

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: P562740

Luminaire Tested: FSR-24-4-LD4-2LO-40-UNV-80-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P562740
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-LD4-2LO-40-UNV-80-86-EDD-90
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRON
SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4793.0 lumens
Efficiency: N/A
Efficacy: 102.4 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

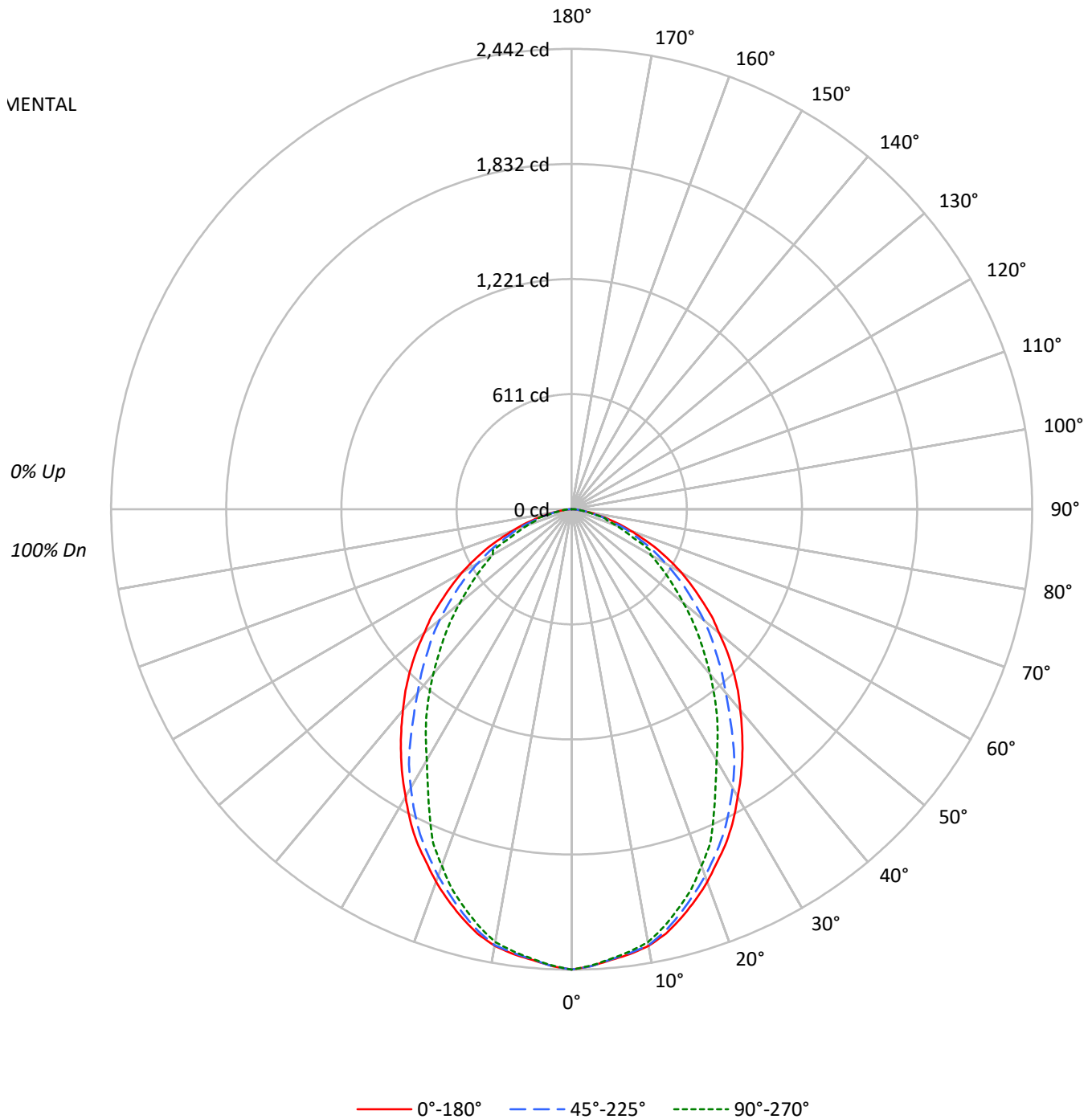
Input Watts (W): 46.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P562740

