

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: P559875

Luminaire Tested: FSR-12-2-LD4-1LO-40-UNV-81-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P559875  
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-40-UNV-81-85-EDD  
Description: 1X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

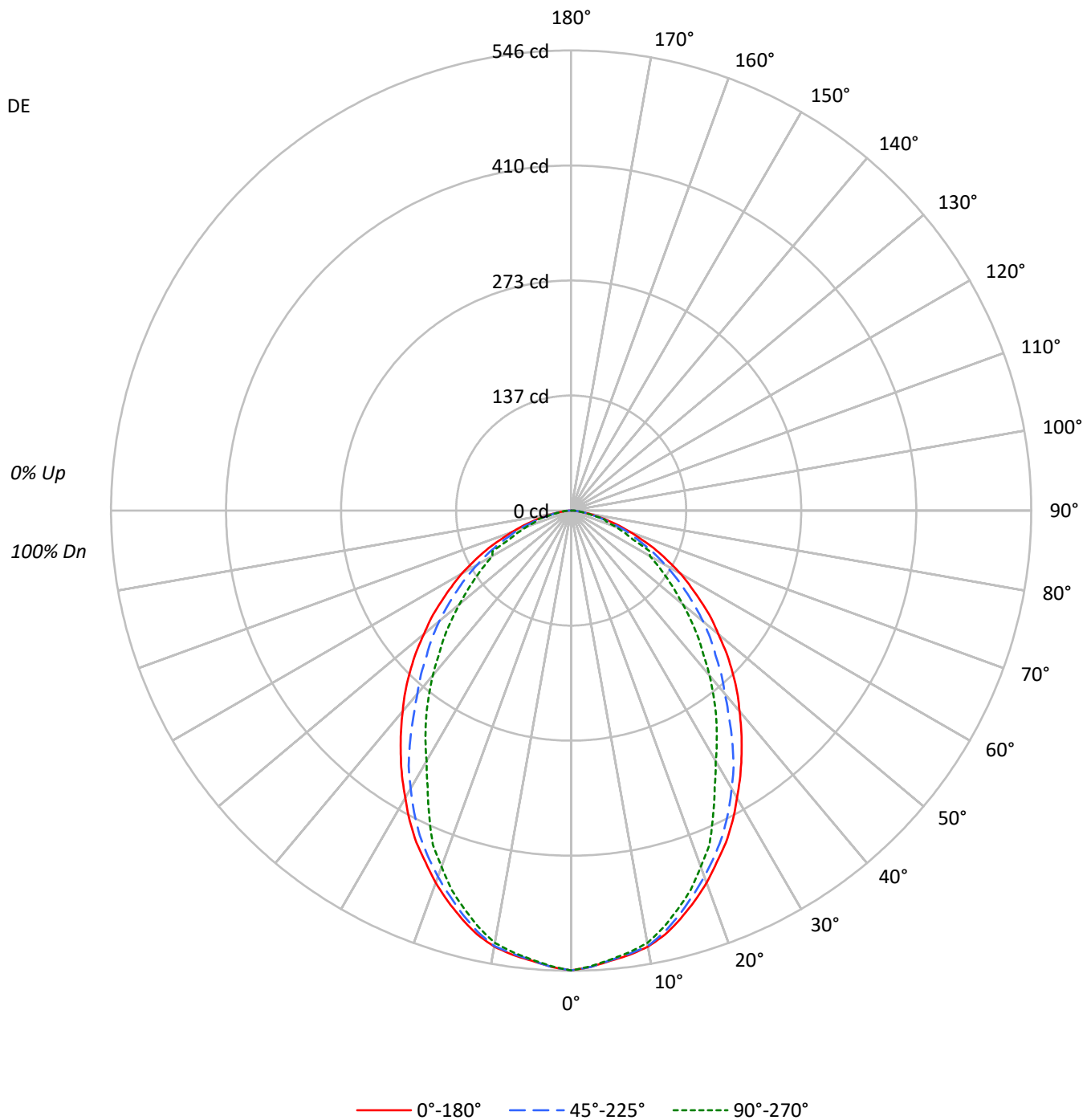
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1071.0 lumens  
Efficiency: N/A  
Efficacy: 91.5 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  | 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°  | 2936 | 2936 | 2936 |
| 5°  | 2896 | 2893 | 2889 |
| 10° | 2871 | 2867 | 2847 |
| 15° | 2794 | 2766 | 2727 |
| 20° | 2691 | 2648 | 2576 |
| 25° | 2581 | 2524 | 2367 |
| 30° | 2446 | 2367 | 2132 |
| 35° | 2317 | 2188 | 1972 |
| 40° | 2184 | 1994 | 1794 |
| 45° | 2060 | 1843 | 1623 |
| 50° | 1906 | 1711 | 1447 |
| 55° | 1763 | 1550 | 1296 |
| 60° | 1616 | 1385 | 1160 |
| 65° | 1421 | 1212 | 1028 |
| 70° | 1171 | 1062 | 873  |
| 75° | 932  | 813  | 853  |
| 80° | 626  | 586  | 549  |
| 85° | 389  | 469  | 543  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2060 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 50.8   | 4.7       |
| 10°-20°   | 139.4  | 13.0      |
| 20°-30°   | 193.0  | 18.0      |
| 30°-40°   | 205.7  | 19.2      |
| 40°-50°   | 187.7  | 17.5      |
| 50°-60°   | 147.1  | 13.7      |
| 60°-70°   | 95.8   | 8.9       |
| 70°-80°   | 42.5   | 4.0       |
| 80°-90°   | 9.1    | 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°    | 383.1  | 35.8      |
| 0°-40°    | 588.8  | 55.0      |
| 0°-60°    | 923.6  | 86.2      |
| 0°-90°    | 1071.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1071.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 546 | 546   | 546 | 546   | 546 |      |
| 5°  | 536 | 536   | 536 | 535   | 535 | 51   |
| 15° | 501 | 501   | 496 | 491   | 489 | 141  |
| 25° | 435 | 432   | 425 | 410   | 399 | 200  |
| 35° | 353 | 350   | 333 | 308   | 300 | 220  |
| 45° | 271 | 265   | 242 | 222   | 213 | 208  |
| 55° | 188 | 182   | 165 | 146   | 138 | 169  |
| 65° | 112 | 105   | 95  | 97    | 81  | 110  |
| 75° | 45  | 42    | 39  | 37    | 41  | 48   |
| 85° | 6   | 7     | 8   | 8     | 9   | 9    |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



