

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: P559977

Luminaire Tested: FSR-12-2-LD4-1LO-50-UNV-93-88-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P559977
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-LD4-1LO-50-UNV-93-88-EDD
Description: 1X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 990.0 lumens
Efficiency: N/A
Efficacy: 84.6 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

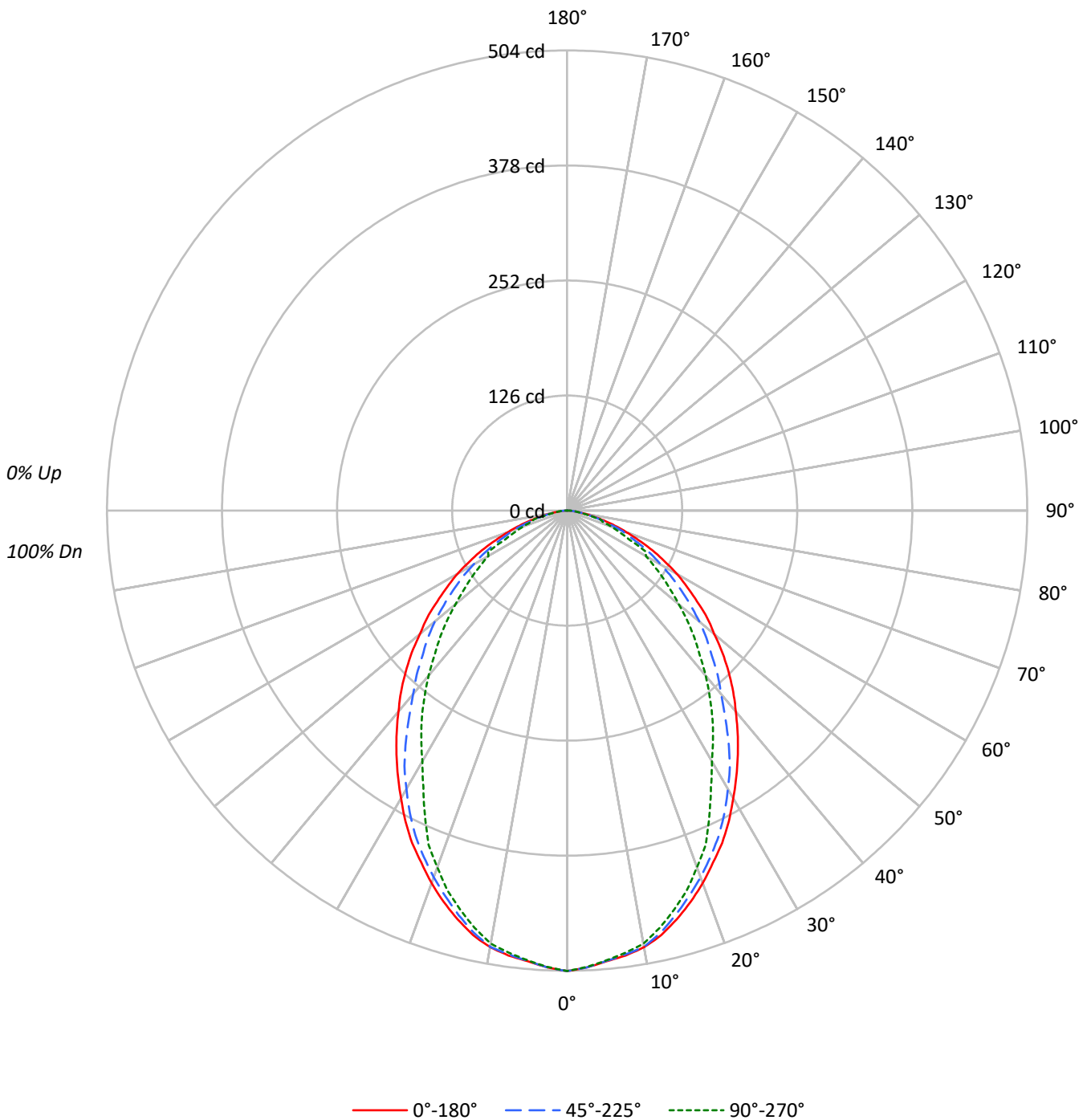
Input Watts (W): 11.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P559977

