

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: P559060

Luminaire Tested: FSR-12-1-LD4-2HI-35-UNV-82-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P559060
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-35-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 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

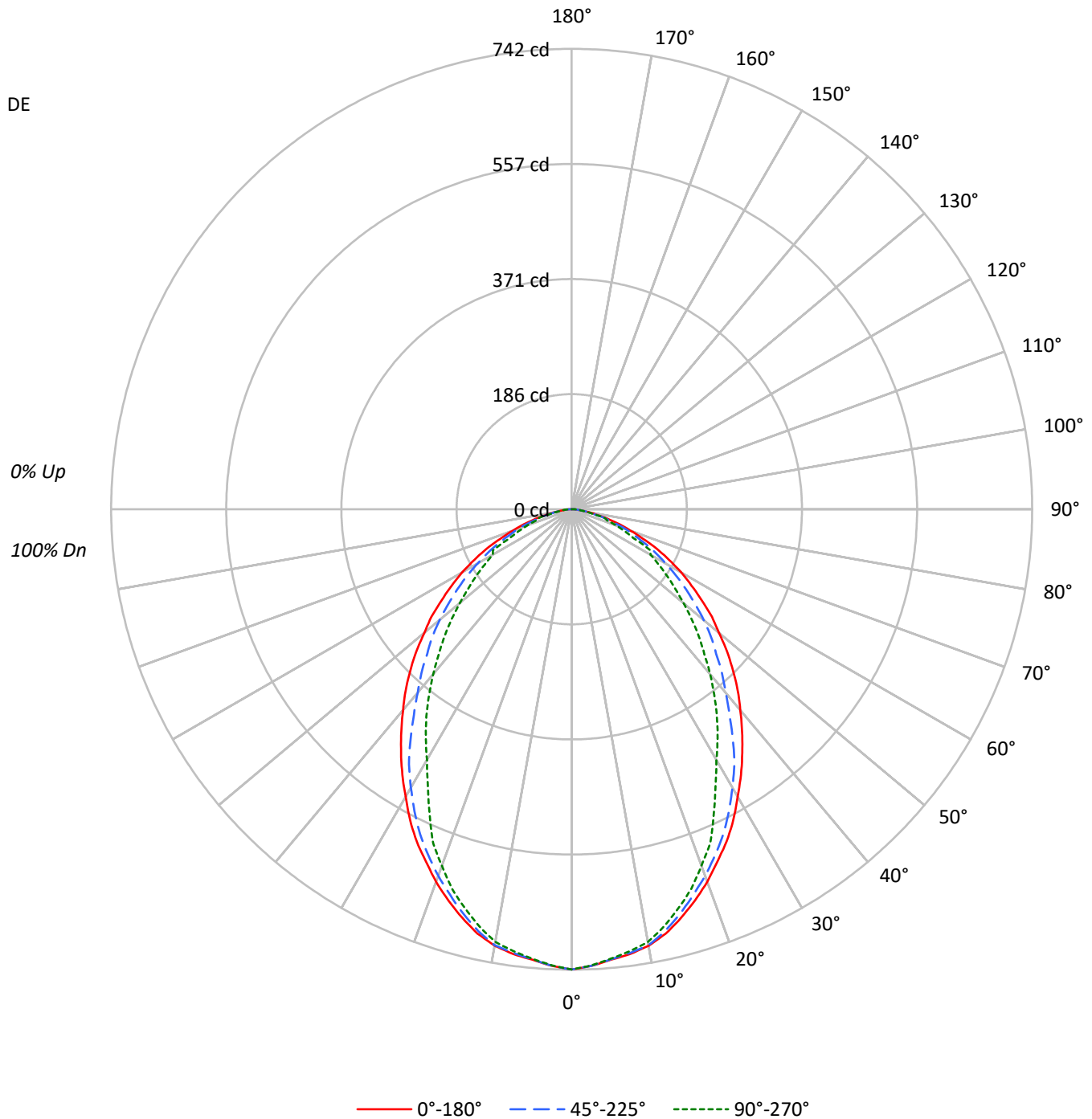
Lumens per Lamp: N/A
Luminaire Lumens: 1456.0 lumens
Efficiency: N/A
Efficacy: 67.4 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
CIE Type: Direct

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



TEST NUMBER: P559060
CATALOG NUMBER: FSR-12-1-LD4-2HI-35-UNV-82-86-EDD-90

Luminous Intensity Polar Plot





TEST NUMBER: P559060

CATALOG NUMBER: FSR-12-1-LD4-2HI-35-UNV-82-86-EDD-90

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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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° | 7984 | 7984 | 7984 |
| 5° | 7875 | 7865 | 7856 |
| 10° | 7806 | 7797 | 7741 |
| 15° | 7595 | 7520 | 7415 |
| 20° | 7317 | 7199 | 7002 |
| 25° | 7017 | 6864 | 6436 |
| 30° | 6650 | 6437 | 5797 |
| 35° | 6298 | 5949 | 5363 |
| 40° | 5939 | 5421 | 4880 |
| 45° | 5599 | 5011 | 4411 |
| 50° | 5183 | 4652 | 3934 |
| 55° | 4795 | 4215 | 3524 |
| 60° | 4394 | 3765 | 3156 |
| 65° | 3866 | 3298 | 2794 |
| 70° | 3185 | 2886 | 2376 |
| 75° | 2533 | 2213 | 2316 |
| 80° | 1698 | 1593 | 1488 |
| 85° | 1062 | 1272 | 1482 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5599 cd/sqm



