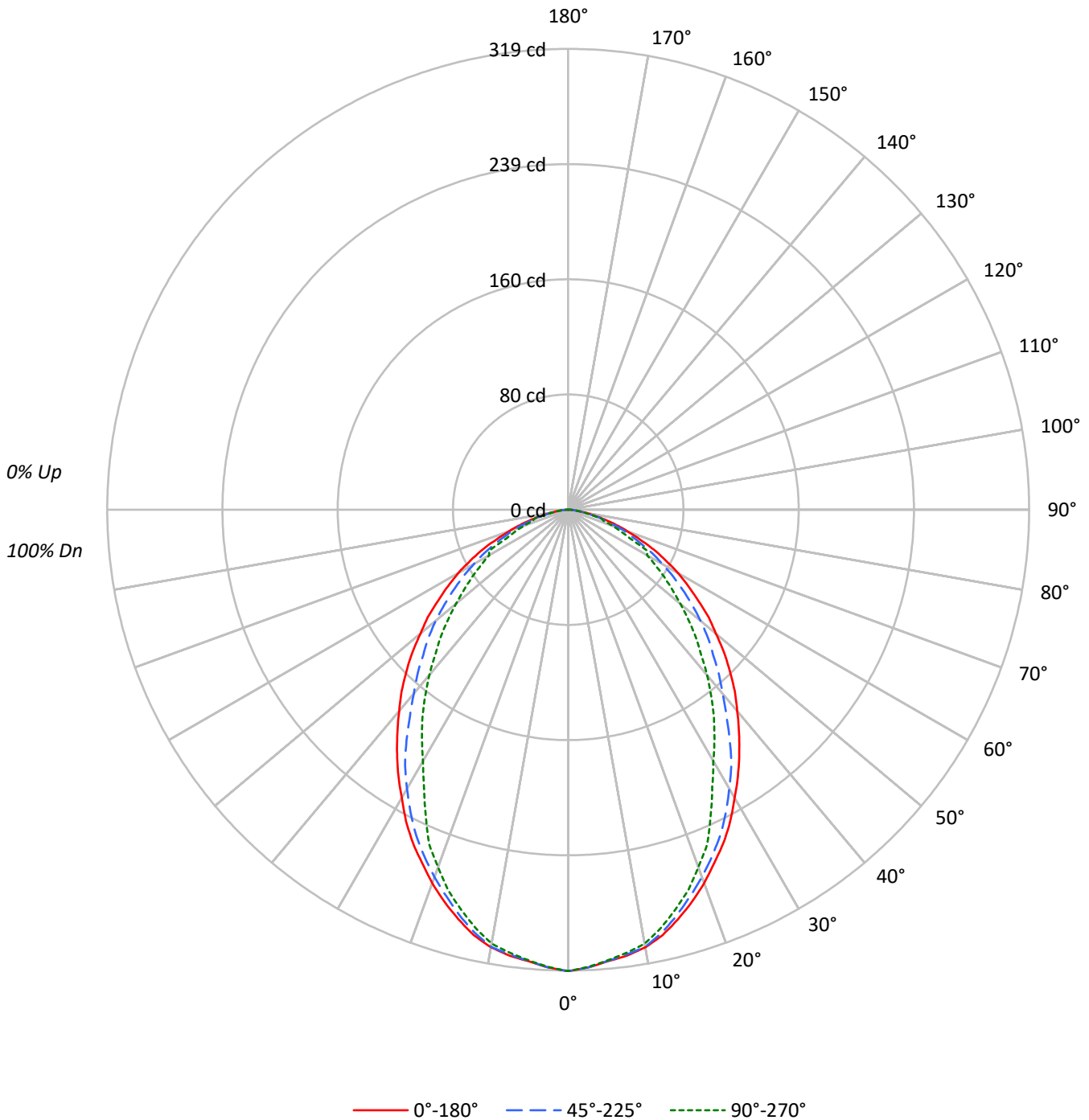
Lumens per Lamp: N/A  
Luminaire Lumens: 627.0 lumens  
Efficiency: N/A  
Efficacy: 75.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 8.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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  | 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°  | 3438 | 3438 | 3438 |
| 5°  | 3391 | 3387 | 3383 |
| 10° | 3362 | 3358 | 3334 |
| 15° | 3271 | 3238 | 3193 |
| 20° | 3151 | 3100 | 3016 |
| 25° | 3021 | 2956 | 2772 |
| 30° | 2864 | 2772 | 2497 |
| 35° | 2712 | 2562 | 2310 |
| 40° | 2557 | 2335 | 2101 |
| 45° | 2411 | 2159 | 1900 |
| 50° | 2232 | 2003 | 1695 |
| 55° | 2064 | 1815 | 1518 |
| 60° | 1892 | 1621 | 1358 |
| 65° | 1666 | 1421 | 1205 |
| 70° | 1372 | 1243 | 1023 |
| 75° | 1090 | 952  | 998  |
| 80° | 731  | 688  | 638  |
| 85° | 457  | 543  | 642  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2411 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 29.7   | 4.7       |
| 10°-20°   | 81.6   | 13.0      |
| 20°-30°   | 113.0  | 18.0      |
| 30°-40°   | 120.4  | 19.2      |
| 40°-50°   | 109.9  | 17.5      |
| 50°-60°   | 86.1   | 13.7      |
| 60°-70°   | 56.1   | 9.0       |
| 70°-80°   | 24.9   | 4.0       |
| 80°-90°   | 5.3    | 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°    | 224.3  | 35.8      |
| 0°-40°    | 344.7  | 55.0      |
| 0°-60°    | 540.7  | 86.2      |
| 0°-90°    | 627.0  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 627.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 319 | 319   | 319 | 319   | 319 |      |
| 5°  | 314 | 314   | 314 | 313   | 313 | 30   |
| 15° | 294 | 294   | 291 | 288   | 286 | 83   |
| 25° | 254 | 253   | 249 | 240   | 233 | 117  |
| 35° | 206 | 205   | 195 | 180   | 176 | 129  |
| 45° | 158 | 155   | 142 | 130   | 125 | 122  |
| 55° | 110 | 107   | 97  | 85    | 81  | 99   |
| 65° | 65  | 62    | 56  | 57    | 47  | 64   |
| 75° | 26  | 24    | 23  | 22    | 24  | 28   |
