

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: P559225

Luminaire Tested: FSR-12-1-LD4-2LO-35-UNV-80-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P559225  
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-35-UNV-80-88-EDD  
Description: 1X1 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .500 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

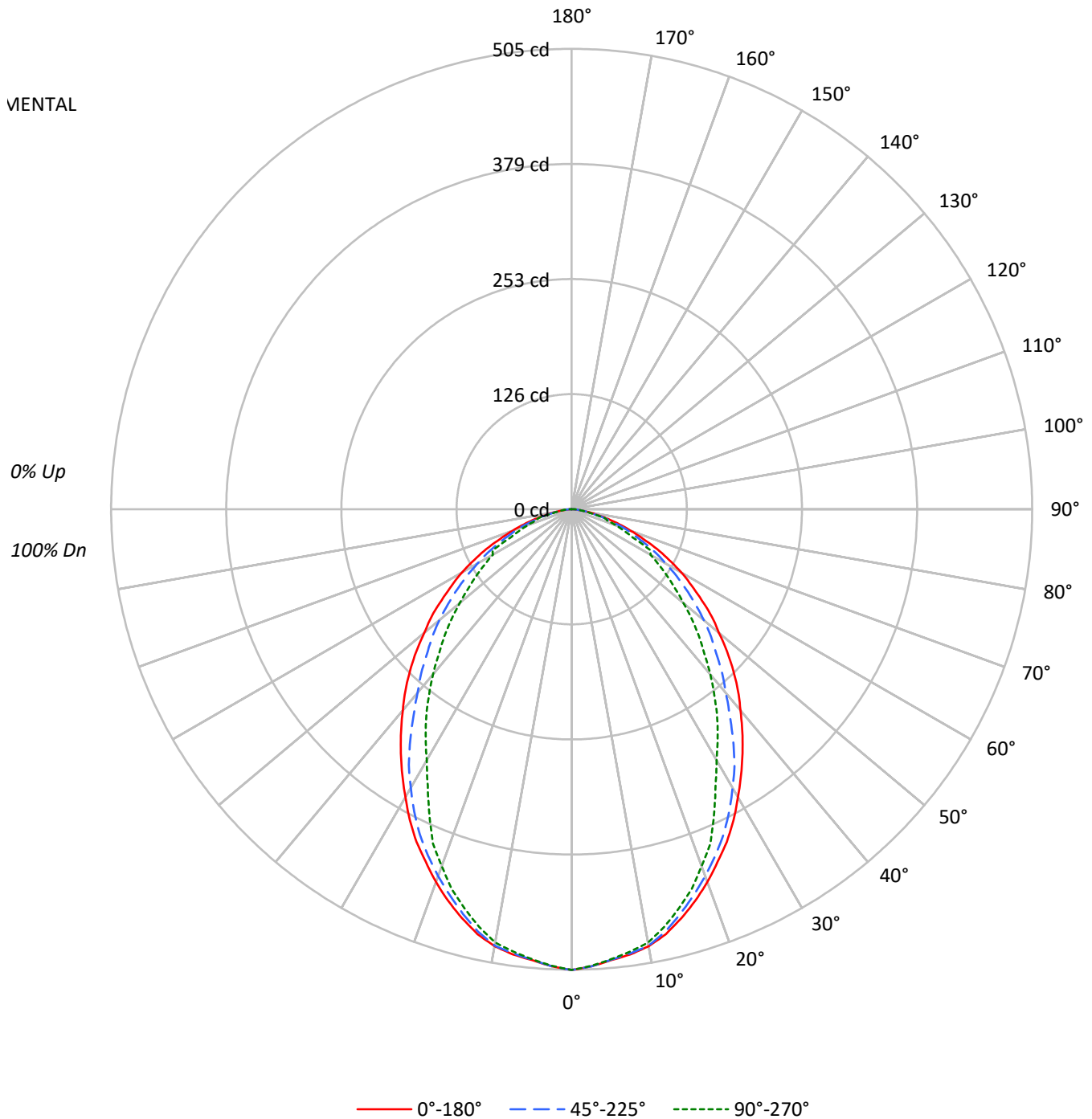
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 992.0 lumens  
Efficiency: N/A  
Efficacy: 84.8 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



