

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: P561342

Luminaire Tested: FSR-12-4-LD4-2HI-35-UNV-80-97-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561342
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-LD4-2HI-35-UNV-80-97-EDD-90
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR TEMPERED G ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

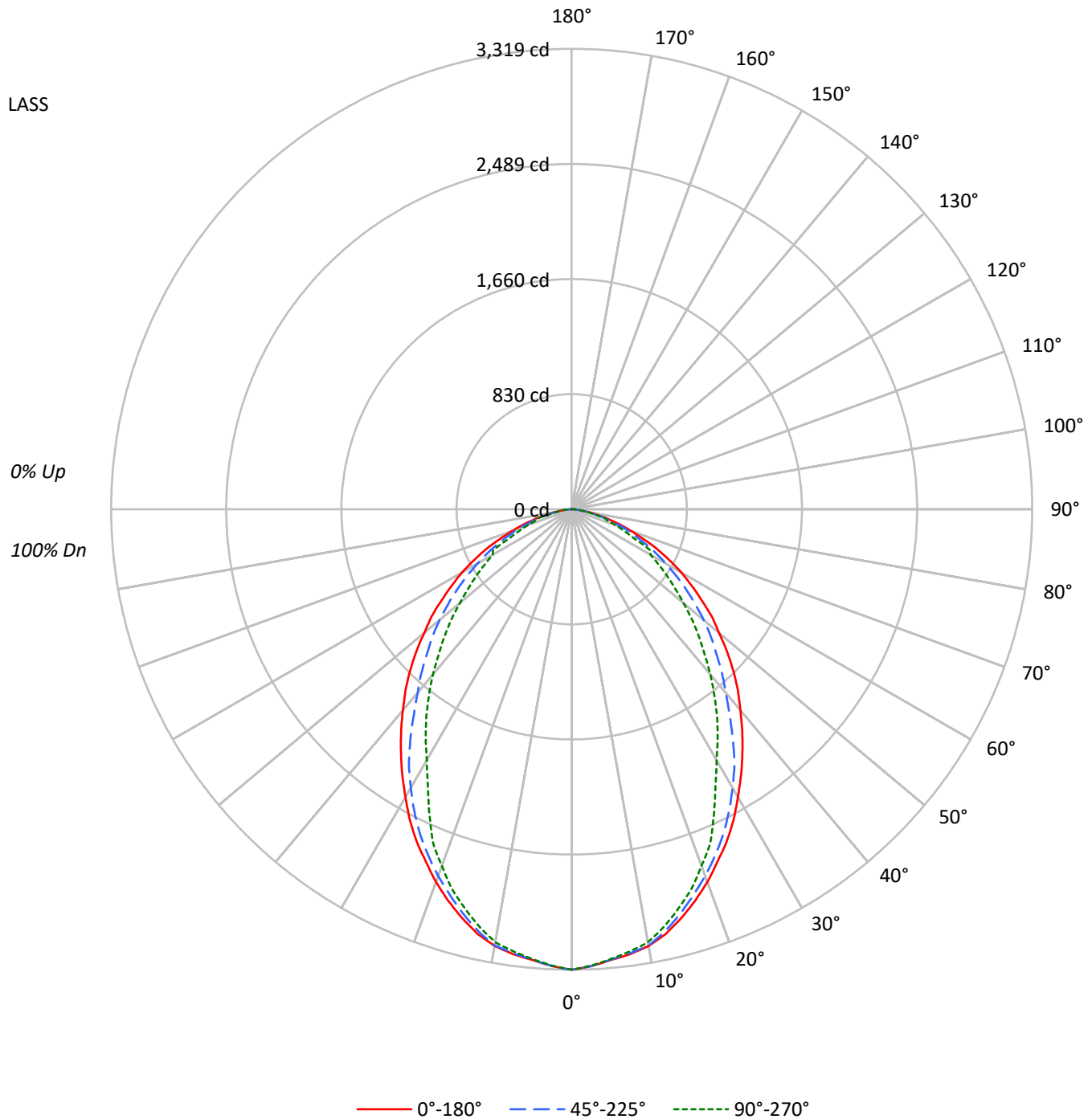
Lumens per Lamp: N/A
Luminaire Lumens: 6516.0 lumens
Efficiency: N/A
Efficacy: 75.4 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 86.4
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: P561342

