

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: P560574

Luminaire Tested: FSR-12-2-LD4-2STD-35-UNV-80-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560574  
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-LD4-2STD-35-UNV-80-97-EDD-90  
Description: 1X2 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR TEMPERED G ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

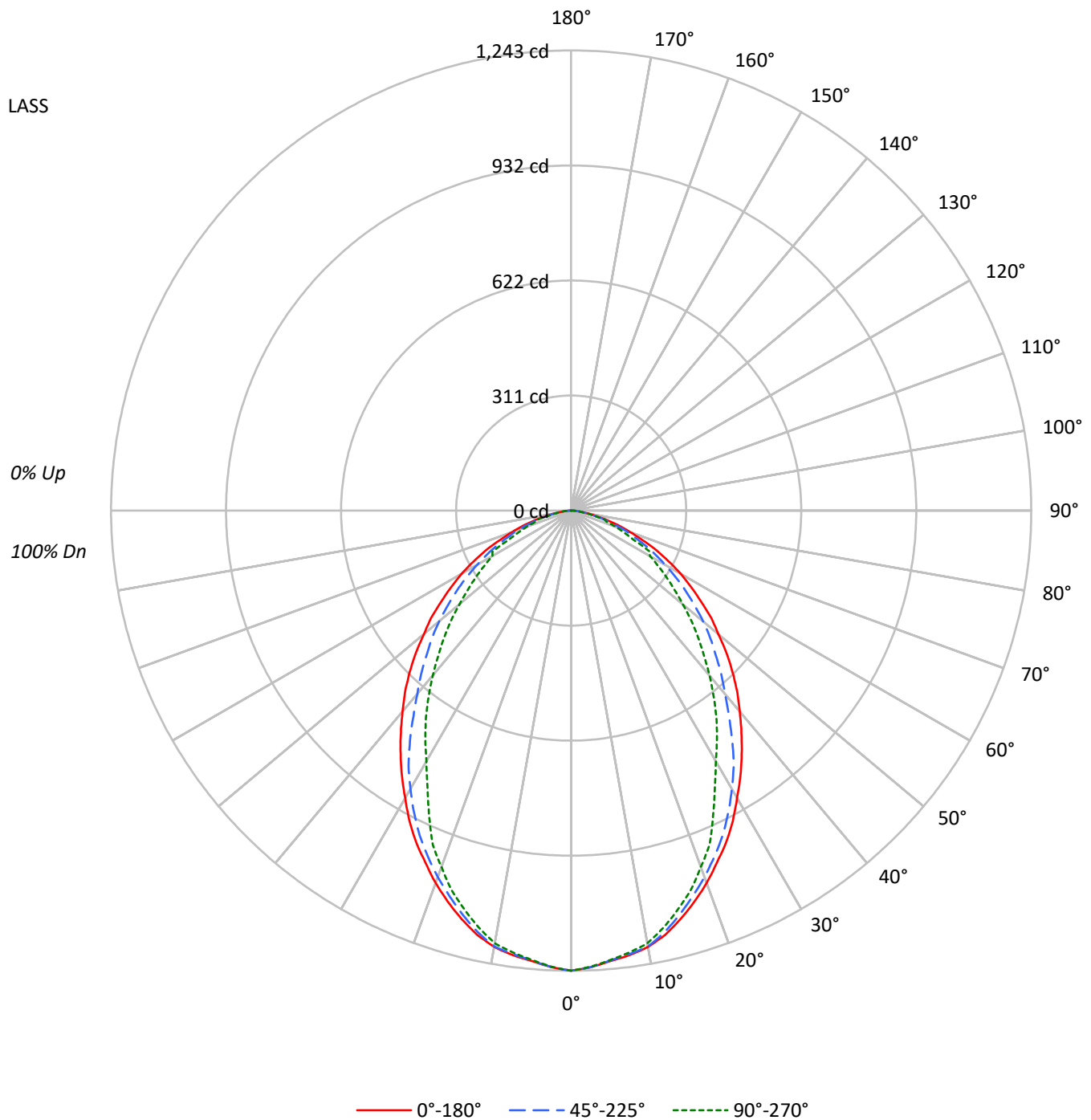
Lumens per Lamp: N/A  
Luminaire Lumens: 2440.0 lumens  
Efficiency: N/A  
Efficacy: 73.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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 | 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°  | 6689 | 6689 | 6689 |
| 5°  | 6599 | 6591 | 6583 |
| 10° | 6541 | 6533 | 6486 |
| 15° | 6365 | 6301 | 6213 |
| 20° | 6131 | 6032 | 5868 |
| 25° | 5879 | 5751 | 5393 |
| 30° | 5572 | 5394 | 4858 |
| 35° | 5277 | 4985 | 4494 |
| 40° | 4977 | 4543 | 4088 |
| 45° | 4692 | 4200 | 3697 |
| 50° | 4343 | 3898 | 3296 |
| 55° | 4018 | 3533 | 2953 |
| 60° | 3681 | 3155 | 2645 |
| 65° | 3238 | 2763 | 2342 |
| 70° | 2669 | 2419 | 1989 |
| 75° | 2121 | 1853 | 1942 |
| 80° | 1426 | 1336 | 1246 |
| 85° | 889  | 1062 | 1241 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4692 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 115.7  | 4.7       |
| 10°-20°   | 317.5  | 13.0      |
| 20°-30°   | 439.6  | 18.0      |
| 30°-40°   | 468.7  | 19.2      |
| 40°-50°   | 427.6  | 17.5      |
| 50°-60°   | 335.0  | 13.7      |
| 60°-70°   | 218.3  | 8.9       |
| 70°-80°   | 96.7   | 4.0       |
| 80°-90°   | 20.8   | 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°    | 872.8  | 35.8      |
| 0°-40°    | 1341.5 | 55.0      |
| 0°-60°    | 2104.2 | 86.2      |
| 0°-90°    | 2440.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2440.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1243 | 1243  | 1243 | 1243  | 1243 |      |
| 5°  | 1221 | 1220  | 1220 | 1218  | 1218 | 116  |
| 15° | 1142 | 1142  | 1131 | 1119  | 1115 | 321  |
| 25° | 990  | 984   | 968  | 934   | 908  | 455  |
| 35° | 803  | 798   | 759  | 701   | 684  | 502  |
| 45° | 616  | 604   | 552  | 506   | 486  | 475  |
| 55° | 428  | 415   | 376  | 332   | 315  | 384  |
