

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: P559245

Luminaire Tested: FSR-12-1-LD4-2LO-35-UNV-81-96-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P559245
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-LD4-2LO-35-UNV-81-96-EDD
Description: 1X1 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1107.0 lumens
Efficiency: N/A
Efficacy: 94.6 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

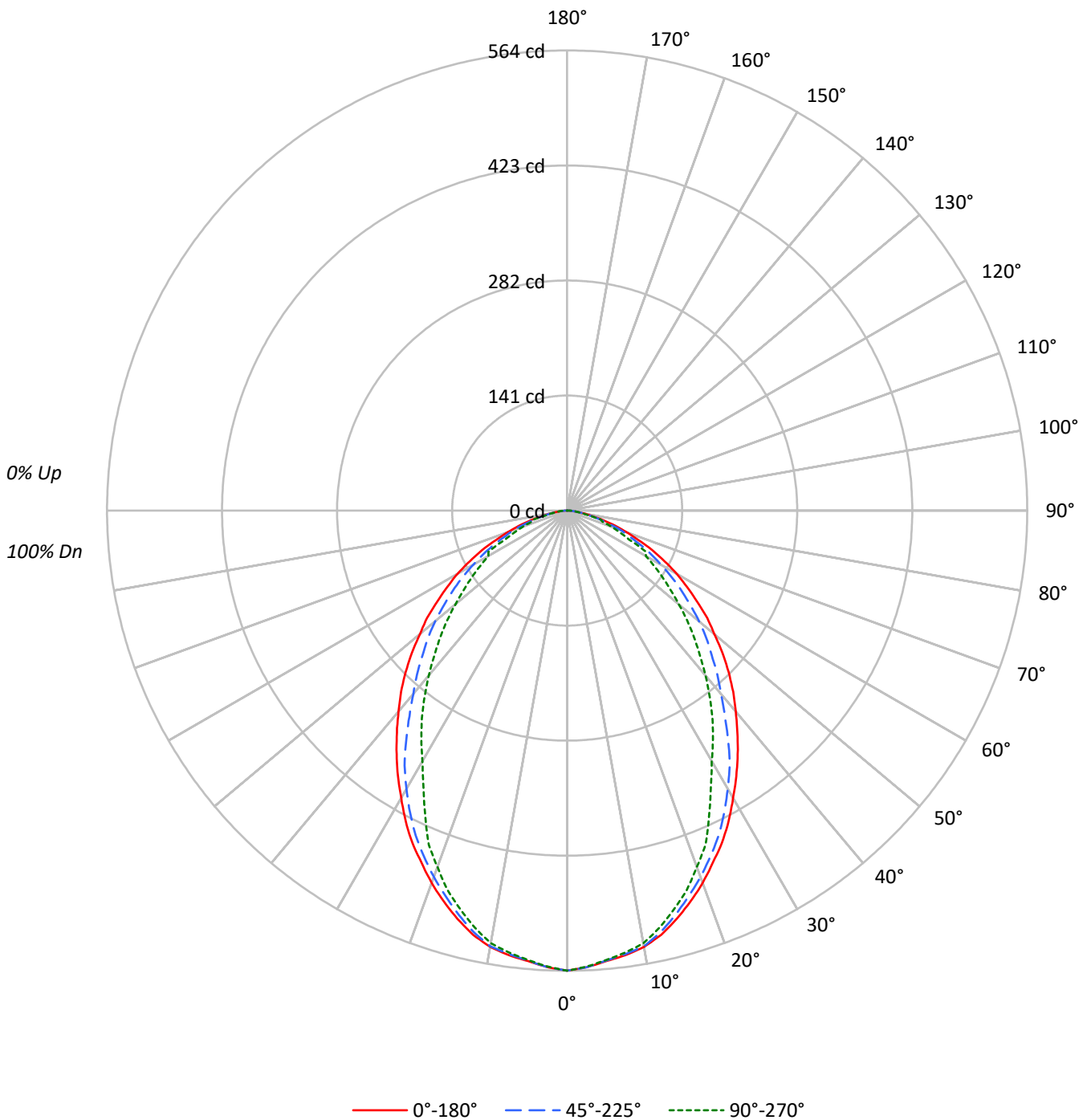
Input Watts (W): 11.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P559245

