

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: P559979

Luminaire Tested: FSR-12-2-LD4-1LO-50-UNV-93-94-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P559979  
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-12-2-LD4-1LO-50-UNV-93-94-EDD  
Description: 1X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

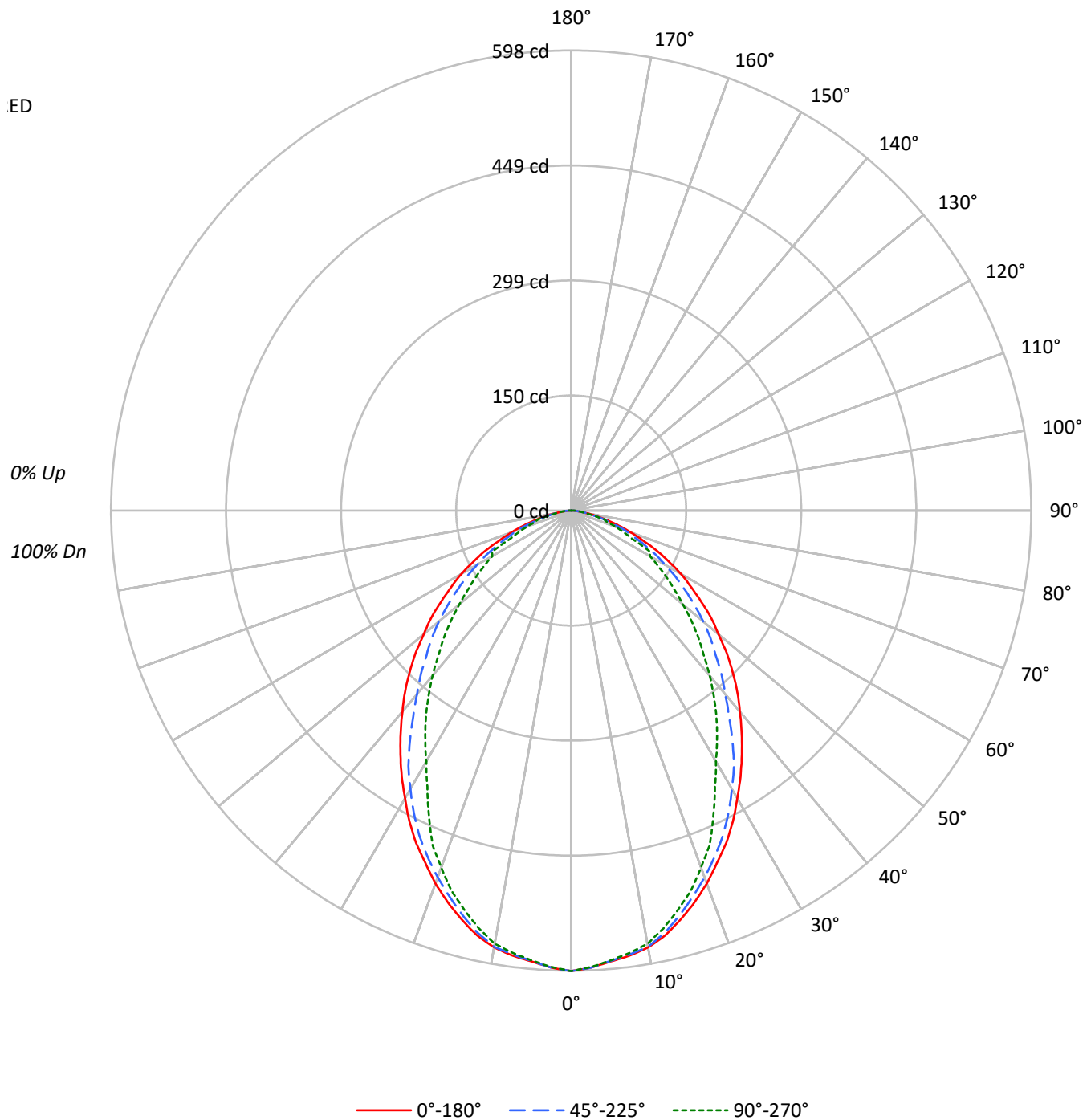
Lumens per Lamp: N/A  
Luminaire Lumens: 1175.0 lumens  
Efficiency: N/A  
Efficacy: 100.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.7  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°  | 3221 | 3221 | 3221 |
| 5°  | 3178 | 3174 | 3170 |
| 10° | 3150 | 3146 | 3123 |
| 15° | 3065 | 3034 | 2992 |
| 20° | 2952 | 2905 | 2826 |
| 25° | 2831 | 2770 | 2597 |
| 30° | 2683 | 2597 | 2339 |
| 35° | 2541 | 2400 | 2164 |
| 40° | 2396 | 2188 | 1969 |
| 45° | 2259 | 2022 | 1780 |
| 50° | 2092 | 1877 | 1587 |
| 55° | 1935 | 1701 | 1422 |
| 60° | 1773 | 1520 | 1273 |
| 65° | 1560 | 1331 | 1128 |
| 70° | 1284 | 1164 | 958  |
| 75° | 1021 | 892  | 936  |
| 80° | 685  | 645  | 601  |
| 85° | 426  | 513  | 599  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2259 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 55.7   | 4.7       |
| 10°-20°   | 152.9  | 13.0      |
| 20°-30°   | 211.7  | 18.0      |
| 30°-40°   | 225.7  | 19.2      |
| 40°-50°   | 205.9  | 17.5      |
| 50°-60°   | 161.3  | 13.7      |
| 60°-70°   | 105.2  | 8.9       |
| 70°-80°   | 46.6   | 4.0       |
| 80°-90°   | 10.0   | 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°    | 420.3  | 35.8      |
| 0°-40°    | 646.0  | 55.0      |
| 0°-60°    | 1013.3 | 86.2      |
| 0°-90°    | 1175.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1175.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 598 | 598   | 598 | 598   | 598 |      |
| 5°  | 588 | 588   | 588 | 587   | 587 | 56   |
| 15° | 550 | 550   | 545 | 539   | 537 | 155  |
| 25° | 477 | 474   | 466 | 450   | 437 | 219  |
| 35° | 387 | 384   | 365 | 338   | 329 | 242  |
| 45° | 297 | 291   | 266 | 244   | 234 | 229  |
