

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: P564013

Luminaire Tested: FSR-24-4-LD4-4LO-50-UNV-93-96-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P564013
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-24-4-LD4-4LO-50-UNV-93-96-EDD
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 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: 11891.0 lumens
Efficiency: N/A
Efficacy: 127.0 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

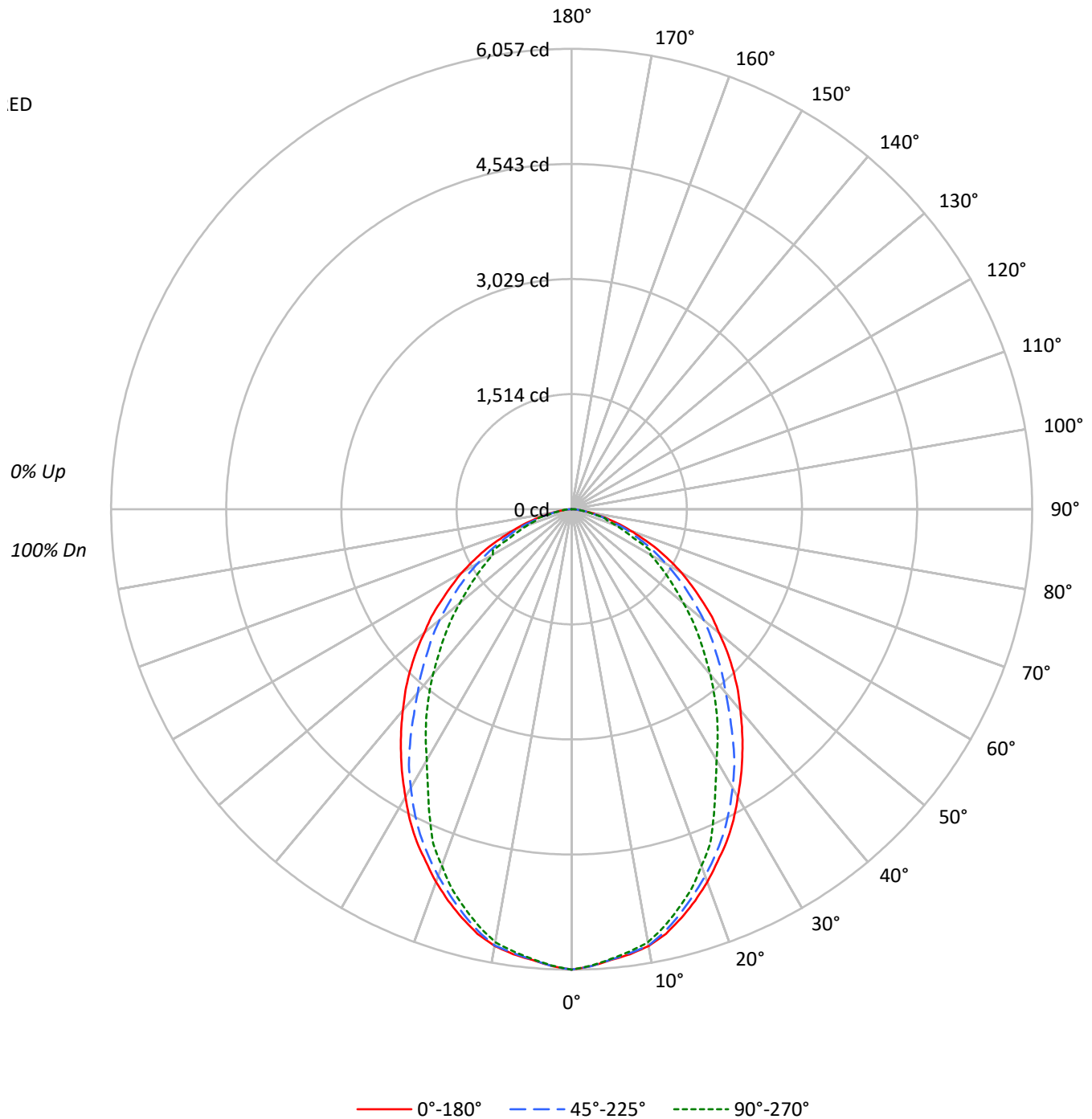
Input Watts (W): 93.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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 | 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° | 8150 | 8150 | 8150 |
| 5° | 8039 | 8030 | 8020 |
| 10° | 7969 | 7960 | 7902 |
| 15° | 7754 | 7676 | 7569 |
| 20° | 7470 | 7349 | 7149 |
| 25° | 7163 | 7007 | 6570 |
| 30° | 6789 | 6571 | 5918 |
| 35° | 6430 | 6073 | 5475 |
| 40° | 6063 | 5535 | 4981 |
| 45° | 5716 | 5116 | 4504 |
| 50° | 5291 | 4749 | 4016 |
| 55° | 4895 | 4304 | 3597 |
| 60° | 4485 | 3844 | 3222 |
| 65° | 3946 | 3366 | 2854 |
| 70° | 3251 | 2948 | 2424 |
| 75° | 2585 | 2257 | 2366 |
| 80° | 1736 | 1628 | 1519 |
| 85° | 1081 | 1297 | 1513 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5716 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 563.8 | 4.7 |
| 10°-20° | 1547.4 | 13.0 |
| 20°-30° | 2142.3 | 18.0 |
| 30°-40° | 2284.3 | 19.2 |
| 40°-50° | 2083.9 | 17.5 |
| 50°-60° | 1632.6 | 13.7 |
| 60°-70° | 1064.0 | 8.9 |
| 70°-80° | 471.4 | 4.0 |
| 80°-90° | 101.2 | 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° | 4253.5 | 35.8 |
| 0°-40° | 6537.8 | 55.0 |
| 0°-60° | 10254.3 | 86.2 |
| 0°-90° | 11891.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 11891.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 6057 | 6057 | 6057 | 6057 | 6057 | |
| 5° | 5952 | 5945 | 5945 | 5938 | 5938 | 565 |
| 15° | 5567 | 5567 | 5511 | 5455 | 5434 | 1565 |
| 25° | 4825 | 4797 | 4720 | 4552 | 4426 | 2215 |
| 35° | 3914 | 3886 | 3697 | 3417 | 3333 | 2447 |
| 45° | 3004 | 2941 | 2689 | 2465 | 2367 | 2314 |
| 55° | 2087 | 2024 | 1835 | 1618 | 1534 | 1872 |
| 65° | 1239 | 1169 | 1057 | 1078 | 896 | 1221 |
| 75° | 497 | 462 | 434 | 413 | 455 | 533 |
| 85° | 70 | 77 | 84 | 91 | 98 | 97 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P564013

