

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: P559326

Luminaire Tested: FSR-12-1-LD4-2LO-40-UNV-82-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P559326  
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-LD4-2LO-40-UNV-82-97-EDD-90  
Description: 1X1 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

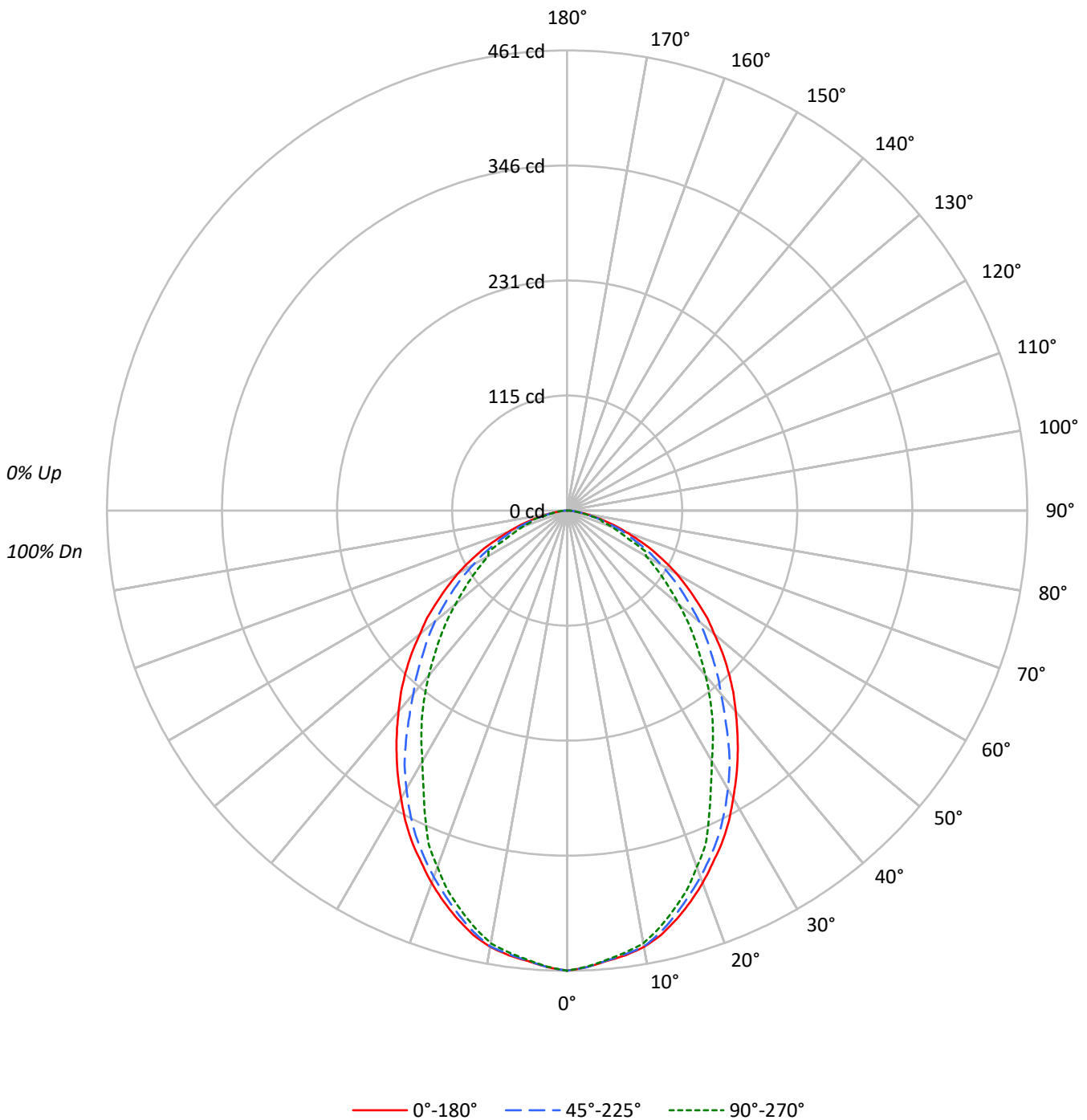
Lumens per Lamp: N/A  
Luminaire Lumens: 905.0 lumens  
Efficiency: N/A  
Efficacy: 77.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.7  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P559326