| 55° | 206 | 200   | 181 | 160   | 152 | 185  |
| 65° | 122 | 116   | 104 | 107   | 89  | 121  |
| 75° | 49  | 46    | 43  | 41    | 45  | 53   |
| 85° | 7   | 8     | 8   | 9     | 10  | 10   |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 598.5 | 598.5 | 598.5 | 598.5 | 598.5 |
| 2.5°  | 594.4 | 594.4 | 594.4 | 593.7 | 593.7 |
| 5°    | 588.2 | 587.5 | 587.5 | 586.8 | 586.8 |
| 7.5°  | 583.3 | 582.6 | 581.9 | 581.2 | 579.8 |
| 10°   | 576.4 | 576.4 | 575.7 | 572.2 | 571.5 |
| 12.5° | 565.3 | 564.6 | 561.9 | 557.0 | 555.6 |
| 15°   | 550.1 | 550.1 | 544.6 | 539.0 | 536.9 |
| 17.5° | 533.5 | 532.8 | 525.9 | 520.3 | 517.6 |
| 20°   | 515.5 | 514.1 | 507.2 | 498.2 | 493.4 |
| 22.5° | 495.4 | 495.4 | 487.1 | 475.4 | 470.5 |
| 25°   | 476.7 | 474.0 | 466.4 | 449.8 | 437.3 |
| 27.5° | 455.3 | 451.1 | 442.8 | 419.3 | 404.8 |
| 30°   | 431.8 | 429.7 | 417.9 | 387.5 | 376.4 |
| 32.5° | 409.6 | 406.2 | 393.7 | 361.9 | 352.9 |
| 35°   | 386.8 | 384.0 | 365.3 | 337.7 | 329.4 |
| 37.5° | 364.0 | 360.5 | 337.0 | 314.8 | 304.5 |
| 40°   | 341.1 | 337.0 | 311.4 | 291.3 | 280.2 |
| 42.5° | 319.7 | 314.1 | 289.2 | 267.8 | 255.3 |
| 45°   | 296.8 | 290.6 | 265.7 | 243.6 | 233.9 |
| 47.5° | 274.0 | 268.5 | 245.6 | 222.8 | 211.7 |
| 50°   | 249.8 | 244.9 | 224.2 | 201.4 | 189.6 |
| 52.5° | 229.7 | 222.1 | 202.0 | 179.2 | 169.5 |
| 55°   | 206.2 | 200.0 | 181.3 | 159.8 | 151.5 |
| 57.5° | 184.7 | 178.5 | 161.2 | 141.2 | 134.2 |
| 60°   | 164.7 | 155.7 | 141.2 | 123.9 | 118.3 |
| 62.5° | 142.5 | 135.6 | 123.2 | 108.6 | 115.6 |
| 65°   | 122.5 | 115.6 | 104.5 | 106.6 | 88.6  |
| 67.5° | 100.3 | 96.9  | 87.2  | 77.5  | 74.7  |
| 70°   | 81.6  | 77.5  | 74.0  | 63.7  | 60.9  |
| 72.5° | 65.0  | 60.9  | 56.0  | 50.5  | 48.4  |
| 75°   | 49.1  | 45.7  | 42.9  | 40.8  | 45.0  |
| 77.5° | 33.9  | 32.5  | 30.4  | 28.4  | 27.7  |
| 80°   | 22.1  | 21.5  | 20.8  | 20.1  | 19.4  |
| 82.5° | 13.1  | 13.1  | 13.1  | 13.1  | 13.1  |
| 85°   | 6.9   | 7.6   | 8.3   | 9.0   | 9.7   |
| 87.5° | 4.2   | 4.2   | 4.8   | 5.5   | 6.2   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)