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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 | 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°  | 5439 | 5439 | 5439 |
| 5°  | 5365 | 5359 | 5353 |
| 10° | 5319 | 5312 | 5274 |
| 15° | 5175 | 5123 | 5051 |
| 20° | 4985 | 4905 | 4771 |
| 25° | 4780 | 4676 | 4385 |
| 30° | 4530 | 4385 | 3950 |
| 35° | 4292 | 4052 | 3654 |
| 40° | 4047 | 3694 | 3325 |
| 45° | 3815 | 3414 | 3006 |
| 50° | 3532 | 3170 | 2681 |
| 55° | 3267 | 2873 | 2400 |
| 60° | 2992 | 2566 | 2151 |
| 65° | 2634 | 2246 | 1905 |
| 70° | 2168 | 1967 | 1618 |
| 75° | 1726 | 1506 | 1580 |
| 80° | 1159 | 1085 | 1017 |
| 85° | 716  | 865  | 1013 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3815 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 47.0   | 4.7       |
| 10°-20°   | 129.1  | 13.0      |
| 20°-30°   | 178.7  | 18.0      |
| 30°-40°   | 190.6  | 19.2      |
| 40°-50°   | 173.9  | 17.5      |
| 50°-60°   | 136.2  | 13.7      |
| 60°-70°   | 88.8   | 8.9       |
| 70°-80°   | 39.3   | 4.0       |
| 80°-90°   | 8.4    | 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°    | 354.8  | 35.8      |
| 0°-40°    | 545.4  | 55.0      |
| 0°-60°    | 855.5  | 86.2      |
| 0°-90°    | 992.0  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 992.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 505 | 505   | 505 | 505   | 505 |      |
| 5°  | 496 | 496   | 496 | 495   | 495 | 47   |
| 15° | 464 | 464   | 460 | 455   | 453 | 131  |
| 25° | 402 | 400   | 394 | 380   | 369 | 185  |
| 35° | 327 | 324   | 308 | 285   | 278 | 204  |
| 45° | 251 | 245   | 224 | 206   | 198 | 193  |
| 55° | 174 | 169   | 153 | 135   | 128 | 156  |
| 65° | 103 | 98    | 88  | 90    | 75  | 102  |
| 75° | 42  | 39    | 36  | 34    | 38  | 44   |
| 85° | 6   | 6     | 7   | 8     | 8   | 8    |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 505.3 | 505.3 | 505.3 | 505.3 | 505.3 |
| 2.5°  | 501.8 | 501.8 | 501.8 | 501.2 | 501.2 |
| 5°    | 496.5 | 496.0 | 496.0 | 495.4 | 495.4 |
| 7.5°  | 492.5 | 491.9 | 491.3 | 490.7 | 489.5 |
| 10°   | 486.6 | 486.6 | 486.0 | 483.1 | 482.5 |
| 12.5° | 477.3 | 476.7 | 474.4 | 470.3 | 469.1 |
| 15°   | 464.4 | 464.4 | 459.7 | 455.1 | 453.3 |
| 17.5° | 450.4 | 449.8 | 444.0 | 439.3 | 437.0 |
| 20°   | 435.2 | 434.0 | 428.2 | 420.6 | 416.5 |
| 22.5° | 418.3 | 418.3 | 411.3 | 401.3 | 397.2 |
| 25°   | 402.5 | 400.2 | 393.7 | 379.7 | 369.2 |
| 27.5° | 384.4 | 380.9 | 373.9 | 354.0 | 341.7 |
| 30°   | 364.5 | 362.8 | 352.8 | 327.1 | 317.8 |
| 32.5° | 345.8 | 342.9 | 332.4 | 305.5 | 297.9 |
| 35°   | 326.6 | 324.2 | 308.4 | 285.1 | 278.1 |
| 37.5° | 307.3 | 304.4 | 284.5 | 265.8 | 257.0 |
| 40°   | 288.0 | 284.5 | 262.9 | 245.9 | 236.6 |
| 42.5° | 269.9 | 265.2 | 244.2 | 226.1 | 215.6 |
| 45°   | 250.6 | 245.4 | 224.3 | 205.6 | 197.5 |
| 47.5° | 231.3 | 226.7 | 207.4 | 188.1 | 178.8 |
| 50°   | 210.9 | 206.8 | 189.3 | 170.0 | 160.1 |
| 52.5° | 193.9 | 187.5 | 170.6 | 151.3 | 143.1 |
| 55°   | 174.1 | 168.8 | 153.1 | 134.9 | 127.9 |
| 57.5° | 156.0 | 150.7 | 136.1 | 119.2 | 113.3 |
| 60°   | 139.0 | 131.4 | 119.2 | 104.6 | 99.9  |
| 62.5° | 120.3 | 114.5 | 104.0 | 91.7  | 97.6  |
| 65°   | 103.4 | 97.6  | 88.2  | 90.0  | 74.8  |
| 67.5° | 84.7  | 81.8  | 73.6  | 65.4  | 63.1  |
| 70°   | 68.9  | 65.4  | 62.5  | 53.7  | 51.4  |
| 72.5° | 54.9  | 51.4  | 47.3  | 42.6  | 40.9  |
| 75°   | 41.5  | 38.6  | 36.2  | 34.5  | 38.0  |
| 77.5° | 28.6  | 27.5  | 25.7  | 24.0  | 23.4  |
| 80°   | 18.7  | 18.1  | 17.5  | 16.9  | 16.4  |
| 82.5° | 11.1  | 11.1  | 11.1  | 11.1  | 11.1  |
| 85°   | 5.8   | 6.4   | 7.0   | 7.6   | 8.2   |
| 87.5° | 3.5   | 3.5   | 4.1   | 4.7   | 5.3   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)