CATALOG NUMBER: FSR-12-4-LD4-2HI-35-UNV-80-97-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 | 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° | 8932 | 8932 | 8932 |
| 5° | 8810 | 8800 | 8790 |
| 10° | 8734 | 8723 | 8661 |
| 15° | 8499 | 8413 | 8296 |
| 20° | 8186 | 8055 | 7835 |
| 25° | 7850 | 7679 | 7201 |
| 30° | 7440 | 7202 | 6486 |
| 35° | 7046 | 6656 | 6000 |
| 40° | 6645 | 6066 | 5459 |
| 45° | 6265 | 5608 | 4936 |
| 50° | 5799 | 5205 | 4402 |
| 55° | 5365 | 4716 | 3942 |
| 60° | 4915 | 4213 | 3532 |
| 65° | 4325 | 3689 | 3128 |
| 70° | 3563 | 3231 | 2657 |
| 75° | 2832 | 2473 | 2593 |
| 80° | 1903 | 1784 | 1664 |
| 85° | 1186 | 1420 | 1658 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6265 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 309.0 | 4.7 |
| 10°-20° | 847.9 | 13.0 |
| 20°-30° | 1173.9 | 18.0 |
| 30°-40° | 1251.7 | 19.2 |
| 40°-50° | 1142.0 | 17.5 |
| 50°-60° | 894.6 | 13.7 |
| 60°-70° | 583.1 | 8.9 |
| 70°-80° | 258.3 | 4.0 |
| 80°-90° | 55.5 | 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° | 2330.8 | 35.8 |
| 0°-40° | 3582.6 | 55.0 |
| 0°-60° | 5619.1 | 86.2 |
| 0°-90° | 6516.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 6516.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 3319 | 3319 | 3319 | 3319 | 3319 | |
| 5° | 3262 | 3258 | 3258 | 3254 | 3254 | 310 |
| 15° | 3051 | 3051 | 3020 | 2989 | 2978 | 858 |
| 25° | 2644 | 2628 | 2586 | 2494 | 2425 | 1214 |
| 35° | 2145 | 2130 | 2026 | 1872 | 1826 | 1341 |
| 45° | 1646 | 1612 | 1474 | 1351 | 1297 | 1268 |
| 55° | 1144 | 1109 | 1005 | 886 | 840 | 1026 |
| 65° | 679 | 641 | 579 | 591 | 491 | 669 |
| 75° | 272 | 253 | 238 | 226 | 249 | 292 |
| 85° | 38 | 42 | 46 | 50 | 54 | 53 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P561342

CATALOG NUMBER: FSR-12-4-LD4-2HI-35-UNV-80-97-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 3319.2 | 3319.2 | 3319.2 | 3319.2 | 3319.2 |
| 2.5° | 3296.1 | 3296.1 | 3296.1 | 3292.3 | 3292.3 |
| 5° | 3261.6 | 3257.8 | 3257.8 | 3253.9 | 3253.9 |
| 7.5° | 3234.7 | 3230.9 | 3227.1 | 3223.2 | 3215.6 |
| 10° | 3196.4 | 3196.4 | 3192.5 | 3173.4 | 3169.5 |
| 12.5° | 3135.0 | 3131.1 | 3115.8 | 3088.9 | 3081.3 |
| 15° | 3050.6 | 3050.6 | 3019.9 | 2989.2 | 2977.7 |
| 17.5° | 2958.5 | 2954.6 | 2916.3 | 2885.6 | 2870.2 |
| 20° | 2858.7 | 2851.0 | 2812.7 | 2762.8 | 2735.9 |
| 22.5° | 2747.4 | 2747.4 | 2701.4 | 2636.1 | 2609.3 |
| 25° | 2643.8 | 2628.5 | 2586.3 | 2494.2 | 2425.1 |
| 27.5° | 2524.9 | 2501.8 | 2455.8 | 2325.3 | 2244.8 |
| 30° | 2394.4 | 2382.9 | 2317.7 | 2148.8 | 2087.4 |
| 32.5° | 2271.6 | 2252.4 | 2183.4 | 2006.8 | 1957.0 |
| 35° | 2145.0 | 2129.6 | 2026.0 | 1872.5 | 1826.5 |
| 37.5° | 2018.4 | 1999.2 | 1868.7 | 1745.9 | 1688.4 |
| 40° | 1891.7 | 1868.7 | 1726.7 | 1615.5 | 1554.1 |
| 42.5° | 1772.8 | 1742.1 | 1603.9 | 1485.0 | 1415.9 |
| 45° | 1646.2 | 1611.6 | 1473.5 | 1350.7 | 1297.0 |
| 47.5° | 1519.5 | 1488.8 | 1362.2 | 1235.6 | 1174.2 |
| 50° | 1385.2 | 1358.4 | 1243.2 | 1116.6 | 1051.4 |
| 52.5° | 1273.9 | 1231.7 | 1120.5 | 993.8 | 940.1 |
| 55° | 1143.5 | 1108.9 | 1005.3 | 886.4 | 840.3 |
| 57.5° | 1024.5 | 990.0 | 894.1 | 782.8 | 744.4 |
| 60° | 913.2 | 863.4 | 782.8 | 686.9 | 656.2 |
| 62.5° | 790.5 | 752.1 | 683.0 | 602.4 | 640.8 |
| 65° | 679.2 | 640.8 | 579.4 | 590.9 | 491.2 |
| 67.5° | 556.4 | 537.2 | 483.5 | 429.8 | 414.4 |
| 70° | 452.8 | 429.8 | 410.6 | 353.0 | 337.7 |
| 72.5° | 360.7 | 337.7 | 310.8 | 280.1 | 268.6 |
| 75° | 272.4 | 253.3 | 237.9 | 226.4 | 249.4 |
| 77.5° | 188.0 | 180.3 | 168.8 | 157.3 | 153.5 |
| 80° | 122.8 | 119.0 | 115.1 | 111.3 | 107.4 |
| 82.5° | 72.9 | 72.9 | 72.9 | 72.9 | 72.9 |
| 85° | 38.4 | 42.2 | 46.0 | 49.9 | 53.7 |
| 87.5° | 23.0 | 23.0 | 26.9 | 30.7 | 34.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)