

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: P590905

Luminaire Tested: FSR-24-2-LD4-4STD-35-UNV-80-88-EDD

Issue Date: 12/8/2021

Test Information

Test Method: LM-79-2019
Report Number: P590905
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-LD4-4STD-35-UNV-80-88-EDD
Description: 2X2 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .500 CLEAR PC ENVIRONM
SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6590.0 lumens
Efficiency: N/A
Efficacy: 98.9 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

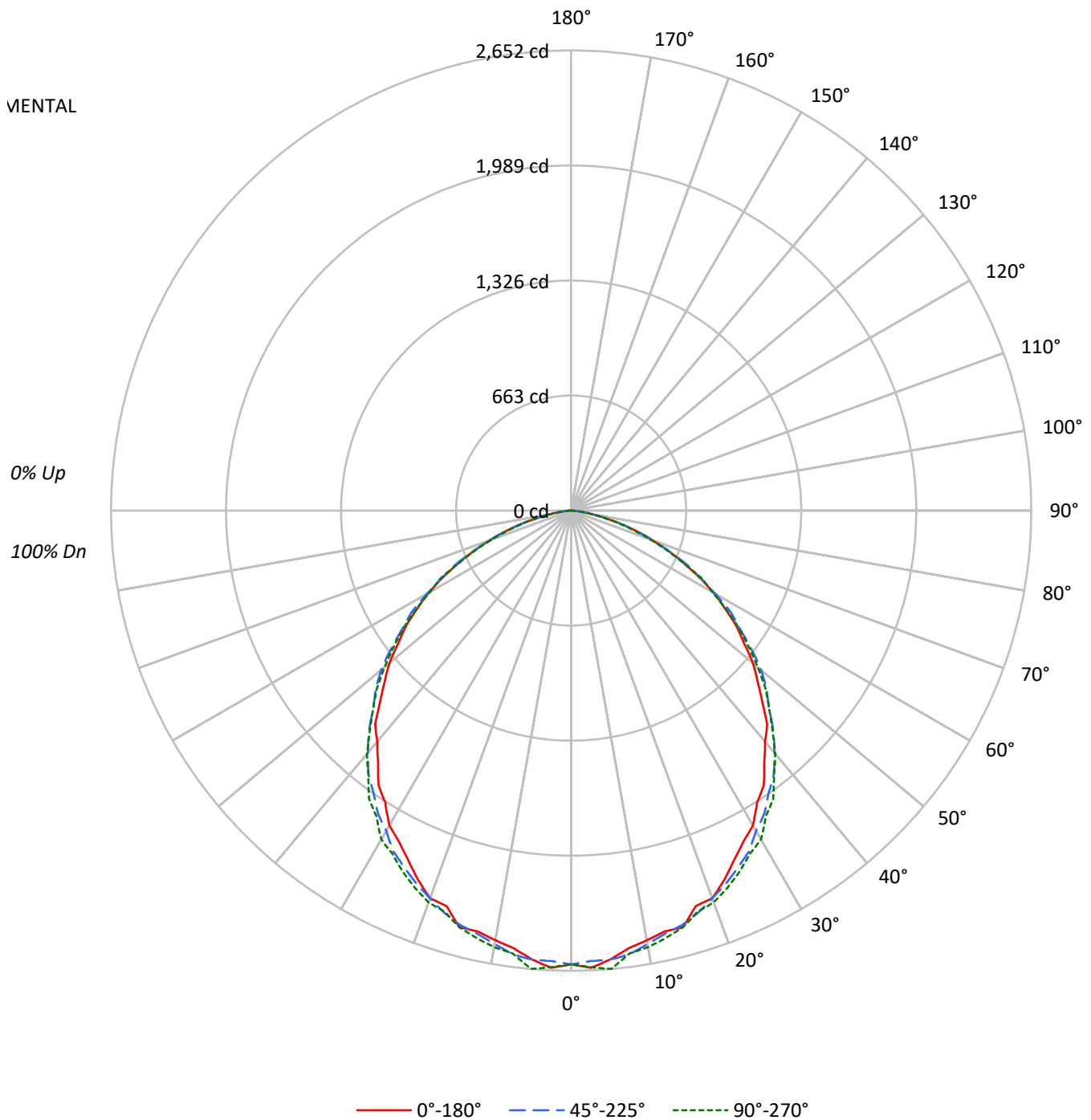
Input Watts (W): 66.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 110 | 105 | 101 | 98 | 107 | 103 | 100 | 96 | 99 | 96 | 93 | 95 | 93 | 90 | 91 | 90 | 88 | 86 |
| 2 | 100 | 93 | 86 | 81 | 98 | 91 | 85 | 80 | 87 | 82 | 78 | 84 | 80 | 76 | 81 | 78 | 75 | 73 |
| 3 | 92 | 82 | 74 | 68 | 89 | 80 | 73 | 67 | 77 | 71 | 66 | 75 | 69 | 65 | 72 | 68 | 64 | 62 |
| 4 | 84 | 73 | 64 | 58 | 82 | 71 | 64 | 58 | 69 | 62 | 57 | 67 | 61 | 56 | 65 | 59 | 55 | 53 |
| 5 | 78 | 65 | 57 | 50 | 76 | 64 | 56 | 50 | 62 | 55 | 49 | 60 | 54 | 49 | 58 | 53 | 48 | 46 |
| 6 | 72 | 59 | 50 | 44 | 70 | 58 | 50 | 44 | 56 | 49 | 43 | 54 | 48 | 43 | 53 | 47 | 43 | 41 |
| 7 | 67 | 53 | 45 | 39 | 65 | 53 | 45 | 39 | 51 | 44 | 39 | 50 | 43 | 38 | 48 | 42 | 38 | 36 |
| 8 | 62 | 49 | 41 | 35 | 61 | 48 | 40 | 35 | 47 | 40 | 34 | 46 | 39 | 34 | 44 | 39 | 34 | 32 |
| 9 | 58 | 45 | 37 | 31 | 57 | 44 | 37 | 31 | 43 | 36 | 31 | 42 | 36 | 31 | 41 | 35 | 31 | 29 |
| 10 | 54 | 41 | 34 | 29 | 53 | 41 | 33 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 7036 | 7036 | 7036 |