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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 | | | | |
| 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° | 6070 | 6070 | 6070 |
| 5° | 5987 | 5981 | 5973 |
| 10° | 5935 | 5928 | 5886 |
| 15° | 5776 | 5717 | 5638 |
| 20° | 5564 | 5473 | 5324 |
| 25° | 5335 | 5219 | 4893 |
| 30° | 5056 | 4893 | 4407 |
| 35° | 4788 | 4523 | 4077 |
| 40° | 4516 | 4123 | 3710 |
| 45° | 4258 | 3810 | 3354 |
| 50° | 3940 | 3537 | 2991 |
| 55° | 3646 | 3205 | 2680 |
| 60° | 3341 | 2863 | 2400 |
| 65° | 2939 | 2506 | 2124 |
| 70° | 2420 | 2197 | 1806 |
| 75° | 1926 | 1680 | 1763 |
| 80° | 1296 | 1215 | 1134 |
| 85° | 803 | 963 | 1124 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4258 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 52.5 | 4.7 |
| 10°-20° | 144.1 | 13.0 |
| 20°-30° | 199.4 | 18.0 |
| 30°-40° | 212.7 | 19.2 |
| 40°-50° | 194.0 | 17.5 |
| 50°-60° | 152.0 | 13.7 |
| 60°-70° | 99.1 | 8.9 |
| 70°-80° | 43.9 | 4.0 |
| 80°-90° | 9.4 | 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° | 396.0 | 35.8 |
| 0°-40° | 608.6 | 55.0 |
| 0°-60° | 954.6 | 86.2 |
| 0°-90° | 1107.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1107.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 564 | 564 | 564 | 564 | 564 | |
| 5° | 554 | 554 | 554 | 553 | 553 | 53 |
| 15° | 518 | 518 | 513 | 508 | 506 | 146 |
| 25° | 449 | 446 | 439 | 424 | 412 | 206 |
| 35° | 364 | 362 | 344 | 318 | 310 | 228 |
| 45° | 280 | 274 | 250 | 230 | 220 | 215 |
| 55° | 194 | 188 | 171 | 151 | 143 | 174 |
| 65° | 115 | 109 | 98 | 100 | 83 | 114 |
| 75° | 46 | 43 | 40 | 38 | 42 | 50 |
| 85° | 6 | 7 | 8 | 8 | 9 | 9 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P559245

CATALOG NUMBER: FSR-12-1-LD4-2LO-35-UNV-81-96-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 563.9 | 563.9 | 563.9 | 563.9 | 563.9 |
| 2.5° | 560.0 | 560.0 | 560.0 | 559.3 | 559.3 |
| 5° | 554.1 | 553.5 | 553.5 | 552.8 | 552.8 |
| 7.5° | 549.5 | 548.9 | 548.2 | 547.6 | 546.3 |
| 10° | 543.0 | 543.0 | 542.4 | 539.1 | 538.5 |
| 12.5° | 532.6 | 531.9 | 529.3 | 524.8 | 523.5 |
| 15° | 518.3 | 518.3 | 513.0 | 507.8 | 505.9 |
| 17.5° | 502.6 | 502.0 | 495.4 | 490.2 | 487.6 |
| 20° | 485.7 | 484.4 | 477.8 | 469.4 | 464.8 |
| 22.5° | 466.8 | 466.8 | 458.9 | 447.9 | 443.3 |
| 25° | 449.2 | 446.5 | 439.4 | 423.7 | 412.0 |
| 27.5° | 428.9 | 425.0 | 417.2 | 395.0 | 381.4 |
| 30° | 406.8 | 404.8 | 393.7 | 365.1 | 354.6 |
| 32.5° | 385.9 | 382.7 | 370.9 | 340.9 | 332.5 |
| 35° | 364.4 | 361.8 | 344.2 | 318.1 | 310.3 |
| 37.5° | 342.9 | 339.6 | 317.5 | 296.6 | 286.8 |
| 40° | 321.4 | 317.5 | 293.4 | 274.4 | 264.0 |
| 42.5° | 301.2 | 296.0 | 272.5 | 252.3 | 240.6 |
| 45° | 279.7 | 273.8 | 250.3 | 229.5 | 220.3 |
| 47.5° | 258.2 | 252.9 | 231.4 | 209.9 | 199.5 |
| 50° | 235.3 | 230.8 | 211.2 | 189.7 | 178.6 |
| 52.5° | 216.4 | 209.3 | 190.4 | 168.8 | 159.7 |
| 55° | 194.3 | 188.4 | 170.8 | 150.6 | 142.8 |
| 57.5° | 174.1 | 168.2 | 151.9 | 133.0 | 126.5 |
| 60° | 155.2 | 146.7 | 133.0 | 116.7 | 111.5 |
| 62.5° | 134.3 | 127.8 | 116.0 | 102.3 | 108.9 |
| 65° | 115.4 | 108.9 | 98.4 | 100.4 | 83.4 |
| 67.5° | 94.5 | 91.3 | 82.1 | 73.0 | 70.4 |
| 70° | 76.9 | 73.0 | 69.8 | 60.0 | 57.4 |
| 72.5° | 61.3 | 57.4 | 52.8 | 47.6 | 45.6 |
| 75° | 46.3 | 43.0 | 40.4 | 38.5 | 42.4 |
| 77.5° | 31.9 | 30.6 | 28.7 | 26.7 | 26.1 |
| 80° | 20.9 | 20.2 | 19.6 | 18.9 | 18.3 |
| 82.5° | 12.4 | 12.4 | 12.4 | 12.4 | 12.4 |
| 85° | 6.5 | 7.2 | 7.8 | 8.5 | 9.1 |
| 87.5° | 3.9 | 3.9 | 4.6 | 5.2 | 5.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)