

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: P559543

Luminaire Tested: FSR-12-1-LD4-2STD-50-UNV-80-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P559543  
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-LD4-2STD-50-UNV-80-87-EDD  
Description: 1X1 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

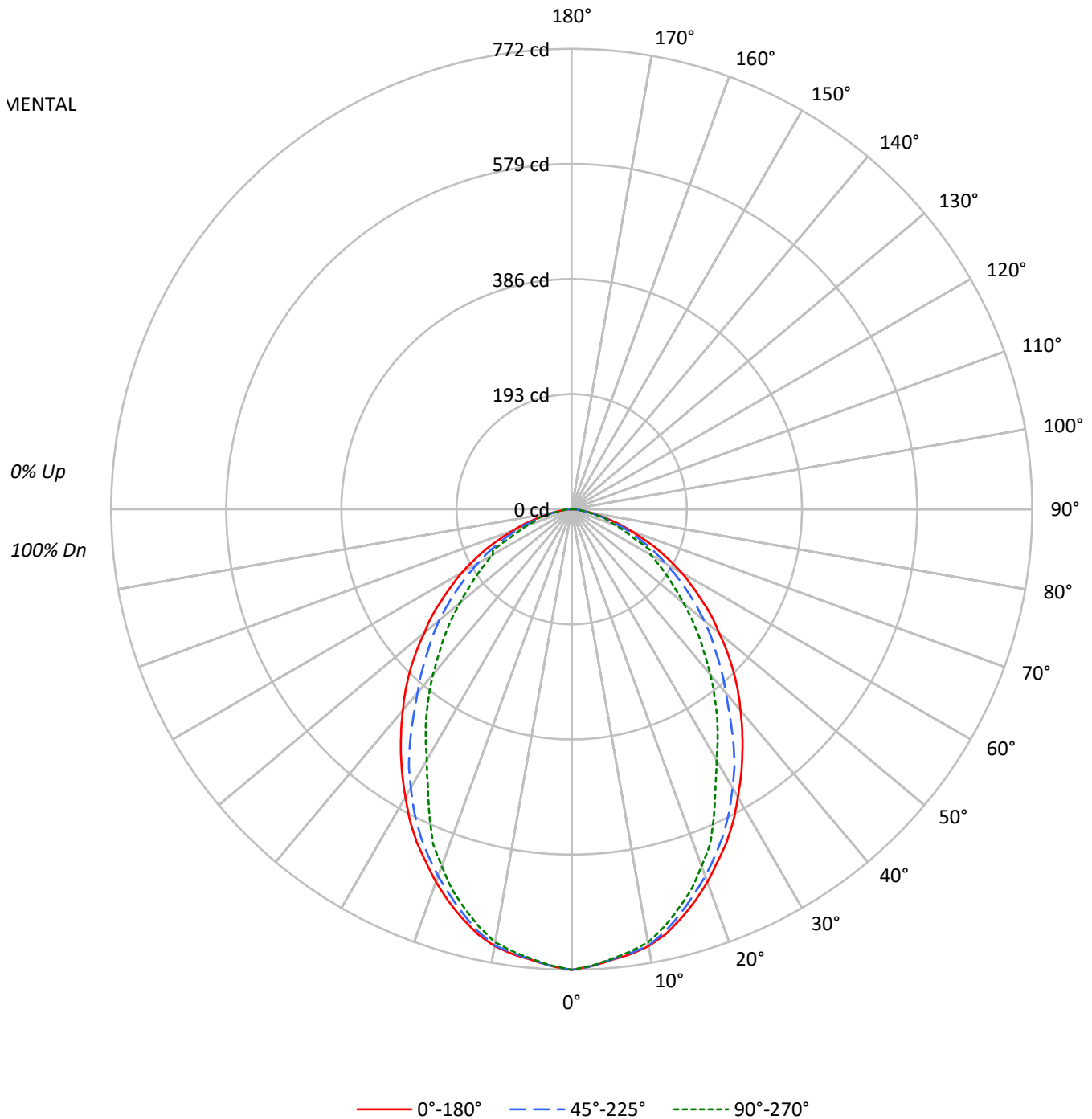
Lumens per Lamp: N/A  
Luminaire Lumens: 1516.0 lumens  
Efficiency: N/A  
Efficacy: 91.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 16.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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  | 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°  | 8312 | 8312 | 8312 |
| 5°  | 8199 | 8189 | 8180 |
| 10° | 8129 | 8119 | 8060 |
| 15° | 7909 | 7830 | 7720 |
| 20° | 7619 | 7496 | 7291 |
| 25° | 7305 | 7146 | 6701 |
| 30° | 6924 | 6702 | 6037 |
| 35° | 6557 | 6194 | 5583 |
| 40° | 6184 | 5644 | 5081 |
| 45° | 5830 | 5218 | 4594 |
| 50° | 5397 | 4845 | 4096 |
| 55° | 4992 | 4389 | 3669 |
| 60° | 4575 | 3920 | 3287 |
| 65° | 4024 | 3433 | 2911 |
| 70° | 3314 | 3006 | 2474 |
| 75° | 2637 | 2304 | 2412 |
| 80° | 1773 | 1661 | 1550 |
| 85° | 1099 | 1321 | 1544 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5830 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 71.9   | 4.7       |
| 10°-20°   | 197.3  | 13.0      |
| 20°-30°   | 273.1  | 18.0      |
| 30°-40°   | 291.2  | 19.2      |
| 40°-50°   | 265.7  | 17.5      |
| 50°-60°   | 208.1  | 13.7      |
| 60°-70°   | 135.7  | 8.9       |
| 70°-80°   | 60.1   | 4.0       |
| 80°-90°   | 12.9   | 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°    | 542.3  | 35.8      |
| 0°-40°    | 833.5  | 55.0      |
| 0°-60°    | 1307.3 | 86.2      |
| 0°-90°    | 1516.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1516.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 772 | 772   | 772 | 772   | 772 |      |
| 5°  | 759 | 758   | 758 | 757   | 757 | 72   |
| 15° | 710 | 710   | 703 | 696   | 693 | 200  |
| 25° | 615 | 612   | 602 | 580   | 564 | 282  |
| 35° | 499 | 496   | 471 | 436   | 425 | 312  |