TEST NUMBER: P559875

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 545.6 | 545.6 | 545.6 | 545.6 | 545.6 |
| 2.5°  | 541.8 | 541.8 | 541.8 | 541.1 | 541.1 |
| 5°    | 536.1 | 535.5 | 535.5 | 534.8 | 534.8 |
| 7.5°  | 531.7 | 531.0 | 530.4 | 529.8 | 528.5 |
| 10°   | 525.4 | 525.4 | 524.7 | 521.6 | 521.0 |
| 12.5° | 515.3 | 514.6 | 512.1 | 507.7 | 506.4 |
| 15°   | 501.4 | 501.4 | 496.4 | 491.3 | 489.4 |
| 17.5° | 486.3 | 485.6 | 479.3 | 474.3 | 471.8 |
| 20°   | 469.9 | 468.6 | 462.3 | 454.1 | 449.7 |
| 22.5° | 451.6 | 451.6 | 444.0 | 433.3 | 428.9 |
| 25°   | 434.6 | 432.0 | 425.1 | 410.0 | 398.6 |
| 27.5° | 415.0 | 411.2 | 403.6 | 382.2 | 369.0 |
| 30°   | 393.6 | 391.7 | 380.9 | 353.2 | 343.1 |
| 32.5° | 373.4 | 370.2 | 358.9 | 329.9 | 321.7 |
| 35°   | 352.6 | 350.0 | 333.0 | 307.8 | 300.2 |
| 37.5° | 331.7 | 328.6 | 307.1 | 287.0 | 277.5 |
| 40°   | 310.9 | 307.1 | 283.8 | 265.5 | 255.4 |
| 42.5° | 291.4 | 286.3 | 263.6 | 244.1 | 232.7 |
| 45°   | 270.6 | 264.9 | 242.2 | 222.0 | 213.2 |
| 47.5° | 249.8 | 244.7 | 223.9 | 203.1 | 193.0 |
| 50°   | 227.7 | 223.3 | 204.3 | 183.5 | 172.8 |
| 52.5° | 209.4 | 202.5 | 184.2 | 163.4 | 154.5 |
| 55°   | 187.9 | 182.3 | 165.2 | 145.7 | 138.1 |
| 57.5° | 168.4 | 162.7 | 147.0 | 128.7 | 122.4 |
| 60°   | 150.1 | 141.9 | 128.7 | 112.9 | 107.8 |
| 62.5° | 129.9 | 123.6 | 112.3 | 99.0  | 105.3 |
| 65°   | 111.6 | 105.3 | 95.2  | 97.1  | 80.7  |
| 67.5° | 91.5  | 88.3  | 79.5  | 70.6  | 68.1  |
| 70°   | 74.4  | 70.6  | 67.5  | 58.0  | 55.5  |
| 72.5° | 59.3  | 55.5  | 51.1  | 46.0  | 44.1  |
| 75°   | 44.8  | 41.6  | 39.1  | 37.2  | 41.0  |
| 77.5° | 30.9  | 29.6  | 27.8  | 25.9  | 25.2  |
| 80°   | 20.2  | 19.6  | 18.9  | 18.3  | 17.7  |
| 82.5° | 12.0  | 12.0  | 12.0  | 12.0  | 12.0  |
| 85°   | 6.3   | 6.9   | 7.6   | 8.2   | 8.8   |
| 87.5° | 3.8   | 3.8   | 4.4   | 5.0   | 5.7   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)