

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: P559879

Luminaire Tested: FSR-12-2-LD4-1LO-40-UNV-81-87-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P559879
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-40-UNV-81-87-EDD
Description: 1X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1025.0 lumens
Efficiency: N/A
Efficacy: 87.6 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

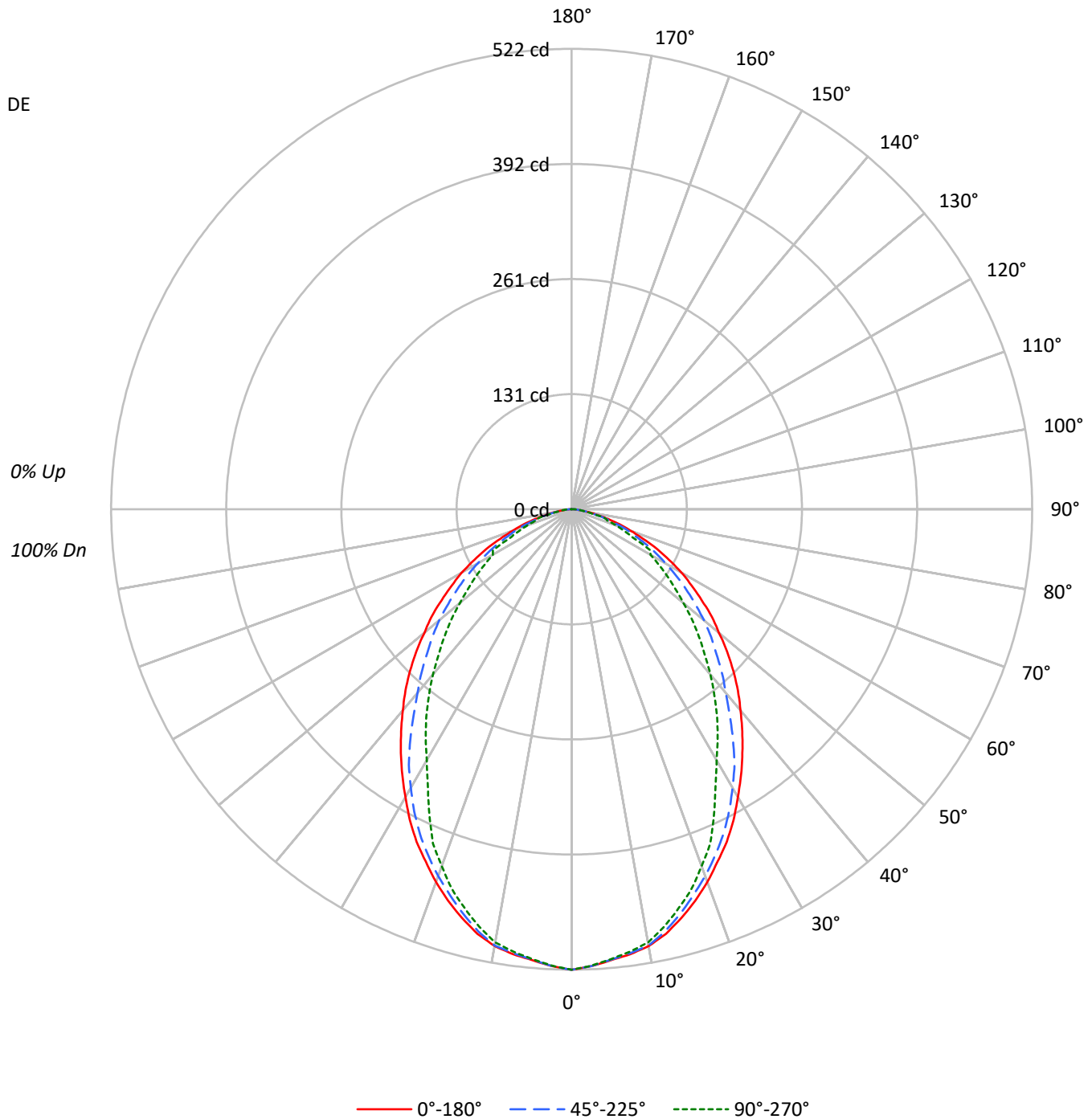
Input Watts (W): 11.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P559879

