

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: P559989

Luminaire Tested: FSR-12-2-LD4-1STD-35-UNV-80-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P559989  
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-LD4-1STD-35-UNV-80-86-EDD  
Description: 1X2 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1478.0 lumens  
Efficiency: N/A  
Efficacy: 89.0 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

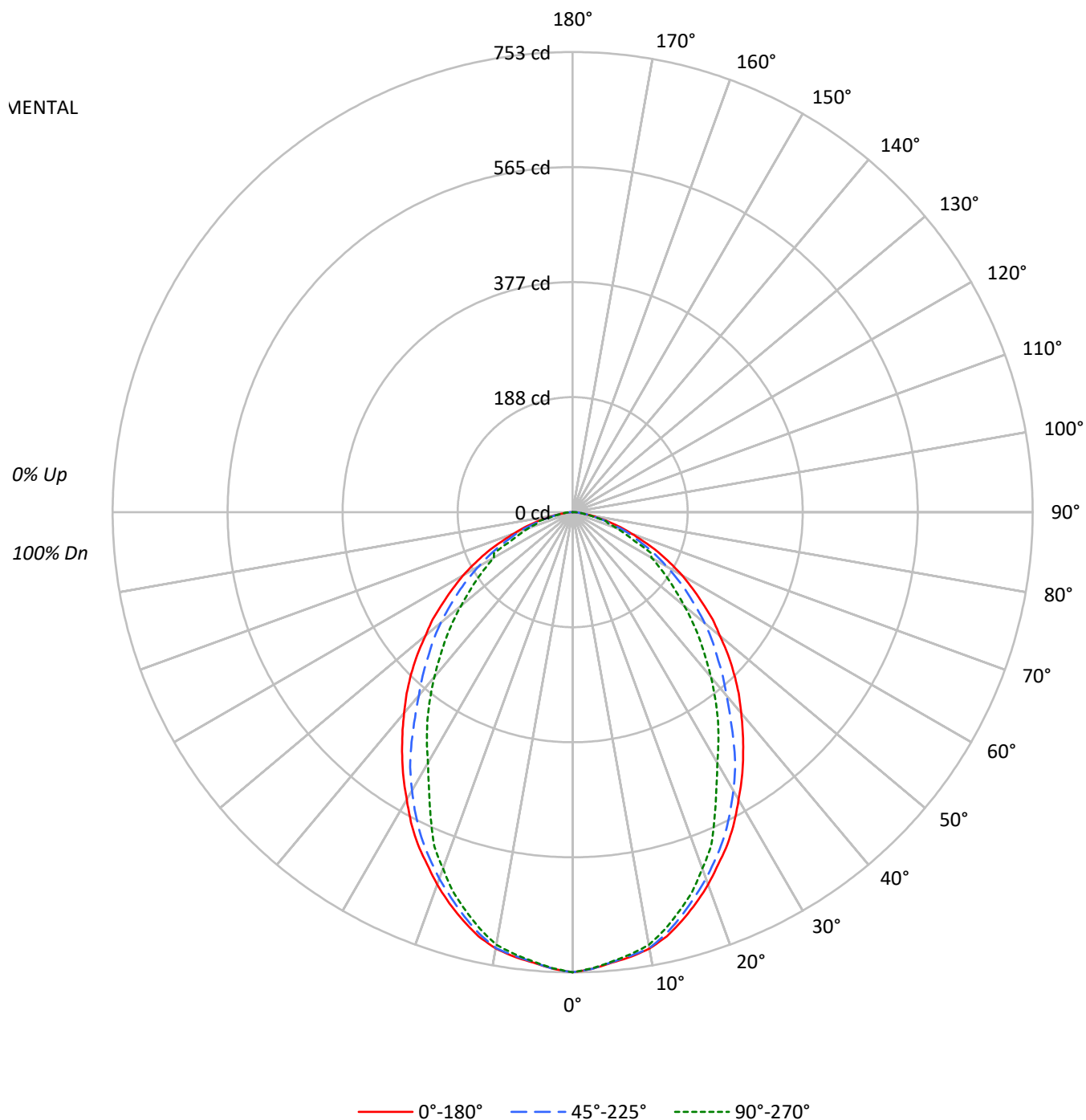
Input Watts (W): 16.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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  |     |  |  |
| 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°  | 4052 | 4052 | 4052 |
| 5°  | 3997 | 3992 | 3988 |
| 10° | 3962 | 3958 | 3929 |
| 15° | 3855 | 3817 | 3763 |
| 20° | 3714 | 3654 | 3554 |
| 25° | 3561 | 3483 | 3267 |
| 30° | 3375 | 3267 | 2943 |
| 35° | 3196 | 3020 | 2722 |
| 40° | 3015 | 2752 | 2477 |
| 45° | 2842 | 2544 | 2239 |
| 50° | 2631 | 2361 | 1997 |
| 55° | 2434 | 2139 | 1788 |
| 60° | 2229 | 1912 | 1602 |
| 65° | 1962 | 1673 | 1419 |
| 70° | 1616 | 1465 | 1205 |
| 75° | 1285 | 1123 | 1177 |
| 80° | 865  | 809  | 756  |
| 85° | 537  | 642  | 753  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle:  $0^\circ$ 