CATALOG NUMBER: FSR-24-4-LD4-4LO-50-UNV-93-96-EDD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 6057.1 | 6057.1 | 6057.1 | 6057.1 | 6057.1 |
| 2.5° | 6015.1 | 6015.1 | 6015.1 | 6008.1 | 6008.1 |
| 5° | 5952.1 | 5945.1 | 5945.1 | 5938.1 | 5938.1 |
| 7.5° | 5903.1 | 5896.1 | 5889.1 | 5882.1 | 5868.1 |
| 10° | 5833.0 | 5833.0 | 5826.0 | 5791.0 | 5784.0 |
| 12.5° | 5721.0 | 5714.0 | 5686.0 | 5637.0 | 5623.0 |
| 15° | 5566.9 | 5566.9 | 5510.9 | 5454.9 | 5433.9 |
| 17.5° | 5398.9 | 5391.9 | 5321.9 | 5265.8 | 5237.8 |
| 20° | 5216.8 | 5202.8 | 5132.8 | 5041.8 | 4992.7 |
| 22.5° | 5013.8 | 5013.8 | 4929.7 | 4810.7 | 4761.7 |
| 25° | 4824.7 | 4796.7 | 4719.6 | 4551.6 | 4425.5 |
| 27.5° | 4607.6 | 4565.6 | 4481.6 | 4243.5 | 4096.4 |
| 30° | 4369.5 | 4348.5 | 4229.5 | 3921.4 | 3809.3 |
| 32.5° | 4145.4 | 4110.4 | 3984.4 | 3662.3 | 3571.2 |
| 35° | 3914.4 | 3886.4 | 3697.3 | 3417.2 | 3333.2 |
| 37.5° | 3683.3 | 3648.3 | 3410.2 | 3186.1 | 3081.1 |
| 40° | 3452.2 | 3410.2 | 3151.1 | 2948.0 | 2836.0 |
| 42.5° | 3235.1 | 3179.1 | 2927.0 | 2709.9 | 2583.9 |
| 45° | 3004.0 | 2941.0 | 2688.9 | 2464.9 | 2366.8 |
| 47.5° | 2773.0 | 2716.9 | 2485.9 | 2254.8 | 2142.7 |
| 50° | 2527.9 | 2478.9 | 2268.8 | 2037.7 | 1918.7 |
| 52.5° | 2324.8 | 2247.8 | 2044.7 | 1813.6 | 1715.6 |
| 55° | 2086.7 | 2023.7 | 1834.6 | 1617.6 | 1533.5 |
| 57.5° | 1869.7 | 1806.6 | 1631.6 | 1428.5 | 1358.5 |
| 60° | 1666.6 | 1575.6 | 1428.5 | 1253.4 | 1197.4 |
| 62.5° | 1442.5 | 1372.5 | 1246.4 | 1099.4 | 1169.4 |
| 65° | 1239.4 | 1169.4 | 1057.4 | 1078.4 | 896.3 |
| 67.5° | 1015.4 | 980.3 | 882.3 | 784.3 | 756.3 |
| 70° | 826.3 | 784.3 | 749.3 | 644.2 | 616.2 |
| 72.5° | 658.2 | 616.2 | 567.2 | 511.2 | 490.2 |
| 75° | 497.2 | 462.2 | 434.2 | 413.1 | 455.2 |
| 77.5° | 343.1 | 329.1 | 308.1 | 287.1 | 280.1 |
| 80° | 224.1 | 217.1 | 210.1 | 203.1 | 196.1 |
| 82.5° | 133.0 | 133.0 | 133.0 | 133.0 | 133.0 |
| 85° | 70.0 | 77.0 | 84.0 | 91.0 | 98.0 |
| 87.5° | 42.0 | 42.0 | 49.0 | 56.0 | 63.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)