

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: P559704

Luminaire Tested: FSR-12-2-LD4-1HI-40-UNV-82-88-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P559704
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-LD4-1HI-40-UNV-82-88-EDD-90
Description: 1X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1247.0 lumens
Efficiency: N/A
Efficacy: 57.7 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

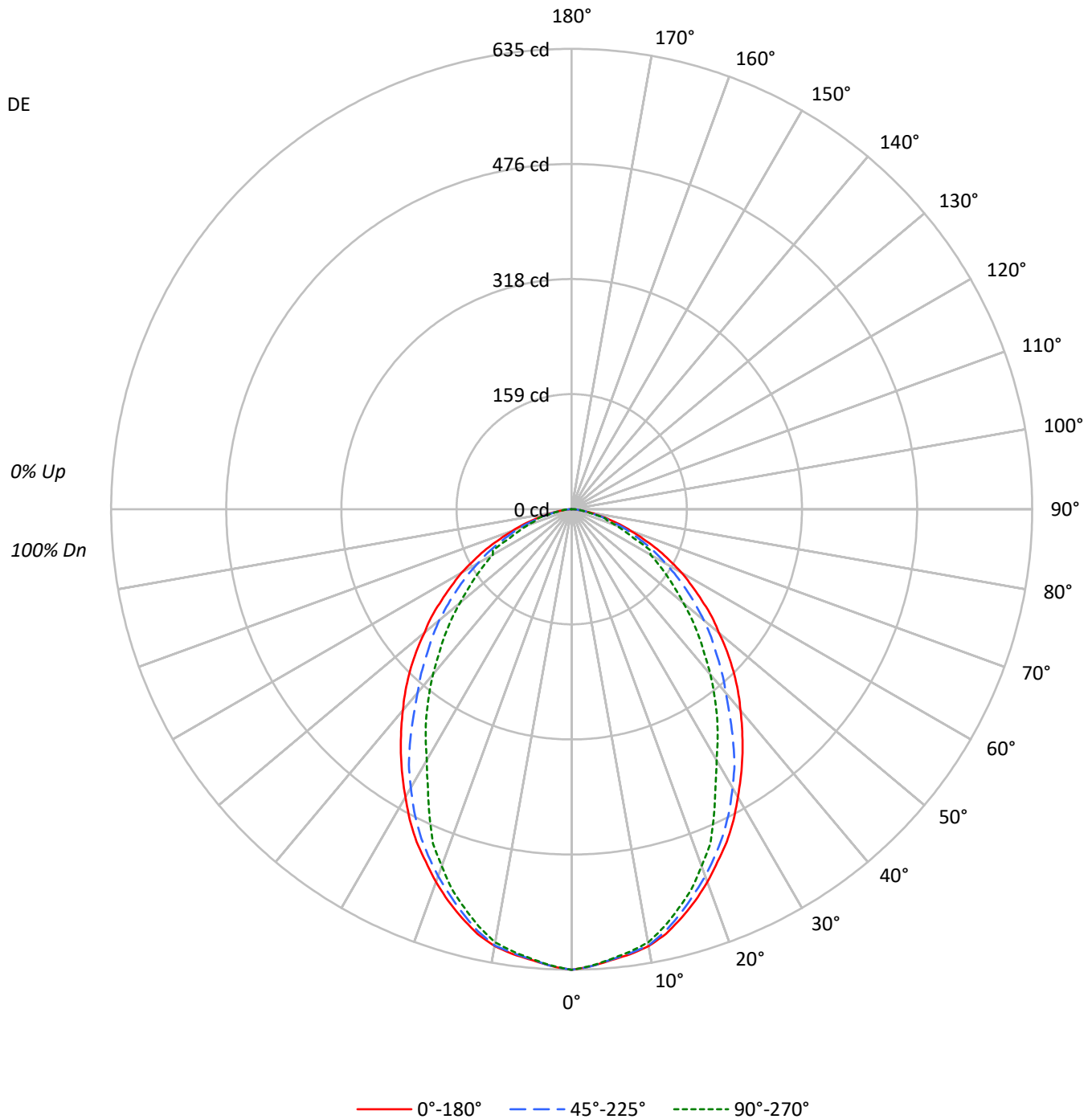
Input Watts (W): 21.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P559704

