

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: P560160

Luminaire Tested: FSR-12-2-LD4-1STD-50-UNV-93-84-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560160
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-50-UNV-93-84-EDD-90
Description: 1X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1366.0 lumens
Efficiency: N/A
Efficacy: 82.3 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

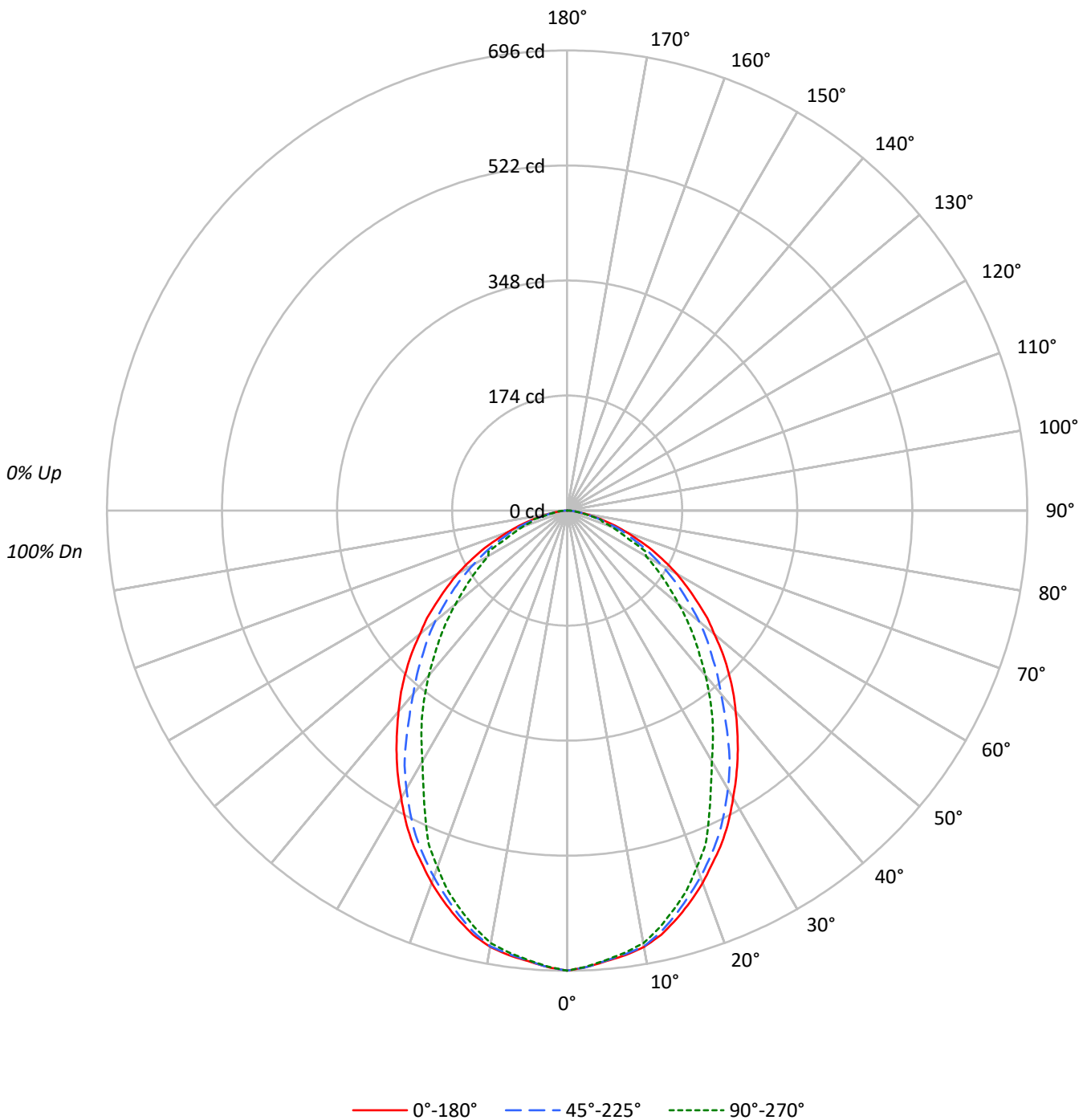
Input Watts (W): 16.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P560160

