

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: P589940

Luminaire Tested: FSR-24-2-LD4-1HI-50-UNV-93-97-EDD

Issue Date: 12/8/2021

Test Information

Test Method: LM-79-2019
Report Number: P589940
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)
Test Lab: INNOVATION CENTER
Issue Date: 12/8/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: FSR-24-2-LD4-1HI-50-UNV-93-97-EDD
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2354.0 lumens
Efficiency: N/A
Efficacy: 109.0 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

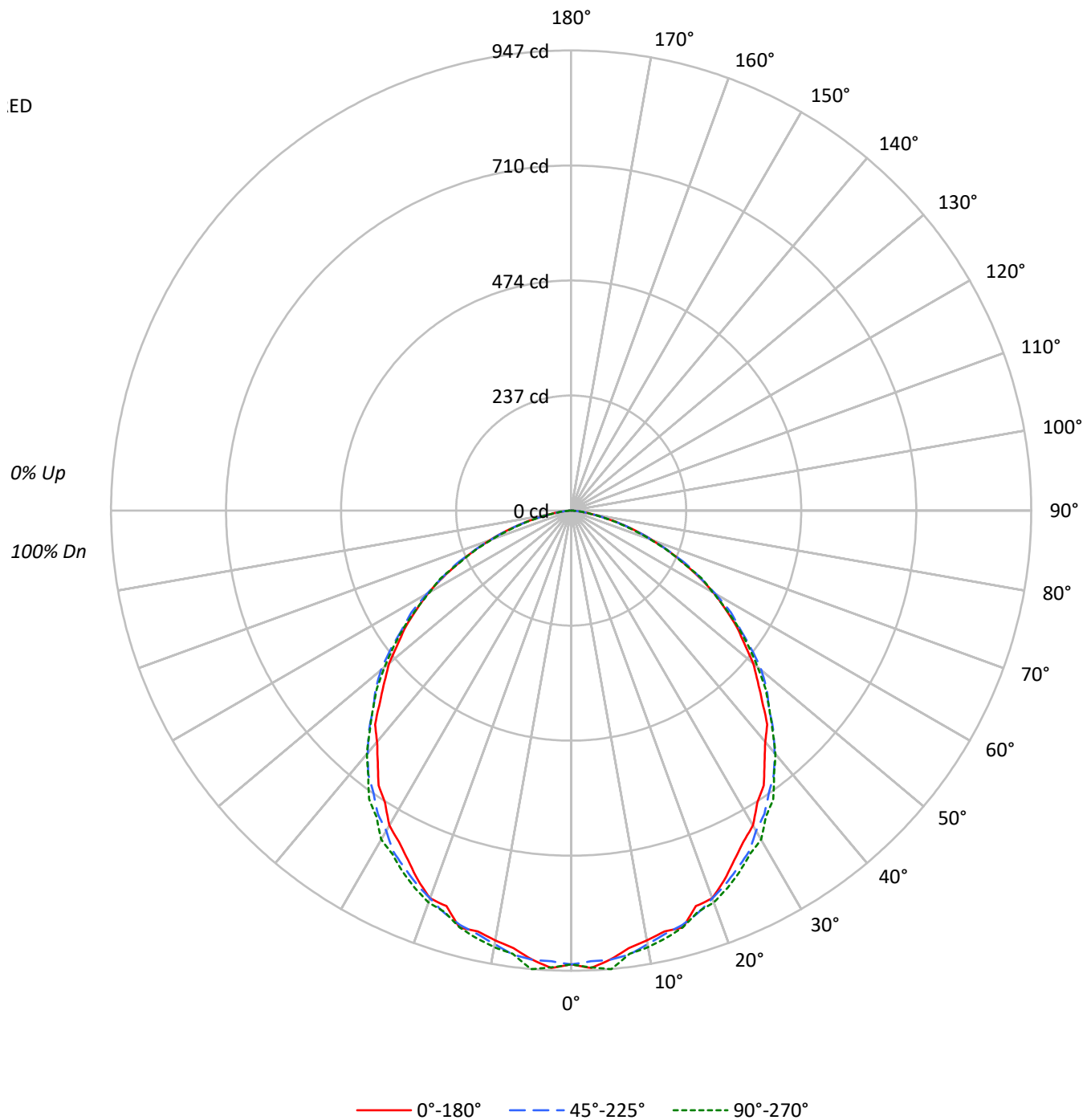
Input Watts (W): 21.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P589940

