

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: P561777

Luminaire Tested: FSR-12-4-LD4-2STD-40-UNV-80-84-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561777
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-12-4-LD4-2STD-40-UNV-80-84-EDD
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .125 CLEAR PC ENVIRON
SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6709.0 lumens
Efficiency: N/A
Efficacy: 100.7 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

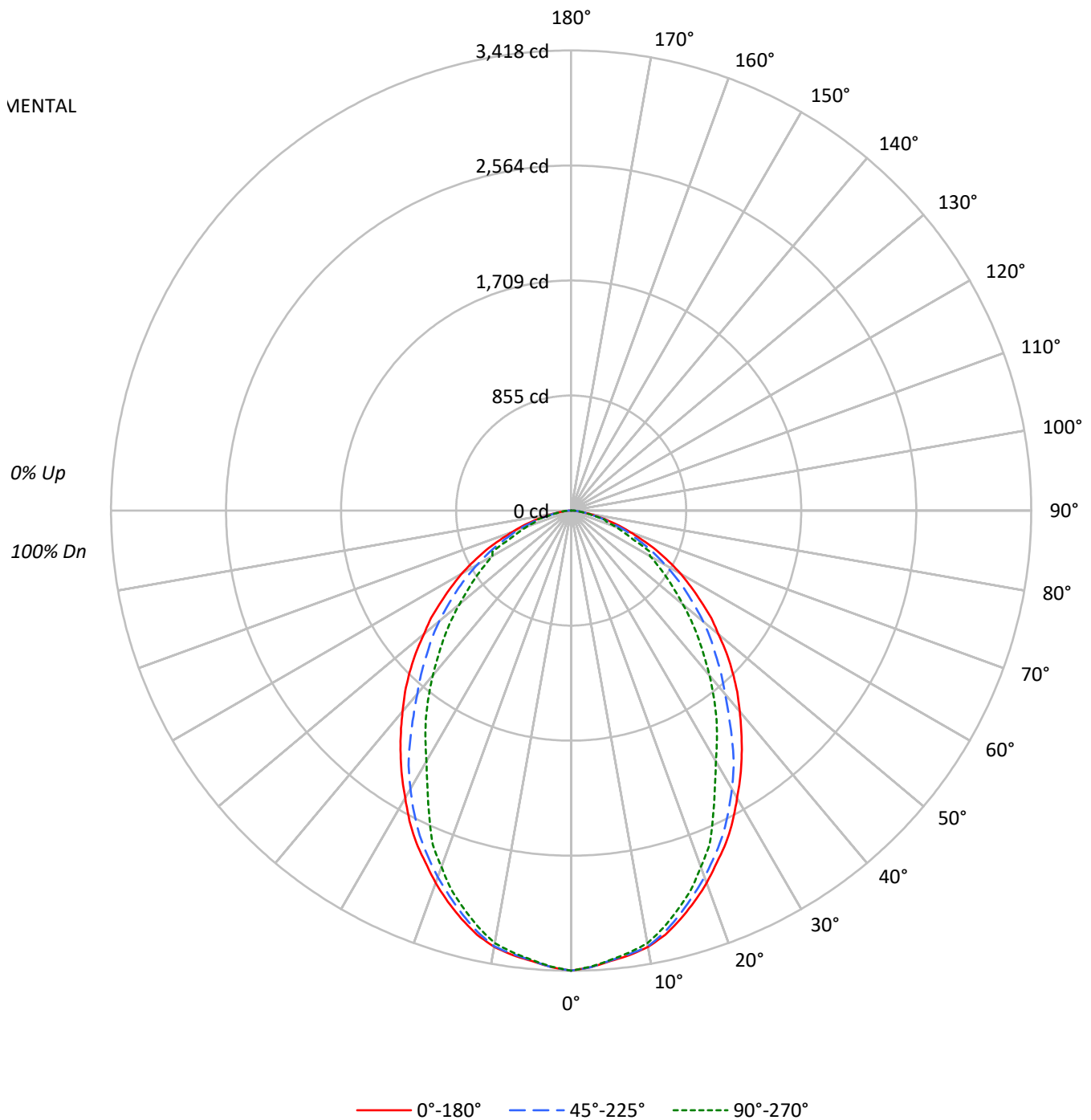
Input Watts (W): 66.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P561777