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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° | 2810 | 2810 | 2810 |
| 5° | 2772 | 2769 | 2766 |
| 10° | 2748 | 2745 | 2725 |
| 15° | 2674 | 2647 | 2610 |
| 20° | 2576 | 2534 | 2465 |
| 25° | 2470 | 2416 | 2265 |
| 30° | 2341 | 2266 | 2041 |
| 35° | 2217 | 2094 | 1888 |
| 40° | 2091 | 1908 | 1718 |
| 45° | 1971 | 1764 | 1553 |
| 50° | 1824 | 1638 | 1385 |
| 55° | 1688 | 1483 | 1240 |
| 60° | 1547 | 1325 | 1111 |
| 65° | 1360 | 1160 | 984 |
| 70° | 1120 | 1017 | 836 |
| 75° | 892 | 778 | 815 |
| 80° | 598 | 561 | 524 |
| 85° | 371 | 445 | 525 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1971 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 48.6 | 4.7 |
| 10°-20° | 133.4 | 13.0 |
| 20°-30° | 184.7 | 18.0 |
| 30°-40° | 196.9 | 19.2 |
| 40°-50° | 179.6 | 17.5 |
| 50°-60° | 140.7 | 13.7 |
| 60°-70° | 91.7 | 8.9 |
| 70°-80° | 40.6 | 4.0 |
| 80°-90° | 8.7 | 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° | 366.7 | 35.8 |
| 0°-40° | 563.6 | 55.0 |
| 0°-60° | 883.9 | 86.2 |
| 0°-90° | 1025.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1025.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 522 | 522 | 522 | 522 | 522 | |
| 5° | 513 | 512 | 512 | 512 | 512 | 49 |
| 15° | 480 | 480 | 475 | 470 | 468 | 135 |
| 25° | 416 | 414 | 407 | 392 | 382 | 191 |
| 35° | 337 | 335 | 319 | 295 | 287 | 211 |
| 45° | 259 | 254 | 232 | 212 | 204 | 199 |
| 55° | 180 | 174 | 158 | 139 | 132 | 161 |
| 65° | 107 | 101 | 91 | 93 | 77 | 105 |
| 75° | 43 | 40 | 37 | 36 | 39 | 46 |
| 85° | 6 | 7 | 7 | 8 | 8 | 8 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P559879

CATALOG NUMBER: FSR-12-2-LD4-1LO-40-UNV-81-87-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 522.1 | 522.1 | 522.1 | 522.1 | 522.1 |
| 2.5° | 518.5 | 518.5 | 518.5 | 517.9 | 517.9 |
| 5° | 513.1 | 512.5 | 512.5 | 511.9 | 511.9 |
| 7.5° | 508.8 | 508.2 | 507.6 | 507.0 | 505.8 |
| 10° | 502.8 | 502.8 | 502.2 | 499.2 | 498.6 |
| 12.5° | 493.1 | 492.5 | 490.1 | 485.9 | 484.7 |
| 15° | 479.9 | 479.9 | 475.0 | 470.2 | 468.4 |
| 17.5° | 465.4 | 464.8 | 458.7 | 453.9 | 451.5 |
| 20° | 449.7 | 448.5 | 442.4 | 434.6 | 430.4 |
| 22.5° | 432.2 | 432.2 | 424.9 | 414.7 | 410.5 |
| 25° | 415.9 | 413.5 | 406.8 | 392.3 | 381.5 |
| 27.5° | 397.2 | 393.6 | 386.3 | 365.8 | 353.1 |
| 30° | 376.7 | 374.8 | 364.6 | 338.0 | 328.4 |
| 32.5° | 357.3 | 354.3 | 343.5 | 315.7 | 307.8 |
| 35° | 337.4 | 335.0 | 318.7 | 294.6 | 287.3 |
| 37.5° | 317.5 | 314.5 | 294.0 | 274.6 | 265.6 |
| 40° | 297.6 | 294.0 | 271.6 | 254.1 | 244.5 |
| 42.5° | 278.9 | 274.0 | 252.3 | 233.6 | 222.7 |
| 45° | 258.9 | 253.5 | 231.8 | 212.5 | 204.0 |
| 47.5° | 239.0 | 234.2 | 214.3 | 194.4 | 184.7 |
| 50° | 217.9 | 213.7 | 195.6 | 175.7 | 165.4 |
| 52.5° | 200.4 | 193.8 | 176.3 | 156.3 | 147.9 |
| 55° | 179.9 | 174.4 | 158.1 | 139.4 | 132.2 |
| 57.5° | 161.2 | 155.7 | 140.6 | 123.1 | 117.1 |
| 60° | 143.7 | 135.8 | 123.1 | 108.0 | 103.2 |
| 62.5° | 124.3 | 118.3 | 107.4 | 94.8 | 100.8 |
| 65° | 106.8 | 100.8 | 91.1 | 93.0 | 77.3 |
| 67.5° | 87.5 | 84.5 | 76.1 | 67.6 | 65.2 |
| 70° | 71.2 | 67.6 | 64.6 | 55.5 | 53.1 |
| 72.5° | 56.7 | 53.1 | 48.9 | 44.1 | 42.3 |
| 75° | 42.9 | 39.8 | 37.4 | 35.6 | 39.2 |
| 77.5° | 29.6 | 28.4 | 26.6 | 24.7 | 24.1 |
| 80° | 19.3 | 18.7 | 18.1 | 17.5 | 16.9 |
| 82.5° | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 |
| 85° | 6.0 | 6.6 | 7.2 | 7.8 | 8.5 |
| 87.5° | 3.6 | 3.6 | 4.2 | 4.8 | 5.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)