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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 | 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° | 3419 | 3419 | 3419 |
| 5° | 3372 | 3368 | 3364 |
| 10° | 3343 | 3339 | 3315 |
| 15° | 3253 | 3220 | 3175 |
| 20° | 3133 | 3083 | 2999 |
| 25° | 3005 | 2939 | 2756 |
| 30° | 2848 | 2756 | 2483 |
| 35° | 2697 | 2547 | 2296 |
| 40° | 2543 | 2322 | 2089 |
| 45° | 2398 | 2146 | 1889 |
| 50° | 2220 | 1992 | 1685 |
| 55° | 2053 | 1805 | 1509 |
| 60° | 1882 | 1612 | 1352 |
| 65° | 1656 | 1412 | 1197 |
| 70° | 1364 | 1237 | 1017 |
| 75° | 1083 | 946 | 992 |
| 80° | 728 | 682 | 638 |
| 85° | 451 | 543 | 636 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2398 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 59.1 | 4.7 |
| 10°-20° | 162.3 | 13.0 |
| 20°-30° | 224.7 | 18.0 |
| 30°-40° | 239.6 | 19.2 |
| 40°-50° | 218.5 | 17.5 |
| 50°-60° | 171.2 | 13.7 |
| 60°-70° | 111.6 | 8.9 |
| 70°-80° | 49.4 | 4.0 |
| 80°-90° | 10.6 | 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° | 446.1 | 35.8 |
| 0°-40° | 685.6 | 55.0 |
| 0°-60° | 1075.4 | 86.2 |
| 0°-90° | 1247.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1247.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 635 | 635 | 635 | 635 | 635 | |
| 5° | 624 | 624 | 624 | 623 | 623 | 59 |
| 15° | 584 | 584 | 578 | 572 | 570 | 164 |
| 25° | 506 | 503 | 495 | 477 | 464 | 232 |
| 35° | 410 | 408 | 388 | 358 | 350 | 257 |
| 45° | 315 | 308 | 282 | 258 | 248 | 243 |
| 55° | 219 | 212 | 192 | 170 | 161 | 196 |
| 65° | 130 | 123 | 111 | 113 | 94 | 128 |
| 75° | 52 | 48 | 46 | 43 | 48 | 56 |
| 85° | 7 | 8 | 9 | 10 | 10 | 10 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P559704

CATALOG NUMBER: FSR-12-2-LD4-1HI-40-UNV-82-88-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 635.2 | 635.2 | 635.2 | 635.2 | 635.2 |
| 2.5° | 630.8 | 630.8 | 630.8 | 630.1 | 630.1 |
| 5° | 624.2 | 623.5 | 623.5 | 622.7 | 622.7 |
| 7.5° | 619.0 | 618.3 | 617.6 | 616.8 | 615.4 |
| 10° | 611.7 | 611.7 | 611.0 | 607.3 | 606.6 |
| 12.5° | 600.0 | 599.2 | 596.3 | 591.1 | 589.7 |
| 15° | 583.8 | 583.8 | 577.9 | 572.1 | 569.8 |
| 17.5° | 566.2 | 565.4 | 558.1 | 552.2 | 549.3 |
| 20° | 547.1 | 545.6 | 538.3 | 528.7 | 523.6 |
| 22.5° | 525.8 | 525.8 | 517.0 | 504.5 | 499.4 |
| 25° | 506.0 | 503.0 | 494.9 | 477.3 | 464.1 |
| 27.5° | 483.2 | 478.8 | 470.0 | 445.0 | 429.6 |
| 30° | 458.2 | 456.0 | 443.5 | 411.2 | 399.5 |
| 32.5° | 434.7 | 431.1 | 417.8 | 384.1 | 374.5 |
| 35° | 410.5 | 407.6 | 387.7 | 358.4 | 349.5 |
| 37.5° | 386.3 | 382.6 | 357.6 | 334.1 | 323.1 |
| 40° | 362.0 | 357.6 | 330.5 | 309.2 | 297.4 |
| 42.5° | 339.3 | 333.4 | 307.0 | 284.2 | 271.0 |
| 45° | 315.0 | 308.4 | 282.0 | 258.5 | 248.2 |
| 47.5° | 290.8 | 284.9 | 260.7 | 236.5 | 224.7 |
| 50° | 265.1 | 260.0 | 237.9 | 213.7 | 201.2 |
| 52.5° | 243.8 | 235.7 | 214.4 | 190.2 | 179.9 |
| 55° | 218.8 | 212.2 | 192.4 | 169.6 | 160.8 |
| 57.5° | 196.1 | 189.5 | 171.1 | 149.8 | 142.5 |
| 60° | 174.8 | 165.2 | 149.8 | 131.4 | 125.6 |
| 62.5° | 151.3 | 143.9 | 130.7 | 115.3 | 122.6 |
| 65° | 130.0 | 122.6 | 110.9 | 113.1 | 94.0 |
| 67.5° | 106.5 | 102.8 | 92.5 | 82.2 | 79.3 |
| 70° | 86.7 | 82.2 | 78.6 | 67.6 | 64.6 |
| 72.5° | 69.0 | 64.6 | 59.5 | 53.6 | 51.4 |
| 75° | 52.1 | 48.5 | 45.5 | 43.3 | 47.7 |
| 77.5° | 36.0 | 34.5 | 32.3 | 30.1 | 29.4 |
| 80° | 23.5 | 22.8 | 22.0 | 21.3 | 20.6 |
| 82.5° | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 |
| 85° | 7.3 | 8.1 | 8.8 | 9.5 | 10.3 |
| 87.5° | 4.4 | 4.4 | 5.1 | 5.9 | 6.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)