Vertical Angle:  $45^\circ$

Luminance: 2842 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 70.1   | 4.7       |
| 10°-20°   | 192.3  | 13.0      |
| 20°-30°   | 266.3  | 18.0      |
| 30°-40°   | 283.9  | 19.2      |
| 40°-50°   | 259.0  | 17.5      |
| 50°-60°   | 202.9  | 13.7      |
| 60°-70°   | 132.3  | 8.9       |
| 70°-80°   | 58.6   | 4.0       |
| 80°-90°   | 12.6   | 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°    | 528.7  | 35.8      |
| 0°-40°    | 812.6  | 55.0      |
| 0°-60°    | 1274.6 | 86.2      |
| 0°-90°    | 1478.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1478.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 753 | 753   | 753 | 753   | 753 |      |
| 5°  | 740 | 739   | 739 | 738   | 738 | 70   |
| 15° | 692 | 692   | 685 | 678   | 675 | 195  |
| 25° | 600 | 596   | 587 | 566   | 550 | 275  |
| 35° | 486 | 483   | 460 | 425   | 414 | 304  |
| 45° | 373 | 366   | 334 | 306   | 294 | 288  |
| 55° | 259 | 252   | 228 | 201   | 191 | 233  |
| 65° | 154 | 145   | 131 | 134   | 111 | 152  |
| 75° | 62  | 57    | 54  | 51    | 57  | 66   |
| 85° | 9   | 10    | 10  | 11    | 12  | 12   |
| 90° | 0   | 0     | 0   | 0     | 0   |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 752.9 | 752.9 | 752.9 | 752.9 | 752.9 |
| 2.5°  | 747.7 | 747.7 | 747.7 | 746.8 | 746.8 |
| 5°    | 739.8 | 738.9 | 738.9 | 738.1 | 738.1 |
| 7.5°  | 733.7 | 732.9 | 732.0 | 731.1 | 729.4 |
| 10°   | 725.0 | 725.0 | 724.2 | 719.8 | 718.9 |
| 12.5° | 711.1 | 710.2 | 706.7 | 700.7 | 698.9 |
| 15°   | 691.9 | 691.9 | 685.0 | 678.0 | 675.4 |
| 17.5° | 671.1 | 670.2 | 661.5 | 654.5 | 651.0 |
| 20°   | 648.4 | 646.7 | 638.0 | 626.7 | 620.6 |
| 22.5° | 623.2 | 623.2 | 612.7 | 597.9 | 591.9 |
| 25°   | 599.7 | 596.2 | 586.6 | 565.7 | 550.1 |
| 27.5° | 572.7 | 567.5 | 557.0 | 527.4 | 509.2 |
| 30°   | 543.1 | 540.5 | 525.7 | 487.4 | 473.5 |
| 32.5° | 515.3 | 510.9 | 495.2 | 455.2 | 443.9 |
| 35°   | 486.5 | 483.1 | 459.6 | 424.7 | 414.3 |
| 37.5° | 457.8 | 453.5 | 423.9 | 396.0 | 383.0 |
| 40°   | 429.1 | 423.9 | 391.7 | 366.4 | 352.5 |
| 42.5° | 402.1 | 395.1 | 363.8 | 336.8 | 321.2 |
| 45°   | 373.4 | 365.6 | 334.2 | 306.4 | 294.2 |
| 47.5° | 344.7 | 337.7 | 309.0 | 280.3 | 266.3 |
| 50°   | 314.2 | 308.1 | 282.0 | 253.3 | 238.5 |
| 52.5° | 289.0 | 279.4 | 254.1 | 225.4 | 213.2 |
| 55°   | 259.4 | 251.5 | 228.0 | 201.1 | 190.6 |
| 57.5° | 232.4 | 224.6 | 202.8 | 177.6 | 168.9 |
| 60°   | 207.1 | 195.8 | 177.6 | 155.8 | 148.8 |
| 62.5° | 179.3 | 170.6 | 154.9 | 136.6 | 145.4 |
| 65°   | 154.1 | 145.4 | 131.4 | 134.0 | 111.4 |
| 67.5° | 126.2 | 121.9 | 109.7 | 97.5  | 94.0  |
| 70°   | 102.7 | 97.5  | 93.1  | 80.1  | 76.6  |
| 72.5° | 81.8  | 76.6  | 70.5  | 63.5  | 60.9  |
| 75°   | 61.8  | 57.4  | 54.0  | 51.4  | 56.6  |
| 77.5° | 42.6  | 40.9  | 38.3  | 35.7  | 34.8  |
| 80°   | 27.9  | 27.0  | 26.1  | 25.2  | 24.4  |
| 82.5° | 16.5  | 16.5  | 16.5  | 16.5  | 16.5  |
| 85°   | 8.7   | 9.6   | 10.4  | 11.3  | 12.2  |
| 87.5° | 5.2   | 5.2   | 6.1   | 7.0   | 7.8   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)