| 85° | 4   | 4     | 4   | 5     | 5   | 5    |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 319.4 | 319.4 | 319.4 | 319.4 | 319.4 |
| 2.5°  | 317.2 | 317.2 | 317.2 | 316.8 | 316.8 |
| 5°    | 313.8 | 313.5 | 313.5 | 313.1 | 313.1 |
| 7.5°  | 311.3 | 310.9 | 310.5 | 310.2 | 309.4 |
| 10°   | 307.6 | 307.6 | 307.2 | 305.4 | 305.0 |
| 12.5° | 301.7 | 301.3 | 299.8 | 297.2 | 296.5 |
| 15°   | 293.5 | 293.5 | 290.6 | 287.6 | 286.5 |
| 17.5° | 284.7 | 284.3 | 280.6 | 277.7 | 276.2 |
| 20°   | 275.1 | 274.3 | 270.6 | 265.8 | 263.3 |
| 22.5° | 264.4 | 264.4 | 259.9 | 253.7 | 251.1 |
| 25°   | 254.4 | 252.9 | 248.9 | 240.0 | 233.4 |
| 27.5° | 243.0 | 240.7 | 236.3 | 223.8 | 216.0 |
| 30°   | 230.4 | 229.3 | 223.0 | 206.8 | 200.9 |
| 32.5° | 218.6 | 216.7 | 210.1 | 193.1 | 188.3 |
| 35°   | 206.4 | 204.9 | 195.0 | 180.2 | 175.8 |
| 37.5° | 194.2 | 192.4 | 179.8 | 168.0 | 162.5 |
| 40°   | 182.0 | 179.8 | 166.2 | 155.4 | 149.5 |
| 42.5° | 170.6 | 167.6 | 154.3 | 142.9 | 136.2 |
| 45°   | 158.4 | 155.1 | 141.8 | 130.0 | 124.8 |
| 47.5° | 146.2 | 143.3 | 131.1 | 118.9 | 113.0 |
| 50°   | 133.3 | 130.7 | 119.6 | 107.4 | 101.2 |
| 52.5° | 122.6 | 118.5 | 107.8 | 95.6  | 90.5  |
| 55°   | 110.0 | 106.7 | 96.7  | 85.3  | 80.9  |
| 57.5° | 98.6  | 95.3  | 86.0  | 75.3  | 71.6  |
| 60°   | 87.9  | 83.1  | 75.3  | 66.1  | 63.1  |
| 62.5° | 76.1  | 72.4  | 65.7  | 58.0  | 61.7  |
| 65°   | 65.4  | 61.7  | 55.8  | 56.9  | 47.3  |
| 67.5° | 53.5  | 51.7  | 46.5  | 41.4  | 39.9  |
| 70°   | 43.6  | 41.4  | 39.5  | 34.0  | 32.5  |
| 72.5° | 34.7  | 32.5  | 29.9  | 27.0  | 25.8  |
| 75°   | 26.2  | 24.4  | 22.9  | 21.8  | 24.0  |
| 77.5° | 18.1  | 17.4  | 16.2  | 15.1  | 14.8  |
| 80°   | 11.8  | 11.4  | 11.1  | 10.7  | 10.3  |
| 82.5° | 7.0   | 7.0   | 7.0   | 7.0   | 7.0   |
| 85°   | 3.7   | 4.1   | 4.4   | 4.8   | 5.2   |
| 87.5° | 2.2   | 2.2   | 2.6   | 3.0   | 3.3   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)