

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: P559130

Luminaire Tested: FSR-12-1-LD4-2HI-40-UNV-82-94-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P559130
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-LD4-2HI-40-UNV-82-94-EDD-90
Description: 1X1 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1527.0 lumens
Efficiency: N/A
Efficacy: 70.7 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

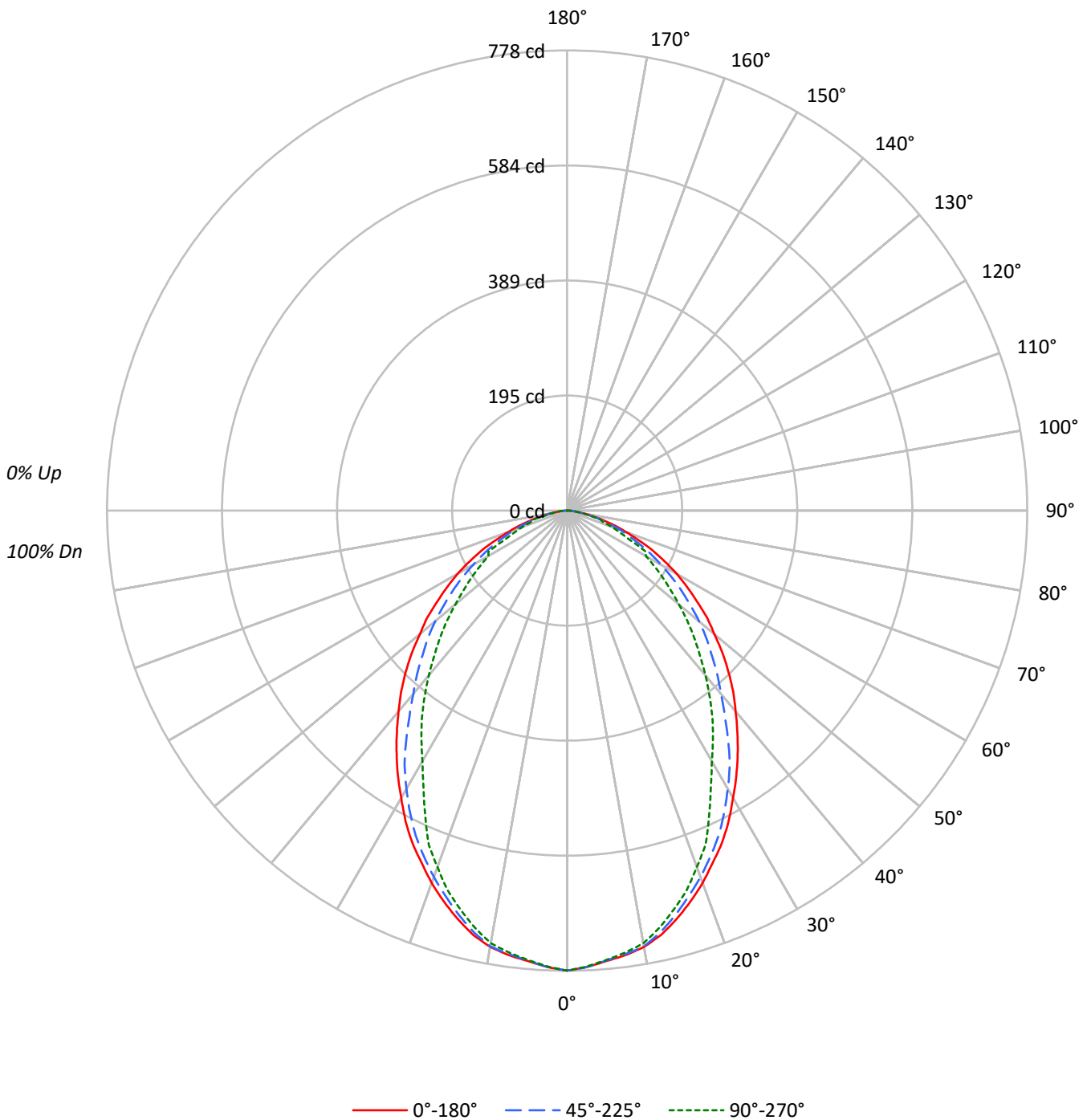
Input Watts (W): 21.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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 | 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° | 8372 | 8372 | 8372 |
| 5° | 8258 | 8249 | 8239 |
| 10° | 8188 | 8178 | 8119 |
| 15° | 7967 | 7886 | 7776 |
| 20° | 7674 | 7550 | 7345 |
| 25° | 7359 | 7198 | 6750 |
| 30° | 6974 | 6750 | 6080 |
| 35° | 6606 | 6239 | 5624 |
| 40° | 6229 | 5687 | 5117 |
| 45° | 5873 | 5256 | 4626 |
| 50° | 5436 | 4880 | 4126 |
| 55° | 5029 | 4421 | 3695 |
| 60° | 4607 | 3948 | 3311 |
| 65° | 4055 | 3459 | 2932 |
| 70° | 3339 | 3028 | 2489 |
| 75° | 2653 | 2321 | 2429 |
| 80° | 1785 | 1674 | 1562 |
| 85° | 1112 | 1334 | 1556 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5873 cd/sqm

