

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: P559617

Luminaire Tested: FSR-12-2-LD4-1HI-35-UNV-81-84-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P559617
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-12-2-LD4-1HI-35-UNV-81-84-EDD
Description: 1X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1777.0 lumens
Efficiency: N/A
Efficacy: 82.3 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')
CIE Type: Direct

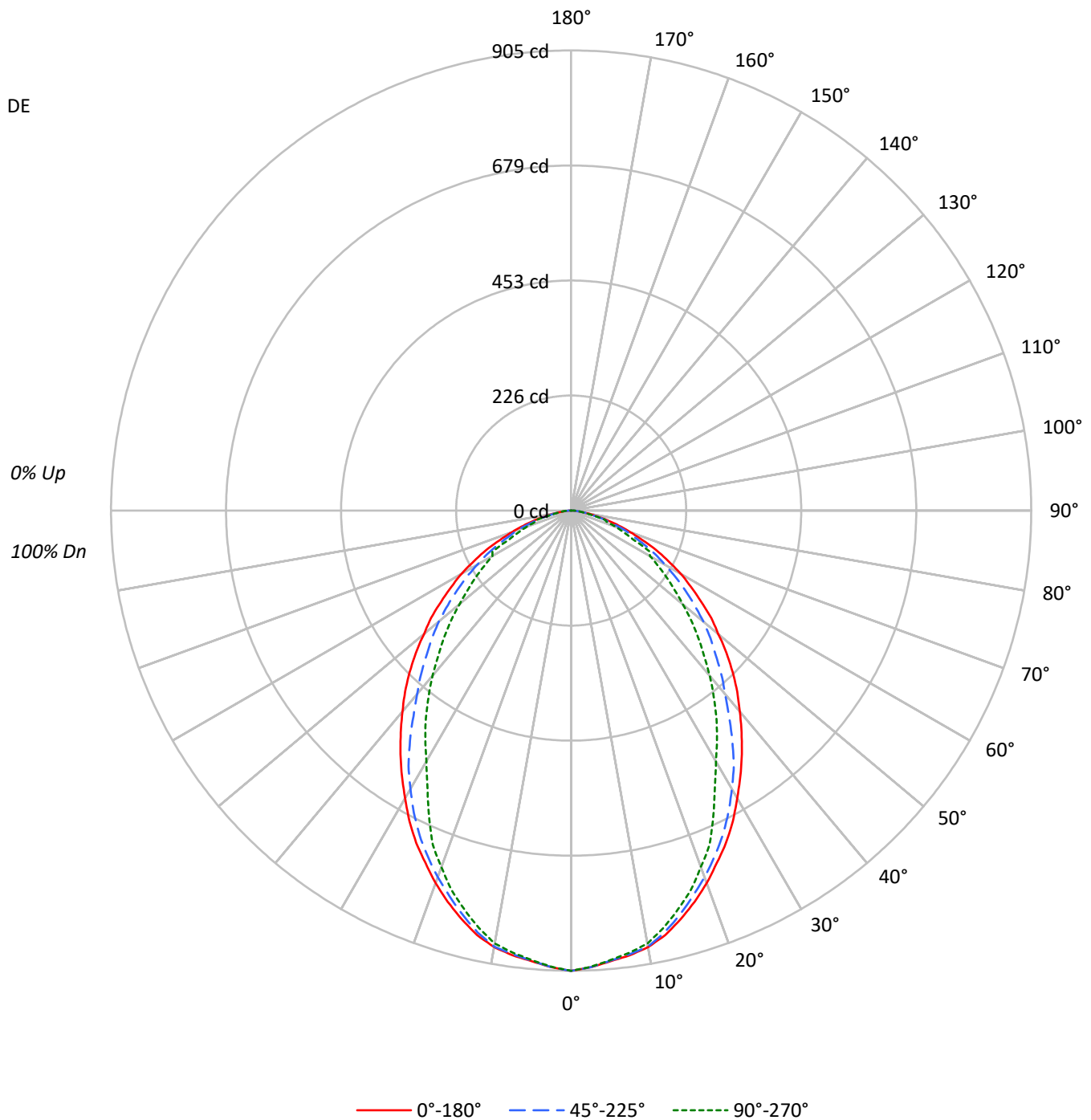
Input Watts (W): 21.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P559617

CATALOG NUMBER: FSR-12-2-LD4-1HI-35-UNV-81-84-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P559617

CATALOG NUMBER: FSR-12-2-LD4-1HI-35-UNV-81-84-EDD

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° | 4872 | 4872 | 4872 |
| 5° | 4806 | 4800 | 4794 |
| 10° | 4764 | 4758 | 4724 |
| 15° | 4635 | 4589 | 4524 |
| 20° | 4465 | 4393 | 4273 |
| 25° | 4282 | 4188 | 3928 |
| 30° | 4058 | 3928 | 3538 |
| 35° | 3844 | 3630 | 3273 |
| 40° | 3625 | 3308 | 2977 |
| 45° | 3417 | 3058 | 2692 |
| 50° | 3163 | 2839 | 2400 |
| 55° | 2926 | 2573 | 2151 |
| 60° | 2681 | 2298 | 1926 |
| 65° | 2358 | 2012 | 1705 |
| 70° | 1943 | 1762 | 1449 |
| 75° | 1545 | 1350 | 1414 |
| 80° | 1038 | 973 | 908 |
| 85° | 648 | 778 | 908 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3417 cd/sqm