| 5° | 7013 | 7016 | 7163 |
| 10° | 6871 | 6931 | 6980 |
| 15° | 6925 | 6888 | 6926 |
| 20° | 6808 | 6808 | 6881 |
| 25° | 6599 | 6743 | 6817 |
| 30° | 6508 | 6623 | 6799 |
| 35° | 6355 | 6521 | 6668 |
| 40° | 6108 | 6402 | 6430 |
| 45° | 5923 | 6134 | 6143 |
| 50° | 5728 | 5987 | 5872 |
| 55° | 5458 | 5564 | 5525 |
| 60° | 5104 | 5155 | 5062 |
| 65° | 4551 | 4667 | 4518 |
| 70° | 3905 | 3918 | 3809 |
| 75° | 3092 | 3086 | 2966 |
| 80° | 2072 | 2015 | 1936 |
| 85° | 1127 | 1115 | 1044 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 45°
 Luminance: 6291 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 246.0 | 3.7 |
| 10°-20° | 697.1 | 10.6 |
| 20°-30° | 1044.4 | 15.8 |
| 30°-40° | 1237.8 | 18.8 |
| 40°-50° | 1240.1 | 18.8 |
| 50°-60° | 1052.6 | 16.0 |
| 60°-70° | 709.7 | 10.8 |
| 70°-80° | 311.8 | 4.7 |
| 80°-90° | 50.7 | 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° | 1987.4 | 30.2 |
| 0°-40° | 3225.2 | 48.9 |
| 0°-60° | 5517.8 | 83.7 |
| 0°-90° | 6590.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 6590.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2615 | 2615 | 2615 | 2615 | 2615 | |
| 5° | 2596 | 2590 | 2597 | 2589 | 2652 | 245 |
| 15° | 2486 | 2457 | 2472 | 2485 | 2486 | 693 |
| 25° | 2222 | 2235 | 2271 | 2301 | 2296 | 1027 |
| 35° | 1934 | 1940 | 1985 | 2031 | 2030 | 1201 |
| 45° | 1556 | 1585 | 1612 | 1653 | 1614 | 1204 |
| 55° | 1163 | 1156 | 1186 | 1178 | 1178 | 1035 |
| 65° | 715 | 705 | 733 | 705 | 710 | 711 |
| 75° | 297 | 291 | 297 | 276 | 285 | 319 |
| 85° | 36 | 35 | 36 | 35 | 34 | 53 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

