

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: P558565

Luminaire Tested: FSR-12-1-LD4-1HI-40-UNV-93-86-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P558565
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-LD4-1HI-40-UNV-93-86-EDD
Description: 1X1 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 947.0 lumens
Efficiency: N/A
Efficacy: 87.7 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

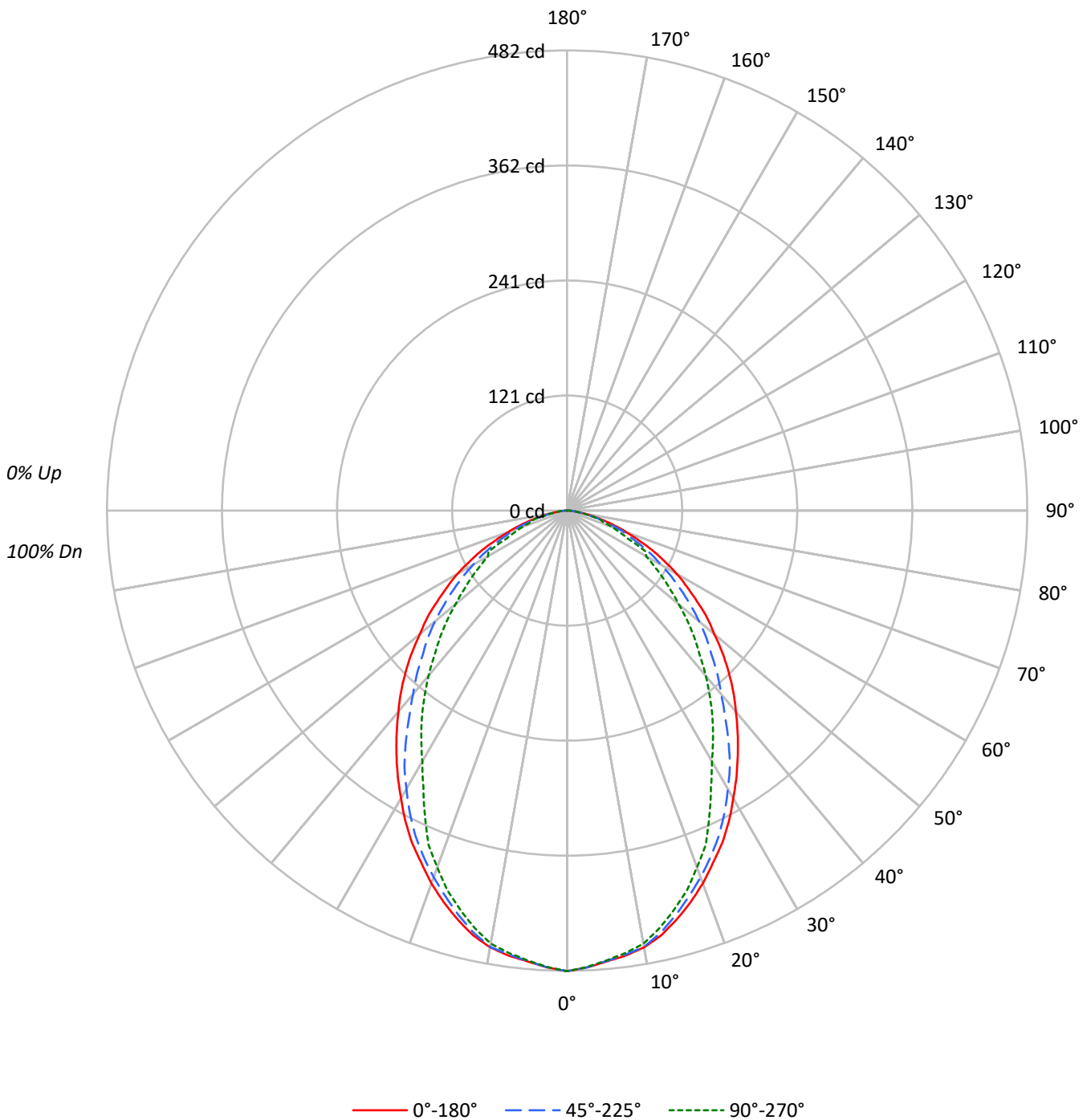
Input Watts (W): 10.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P558565

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Luminous Intensity Polar Plot





