

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: P559188

Luminaire Tested: FSR-12-1-LD4-2HI-50-UNV-82-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P559188
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-LD4-2HI-50-UNV-82-86-EDD-90
Description: 1X1 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1555.0 lumens
Efficiency: N/A
Efficacy: 72.0 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

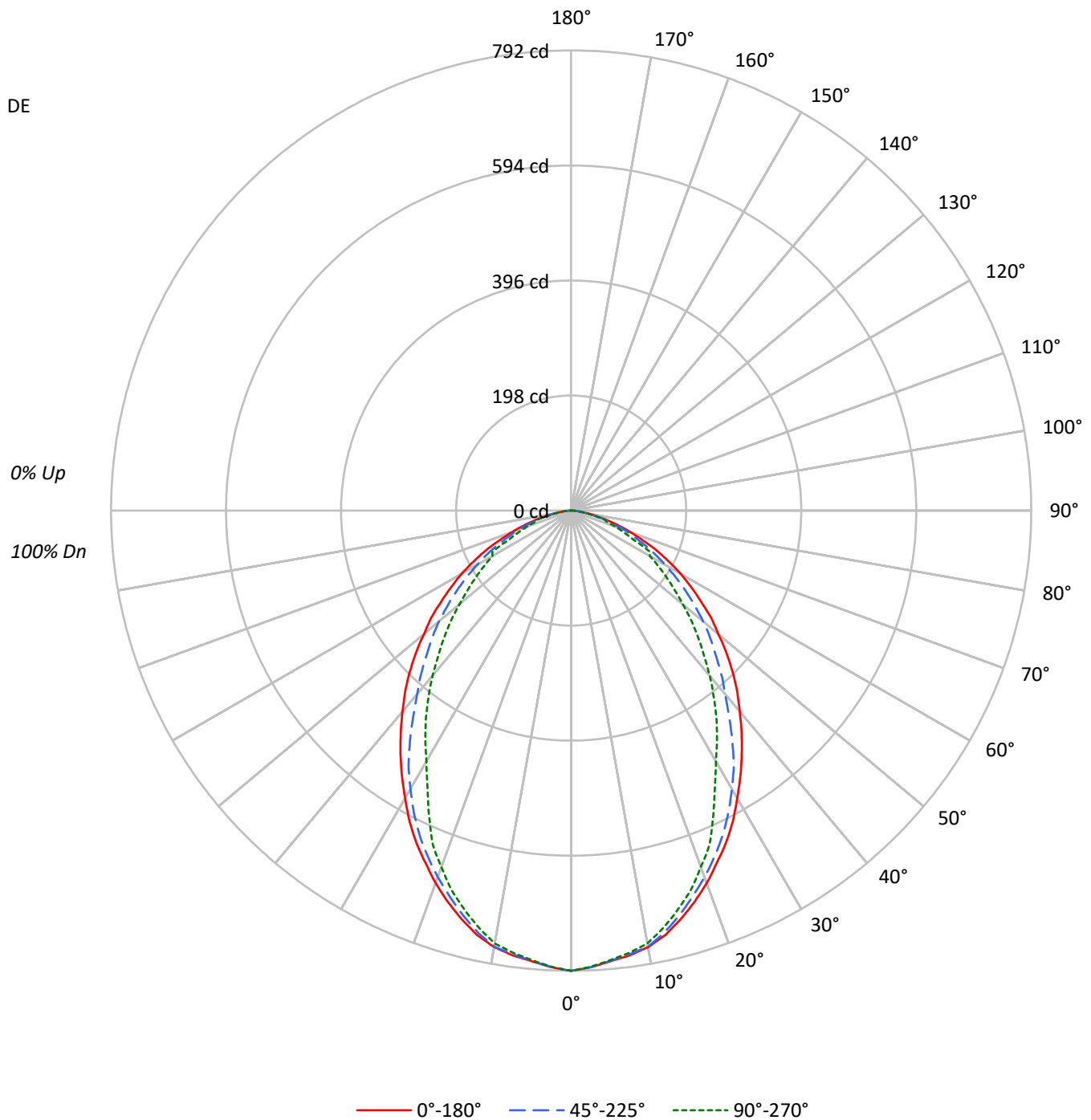
Input Watts (W): 21.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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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 | 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° | 8526 | 8526 | 8526 |
| 5° | 8411 | 8400 | 8390 |
| 10° | 8337 | 8328 | 8267 |
| 15° | 8113 | 8031 | 7919 |
| 20° | 7814 | 7688 | 7479 |
| 25° | 7493 | 7330 | 6873 |
| 30° | 7102 | 6875 | 6192 |
| 35° | 6727 | 6353 | 5728 |
| 40° | 6343 | 5791 | 5212 |
| 45° | 5979 | 5352 | 4711 |
| 50° | 5536 | 4968 | 4201 |
| 55° | 5121 | 4502 | 3763 |
| 60° | 4691 | 4021 | 3371 |
| 65° | 4129 | 3522 | 2985 |
| 70° | 3402 | 3084 | 2537 |
| 75° | 2703 | 2362 | 2475 |
| 80° | 1816 | 1705 | 1587 |
| 85° | 1136 | 1359 | 1581 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5979 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 73.7 | 4.7 |
| 10°-20° | 202.4 | 13.0 |
| 20°-30° | 280.1 | 18.0 |
| 30°-40° | 298.7 | 19.2 |
| 40°-50° | 272.5 | 17.5 |
| 50°-60° | 213.5 | 13.7 |
| 60°-70° | 139.2 | 8.9 |
| 70°-80° | 61.6 | 4.0 |
| 80°-90° | 13.2 | 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° | 556.2 | 35.8 |
| 0°-40° | 855.0 | 55.0 |
| 0°-60° | 1341.0 | 86.2 |
| 0°-90° | 1555.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1555.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 792 | 792 | 792 | 792 | 792 | |
| 5° | 778 | 777 | 777 | 776 | 776 | 74 |
| 15° | 728 | 728 | 721 | 713 | 711 | 205 |
| 25° | 631 | 627 | 617 | 595 | 579 | 290 |
| 35° | 512 | 508 | 484 | 447 | 436 | 320 |
