

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: P562168

Luminaire Tested: FSR-24-4-LD4-1LO-40-UNV-80-88-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P562168
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-LD4-1LO-40-UNV-80-88-EDD-90
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .500 CLEAR PC ENVIRON
SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

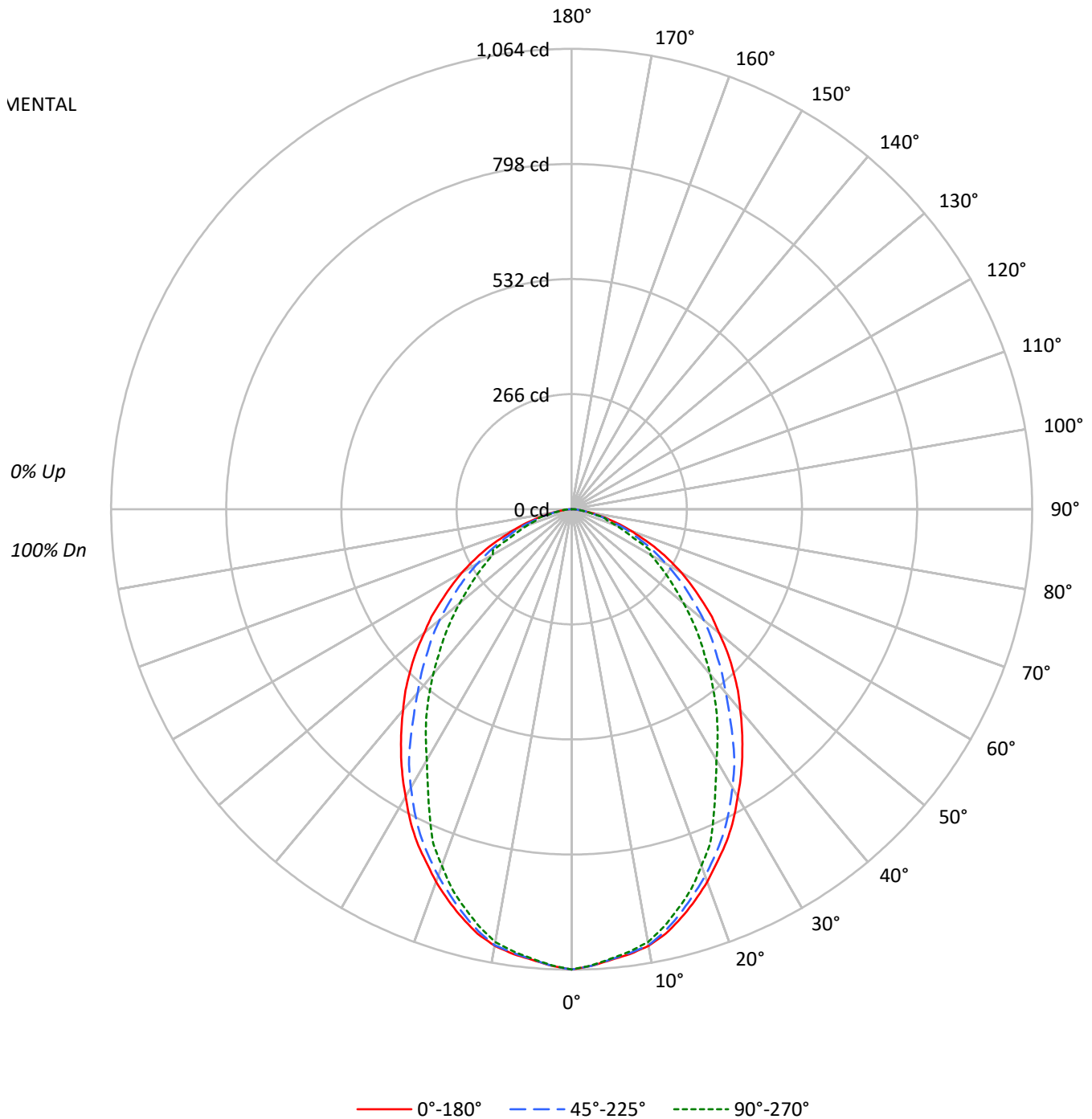
Lumens per Lamp: N/A
Luminaire Lumens: 2088.0 lumens
Efficiency: N/A
Efficacy: 89.2 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 23.4
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: P562168