TEST NUMBER: P559060

CATALOG NUMBER: FSR-12-1-LD4-2HI-35-UNV-82-86-EDD-90

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 69.0 | 4.7 |
| 10°-20° | 189.5 | 13.0 |
| 20°-30° | 262.3 | 18.0 |
| 30°-40° | 279.7 | 19.2 |
| 40°-50° | 255.2 | 17.5 |
| 50°-60° | 199.9 | 13.7 |
| 60°-70° | 130.3 | 8.9 |
| 70°-80° | 57.7 | 4.0 |
| 80°-90° | 12.4 | 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° | 520.8 | 35.8 |
| 0°-40° | 800.5 | 55.0 |
| 0°-60° | 1255.6 | 86.2 |
| 0°-90° | 1456.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1456.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 742 | 742 | 742 | 742 | 742 | |
| 5° | 729 | 728 | 728 | 727 | 727 | 69 |
| 15° | 682 | 682 | 675 | 668 | 665 | 192 |
| 25° | 591 | 587 | 578 | 557 | 542 | 271 |
| 35° | 479 | 476 | 453 | 418 | 408 | 300 |
| 45° | 368 | 360 | 329 | 302 | 290 | 283 |
| 55° | 256 | 248 | 225 | 198 | 188 | 229 |
| 65° | 152 | 143 | 130 | 132 | 110 | 150 |
| 75° | 61 | 57 | 53 | 51 | 56 | 65 |
| 85° | 9 | 9 | 10 | 11 | 12 | 12 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P559060

CATALOG NUMBER: FSR-12-1-LD4-2HI-35-UNV-82-86-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 741.7 | 741.7 | 741.7 | 741.7 | 741.7 |
| 2.5° | 736.5 | 736.5 | 736.5 | 735.7 | 735.7 |
| 5° | 728.8 | 727.9 | 727.9 | 727.1 | 727.1 |
| 7.5° | 722.8 | 721.9 | 721.1 | 720.2 | 718.5 |
| 10° | 714.2 | 714.2 | 713.4 | 709.1 | 708.2 |
| 12.5° | 700.5 | 699.7 | 696.2 | 690.2 | 688.5 |
| 15° | 681.6 | 681.6 | 674.8 | 667.9 | 665.4 |
| 17.5° | 661.1 | 660.2 | 651.6 | 644.8 | 641.3 |
| 20° | 638.8 | 637.1 | 628.5 | 617.3 | 611.3 |
| 22.5° | 613.9 | 613.9 | 603.6 | 589.0 | 583.0 |
| 25° | 590.8 | 587.3 | 577.9 | 557.3 | 541.9 |
| 27.5° | 564.2 | 559.0 | 548.7 | 519.6 | 501.6 |
| 30° | 535.0 | 532.5 | 517.9 | 480.2 | 466.4 |
| 32.5° | 507.6 | 503.3 | 487.9 | 448.4 | 437.3 |
| 35° | 479.3 | 475.9 | 452.7 | 418.4 | 408.1 |
| 37.5° | 451.0 | 446.7 | 417.6 | 390.1 | 377.3 |
| 40° | 422.7 | 417.6 | 385.8 | 361.0 | 347.3 |
| 42.5° | 396.1 | 389.3 | 358.4 | 331.8 | 316.4 |
| 45° | 367.8 | 360.1 | 329.2 | 301.8 | 289.8 |
| 47.5° | 339.5 | 332.7 | 304.4 | 276.1 | 262.4 |
| 50° | 309.5 | 303.5 | 277.8 | 249.5 | 234.9 |
| 52.5° | 284.7 | 275.2 | 250.4 | 222.1 | 210.1 |
| 55° | 255.5 | 247.8 | 224.6 | 198.1 | 187.8 |
| 57.5° | 228.9 | 221.2 | 199.8 | 174.9 | 166.3 |
| 60° | 204.1 | 192.9 | 174.9 | 153.5 | 146.6 |
| 62.5° | 176.6 | 168.1 | 152.6 | 134.6 | 143.2 |
| 65° | 151.8 | 143.2 | 129.5 | 132.0 | 109.7 |
| 67.5° | 124.3 | 120.0 | 108.0 | 96.0 | 92.6 |
| 70° | 101.2 | 96.0 | 91.7 | 78.9 | 75.5 |
| 72.5° | 80.6 | 75.5 | 69.5 | 62.6 | 60.0 |
| 75° | 60.9 | 56.6 | 53.2 | 50.6 | 55.7 |
| 77.5° | 42.0 | 40.3 | 37.7 | 35.2 | 34.3 |
| 80° | 27.4 | 26.6 | 25.7 | 24.9 | 24.0 |
| 82.5° | 16.3 | 16.3 | 16.3 | 16.3 | 16.3 |
| 85° | 8.6 | 9.4 | 10.3 | 11.1 | 12.0 |
| 87.5° | 5.1 | 5.1 | 6.0 | 6.9 | 7.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)