

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: P559572

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

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P559572
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-LD4-2STD-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: 1267.0 lumens
Efficiency: N/A
Efficacy: 76.3 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

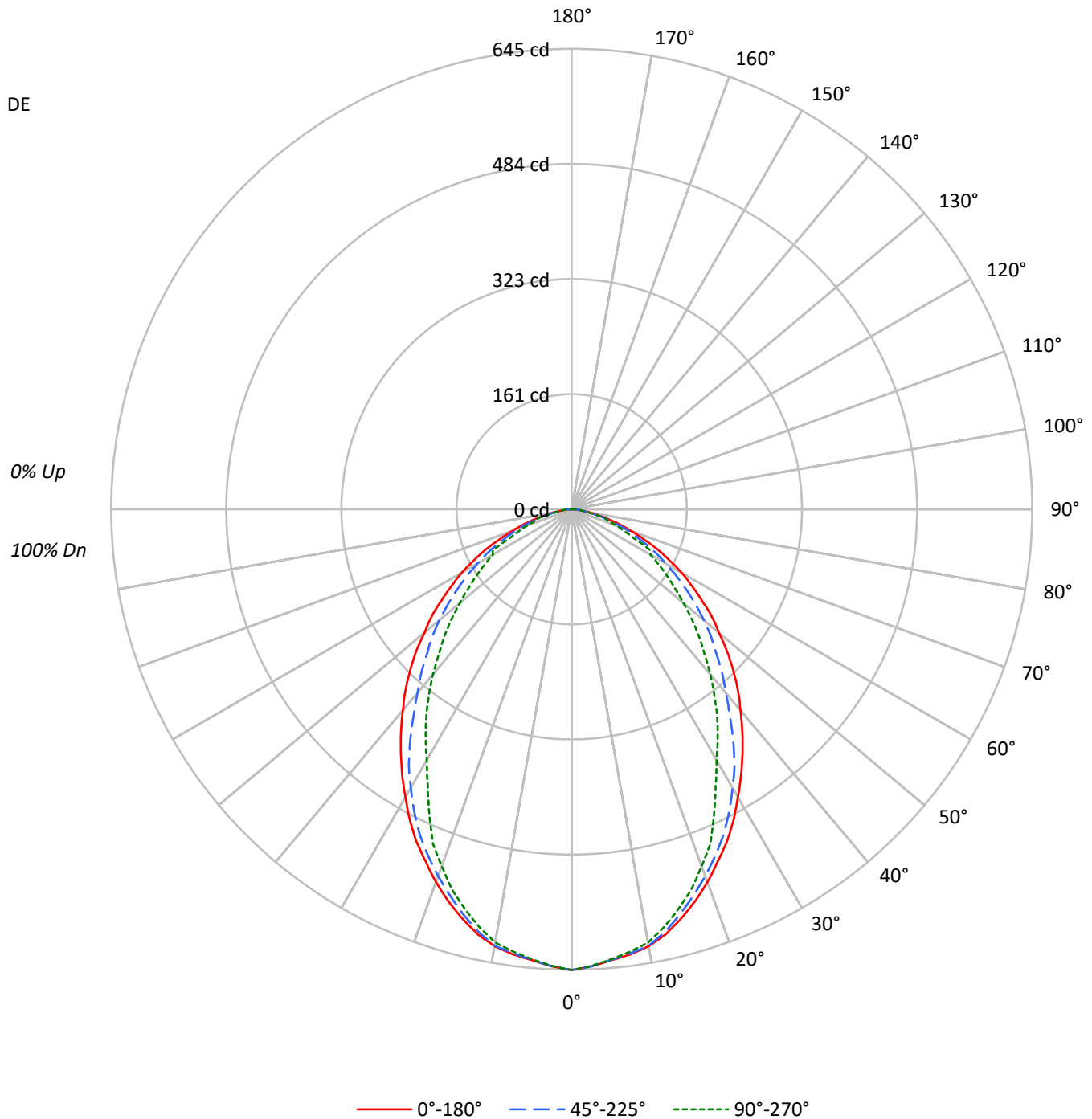
Input Watts (W): 16.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P559572