CATALOG NUMBER: FSR-24-2-LD4-1HI-50-UNV-93-97-EDD

Luminous Intensity Polar Plot





TEST NUMBER: P589940

CATALOG NUMBER: FSR-24-2-LD4-1HI-50-UNV-93-97-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 | 105 | 101 | 98 | 107 | 103 | 100 | 96 | 99 | 96 | 93 | 95 | 93 | 90 | 91 | 90 | 88 | 86 | | | | | 86 | | | |
| 2 | 100 | 93 | 86 | 81 | 98 | 91 | 85 | 80 | 87 | 82 | 78 | 84 | 80 | 76 | 81 | 78 | 75 | 73 | | | | | 73 | | | |
| 3 | 92 | 82 | 74 | 68 | 89 | 80 | 73 | 67 | 77 | 71 | 66 | 75 | 69 | 65 | 72 | 68 | 64 | 62 | | | | | 62 | | | |
| 4 | 84 | 73 | 64 | 58 | 82 | 71 | 64 | 58 | 69 | 62 | 57 | 67 | 61 | 56 | 65 | 59 | 55 | 53 | | | | | 53 | | | |
| 5 | 78 | 65 | 57 | 50 | 76 | 64 | 56 | 50 | 62 | 55 | 49 | 60 | 54 | 49 | 58 | 53 | 48 | 46 | | | | | 46 | | | |
| 6 | 72 | 59 | 50 | 44 | 70 | 58 | 50 | 44 | 56 | 49 | 43 | 54 | 48 | 43 | 53 | 47 | 43 | 41 | | | | | 41 | | | |
| 7 | 67 | 53 | 45 | 39 | 65 | 53 | 45 | 39 | 51 | 44 | 39 | 50 | 43 | 38 | 48 | 42 | 38 | 36 | | | | | 36 | | | |
| 8 | 62 | 49 | 41 | 35 | 61 | 48 | 40 | 35 | 47 | 40 | 34 | 46 | 39 | 34 | 44 | 39 | 34 | 32 | | | | | 32 | | | |
| 9 | 58 | 45 | 37 | 31 | 57 | 44 | 37 | 31 | 43 | 36 | 31 | 42 | 36 | 31 | 41 | 35 | 31 | 29 | | | | | 29 | | | |
| 10 | 54 | 41 | 34 | 29 | 53 | 41 | 33 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 | | | | | 26 | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 2513 | 2513 | 2513 |
| 5° | 2505 | 2506 | 2559 |
| 10° | 2454 | 2476 | 2493 |
| 15° | 2474 | 2460 | 2474 |
| 20° | 2432 | 2432 | 2458 |
| 25° | 2357 | 2409 | 2435 |
| 30° | 2325 | 2366 | 2429 |
| 35° | 2270 | 2329 | 2382 |
| 40° | 2182 | 2287 | 2297 |
| 45° | 2116 | 2191 | 2194 |
| 50° | 2046 | 2138 | 2098 |
| 55° | 1950 | 1987 | 1973 |
| 60° | 1823 | 1841 | 1808 |
| 65° | 1626 | 1667 | 1614 |
| 70° | 1395 | 1400 | 1360 |
| 75° | 1104 | 1102 | 1059 |
| 80° | 741 | 719 | 691 |
| 85° | 401 | 398 | 374 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 45°
 Luminance: 2248 cd/sqm