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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° | 3745 | 3745 | 3745 |
| 5° | 3694 | 3690 | 3685 |
| 10° | 3662 | 3658 | 3631 |
| 15° | 3563 | 3528 | 3478 |
| 20° | 3432 | 3377 | 3285 |
| 25° | 3291 | 3220 | 3019 |
| 30° | 3120 | 3020 | 2719 |
| 35° | 2955 | 2790 | 2516 |
| 40° | 2786 | 2543 | 2289 |
| 45° | 2627 | 2351 | 2069 |
| 50° | 2431 | 2182 | 1845 |
| 55° | 2249 | 1978 | 1653 |
| 60° | 2061 | 1766 | 1481 |
| 65° | 1813 | 1547 | 1312 |
| 70° | 1493 | 1355 | 1114 |
| 75° | 1187 | 1038 | 1088 |
| 80° | 797 | 747 | 697 |
| 85° | 494 | 599 | 698 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2627 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 64.8 | 4.7 |
| 10°-20° | 177.8 | 13.0 |
| 20°-30° | 246.1 | 18.0 |
| 30°-40° | 262.4 | 19.2 |
| 40°-50° | 239.4 | 17.5 |
| 50°-60° | 187.5 | 13.7 |
| 60°-70° | 122.2 | 8.9 |
| 70°-80° | 54.2 | 4.0 |
| 80°-90° | 11.6 | 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° | 488.6 | 35.8 |
| 0°-40° | 751.0 | 55.0 |
| 0°-60° | 1178.0 | 86.2 |
| 0°-90° | 1366.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1366.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 696 | 696 | 696 | 696 | 696 | |
| 5° | 684 | 683 | 683 | 682 | 682 | 65 |
| 15° | 640 | 640 | 633 | 627 | 624 | 180 |
| 25° | 554 | 551 | 542 | 523 | 508 | 254 |
| 35° | 450 | 446 | 425 | 393 | 383 | 281 |
| 45° | 345 | 338 | 309 | 283 | 272 | 266 |
| 55° | 240 | 232 | 211 | 186 | 176 | 215 |
| 65° | 142 | 134 | 122 | 124 | 103 | 140 |
| 75° | 57 | 53 | 50 | 48 | 52 | 61 |
| 85° | 8 | 9 | 10 | 10 | 11 | 11 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 695.8 | 695.8 | 695.8 | 695.8 | 695.8 |
| 2.5° | 691.0 | 691.0 | 691.0 | 690.2 | 690.2 |
| 5° | 683.8 | 683.0 | 683.0 | 682.1 | 682.1 |
| 7.5° | 678.1 | 677.3 | 676.5 | 675.7 | 674.1 |
| 10° | 670.1 | 670.1 | 669.3 | 665.3 | 664.4 |
| 12.5° | 657.2 | 656.4 | 653.2 | 647.6 | 645.9 |
| 15° | 639.5 | 639.5 | 633.1 | 626.6 | 624.2 |
| 17.5° | 620.2 | 619.4 | 611.4 | 604.9 | 601.7 |
| 20° | 599.3 | 597.7 | 589.6 | 579.2 | 573.6 |
| 22.5° | 576.0 | 576.0 | 566.3 | 552.6 | 547.0 |
| 25° | 554.2 | 551.0 | 542.2 | 522.9 | 508.4 |
| 27.5° | 529.3 | 524.5 | 514.8 | 487.5 | 470.6 |
| 30° | 502.0 | 499.5 | 485.9 | 450.5 | 437.6 |
| 32.5° | 476.2 | 472.2 | 457.7 | 420.7 | 410.3 |
| 35° | 449.7 | 446.5 | 424.7 | 392.6 | 382.9 |
| 37.5° | 423.1 | 419.1 | 391.8 | 366.0 | 353.9 |
| 40° | 396.6 | 391.8 | 362.0 | 338.7 | 325.8 |
| 42.5° | 371.6 | 365.2 | 336.2 | 311.3 | 296.8 |
| 45° | 345.1 | 337.9 | 308.9 | 283.2 | 271.9 |
| 47.5° | 318.5 | 312.1 | 285.6 | 259.0 | 246.2 |
| 50° | 290.4 | 284.8 | 260.6 | 234.1 | 220.4 |
| 52.5° | 267.1 | 258.2 | 234.9 | 208.3 | 197.1 |
| 55° | 239.7 | 232.5 | 210.8 | 185.8 | 176.2 |
| 57.5° | 214.8 | 207.5 | 187.4 | 164.1 | 156.1 |
| 60° | 191.5 | 181.0 | 164.1 | 144.0 | 137.6 |
| 62.5° | 165.7 | 157.7 | 143.2 | 126.3 | 134.3 |
| 65° | 142.4 | 134.3 | 121.5 | 123.9 | 103.0 |
| 67.5° | 116.6 | 112.6 | 101.4 | 90.1 | 86.9 |
| 70° | 94.9 | 90.1 | 86.1 | 74.0 | 70.8 |
| 72.5° | 75.6 | 70.8 | 65.2 | 58.7 | 56.3 |
| 75° | 57.1 | 53.1 | 49.9 | 47.5 | 52.3 |
| 77.5° | 39.4 | 37.8 | 35.4 | 33.0 | 32.2 |
| 80° | 25.7 | 24.9 | 24.1 | 23.3 | 22.5 |
| 82.5° | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 |
| 85° | 8.0 | 8.8 | 9.7 | 10.5 | 11.3 |
| 87.5° | 4.8 | 4.8 | 5.6 | 6.4 | 7.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)