

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: P559010

Luminaire Tested: FSR-12-1-LD4-1STD-50-UNV-93-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P559010  
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-LD4-1STD-50-UNV-93-85-EDD-90  
Description: 1X1 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

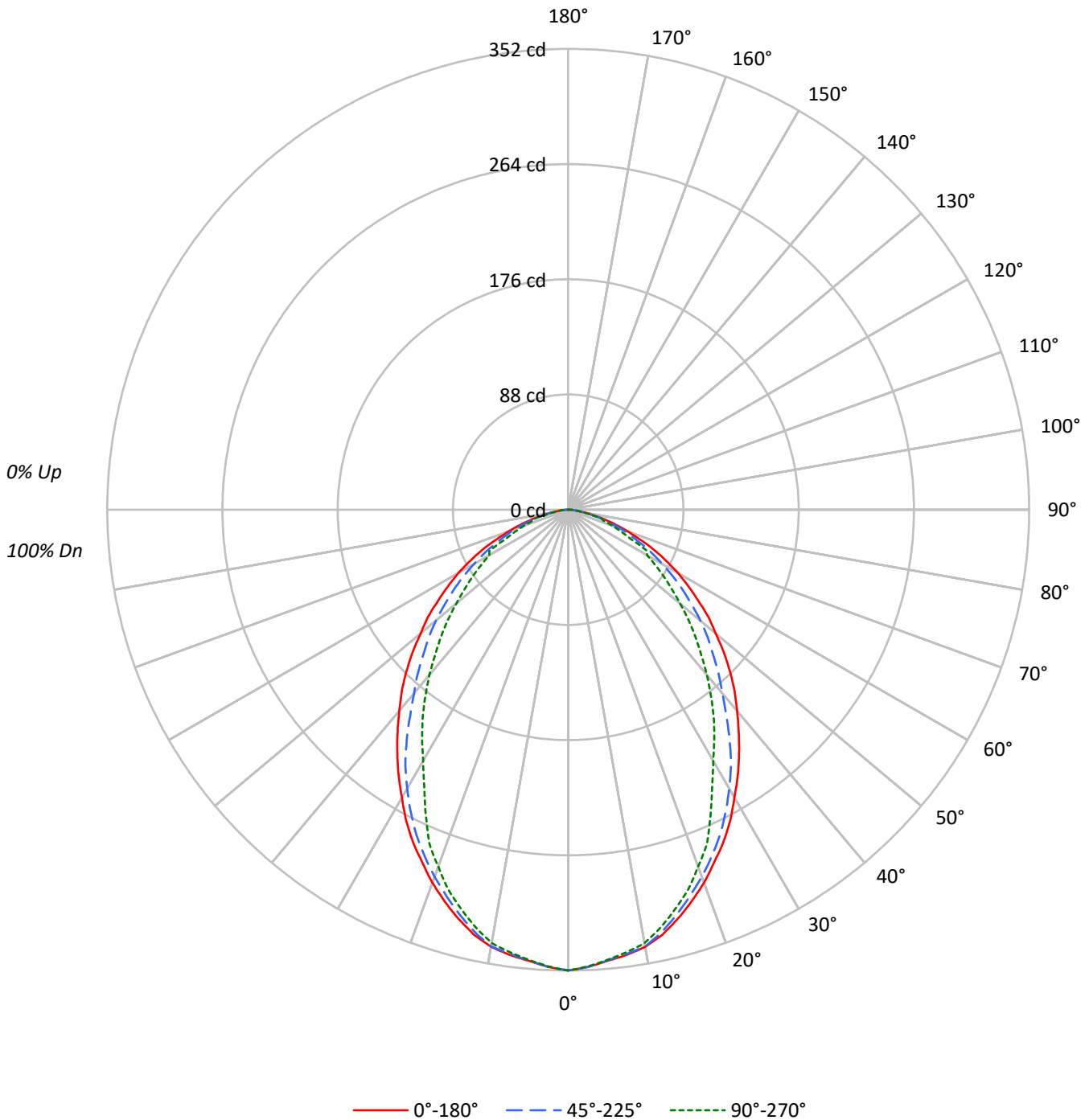
Lumens per Lamp: N/A  
Luminaire Lumens: 691.0 lumens  
Efficiency: N/A  
Efficacy: 83.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 8.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P559010

CATALOG NUMBER: FSR-12-1-LD4-1STD-50-UNV-93-85-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P559010

CATALOG NUMBER: FSR-12-1-LD4-1STD-50-UNV-93-85-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  | 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°  | 3789 | 3789 | 3789 |
| 5°  | 3737 | 3733 | 3729 |
| 10° | 3705 | 3701 | 3674 |
| 15° | 3605 | 3568 | 3519 |
| 20° | 3473 | 3417 | 3323 |
| 25° | 3330 | 3258 | 3055 |
| 30° | 3156 | 3055 | 2752 |
| 35° | 2989 | 2824 | 2545 |
| 40° | 2819 | 2573 | 2316 |
| 45° | 2658 | 2379 | 2093 |
| 50° | 2460 | 2207 | 1867 |
| 55° | 2276 | 2000 | 1672 |
| 60° | 2084 | 1787 | 1498 |
| 65° | 1834 | 1564 | 1327 |
| 70° | 1511 | 1369 | 1127 |
| 75° | 1202 | 1048 | 1098 |
| 80° | 806  | 756  | 707  |
| 85° | 506  | 605  | 704  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2658 cd/sqm