| 45° | 383 | 375   | 343 | 314   | 302 | 295  |
| 55° | 266 | 258   | 234 | 206   | 196 | 239  |
| 65° | 158 | 149   | 135 | 138   | 114 | 156  |
| 75° | 63  | 59    | 55  | 53    | 58  | 68   |
| 85° | 9   | 10    | 11  | 12    | 12  | 12   |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 772.2 | 772.2 | 772.2 | 772.2 | 772.2 |
| 2.5°  | 766.9 | 766.9 | 766.9 | 766.0 | 766.0 |
| 5°    | 758.8 | 757.9 | 757.9 | 757.1 | 757.1 |
| 7.5°  | 752.6 | 751.7 | 750.8 | 749.9 | 748.1 |
| 10°   | 743.7 | 743.7 | 742.8 | 738.3 | 737.4 |
| 12.5° | 729.4 | 728.5 | 724.9 | 718.7 | 716.9 |
| 15°   | 709.7 | 709.7 | 702.6 | 695.5 | 692.8 |
| 17.5° | 688.3 | 687.4 | 678.5 | 671.3 | 667.8 |
| 20°   | 665.1 | 663.3 | 654.4 | 642.8 | 636.5 |
| 22.5° | 639.2 | 639.2 | 628.5 | 613.3 | 607.1 |
| 25°   | 615.1 | 611.5 | 601.7 | 580.3 | 564.2 |
| 27.5° | 587.4 | 582.1 | 571.4 | 541.0 | 522.3 |
| 30°   | 557.1 | 554.4 | 539.2 | 499.9 | 485.7 |
| 32.5° | 528.5 | 524.0 | 508.0 | 466.9 | 455.3 |
| 35°   | 499.0 | 495.5 | 471.4 | 435.7 | 424.9 |
| 37.5° | 469.6 | 465.1 | 434.8 | 406.2 | 392.8 |
| 40°   | 440.1 | 434.8 | 401.7 | 375.8 | 361.6 |
| 42.5° | 412.5 | 405.3 | 373.2 | 345.5 | 329.4 |
| 45°   | 383.0 | 375.0 | 342.8 | 314.2 | 301.8 |
| 47.5° | 353.5 | 346.4 | 316.9 | 287.5 | 273.2 |
| 50°   | 322.3 | 316.0 | 289.3 | 259.8 | 244.6 |
| 52.5° | 296.4 | 286.6 | 260.7 | 231.2 | 218.7 |
| 55°   | 266.0 | 258.0 | 233.9 | 206.2 | 195.5 |
| 57.5° | 238.4 | 230.3 | 208.0 | 182.1 | 173.2 |
| 60°   | 212.5 | 200.9 | 182.1 | 159.8 | 152.7 |
| 62.5° | 183.9 | 175.0 | 158.9 | 140.2 | 149.1 |
| 65°   | 158.0 | 149.1 | 134.8 | 137.5 | 114.3 |
| 67.5° | 129.4 | 125.0 | 112.5 | 100.0 | 96.4  |
| 70°   | 105.3 | 100.0 | 95.5  | 82.1  | 78.6  |
| 72.5° | 83.9  | 78.6  | 72.3  | 65.2  | 62.5  |
| 75°   | 63.4  | 58.9  | 55.4  | 52.7  | 58.0  |
| 77.5° | 43.7  | 42.0  | 39.3  | 36.6  | 35.7  |
| 80°   | 28.6  | 27.7  | 26.8  | 25.9  | 25.0  |
| 82.5° | 17.0  | 17.0  | 17.0  | 17.0  | 17.0  |
| 85°   | 8.9   | 9.8   | 10.7  | 11.6  | 12.5  |
| 87.5° | 5.4   | 5.4   | 6.2   | 7.1   | 8.0   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)