| 65° | 254  | 240   | 217  | 221   | 184  | 251  |
| 75° | 102  | 95    | 89   | 85    | 93   | 109  |
| 85° | 14   | 16    | 17   | 19    | 20   | 20   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1242.9 | 1242.9 | 1242.9 | 1242.9 | 1242.9 |
| 2.5°  | 1234.3 | 1234.3 | 1234.3 | 1232.8 | 1232.8 |
| 5°    | 1221.4 | 1219.9 | 1219.9 | 1218.5 | 1218.5 |
| 7.5°  | 1211.3 | 1209.9 | 1208.4 | 1207.0 | 1204.1 |
| 10°   | 1196.9 | 1196.9 | 1195.5 | 1188.3 | 1186.9 |
| 12.5° | 1173.9 | 1172.5 | 1166.7 | 1156.7 | 1153.8 |
| 15°   | 1142.3 | 1142.3 | 1130.8 | 1119.3 | 1115.0 |
| 17.5° | 1107.8 | 1106.4 | 1092.0 | 1080.5 | 1074.8 |
| 20°   | 1070.5 | 1067.6 | 1053.2 | 1034.6 | 1024.5 |
| 22.5° | 1028.8 | 1028.8 | 1011.6 | 987.1  | 977.1  |
| 25°   | 990.0  | 984.3  | 968.5  | 934.0  | 908.1  |
| 27.5° | 945.5  | 936.8  | 919.6  | 870.8  | 840.6  |
| 30°   | 896.6  | 892.3  | 867.9  | 804.7  | 781.7  |
| 32.5° | 850.6  | 843.5  | 817.6  | 751.5  | 732.8  |
| 35°   | 803.2  | 797.5  | 758.7  | 701.2  | 684.0  |
| 37.5° | 755.8  | 748.6  | 699.8  | 653.8  | 632.2  |
| 40°   | 708.4  | 699.8  | 646.6  | 604.9  | 581.9  |
| 42.5° | 663.8  | 652.3  | 600.6  | 556.1  | 530.2  |
| 45°   | 616.4  | 603.5  | 551.8  | 505.8  | 485.7  |
| 47.5° | 569.0  | 557.5  | 510.1  | 462.7  | 439.7  |
| 50°   | 518.7  | 508.7  | 465.5  | 418.1  | 393.7  |
| 52.5° | 477.0  | 461.2  | 419.6  | 372.2  | 352.0  |
| 55°   | 428.2  | 415.3  | 376.5  | 331.9  | 314.7  |
| 57.5° | 383.6  | 370.7  | 334.8  | 293.1  | 278.8  |
| 60°   | 342.0  | 323.3  | 293.1  | 257.2  | 245.7  |
| 62.5° | 296.0  | 281.6  | 255.8  | 225.6  | 240.0  |
| 65°   | 254.3  | 240.0  | 217.0  | 221.3  | 183.9  |
| 67.5° | 208.3  | 201.2  | 181.0  | 160.9  | 155.2  |
| 70°   | 169.6  | 160.9  | 153.7  | 132.2  | 126.4  |
| 72.5° | 135.1  | 126.4  | 116.4  | 104.9  | 100.6  |
| 75°   | 102.0  | 94.8   | 89.1   | 84.8   | 93.4   |
| 77.5° | 70.4   | 67.5   | 63.2   | 58.9   | 57.5   |
| 80°   | 46.0   | 44.5   | 43.1   | 41.7   | 40.2   |
| 82.5° | 27.3   | 27.3   | 27.3   | 27.3   | 27.3   |
| 85°   | 14.4   | 15.8   | 17.2   | 18.7   | 20.1   |
| 87.5° | 8.6    | 8.6    | 10.1   | 11.5   | 12.9   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)