

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: P560358

Luminaire Tested: FSR-12-2-LD4-2HI-50-UNV-93-87-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560358
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-12-2-LD4-2HI-50-UNV-93-87-EDD-90
Description: 1X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3142.0 lumens
Efficiency: N/A
Efficacy: 72.7 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')
CIE Type: Direct

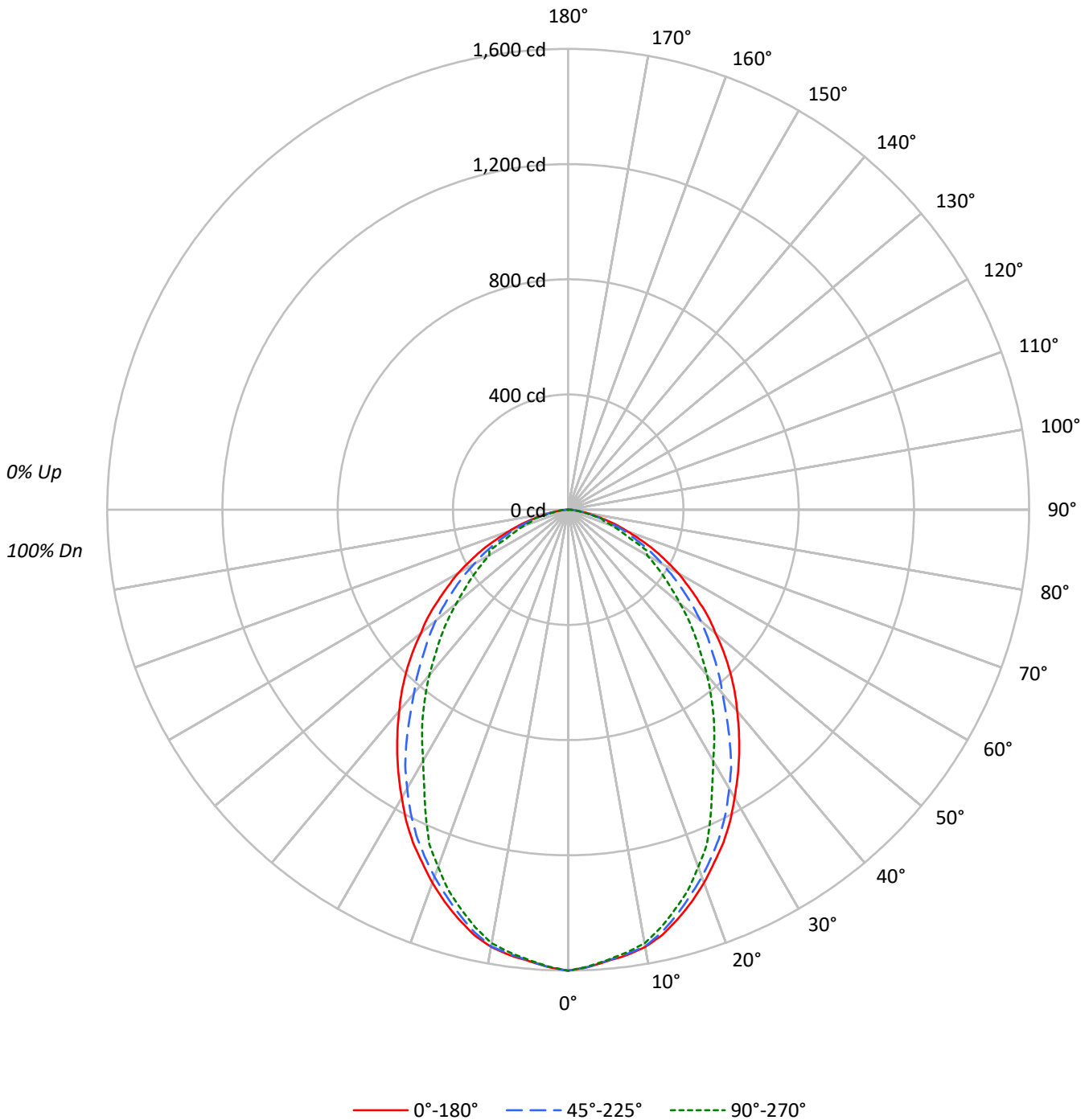
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P560358