TEST NUMBER: P589940

CATALOG NUMBER: FSR-24-2-LD4-1HI-50-UNV-93-97-EDD

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 87.9 | 3.7 |
| 10°-20° | 249.0 | 10.6 |
| 20°-30° | 373.0 | 15.8 |
| 30°-40° | 442.1 | 18.8 |
| 40°-50° | 443.0 | 18.8 |
| 50°-60° | 376.0 | 16.0 |
| 60°-70° | 253.5 | 10.8 |
| 70°-80° | 111.4 | 4.7 |
| 80°-90° | 18.1 | 0.8 |
| 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° | 709.9 | 30.2 |
| 0°-40° | 1152.1 | 48.9 |
| 0°-60° | 1971.0 | 83.7 |
| 0°-90° | 2354.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2354.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 934 | 934 | 934 | 934 | 934 | |
| 5° | 927 | 925 | 928 | 925 | 947 | 87 |
| 15° | 888 | 878 | 883 | 888 | 888 | 247 |
| 25° | 794 | 798 | 811 | 822 | 820 | 367 |
| 35° | 691 | 693 | 709 | 726 | 725 | 429 |
| 45° | 556 | 566 | 576 | 591 | 577 | 430 |
| 55° | 416 | 413 | 424 | 421 | 421 | 370 |
| 65° | 255 | 252 | 262 | 252 | 254 | 254 |
| 75° | 106 | 104 | 106 | 98 | 102 | 114 |
| 85° | 13 | 13 | 13 | 12 | 12 | 19 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P589940

CATALOG NUMBER: FSR-24-2-LD4-1HI-50-UNV-93-97-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 934.0 | 934.0 | 934.0 | 934.0 | 934.0 |
| 2.5° | 942.1 | 935.0 | 928.3 | 936.1 | 940.8 |
| 5° | 927.4 | 925.2 | 927.7 | 925.0 | 947.3 |
| 7.5° | 908.3 | 916.6 | 921.5 | 918.5 | 919.8 |
| 10° | 898.2 | 895.3 | 906.0 | 913.5 | 912.4 |
| 12.5° | 887.3 | 891.7 | 892.3 | 900.4 | 901.1 |
| 15° | 887.9 | 877.7 | 883.1 | 887.7 | 888.1 |
| 17.5° | 853.5 | 864.5 | 868.3 | 878.8 | 865.8 |
| 20° | 849.2 | 841.1 | 849.2 | 860.0 | 858.3 |
| 22.5° | 823.3 | 814.3 | 831.6 | 841.1 | 840.5 |
| 25° | 793.9 | 798.2 | 811.2 | 821.9 | 820.2 |
| 27.5° | 768.1 | 773.1 | 791.7 | 806.3 | 796.9 |
| 30° | 748.2 | 745.6 | 761.3 | 774.3 | 781.6 |
| 32.5° | 712.6 | 721.8 | 740.1 | 753.0 | 746.1 |
| 35° | 691.0 | 693.1 | 709.1 | 725.5 | 725.0 |
| 37.5° | 653.3 | 662.8 | 685.3 | 689.9 | 685.7 |
| 40° | 621.1 | 630.6 | 651.0 | 655.9 | 653.9 |
| 42.5° | 597.3 | 599.0 | 616.5 | 622.1 | 613.1 |
| 45° | 555.9 | 566.3 | 575.7 | 590.6 | 576.6 |
| 47.5° | 520.7 | 525.6 | 545.8 | 549.8 | 542.4 |
| 50° | 488.8 | 490.5 | 510.8 | 505.9 | 501.1 |
| 52.5° | 448.6 | 455.7 | 467.2 | 466.2 | 460.6 |
| 55° | 415.6 | 412.8 | 423.6 | 420.8 | 420.6 |
| 57.5° | 375.9 | 380.7 | 389.6 | 385.1 | 377.7 |
| 60° | 338.8 | 338.9 | 342.1 | 336.9 | 336.0 |
| 62.5° | 297.4 | 298.8 | 299.6 | 293.2 | 303.5 |
| 65° | 255.3 | 251.9 | 261.8 | 251.8 | 253.5 |
| 67.5° | 216.6 | 218.3 | 217.3 | 211.0 | 213.5 |
| 70° | 177.3 | 179.4 | 177.9 | 170.8 | 172.9 |
| 72.5° | 141.3 | 138.7 | 140.4 | 131.4 | 135.5 |
| 75° | 106.2 | 104.1 | 106.0 | 98.5 | 101.9 |
| 77.5° | 72.4 | 74.0 | 72.8 | 68.9 | 71.2 |
| 80° | 47.8 | 46.4 | 46.4 | 44.1 | 44.6 |
| 82.5° | 27.9 | 26.5 | 26.2 | 25.4 | 26.5 |
| 85° | 13.0 | 12.7 | 12.9 | 12.5 | 12.1 |
| 87.5° | 4.7 | 4.8 | 4.8 | 4.6 | 4.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)