TEST NUMBER: P558565

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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° | 5193 | 5193 | 5193 |
| 5° | 5122 | 5116 | 5110 |
| 10° | 5077 | 5072 | 5034 |
| 15° | 4941 | 4891 | 4823 |
| 20° | 4759 | 4683 | 4554 |
| 25° | 4563 | 4464 | 4187 |
| 30° | 4325 | 4186 | 3771 |
| 35° | 4096 | 3870 | 3489 |
| 40° | 3863 | 3527 | 3174 |
| 45° | 3641 | 3259 | 2869 |
| 50° | 3371 | 3026 | 2559 |
| 55° | 3119 | 2742 | 2291 |
| 60° | 2857 | 2450 | 2054 |
| 65° | 2514 | 2145 | 1819 |
| 70° | 2071 | 1879 | 1545 |
| 75° | 1647 | 1439 | 1506 |
| 80° | 1103 | 1035 | 967 |
| 85° | 692 | 827 | 963 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3641 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 44.9 | 4.7 |
| 10°-20° | 123.2 | 13.0 |
| 20°-30° | 170.6 | 18.0 |
| 30°-40° | 181.9 | 19.2 |
| 40°-50° | 166.0 | 17.5 |
| 50°-60° | 130.0 | 13.7 |
| 60°-70° | 84.8 | 8.9 |
| 70°-80° | 37.5 | 4.0 |
| 80°-90° | 8.1 | 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° | 338.8 | 35.8 |
| 0°-40° | 520.7 | 55.0 |
| 0°-60° | 816.6 | 86.2 |
| 0°-90° | 947.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 947.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 482 | 482 | 482 | 482 | 482 | |
| 5° | 474 | 474 | 474 | 473 | 473 | 45 |
| 15° | 443 | 443 | 439 | 434 | 433 | 125 |
| 25° | 384 | 382 | 376 | 362 | 352 | 176 |
| 35° | 312 | 310 | 294 | 272 | 266 | 195 |
| 45° | 239 | 234 | 214 | 196 | 188 | 184 |
| 55° | 166 | 161 | 146 | 129 | 122 | 149 |
| 65° | 99 | 93 | 84 | 86 | 71 | 97 |
| 75° | 40 | 37 | 35 | 33 | 36 | 42 |
| 85° | 6 | 6 | 7 | 7 | 8 | 8 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P558565

CATALOG NUMBER: FSR-12-1-LD4-1HI-40-UNV-93-86-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 482.4 | 482.4 | 482.4 | 482.4 | 482.4 |
| 2.5° | 479.0 | 479.0 | 479.0 | 478.5 | 478.5 |
| 5° | 474.0 | 473.5 | 473.5 | 472.9 | 472.9 |
| 7.5° | 470.1 | 469.6 | 469.0 | 468.4 | 467.3 |
| 10° | 464.5 | 464.5 | 464.0 | 461.2 | 460.6 |
| 12.5° | 455.6 | 455.1 | 452.8 | 448.9 | 447.8 |
| 15° | 443.4 | 443.4 | 438.9 | 434.4 | 432.8 |
| 17.5° | 430.0 | 429.4 | 423.8 | 419.4 | 417.1 |
| 20° | 415.5 | 414.4 | 408.8 | 401.5 | 397.6 |
| 22.5° | 399.3 | 399.3 | 392.6 | 383.1 | 379.2 |
| 25° | 384.2 | 382.0 | 375.9 | 362.5 | 352.5 |
| 27.5° | 367.0 | 363.6 | 356.9 | 338.0 | 326.2 |
| 30° | 348.0 | 346.3 | 336.8 | 312.3 | 303.4 |
| 32.5° | 330.1 | 327.4 | 317.3 | 291.7 | 284.4 |
| 35° | 311.7 | 309.5 | 294.5 | 272.1 | 265.5 |
| 37.5° | 293.3 | 290.5 | 271.6 | 253.7 | 245.4 |
| 40° | 274.9 | 271.6 | 251.0 | 234.8 | 225.9 |
| 42.5° | 257.6 | 253.2 | 233.1 | 215.8 | 205.8 |
| 45° | 239.2 | 234.2 | 214.1 | 196.3 | 188.5 |
| 47.5° | 220.8 | 216.4 | 198.0 | 179.6 | 170.6 |
| 50° | 201.3 | 197.4 | 180.7 | 162.3 | 152.8 |
| 52.5° | 185.1 | 179.0 | 162.8 | 144.4 | 136.6 |
| 55° | 166.2 | 161.2 | 146.1 | 128.8 | 122.1 |
| 57.5° | 148.9 | 143.9 | 129.9 | 113.8 | 108.2 |
| 60° | 132.7 | 125.5 | 113.8 | 99.8 | 95.4 |
| 62.5° | 114.9 | 109.3 | 99.3 | 87.6 | 93.1 |
| 65° | 98.7 | 93.1 | 84.2 | 85.9 | 71.4 |
| 67.5° | 80.9 | 78.1 | 70.3 | 62.5 | 60.2 |
| 70° | 65.8 | 62.5 | 59.7 | 51.3 | 49.1 |
| 72.5° | 52.4 | 49.1 | 45.2 | 40.7 | 39.0 |
| 75° | 39.6 | 36.8 | 34.6 | 32.9 | 36.2 |
| 77.5° | 27.3 | 26.2 | 24.5 | 22.9 | 22.3 |
| 80° | 17.8 | 17.3 | 16.7 | 16.2 | 15.6 |
| 82.5° | 10.6 | 10.6 | 10.6 | 10.6 | 10.6 |
| 85° | 5.6 | 6.1 | 6.7 | 7.2 | 7.8 |
| 87.5° | 3.3 | 3.3 | 3.9 | 4.5 | 5.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)