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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 | 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° | 8614 | 8614 | 8614 |
| 5° | 8497 | 8487 | 8477 |
| 10° | 8423 | 8413 | 8352 |
| 15° | 8196 | 8114 | 8000 |
| 20° | 7895 | 7768 | 7556 |
| 25° | 7570 | 7406 | 6944 |
| 30° | 7175 | 6945 | 6256 |
| 35° | 6796 | 6418 | 5786 |
| 40° | 6409 | 5850 | 5265 |
| 45° | 6042 | 5408 | 4760 |
| 50° | 5593 | 5020 | 4245 |
| 55° | 5174 | 4549 | 3802 |
| 60° | 4740 | 4063 | 3406 |
| 65° | 4171 | 3558 | 3016 |
| 70° | 3435 | 3116 | 2562 |
| 75° | 2732 | 2385 | 2502 |
| 80° | 1835 | 1720 | 1605 |
| 85° | 1142 | 1371 | 1599 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6042 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 149.0 | 4.7 |
| 10°-20° | 408.9 | 13.0 |
| 20°-30° | 566.1 | 18.0 |
| 30°-40° | 603.6 | 19.2 |
| 40°-50° | 550.6 | 17.5 |
| 50°-60° | 431.4 | 13.7 |
| 60°-70° | 281.1 | 8.9 |
| 70°-80° | 124.6 | 4.0 |
| 80°-90° | 26.8 | 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° | 1123.9 | 35.8 |
| 0°-40° | 1727.5 | 55.0 |
| 0°-60° | 2709.5 | 86.2 |
| 0°-90° | 3142.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3142.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1600 | 1600 | 1600 | 1600 | 1600 | |
| 5° | 1573 | 1571 | 1571 | 1569 | 1569 | 149 |
| 15° | 1471 | 1471 | 1456 | 1441 | 1436 | 414 |
| 25° | 1275 | 1267 | 1247 | 1203 | 1169 | 585 |
| 35° | 1034 | 1027 | 977 | 903 | 881 | 647 |
| 45° | 794 | 777 | 710 | 651 | 625 | 611 |
| 55° | 551 | 535 | 485 | 427 | 405 | 495 |
| 65° | 328 | 309 | 279 | 285 | 237 | 323 |
| 75° | 131 | 122 | 115 | 109 | 120 | 141 |
| 85° | 18 | 20 | 22 | 24 | 26 | 26 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P560358

CATALOG NUMBER: FSR-12-2-LD4-2HI-50-UNV-93-87-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1600.5 | 1600.5 | 1600.5 | 1600.5 | 1600.5 |
| 2.5° | 1589.4 | 1589.4 | 1589.4 | 1587.5 | 1587.5 |
| 5° | 1572.7 | 1570.9 | 1570.9 | 1569.0 | 1569.0 |
| 7.5° | 1559.8 | 1557.9 | 1556.1 | 1554.2 | 1550.5 |
| 10° | 1541.3 | 1541.3 | 1539.4 | 1530.2 | 1528.3 |
| 12.5° | 1511.7 | 1509.8 | 1502.4 | 1489.5 | 1485.8 |
| 15° | 1471.0 | 1471.0 | 1456.2 | 1441.4 | 1435.8 |
| 17.5° | 1426.6 | 1424.7 | 1406.2 | 1391.4 | 1384.0 |
| 20° | 1378.5 | 1374.8 | 1356.3 | 1332.2 | 1319.3 |
| 22.5° | 1324.8 | 1324.8 | 1302.6 | 1271.1 | 1258.2 |
| 25° | 1274.8 | 1267.4 | 1247.1 | 1202.7 | 1169.4 |
| 27.5° | 1217.5 | 1206.4 | 1184.2 | 1121.3 | 1082.4 |
| 30° | 1154.6 | 1149.0 | 1117.6 | 1036.2 | 1006.6 |
| 32.5° | 1095.4 | 1086.1 | 1052.8 | 967.7 | 943.6 |
| 35° | 1034.3 | 1026.9 | 976.9 | 902.9 | 880.7 |
| 37.5° | 973.2 | 964.0 | 901.1 | 841.9 | 814.1 |
| 40° | 912.2 | 901.1 | 832.6 | 779.0 | 749.4 |
| 42.5° | 854.8 | 840.0 | 773.4 | 716.1 | 682.8 |
| 45° | 793.8 | 777.1 | 710.5 | 651.3 | 625.4 |
| 47.5° | 732.7 | 717.9 | 656.8 | 595.8 | 566.2 |
| 50° | 668.0 | 655.0 | 599.5 | 538.4 | 507.0 |
| 52.5° | 614.3 | 593.9 | 540.3 | 479.2 | 453.3 |
| 55° | 551.4 | 534.7 | 484.8 | 427.4 | 405.2 |
| 57.5° | 494.0 | 477.4 | 431.1 | 377.5 | 359.0 |
| 60° | 440.4 | 416.3 | 377.5 | 331.2 | 316.4 |
| 62.5° | 381.2 | 362.7 | 329.3 | 290.5 | 309.0 |
| 65° | 327.5 | 309.0 | 279.4 | 284.9 | 236.8 |
| 67.5° | 268.3 | 259.0 | 233.1 | 207.2 | 199.8 |
| 70° | 218.3 | 207.2 | 198.0 | 170.2 | 162.8 |
| 72.5° | 173.9 | 162.8 | 149.9 | 135.1 | 129.5 |
| 75° | 131.4 | 122.1 | 114.7 | 109.2 | 120.3 |
| 77.5° | 90.7 | 87.0 | 81.4 | 75.9 | 74.0 |
| 80° | 59.2 | 57.4 | 55.5 | 53.7 | 51.8 |
| 82.5° | 35.2 | 35.2 | 35.2 | 35.2 | 35.2 |
| 85° | 18.5 | 20.4 | 22.2 | 24.1 | 25.9 |
| 87.5° | 11.1 | 11.1 | 13.0 | 14.8 | 16.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)