TEST NUMBER: P559617

CATALOG NUMBER: FSR-12-2-LD4-1HI-35-UNV-81-84-EDD

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 84.3 | 4.7 |
| 10°-20° | 231.2 | 13.0 |
| 20°-30° | 320.1 | 18.0 |
| 30°-40° | 341.4 | 19.2 |
| 40°-50° | 311.4 | 17.5 |
| 50°-60° | 244.0 | 13.7 |
| 60°-70° | 159.0 | 8.9 |
| 70°-80° | 70.5 | 4.0 |
| 80°-90° | 15.1 | 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° | 635.6 | 35.8 |
| 0°-40° | 977.0 | 55.0 |
| 0°-60° | 1532.4 | 86.2 |
| 0°-90° | 1777.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1777.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 905 | 905 | 905 | 905 | 905 | |
| 5° | 890 | 888 | 888 | 887 | 887 | 84 |
| 15° | 832 | 832 | 824 | 815 | 812 | 234 |
| 25° | 721 | 717 | 705 | 680 | 661 | 331 |
| 35° | 585 | 581 | 552 | 511 | 498 | 366 |
| 45° | 449 | 440 | 402 | 368 | 354 | 346 |
| 55° | 312 | 302 | 274 | 242 | 229 | 280 |
| 65° | 185 | 175 | 158 | 161 | 134 | 183 |
| 75° | 74 | 69 | 65 | 62 | 68 | 80 |
| 85° | 10 | 12 | 13 | 14 | 15 | 15 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P559617

CATALOG NUMBER: FSR-12-2-LD4-1HI-35-UNV-81-84-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 905.2 | 905.2 | 905.2 | 905.2 | 905.2 |
| 2.5° | 898.9 | 898.9 | 898.9 | 897.9 | 897.9 |
| 5° | 889.5 | 888.4 | 888.4 | 887.4 | 887.4 |
| 7.5° | 882.2 | 881.1 | 880.1 | 879.0 | 876.9 |
| 10° | 871.7 | 871.7 | 870.6 | 865.4 | 864.4 |
| 12.5° | 855.0 | 853.9 | 849.7 | 842.4 | 840.3 |
| 15° | 831.9 | 831.9 | 823.6 | 815.2 | 812.0 |
| 17.5° | 806.8 | 805.8 | 795.3 | 786.9 | 782.7 |
| 20° | 779.6 | 777.5 | 767.0 | 753.4 | 746.1 |
| 22.5° | 749.3 | 749.3 | 736.7 | 718.9 | 711.6 |
| 25° | 721.0 | 716.8 | 705.3 | 680.2 | 661.4 |
| 27.5° | 688.6 | 682.3 | 669.7 | 634.1 | 612.2 |
| 30° | 653.0 | 649.8 | 632.1 | 586.0 | 569.3 |
| 32.5° | 619.5 | 614.3 | 595.4 | 547.3 | 533.7 |
| 35° | 585.0 | 580.8 | 552.5 | 510.7 | 498.1 |
| 37.5° | 550.4 | 545.2 | 509.6 | 476.1 | 460.4 |
| 40° | 515.9 | 509.6 | 470.9 | 440.6 | 423.8 |
| 42.5° | 483.5 | 475.1 | 437.4 | 405.0 | 386.1 |
| 45° | 448.9 | 439.5 | 401.8 | 368.4 | 353.7 |
| 47.5° | 414.4 | 406.0 | 371.5 | 337.0 | 320.2 |
| 50° | 377.8 | 370.4 | 339.1 | 304.5 | 286.7 |
| 52.5° | 347.4 | 335.9 | 305.6 | 271.0 | 256.4 |
| 55° | 311.8 | 302.4 | 274.2 | 241.7 | 229.2 |
| 57.5° | 279.4 | 270.0 | 243.8 | 213.5 | 203.0 |
| 60° | 249.1 | 235.5 | 213.5 | 187.3 | 178.9 |
| 62.5° | 215.6 | 205.1 | 186.3 | 164.3 | 174.8 |
| 65° | 185.2 | 174.8 | 158.0 | 161.2 | 133.9 |
| 67.5° | 151.7 | 146.5 | 131.9 | 117.2 | 113.0 |
| 70° | 123.5 | 117.2 | 112.0 | 96.3 | 92.1 |
| 72.5° | 98.4 | 92.1 | 84.8 | 76.4 | 73.3 |
| 75° | 74.3 | 69.1 | 64.9 | 61.7 | 68.0 |
| 77.5° | 51.3 | 49.2 | 46.0 | 42.9 | 41.9 |
| 80° | 33.5 | 32.4 | 31.4 | 30.3 | 29.3 |
| 82.5° | 19.9 | 19.9 | 19.9 | 19.9 | 19.9 |
| 85° | 10.5 | 11.5 | 12.6 | 13.6 | 14.7 |
| 87.5° | 6.3 | 6.3 | 7.3 | 8.4 | 9.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)