

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: P561904

Luminaire Tested: FSR-24-2-LD4-1LO-35-UNV-80-84-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561904
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-24-2-LD4-1LO-35-UNV-80-84-EDD-90
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .125 CLEAR PC ENVIRON
SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2438.0 lumens
Efficiency: N/A
Efficacy: 104.2 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

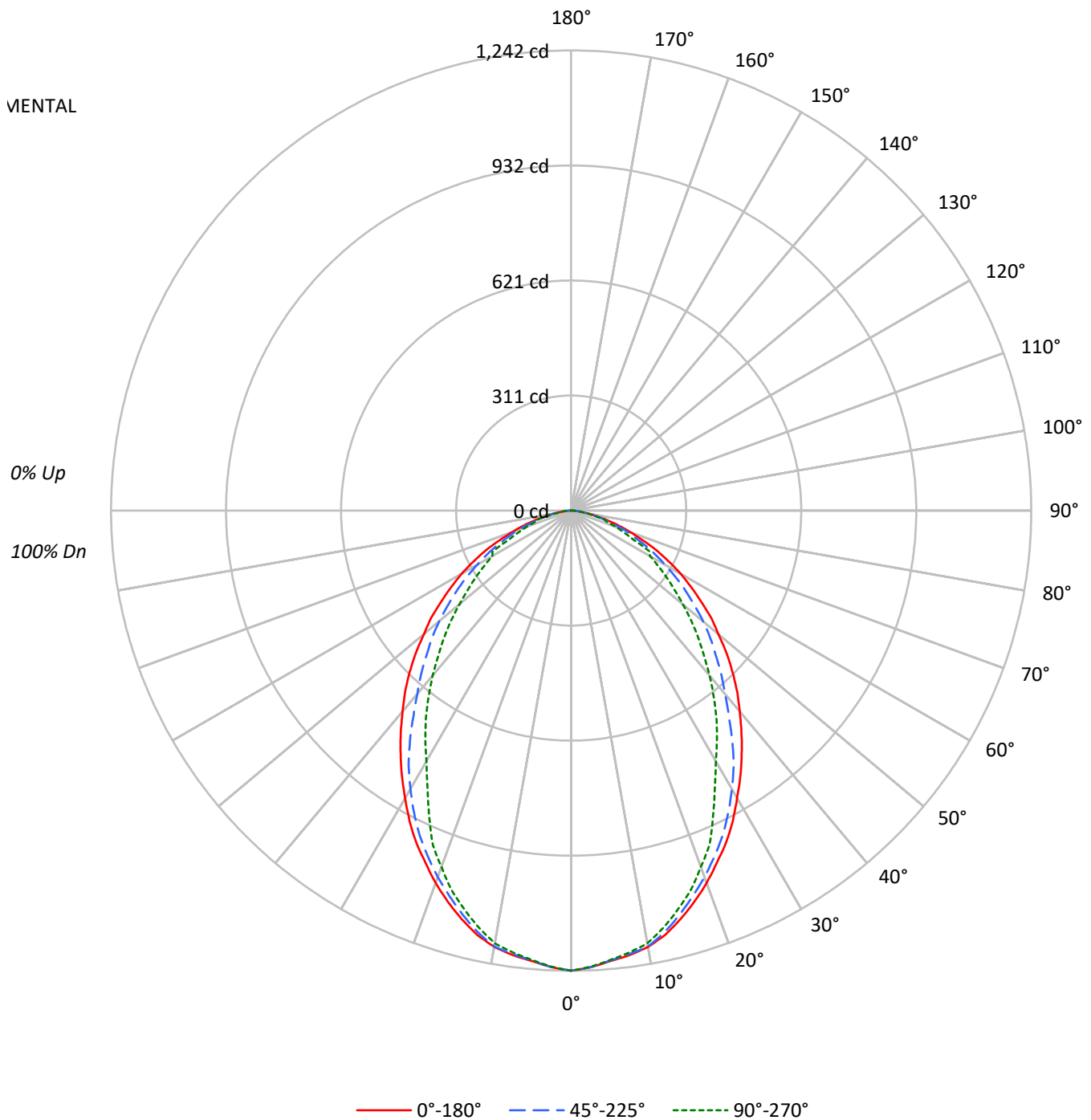
Input Watts (W): 23.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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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 | | | | |
| 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° | 1671 | 1671 | 1671 |
| 5° | 1648 | 1646 | 1644 |
| 10° | 1634 | 1632 | 1620 |
| 15° | 1590 | 1574 | 1552 |
| 20° | 1531 | 1507 | 1466 |
| 25° | 1469 | 1437 | 1347 |
| 30° | 1392 | 1347 | 1213 |
| 35° | 1318 | 1245 | 1123 |
| 40° | 1243 | 1135 | 1021 |
| 45° | 1172 | 1049 | 923 |
| 50° | 1085 | 974 | 823 |
| 55° | 1004 | 882 | 738 |
| 60° | 920 | 788 | 661 |
| 65° | 809 | 690 | 585 |
| 70° | 666 | 604 | 497 |
| 75° | 530 | 463 | 485 |
| 80° | 356 | 334 | 311 |
| 85° | 222 | 266 | 310 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1172 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 115.6 | 4.7 |
| 10°-20° | 317.3 | 13.0 |
| 20°-30° | 439.2 | 18.0 |
| 30°-40° | 468.3 | 19.2 |
| 40°-50° | 427.3 | 17.5 |
| 50°-60° | 334.7 | 13.7 |
| 60°-70° | 218.2 | 8.9 |
| 70°-80° | 96.7 | 4.0 |
| 80°-90° | 20.8 | 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° | 872.1 | 35.8 |
| 0°-40° | 1340.4 | 55.0 |
| 0°-60° | 2102.4 | 86.2 |
| 0°-90° | 2438.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2438.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1242 | 1242 | 1242 | 1242 | 1242 | |
| 5° | 1220 | 1219 | 1219 | 1218 | 1218 | 116 |
| 15° | 1141 | 1141 | 1130 | 1118 | 1114 | 321 |
| 25° | 989 | 984 | 968 | 933 | 907 | 454 |
| 35° | 803 | 797 | 758 | 701 | 683 | 502 |
| 45° | 616 | 603 | 551 | 505 | 485 | 474 |
| 55° | 428 | 415 | 376 | 332 | 314 | 384 |
| 65° | 254 | 240 | 217 | 221 | 184 | 250 |
| 75° | 102 | 95 | 89 | 85 | 93 | 109 |
| 85° | 14 | 16 | 17 | 19 | 20 | 20 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P561904