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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 | | | | | | | | | 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° | 6947 | 6947 | 6947 |
| 5° | 6853 | 6845 | 6836 |
| 10° | 6793 | 6785 | 6736 |
| 15° | 6610 | 6544 | 6452 |
| 20° | 6368 | 6265 | 6094 |
| 25° | 6106 | 5973 | 5600 |
| 30° | 5787 | 5602 | 5045 |
| 35° | 5481 | 5177 | 4667 |
| 40° | 5168 | 4718 | 4246 |
| 45° | 4873 | 4361 | 3839 |
| 50° | 4510 | 4047 | 3423 |
| 55° | 4172 | 3669 | 3066 |
| 60° | 3823 | 3277 | 2747 |
| 65° | 3365 | 2870 | 2432 |
| 70° | 2769 | 2511 | 2068 |
| 75° | 2204 | 1926 | 2017 |
| 80° | 1481 | 1389 | 1296 |
| 85° | 926 | 1112 | 1284 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4873 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 60.1 | 4.7 |
| 10°-20° | 164.9 | 13.0 |
| 20°-30° | 228.3 | 18.0 |
| 30°-40° | 243.4 | 19.2 |
| 40°-50° | 222.0 | 17.5 |
| 50°-60° | 173.9 | 13.7 |
| 60°-70° | 113.4 | 8.9 |
| 70°-80° | 50.2 | 4.0 |
| 80°-90° | 10.8 | 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° | 453.2 | 35.8 |
| 0°-40° | 696.6 | 55.0 |
| 0°-60° | 1092.6 | 86.2 |
| 0°-90° | 1267.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1267.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 645 | 645 | 645 | 645 | 645 | |
| 5° | 634 | 634 | 634 | 633 | 633 | 60 |
| 15° | 593 | 593 | 587 | 581 | 579 | 167 |
| 25° | 514 | 511 | 503 | 485 | 472 | 236 |
| 35° | 417 | 414 | 394 | 364 | 355 | 261 |
| 45° | 320 | 313 | 286 | 263 | 252 | 247 |
| 55° | 222 | 216 | 196 | 172 | 163 | 199 |
| 65° | 132 | 125 | 113 | 115 | 96 | 130 |
| 75° | 53 | 49 | 46 | 44 | 48 | 57 |
| 85° | 8 | 8 | 9 | 10 | 10 | 10 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 645.4 | 645.4 | 645.4 | 645.4 | 645.4 |
| 2.5° | 640.9 | 640.9 | 640.9 | 640.2 | 640.2 |
| 5° | 634.2 | 633.5 | 633.5 | 632.7 | 632.7 |
| 7.5° | 629.0 | 628.2 | 627.5 | 626.7 | 625.2 |
| 10° | 621.5 | 621.5 | 620.8 | 617.0 | 616.3 |
| 12.5° | 609.6 | 608.8 | 605.8 | 600.6 | 599.1 |
| 15° | 593.2 | 593.2 | 587.2 | 581.2 | 579.0 |
| 17.5° | 575.3 | 574.5 | 567.1 | 561.1 | 558.1 |
| 20° | 555.9 | 554.4 | 546.9 | 537.2 | 532.0 |
| 22.5° | 534.2 | 534.2 | 525.3 | 512.6 | 507.4 |
| 25° | 514.1 | 511.1 | 502.9 | 485.0 | 471.5 |
| 27.5° | 490.9 | 486.5 | 477.5 | 452.1 | 436.5 |
| 30° | 465.6 | 463.3 | 450.7 | 417.8 | 405.9 |
| 32.5° | 441.7 | 438.0 | 424.5 | 390.2 | 380.5 |
| 35° | 417.1 | 414.1 | 394.0 | 364.1 | 355.2 |
| 37.5° | 392.5 | 388.7 | 363.4 | 339.5 | 328.3 |
| 40° | 367.8 | 363.4 | 335.8 | 314.1 | 302.2 |
| 42.5° | 344.7 | 338.7 | 311.9 | 288.7 | 275.3 |
| 45° | 320.1 | 313.4 | 286.5 | 262.6 | 252.2 |
| 47.5° | 295.5 | 289.5 | 264.9 | 240.3 | 228.3 |
| 50° | 269.3 | 264.1 | 241.7 | 217.1 | 204.4 |
| 52.5° | 247.7 | 239.5 | 217.9 | 193.2 | 182.8 |
| 55° | 222.3 | 215.6 | 195.5 | 172.4 | 163.4 |
| 57.5° | 199.2 | 192.5 | 173.8 | 152.2 | 144.7 |
| 60° | 177.6 | 167.9 | 152.2 | 133.6 | 127.6 |
| 62.5° | 153.7 | 146.2 | 132.8 | 117.1 | 124.6 |
| 65° | 132.1 | 124.6 | 112.7 | 114.9 | 95.5 |
| 67.5° | 108.2 | 104.5 | 94.0 | 83.6 | 80.6 |
| 70° | 88.0 | 83.6 | 79.8 | 68.6 | 65.7 |
| 72.5° | 70.1 | 65.7 | 60.4 | 54.5 | 52.2 |
| 75° | 53.0 | 49.2 | 46.3 | 44.0 | 48.5 |
| 77.5° | 36.6 | 35.1 | 32.8 | 30.6 | 29.8 |
| 80° | 23.9 | 23.1 | 22.4 | 21.6 | 20.9 |
| 82.5° | 14.2 | 14.2 | 14.2 | 14.2 | 14.2 |
| 85° | 7.5 | 8.2 | 9.0 | 9.7 | 10.4 |
| 87.5° | 4.5 | 4.5 | 5.2 | 6.0 | 6.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)