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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 | 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° | 1431 | 1431 | 1431 |
| 5° | 1412 | 1410 | 1408 |
| 10° | 1399 | 1398 | 1388 |
| 15° | 1362 | 1348 | 1329 |
| 20° | 1312 | 1291 | 1255 |
| 25° | 1258 | 1230 | 1154 |
| 30° | 1192 | 1154 | 1039 |
| 35° | 1129 | 1066 | 961 |
| 40° | 1065 | 972 | 875 |
| 45° | 1004 | 899 | 791 |
| 50° | 929 | 834 | 705 |
| 55° | 859 | 756 | 632 |
| 60° | 787 | 675 | 566 |
| 65° | 693 | 591 | 501 |
| 70° | 571 | 518 | 426 |
| 75° | 454 | 396 | 415 |
| 80° | 305 | 286 | 267 |
| 85° | 190 | 228 | 266 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1004 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 99.0 | 4.7 |
| 10°-20° | 271.7 | 13.0 |
| 20°-30° | 376.2 | 18.0 |
| 30°-40° | 401.1 | 19.2 |
| 40°-50° | 365.9 | 17.5 |
| 50°-60° | 286.7 | 13.7 |
| 60°-70° | 186.8 | 8.9 |
| 70°-80° | 82.8 | 4.0 |
| 80°-90° | 17.8 | 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° | 746.9 | 35.8 |
| 0°-40° | 1148.0 | 55.0 |
| 0°-60° | 1800.6 | 86.2 |
| 0°-90° | 2088.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2088.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1064 | 1064 | 1064 | 1064 | 1064 | |
| 5° | 1045 | 1044 | 1044 | 1043 | 1043 | 99 |
| 15° | 978 | 978 | 968 | 958 | 954 | 275 |
| 25° | 847 | 842 | 829 | 799 | 777 | 389 |
| 35° | 687 | 682 | 649 | 600 | 585 | 430 |
| 45° | 528 | 516 | 472 | 433 | 416 | 406 |
| 55° | 366 | 355 | 322 | 284 | 269 | 329 |
| 65° | 218 | 205 | 186 | 189 | 157 | 214 |
| 75° | 87 | 81 | 76 | 72 | 80 | 94 |
| 85° | 12 | 14 | 15 | 16 | 17 | 17 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P562168

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1063.6 | 1063.6 | 1063.6 | 1063.6 | 1063.6 |
| 2.5° | 1056.2 | 1056.2 | 1056.2 | 1055.0 | 1055.0 |
| 5° | 1045.2 | 1043.9 | 1043.9 | 1042.7 | 1042.7 |
| 7.5° | 1036.5 | 1035.3 | 1034.1 | 1032.9 | 1030.4 |
| 10° | 1024.3 | 1024.3 | 1023.0 | 1016.9 | 1015.6 |
| 12.5° | 1004.6 | 1003.3 | 998.4 | 989.8 | 987.4 |
| 15° | 977.5 | 977.5 | 967.7 | 957.9 | 954.2 |
| 17.5° | 948.0 | 946.8 | 934.5 | 924.7 | 919.7 |
| 20° | 916.0 | 913.6 | 901.3 | 885.3 | 876.7 |
| 22.5° | 880.4 | 880.4 | 865.6 | 844.7 | 836.1 |
| 25° | 847.2 | 842.3 | 828.7 | 799.2 | 777.1 |
| 27.5° | 809.1 | 801.7 | 786.9 | 745.1 | 719.3 |
| 30° | 767.3 | 763.6 | 742.7 | 688.6 | 668.9 |
| 32.5° | 727.9 | 721.8 | 699.6 | 643.1 | 627.1 |
| 35° | 687.3 | 682.4 | 649.2 | 600.0 | 585.3 |
| 37.5° | 646.8 | 640.6 | 598.8 | 559.5 | 541.0 |
| 40° | 606.2 | 598.8 | 553.3 | 517.7 | 498.0 |
| 42.5° | 568.1 | 558.2 | 514.0 | 475.9 | 453.7 |
| 45° | 527.5 | 516.4 | 472.2 | 432.8 | 415.6 |
| 47.5° | 486.9 | 477.1 | 436.5 | 395.9 | 376.3 |
| 50° | 443.9 | 435.3 | 398.4 | 357.8 | 336.9 |
| 52.5° | 408.2 | 394.7 | 359.0 | 318.5 | 301.3 |
| 55° | 366.4 | 355.4 | 322.2 | 284.0 | 269.3 |
| 57.5° | 328.3 | 317.2 | 286.5 | 250.8 | 238.5 |
| 60° | 292.6 | 276.7 | 250.8 | 220.1 | 210.3 |
| 62.5° | 253.3 | 241.0 | 218.9 | 193.0 | 205.3 |
| 65° | 217.6 | 205.3 | 185.7 | 189.4 | 157.4 |
| 67.5° | 178.3 | 172.1 | 154.9 | 137.7 | 132.8 |
| 70° | 145.1 | 137.7 | 131.6 | 113.1 | 108.2 |
| 72.5° | 115.6 | 108.2 | 99.6 | 89.8 | 86.1 |
| 75° | 87.3 | 81.2 | 76.2 | 72.5 | 79.9 |
| 77.5° | 60.3 | 57.8 | 54.1 | 50.4 | 49.2 |
| 80° | 39.3 | 38.1 | 36.9 | 35.7 | 34.4 |
| 82.5° | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 |
| 85° | 12.3 | 13.5 | 14.8 | 16.0 | 17.2 |
| 87.5° | 7.4 | 7.4 | 8.6 | 9.8 | 11.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)