TEST NUMBER: P590905

CATALOG NUMBER: FSR-24-2-LD4-4STD-35-UNV-80-88-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2614.7 | 2614.7 | 2614.7 | 2614.7 | 2614.7 |
| 2.5° | 2637.4 | 2617.4 | 2598.9 | 2620.5 | 2633.7 |
| 5° | 2596.2 | 2590.1 | 2597.2 | 2589.4 | 2651.9 |
| 7.5° | 2542.8 | 2566.1 | 2579.6 | 2571.2 | 2574.9 |
| 10° | 2514.5 | 2506.4 | 2536.4 | 2557.4 | 2554.3 |
| 12.5° | 2484.1 | 2496.2 | 2497.9 | 2520.6 | 2522.6 |
| 15° | 2485.8 | 2457.1 | 2472.3 | 2485.1 | 2486.1 |
| 17.5° | 2389.2 | 2420.3 | 2430.8 | 2460.1 | 2423.7 |
| 20° | 2377.4 | 2354.8 | 2377.4 | 2407.5 | 2402.7 |
| 22.5° | 2304.8 | 2279.5 | 2328.1 | 2354.8 | 2353.1 |
| 25° | 2222.4 | 2234.6 | 2271.1 | 2300.8 | 2296.0 |
| 27.5° | 2150.2 | 2164.4 | 2216.4 | 2257.2 | 2230.9 |
| 30° | 2094.5 | 2087.4 | 2131.3 | 2167.8 | 2188.0 |
| 32.5° | 1994.9 | 2020.6 | 2071.9 | 2108.0 | 2088.8 |
| 35° | 1934.5 | 1940.2 | 1985.1 | 2031.0 | 2029.7 |
| 37.5° | 1828.8 | 1855.5 | 1918.6 | 1931.4 | 1919.6 |
| 40° | 1738.7 | 1765.3 | 1822.4 | 1836.2 | 1830.5 |
| 42.5° | 1672.2 | 1676.9 | 1725.8 | 1741.7 | 1716.4 |
| 45° | 1556.4 | 1585.4 | 1611.7 | 1653.2 | 1614.1 |
| 47.5° | 1457.8 | 1471.3 | 1528.0 | 1539.1 | 1518.5 |
| 50° | 1368.3 | 1373.0 | 1430.1 | 1416.3 | 1402.7 |
| 52.5° | 1255.9 | 1275.8 | 1307.9 | 1305.2 | 1289.3 |
| 55° | 1163.4 | 1155.6 | 1186.0 | 1177.9 | 1177.6 |
| 57.5° | 1052.3 | 1065.8 | 1090.8 | 1078.0 | 1057.4 |
| 60° | 948.3 | 948.7 | 957.8 | 943.3 | 940.6 |
| 62.5° | 832.5 | 836.6 | 838.6 | 820.7 | 849.8 |
| 65° | 714.7 | 705.3 | 732.9 | 704.9 | 709.6 |
| 67.5° | 606.3 | 611.1 | 608.4 | 590.8 | 597.6 |
| 70° | 496.3 | 502.4 | 498.0 | 478.0 | 484.1 |
| 72.5° | 395.7 | 388.2 | 393.0 | 368.0 | 379.5 |
| 75° | 297.4 | 291.4 | 296.8 | 275.8 | 285.3 |
| 77.5° | 202.6 | 207.3 | 203.9 | 192.8 | 199.2 |
| 80° | 133.7 | 130.0 | 130.0 | 123.6 | 124.9 |
| 82.5° | 78.0 | 74.3 | 73.3 | 71.2 | 74.3 |
| 85° | 36.5 | 35.4 | 36.1 | 35.1 | 33.8 |
| 87.5° | 13.2 | 13.5 | 13.5 | 12.8 | 12.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)