CATALOG NUMBER: FSR-12-1-LD4-2LO-40-UNV-82-97-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P559326

CATALOG NUMBER: FSR-12-1-LD4-2LO-40-UNV-82-97-EDD-90

**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  | 0   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1   | 110 | 106 | 102 | 99  | 108 | 104 | 100 | 97  | 100 | 97  | 94  | 96  | 94  | 91  | 92  | 90  | 89  | 87  |
| 2   | 101 | 94  | 88  | 83  | 99  | 92  | 87  | 82  | 89  | 84  | 80  | 86  | 82  | 78  | 83  | 79  | 77  | 75  |
| 3   | 93  | 84  | 77  | 71  | 91  | 82  | 76  | 70  | 79  | 74  | 69  | 77  | 72  | 68  | 74  | 70  | 67  | 65  |
| 4   | 86  | 75  | 67  | 61  | 84  | 74  | 66  | 61  | 72  | 65  | 60  | 69  | 64  | 59  | 67  | 62  | 58  | 56  |
| 5   | 80  | 68  | 60  | 54  | 78  | 67  | 59  | 53  | 65  | 58  | 53  | 63  | 57  | 52  | 61  | 56  | 52  | 50  |
| 6   | 74  | 62  | 53  | 48  | 72  | 61  | 53  | 47  | 59  | 52  | 47  | 57  | 51  | 47  | 56  | 50  | 46  | 44  |
| 7   | 69  | 56  | 48  | 43  | 67  | 56  | 48  | 42  | 54  | 47  | 42  | 53  | 46  | 42  | 51  | 46  | 42  | 40  |
| 8   | 65  | 52  | 44  | 38  | 63  | 51  | 44  | 38  | 50  | 43  | 38  | 49  | 42  | 38  | 48  | 42  | 38  | 36  |
| 9   | 61  | 48  | 40  | 35  | 59  | 47  | 40  | 35  | 46  | 39  | 35  | 45  | 39  | 34  | 44  | 38  | 34  | 33  |
| 10  | 57  | 44  | 37  | 32  | 56  | 44  | 37  | 32  | 43  | 36  | 32  | 42  | 36  | 32  | 41  | 36  | 32  | 30  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 4962 | 4962 | 4962 |
| 5°  | 4895 | 4889 | 4883 |
| 10° | 4852 | 4846 | 4811 |
| 15° | 4722 | 4674 | 4609 |
| 20° | 4548 | 4474 | 4353 |
| 25° | 4361 | 4266 | 4000 |
| 30° | 4134 | 4001 | 3603 |
| 35° | 3914 | 3698 | 3334 |
| 40° | 3691 | 3370 | 3032 |
| 45° | 3480 | 3115 | 2742 |
| 50° | 3222 | 2892 | 2445 |
| 55° | 2980 | 2620 | 2190 |
| 60° | 2730 | 2340 | 1961 |
| 65° | 2402 | 2050 | 1737 |
| 70° | 1980 | 1794 | 1476 |
| 75° | 1572 | 1372 | 1439 |
| 80° | 1060 | 992  | 924  |
| 85° | 655  | 790  | 926  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3480 cd/sqm



TEST NUMBER: P559326

CATALOG NUMBER: FSR-12-1-LD4-2LO-40-UNV-82-97-EDD-90

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 42.9   | 4.7       |
| 10°-20°   | 117.8  | 13.0      |
| 20°-30°   | 163.0  | 18.0      |
| 30°-40°   | 173.8  | 19.2      |
| 40°-50°   | 158.6  | 17.5      |
| 50°-60°   | 124.2  | 13.7      |
| 60°-70°   | 81.0   | 8.9       |
| 70°-80°   | 35.9   | 4.0       |
| 80°-90°   | 7.7    | 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°    | 323.7  | 35.8      |
| 0°-40°    | 497.6  | 55.0      |
| 0°-60°    | 780.4  | 86.2      |
| 0°-90°    | 905.0  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 905.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 461 | 461   | 461 | 461   | 461 |      |
| 5°  | 453 | 452   | 452 | 452   | 452 | 43   |
| 15° | 424 | 424   | 419 | 415   | 414 | 119  |
| 25° | 367 | 365   | 359 | 346   | 337 | 169  |
| 35° | 298 | 296   | 281 | 260   | 254 | 186  |
| 45° | 229 | 224   | 205 | 188   | 180 | 176  |
| 55° | 159 | 154   | 140 | 123   | 117 | 142  |
| 65° | 94  | 89    | 80  | 82    | 68  | 93   |
| 75° | 38  | 35    | 33  | 31    | 35  | 41   |
| 85° | 5   | 6     | 6   | 7     | 8   | 7    |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