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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 | 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° | 9196 | 9196 | 9196 |
| 5° | 9071 | 9061 | 9050 |
| 10° | 8993 | 8982 | 8917 |
| 15° | 8750 | 8662 | 8541 |
| 20° | 8429 | 8293 | 8067 |
| 25° | 8082 | 7907 | 7414 |
| 30° | 7660 | 7415 | 6678 |
| 35° | 7255 | 6853 | 6178 |
| 40° | 6842 | 6245 | 5621 |
| 45° | 6450 | 5774 | 5082 |
| 50° | 5971 | 5359 | 4532 |
| 55° | 5523 | 4856 | 4059 |
| 60° | 5061 | 4338 | 3636 |
| 65° | 4453 | 3799 | 3220 |
| 70° | 3668 | 3326 | 2736 |
| 75° | 2916 | 2547 | 2670 |
| 80° | 1959 | 1836 | 1714 |
| 85° | 1220 | 1463 | 1707 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6450 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 318.1 | 4.7 |
| 10°-20° | 873.1 | 13.0 |
| 20°-30° | 1208.7 | 18.0 |
| 30°-40° | 1288.8 | 19.2 |
| 40°-50° | 1175.8 | 17.5 |
| 50°-60° | 921.1 | 13.7 |
| 60°-70° | 600.3 | 8.9 |
| 70°-80° | 266.0 | 4.0 |
| 80°-90° | 57.1 | 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° | 2399.9 | 35.8 |
| 0°-40° | 3688.7 | 55.0 |
| 0°-60° | 5785.6 | 86.2 |
| 0°-90° | 6709.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 6709.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 3418 | 3418 | 3418 | 3418 | 3418 | |
| 5° | 3358 | 3354 | 3354 | 3350 | 3350 | 319 |
| 15° | 3141 | 3141 | 3109 | 3078 | 3066 | 883 |
| 25° | 2722 | 2706 | 2663 | 2568 | 2497 | 1250 |
| 35° | 2208 | 2193 | 2086 | 1928 | 1881 | 1381 |
| 45° | 1695 | 1659 | 1517 | 1391 | 1335 | 1306 |
| 55° | 1177 | 1142 | 1035 | 913 | 865 | 1056 |
| 65° | 699 | 660 | 597 | 608 | 506 | 689 |
| 75° | 280 | 261 | 245 | 233 | 257 | 301 |
| 85° | 40 | 44 | 47 | 51 | 55 | 55 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P561777

CATALOG NUMBER: FSR-12-4-LD4-2STD-40-UNV-80-84-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 3417.5 | 3417.5 | 3417.5 | 3417.5 | 3417.5 |
| 2.5° | 3393.8 | 3393.8 | 3393.8 | 3389.8 | 3389.8 |
| 5° | 3358.2 | 3354.3 | 3354.3 | 3350.3 | 3350.3 |
| 7.5° | 3330.6 | 3326.6 | 3322.7 | 3318.7 | 3310.8 |
| 10° | 3291.0 | 3291.0 | 3287.1 | 3267.3 | 3263.4 |
| 12.5° | 3227.8 | 3223.9 | 3208.1 | 3180.4 | 3172.5 |
| 15° | 3140.9 | 3140.9 | 3109.3 | 3077.7 | 3065.9 |
| 17.5° | 3046.1 | 3042.1 | 3002.6 | 2971.0 | 2955.2 |
| 20° | 2943.4 | 2935.5 | 2896.0 | 2844.6 | 2816.9 |
| 22.5° | 2828.8 | 2828.8 | 2781.4 | 2714.2 | 2686.6 |
| 25° | 2722.1 | 2706.3 | 2662.9 | 2568.0 | 2496.9 |
| 27.5° | 2599.7 | 2575.9 | 2528.5 | 2394.2 | 2311.2 |
| 30° | 2465.3 | 2453.5 | 2386.3 | 2212.5 | 2149.3 |
| 32.5° | 2338.9 | 2319.1 | 2248.0 | 2066.3 | 2014.9 |
| 35° | 2208.5 | 2192.7 | 2086.0 | 1928.0 | 1880.6 |
| 37.5° | 2078.1 | 2058.4 | 1924.1 | 1797.6 | 1738.4 |
| 40° | 1947.8 | 1924.1 | 1777.9 | 1663.3 | 1600.1 |
| 42.5° | 1825.3 | 1793.7 | 1651.5 | 1529.0 | 1457.9 |
| 45° | 1694.9 | 1659.4 | 1517.1 | 1390.7 | 1335.4 |
| 47.5° | 1564.5 | 1532.9 | 1402.5 | 1272.2 | 1209.0 |
| 50° | 1426.3 | 1398.6 | 1280.1 | 1149.7 | 1082.5 |
| 52.5° | 1311.7 | 1268.2 | 1153.6 | 1023.3 | 968.0 |
| 55° | 1177.3 | 1141.8 | 1035.1 | 912.6 | 865.2 |
| 57.5° | 1054.9 | 1019.3 | 920.5 | 806.0 | 766.5 |
| 60° | 940.3 | 888.9 | 806.0 | 707.2 | 675.6 |
| 62.5° | 813.9 | 774.4 | 703.2 | 620.3 | 659.8 |
| 65° | 699.3 | 659.8 | 596.6 | 608.4 | 505.7 |
| 67.5° | 572.9 | 553.1 | 497.8 | 442.5 | 426.7 |
| 70° | 466.2 | 442.5 | 422.7 | 363.5 | 347.7 |
| 72.5° | 371.4 | 347.7 | 320.0 | 288.4 | 276.6 |
| 75° | 280.5 | 260.8 | 245.0 | 233.1 | 256.8 |
| 77.5° | 193.6 | 185.7 | 173.8 | 162.0 | 158.0 |
| 80° | 126.4 | 122.5 | 118.5 | 114.6 | 110.6 |
| 82.5° | 75.1 | 75.1 | 75.1 | 75.1 | 75.1 |
| 85° | 39.5 | 43.5 | 47.4 | 51.4 | 55.3 |
| 87.5° | 23.7 | 23.7 | 27.7 | 31.6 | 35.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)