TEST NUMBER: P559010

CATALOG NUMBER: FSR-12-1-LD4-1STD-50-UNV-93-85-EDD-90

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 32.8   | 4.7       |
| 10°-20°   | 89.9   | 13.0      |
| 20°-30°   | 124.5  | 18.0      |
| 30°-40°   | 132.7  | 19.2      |
| 40°-50°   | 121.1  | 17.5      |
| 50°-60°   | 94.9   | 13.7      |
| 60°-70°   | 61.8   | 8.9       |
| 70°-80°   | 27.4   | 4.0       |
| 80°-90°   | 5.9    | 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°    | 247.2  | 35.8      |
| 0°-40°    | 379.9  | 55.0      |
| 0°-60°    | 595.9  | 86.2      |
| 0°-90°    | 691.0  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 691.0  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 352 | 352   | 352 | 352   | 352 |      |
| 5°  | 346 | 346   | 346 | 345   | 345 | 33   |
| 15° | 324 | 324   | 320 | 317   | 316 | 91   |
| 25° | 280 | 279   | 274 | 264   | 257 | 129  |
| 35° | 228 | 226   | 215 | 199   | 194 | 142  |
| 45° | 175 | 171   | 156 | 143   | 138 | 134  |
| 55° | 121 | 118   | 107 | 94    | 89  | 109  |
| 65° | 72  | 68    | 61  | 63    | 52  | 71   |
| 75° | 29  | 27    | 25  | 24    | 26  | 31   |
| 85° | 4   | 4     | 5   | 5     | 6   | 6    |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



TEST NUMBER: P559010

CATALOG NUMBER: FSR-12-1-LD4-1STD-50-UNV-93-85-EDD-90

**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 352.0 | 352.0 | 352.0 | 352.0 | 352.0 |
| 2.5°  | 349.5 | 349.5 | 349.5 | 349.1 | 349.1 |
| 5°    | 345.9 | 345.5 | 345.5 | 345.1 | 345.1 |
| 7.5°  | 343.0 | 342.6 | 342.2 | 341.8 | 341.0 |
| 10°   | 339.0 | 339.0 | 338.6 | 336.5 | 336.1 |
| 12.5° | 332.5 | 332.0 | 330.4 | 327.6 | 326.8 |
| 15°   | 323.5 | 323.5 | 320.2 | 317.0 | 315.8 |
| 17.5° | 313.7 | 313.3 | 309.3 | 306.0 | 304.4 |
| 20°   | 303.2 | 302.3 | 298.3 | 293.0 | 290.1 |
| 22.5° | 291.4 | 291.4 | 286.5 | 279.6 | 276.7 |
| 25°   | 280.4 | 278.7 | 274.3 | 264.5 | 257.2 |
| 27.5° | 267.8 | 265.3 | 260.4 | 246.6 | 238.0 |
| 30°   | 253.9 | 252.7 | 245.8 | 227.9 | 221.4 |
| 32.5° | 240.9 | 238.9 | 231.5 | 212.8 | 207.5 |
| 35°   | 227.5 | 225.8 | 214.9 | 198.6 | 193.7 |
| 37.5° | 214.0 | 212.0 | 198.2 | 185.1 | 179.0 |
| 40°   | 200.6 | 198.2 | 183.1 | 171.3 | 164.8 |
| 42.5° | 188.0 | 184.7 | 170.1 | 157.5 | 150.2 |
| 45°   | 174.6 | 170.9 | 156.3 | 143.2 | 137.5 |
| 47.5° | 161.1 | 157.9 | 144.5 | 131.0 | 124.5 |
| 50°   | 146.9 | 144.0 | 131.8 | 118.4 | 111.5 |
| 52.5° | 135.1 | 130.6 | 118.8 | 105.4 | 99.7  |
| 55°   | 121.3 | 117.6 | 106.6 | 94.0  | 89.1  |
| 57.5° | 108.6 | 105.0 | 94.8  | 83.0  | 78.9  |
| 60°   | 96.8  | 91.6  | 83.0  | 72.8  | 69.6  |
| 62.5° | 83.8  | 79.8  | 72.4  | 63.9  | 68.0  |
| 65°   | 72.0  | 68.0  | 61.4  | 62.7  | 52.1  |
| 67.5° | 59.0  | 57.0  | 51.3  | 45.6  | 43.9  |
| 70°   | 48.0  | 45.6  | 43.5  | 37.4  | 35.8  |
| 72.5° | 38.3  | 35.8  | 33.0  | 29.7  | 28.5  |
| 75°   | 28.9  | 26.9  | 25.2  | 24.0  | 26.4  |
| 77.5° | 19.9  | 19.1  | 17.9  | 16.7  | 16.3  |
| 80°   | 13.0  | 12.6  | 12.2  | 11.8  | 11.4  |
| 82.5° | 7.7   | 7.7   | 7.7   | 7.7   | 7.7   |
| 85°   | 4.1   | 4.5   | 4.9   | 5.3   | 5.7   |
| 87.5° | 2.4   | 2.4   | 2.8   | 3.3   | 3.7   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)