TEST NUMBER: P559326

CATALOG NUMBER: FSR-12-1-LD4-2LO-40-UNV-82-97-EDD-90

**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 461.0 | 461.0 | 461.0 | 461.0 | 461.0 |
| 2.5°  | 457.8 | 457.8 | 457.8 | 457.3 | 457.3 |
| 5°    | 453.0 | 452.5 | 452.5 | 451.9 | 451.9 |
| 7.5°  | 449.3 | 448.7 | 448.2 | 447.7 | 446.6 |
| 10°   | 443.9 | 443.9 | 443.4 | 440.7 | 440.2 |
| 12.5° | 435.4 | 434.9 | 432.7 | 429.0 | 428.0 |
| 15°   | 423.7 | 423.7 | 419.4 | 415.2 | 413.6 |
| 17.5° | 410.9 | 410.4 | 405.0 | 400.8 | 398.6 |
| 20°   | 397.0 | 396.0 | 390.6 | 383.7 | 380.0 |
| 22.5° | 381.6 | 381.6 | 375.2 | 366.1 | 362.4 |
| 25°   | 367.2 | 365.1 | 359.2 | 346.4 | 336.8 |
| 27.5° | 350.7 | 347.5 | 341.1 | 323.0 | 311.8 |
| 30°   | 332.6 | 331.0 | 321.9 | 298.4 | 289.9 |
| 32.5° | 315.5 | 312.8 | 303.2 | 278.7 | 271.8 |
| 35°   | 297.9 | 295.8 | 281.4 | 260.1 | 253.7 |
| 37.5° | 280.3 | 277.7 | 259.5 | 242.5 | 234.5 |
| 40°   | 262.7 | 259.5 | 239.8 | 224.4 | 215.8 |
| 42.5° | 246.2 | 242.0 | 222.8 | 206.2 | 196.7 |
| 45°   | 228.6 | 223.8 | 204.6 | 187.6 | 180.1 |
| 47.5° | 211.0 | 206.8 | 189.2 | 171.6 | 163.1 |
| 50°   | 192.4 | 188.7 | 172.7 | 155.1 | 146.0 |
| 52.5° | 176.9 | 171.1 | 155.6 | 138.0 | 130.6 |
| 55°   | 158.8 | 154.0 | 139.6 | 123.1 | 116.7 |
| 57.5° | 142.3 | 137.5 | 124.2 | 108.7 | 103.4 |
| 60°   | 126.8 | 119.9 | 108.7 | 95.4  | 91.1  |
| 62.5° | 109.8 | 104.5 | 94.9  | 83.7  | 89.0  |
| 65°   | 94.3  | 89.0  | 80.5  | 82.1  | 68.2  |
| 67.5° | 77.3  | 74.6  | 67.2  | 59.7  | 57.6  |
| 70°   | 62.9  | 59.7  | 57.0  | 49.0  | 46.9  |
| 72.5° | 50.1  | 46.9  | 43.2  | 38.9  | 37.3  |
| 75°   | 37.8  | 35.2  | 33.0  | 31.4  | 34.6  |
| 77.5° | 26.1  | 25.0  | 23.4  | 21.9  | 21.3  |
| 80°   | 17.1  | 16.5  | 16.0  | 15.5  | 14.9  |
| 82.5° | 10.1  | 10.1  | 10.1  | 10.1  | 10.1  |
| 85°   | 5.3   | 5.9   | 6.4   | 6.9   | 7.5   |
| 87.5° | 3.2   | 3.2   | 3.7   | 4.3   | 4.8   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)