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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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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° | 2714 | 2714 | 2714 |
| 5° | 2677 | 2674 | 2671 |
| 10° | 2654 | 2651 | 2632 |
| 15° | 2583 | 2556 | 2521 |
| 20° | 2487 | 2447 | 2381 |
| 25° | 2385 | 2333 | 2188 |
| 30° | 2261 | 2188 | 1971 |
| 35° | 2141 | 2022 | 1823 |
| 40° | 2019 | 1843 | 1659 |
| 45° | 1904 | 1704 | 1500 |
| 50° | 1762 | 1582 | 1337 |
| 55° | 1630 | 1433 | 1198 |
| 60° | 1494 | 1280 | 1073 |
| 65° | 1314 | 1121 | 950 |
| 70° | 1083 | 982 | 807 |
| 75° | 861 | 751 | 788 |
| 80° | 580 | 542 | 505 |
| 85° | 358 | 432 | 506 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1904 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 46.9 | 4.7 |
| 10°-20° | 128.8 | 13.0 |
| 20°-30° | 178.4 | 18.0 |
| 30°-40° | 190.2 | 19.2 |
| 40°-50° | 173.5 | 17.5 |
| 50°-60° | 135.9 | 13.7 |
| 60°-70° | 88.6 | 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° | 354.1 | 35.8 |
| 0°-40° | 544.3 | 55.0 |
| 0°-60° | 853.7 | 86.2 |
| 0°-90° | 990.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 990.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 504 | 504 | 504 | 504 | 504 | |
| 5° | 496 | 495 | 495 | 494 | 494 | 47 |
| 15° | 464 | 464 | 459 | 454 | 452 | 130 |
| 25° | 402 | 399 | 393 | 379 | 368 | 184 |
| 35° | 326 | 324 | 308 | 284 | 278 | 204 |
| 45° | 250 | 245 | 224 | 205 | 197 | 193 |
| 55° | 174 | 168 | 153 | 135 | 128 | 156 |
| 65° | 103 | 97 | 88 | 90 | 75 | 102 |
| 75° | 41 | 38 | 36 | 34 | 38 | 44 |
| 85° | 6 | 6 | 7 | 8 | 8 | 8 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P559977

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 504.3 | 504.3 | 504.3 | 504.3 | 504.3 |
| 2.5° | 500.8 | 500.8 | 500.8 | 500.2 | 500.2 |
| 5° | 495.5 | 495.0 | 495.0 | 494.4 | 494.4 |
| 7.5° | 491.5 | 490.9 | 490.3 | 489.7 | 488.6 |
| 10° | 485.6 | 485.6 | 485.1 | 482.1 | 481.6 |
| 12.5° | 476.3 | 475.7 | 473.4 | 469.3 | 468.1 |
| 15° | 463.5 | 463.5 | 458.8 | 454.2 | 452.4 |
| 17.5° | 449.5 | 448.9 | 443.1 | 438.4 | 436.1 |
| 20° | 434.3 | 433.2 | 427.3 | 419.8 | 415.7 |
| 22.5° | 417.4 | 417.4 | 410.4 | 400.5 | 396.4 |
| 25° | 401.7 | 399.4 | 392.9 | 378.9 | 368.5 |
| 27.5° | 383.6 | 380.1 | 373.1 | 353.3 | 341.1 |
| 30° | 363.8 | 362.0 | 352.1 | 326.5 | 317.2 |
| 32.5° | 345.1 | 342.2 | 331.7 | 304.9 | 297.3 |
| 35° | 325.9 | 323.6 | 307.8 | 284.5 | 277.5 |
| 37.5° | 306.7 | 303.7 | 283.9 | 265.3 | 256.5 |
| 40° | 287.4 | 283.9 | 262.3 | 245.4 | 236.1 |
| 42.5° | 269.3 | 264.7 | 243.7 | 225.6 | 215.1 |
| 45° | 250.1 | 244.9 | 223.9 | 205.2 | 197.1 |
| 47.5° | 230.9 | 226.2 | 207.0 | 187.7 | 178.4 |
| 50° | 210.5 | 206.4 | 188.9 | 169.7 | 159.7 |
| 52.5° | 193.6 | 187.1 | 170.2 | 151.0 | 142.8 |
| 55° | 173.7 | 168.5 | 152.7 | 134.7 | 127.7 |
| 57.5° | 155.7 | 150.4 | 135.8 | 118.9 | 113.1 |
| 60° | 138.8 | 131.2 | 118.9 | 104.4 | 99.7 |
| 62.5° | 120.1 | 114.3 | 103.8 | 91.5 | 97.4 |
| 65° | 103.2 | 97.4 | 88.0 | 89.8 | 74.6 |
| 67.5° | 84.5 | 81.6 | 73.5 | 65.3 | 63.0 |
| 70° | 68.8 | 65.3 | 62.4 | 53.6 | 51.3 |
| 72.5° | 54.8 | 51.3 | 47.2 | 42.6 | 40.8 |
| 75° | 41.4 | 38.5 | 36.1 | 34.4 | 37.9 |
| 77.5° | 28.6 | 27.4 | 25.7 | 23.9 | 23.3 |
| 80° | 18.7 | 18.1 | 17.5 | 16.9 | 16.3 |
| 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 | 5.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)