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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 72.4 | 4.7 |
| 10°-20° | 198.7 | 13.0 |
| 20°-30° | 275.1 | 18.0 |
| 30°-40° | 293.3 | 19.2 |
| 40°-50° | 267.6 | 17.5 |
| 50°-60° | 209.7 | 13.7 |
| 60°-70° | 136.6 | 8.9 |
| 70°-80° | 60.5 | 4.0 |
| 80°-90° | 13.0 | 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° | 546.2 | 35.8 |
| 0°-40° | 839.6 | 55.0 |
| 0°-60° | 1316.8 | 86.2 |
| 0°-90° | 1527.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1527.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 778 | 778 | 778 | 778 | 778 | |
| 5° | 764 | 763 | 763 | 762 | 762 | 73 |
| 15° | 715 | 715 | 708 | 700 | 698 | 201 |
| 25° | 620 | 616 | 606 | 584 | 568 | 284 |
| 35° | 503 | 499 | 475 | 439 | 428 | 314 |
| 45° | 386 | 378 | 345 | 316 | 304 | 297 |
| 55° | 268 | 260 | 236 | 208 | 197 | 240 |
| 65° | 159 | 150 | 136 | 138 | 115 | 157 |
| 75° | 64 | 59 | 56 | 53 | 58 | 68 |
| 85° | 9 | 10 | 11 | 12 | 13 | 12 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 777.8 | 777.8 | 777.8 | 777.8 | 777.8 |
| 2.5° | 772.4 | 772.4 | 772.4 | 771.5 | 771.5 |
| 5° | 764.3 | 763.4 | 763.4 | 762.5 | 762.5 |
| 7.5° | 758.1 | 757.2 | 756.3 | 755.4 | 753.6 |
| 10° | 749.1 | 749.1 | 748.2 | 743.7 | 742.8 |
| 12.5° | 734.7 | 733.8 | 730.2 | 723.9 | 722.1 |
| 15° | 714.9 | 714.9 | 707.7 | 700.5 | 697.8 |
| 17.5° | 693.3 | 692.4 | 683.4 | 676.2 | 672.6 |
| 20° | 669.9 | 668.1 | 659.1 | 647.4 | 641.2 |
| 22.5° | 643.8 | 643.8 | 633.1 | 617.8 | 611.5 |
| 25° | 619.6 | 616.0 | 606.1 | 584.5 | 568.3 |
| 27.5° | 591.7 | 586.3 | 575.5 | 544.9 | 526.0 |
| 30° | 561.1 | 558.4 | 543.1 | 503.6 | 489.2 |
| 32.5° | 532.3 | 527.8 | 511.7 | 470.3 | 458.6 |
| 35° | 502.7 | 499.1 | 474.8 | 438.8 | 428.0 |
| 37.5° | 473.0 | 468.5 | 437.9 | 409.1 | 395.7 |
| 40° | 443.3 | 437.9 | 404.7 | 378.6 | 364.2 |
| 42.5° | 415.4 | 408.3 | 375.9 | 348.0 | 331.8 |
| 45° | 385.8 | 377.7 | 345.3 | 316.5 | 303.9 |
| 47.5° | 356.1 | 348.9 | 319.2 | 289.6 | 275.2 |
| 50° | 324.6 | 318.3 | 291.4 | 261.7 | 246.4 |
| 52.5° | 298.5 | 288.7 | 262.6 | 232.9 | 220.3 |
| 55° | 268.0 | 259.9 | 235.6 | 207.7 | 196.9 |
| 57.5° | 240.1 | 232.0 | 209.5 | 183.4 | 174.5 |
| 60° | 214.0 | 202.3 | 183.4 | 161.0 | 153.8 |
| 62.5° | 185.2 | 176.2 | 160.1 | 141.2 | 150.2 |
| 65° | 159.2 | 150.2 | 135.8 | 138.5 | 115.1 |
| 67.5° | 130.4 | 125.9 | 113.3 | 100.7 | 97.1 |
| 70° | 106.1 | 100.7 | 96.2 | 82.7 | 79.1 |
| 72.5° | 84.5 | 79.1 | 72.8 | 65.6 | 62.9 |
| 75° | 63.8 | 59.3 | 55.8 | 53.1 | 58.4 |
| 77.5° | 44.1 | 42.3 | 39.6 | 36.9 | 36.0 |
| 80° | 28.8 | 27.9 | 27.0 | 26.1 | 25.2 |
| 82.5° | 17.1 | 17.1 | 17.1 | 17.1 | 17.1 |
| 85° | 9.0 | 9.9 | 10.8 | 11.7 | 12.6 |
| 87.5° | 5.4 | 5.4 | 6.3 | 7.2 | 8.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)