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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 | 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° | 3285 | 3285 | 3285 |
| 5° | 3240 | 3237 | 3233 |
| 10° | 3212 | 3208 | 3185 |
| 15° | 3126 | 3094 | 3051 |
| 20° | 3011 | 2962 | 2882 |
| 25° | 2887 | 2824 | 2648 |
| 30° | 2736 | 2649 | 2386 |
| 35° | 2592 | 2448 | 2207 |
| 40° | 2444 | 2231 | 2008 |
| 45° | 2304 | 2062 | 1815 |
| 50° | 2133 | 1914 | 1619 |
| 55° | 1973 | 1735 | 1450 |
| 60° | 1808 | 1549 | 1299 |
| 65° | 1591 | 1357 | 1150 |
| 70° | 1310 | 1188 | 977 |
| 75° | 1042 | 910 | 954 |
| 80° | 700 | 656 | 612 |
| 85° | 435 | 523 | 610 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2304 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 227.3 | 4.7 |
| 10°-20° | 623.7 | 13.0 |
| 20°-30° | 863.5 | 18.0 |
| 30°-40° | 920.7 | 19.2 |
| 40°-50° | 840.0 | 17.5 |
| 50°-60° | 658.1 | 13.7 |
| 60°-70° | 428.9 | 8.9 |
| 70°-80° | 190.0 | 4.0 |
| 80°-90° | 40.8 | 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° | 1714.5 | 35.8 |
| 0°-40° | 2635.2 | 55.0 |
| 0°-60° | 4133.3 | 86.2 |
| 0°-90° | 4793.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4793.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2442 | 2442 | 2442 | 2442 | 2442 | |
| 5° | 2399 | 2396 | 2396 | 2394 | 2394 | 228 |
| 15° | 2244 | 2244 | 2221 | 2199 | 2190 | 631 |
| 25° | 1945 | 1933 | 1902 | 1835 | 1784 | 893 |
| 35° | 1578 | 1566 | 1490 | 1377 | 1344 | 986 |
| 45° | 1211 | 1186 | 1084 | 994 | 954 | 933 |
| 55° | 841 | 816 | 740 | 652 | 618 | 754 |
| 65° | 500 | 471 | 426 | 435 | 361 | 492 |
| 75° | 200 | 186 | 175 | 166 | 184 | 215 |
| 85° | 28 | 31 | 34 | 37 | 40 | 39 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P562740

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2441.5 | 2441.5 | 2441.5 | 2441.5 | 2441.5 |
| 2.5° | 2424.6 | 2424.6 | 2424.6 | 2421.7 | 2421.7 |
| 5° | 2399.2 | 2396.3 | 2396.3 | 2393.5 | 2393.5 |
| 7.5° | 2379.4 | 2376.6 | 2373.7 | 2370.9 | 2365.3 |
| 10° | 2351.2 | 2351.2 | 2348.3 | 2334.2 | 2331.4 |
| 12.5° | 2306.0 | 2303.2 | 2291.9 | 2272.1 | 2266.5 |
| 15° | 2243.9 | 2243.9 | 2221.3 | 2198.8 | 2190.3 |
| 17.5° | 2176.2 | 2173.3 | 2145.1 | 2122.5 | 2111.3 |
| 20° | 2102.8 | 2097.1 | 2068.9 | 2032.2 | 2012.5 |
| 22.5° | 2020.9 | 2020.9 | 1987.1 | 1939.1 | 1919.3 |
| 25° | 1944.7 | 1933.4 | 1902.4 | 1834.6 | 1783.8 |
| 27.5° | 1857.2 | 1840.3 | 1806.4 | 1710.5 | 1651.2 |
| 30° | 1761.3 | 1752.8 | 1704.8 | 1580.6 | 1535.5 |
| 32.5° | 1670.9 | 1656.8 | 1606.0 | 1476.2 | 1439.5 |
| 35° | 1577.8 | 1566.5 | 1490.3 | 1377.4 | 1343.5 |
| 37.5° | 1484.7 | 1470.5 | 1374.6 | 1284.3 | 1241.9 |
| 40° | 1391.5 | 1374.6 | 1270.1 | 1188.3 | 1143.1 |
| 42.5° | 1304.0 | 1281.4 | 1179.8 | 1092.3 | 1041.5 |
| 45° | 1210.9 | 1185.5 | 1083.9 | 993.5 | 954.0 |
| 47.5° | 1117.7 | 1095.1 | 1002.0 | 908.9 | 863.7 |
| 50° | 1018.9 | 999.2 | 914.5 | 821.4 | 773.4 |
| 52.5° | 937.1 | 906.0 | 824.2 | 731.0 | 691.5 |
| 55° | 841.1 | 815.7 | 739.5 | 652.0 | 618.1 |
| 57.5° | 753.6 | 728.2 | 657.6 | 575.8 | 547.6 |
| 60° | 671.8 | 635.1 | 575.8 | 505.2 | 482.7 |
| 62.5° | 581.4 | 553.2 | 502.4 | 443.1 | 471.4 |
| 65° | 499.6 | 471.4 | 426.2 | 434.7 | 361.3 |
| 67.5° | 409.3 | 395.2 | 355.6 | 316.1 | 304.8 |
| 70° | 333.1 | 316.1 | 302.0 | 259.7 | 248.4 |
| 72.5° | 265.3 | 248.4 | 228.6 | 206.0 | 197.6 |
| 75° | 200.4 | 186.3 | 175.0 | 166.5 | 183.5 |
| 77.5° | 138.3 | 132.7 | 124.2 | 115.7 | 112.9 |
| 80° | 90.3 | 87.5 | 84.7 | 81.9 | 79.0 |
| 82.5° | 53.6 | 53.6 | 53.6 | 53.6 | 53.6 |
| 85° | 28.2 | 31.0 | 33.9 | 36.7 | 39.5 |
| 87.5° | 16.9 | 16.9 | 19.8 | 22.6 | 25.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)