| 45° | 393 | 385 | 352 | 322 | 310 | 303 |
| 55° | 273 | 265 | 240 | 212 | 200 | 245 |
| 65° | 162 | 153 | 138 | 141 | 117 | 160 |
| 75° | 65 | 60 | 57 | 54 | 60 | 70 |
| 85° | 9 | 10 | 11 | 12 | 13 | 13 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 792.1 | 792.1 | 792.1 | 792.1 | 792.1 |
| 2.5° | 786.6 | 786.6 | 786.6 | 785.7 | 785.7 |
| 5° | 778.4 | 777.4 | 777.4 | 776.5 | 776.5 |
| 7.5° | 772.0 | 771.0 | 770.1 | 769.2 | 767.4 |
| 10° | 762.8 | 762.8 | 761.9 | 757.3 | 756.4 |
| 12.5° | 748.1 | 747.2 | 743.6 | 737.2 | 735.3 |
| 15° | 728.0 | 728.0 | 720.7 | 713.3 | 710.6 |
| 17.5° | 706.0 | 705.1 | 695.9 | 688.6 | 685.0 |
| 20° | 682.2 | 680.4 | 671.2 | 659.3 | 652.9 |
| 22.5° | 655.7 | 655.7 | 644.7 | 629.1 | 622.7 |
| 25° | 630.9 | 627.3 | 617.2 | 595.2 | 578.7 |
| 27.5° | 602.5 | 597.0 | 586.1 | 554.9 | 535.7 |
| 30° | 571.4 | 568.7 | 553.1 | 512.8 | 498.2 |
| 32.5° | 542.1 | 537.5 | 521.0 | 478.9 | 467.0 |
| 35° | 511.9 | 508.2 | 483.5 | 446.9 | 435.9 |
| 37.5° | 481.7 | 477.1 | 446.0 | 416.7 | 402.9 |
| 40° | 451.4 | 446.0 | 412.1 | 385.5 | 370.9 |
| 42.5° | 423.1 | 415.7 | 382.8 | 354.4 | 337.9 |
| 45° | 392.8 | 384.6 | 351.6 | 322.3 | 309.5 |
| 47.5° | 362.6 | 355.3 | 325.1 | 294.9 | 280.2 |
| 50° | 330.6 | 324.2 | 296.7 | 266.5 | 250.9 |
| 52.5° | 304.0 | 293.9 | 267.4 | 237.2 | 224.4 |
| 55° | 272.9 | 264.6 | 239.9 | 211.5 | 200.5 |
| 57.5° | 244.5 | 236.3 | 213.4 | 186.8 | 177.6 |
| 60° | 217.9 | 206.0 | 186.8 | 163.9 | 156.6 |
| 62.5° | 188.6 | 179.5 | 163.0 | 143.8 | 152.9 |
| 65° | 162.1 | 152.9 | 138.3 | 141.0 | 117.2 |
| 67.5° | 132.8 | 128.2 | 115.4 | 102.6 | 98.9 |
| 70° | 108.1 | 102.6 | 98.0 | 84.2 | 80.6 |
| 72.5° | 86.1 | 80.6 | 74.2 | 66.8 | 64.1 |
| 75° | 65.0 | 60.4 | 56.8 | 54.0 | 59.5 |
| 77.5° | 44.9 | 43.0 | 40.3 | 37.5 | 36.6 |
| 80° | 29.3 | 28.4 | 27.5 | 26.6 | 25.6 |
| 82.5° | 17.4 | 17.4 | 17.4 | 17.4 | 17.4 |
| 85° | 9.2 | 10.1 | 11.0 | 11.9 | 12.8 |
| 87.5° | 5.5 | 5.5 | 6.4 | 7.3 | 8.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)