CATALOG NUMBER: FSR-24-2-LD4-1LO-35-UNV-80-84-EDD-90

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1241.9 | 1241.9 | 1241.9 | 1241.9 | 1241.9 |
| 2.5° | 1233.3 | 1233.3 | 1233.3 | 1231.8 | 1231.8 |
| 5° | 1220.3 | 1218.9 | 1218.9 | 1217.5 | 1217.5 |
| 7.5° | 1210.3 | 1208.9 | 1207.4 | 1206.0 | 1203.1 |
| 10° | 1195.9 | 1195.9 | 1194.5 | 1187.3 | 1185.9 |
| 12.5° | 1173.0 | 1171.5 | 1165.8 | 1155.7 | 1152.9 |
| 15° | 1141.4 | 1141.4 | 1129.9 | 1118.4 | 1114.1 |
| 17.5° | 1106.9 | 1105.5 | 1091.1 | 1079.6 | 1073.9 |
| 20° | 1069.6 | 1066.7 | 1052.4 | 1033.7 | 1023.7 |
| 22.5° | 1028.0 | 1028.0 | 1010.7 | 986.3 | 976.3 |
| 25° | 989.2 | 983.5 | 967.7 | 933.2 | 907.4 |
| 27.5° | 944.7 | 936.1 | 918.9 | 870.0 | 839.9 |
| 30° | 895.9 | 891.6 | 867.2 | 804.0 | 781.0 |
| 32.5° | 849.9 | 842.8 | 816.9 | 750.9 | 732.2 |
| 35° | 802.6 | 796.8 | 758.1 | 700.6 | 683.4 |
| 37.5° | 755.2 | 748.0 | 699.2 | 653.2 | 631.7 |
| 40° | 707.8 | 699.2 | 646.1 | 604.4 | 581.5 |
| 42.5° | 663.3 | 651.8 | 600.1 | 555.6 | 529.8 |
| 45° | 615.9 | 603.0 | 551.3 | 505.4 | 485.3 |
| 47.5° | 568.5 | 557.1 | 509.7 | 462.3 | 439.3 |
| 50° | 518.3 | 508.2 | 465.2 | 417.8 | 393.4 |
| 52.5° | 476.7 | 460.9 | 419.2 | 371.8 | 351.7 |
| 55° | 427.8 | 414.9 | 376.2 | 331.6 | 314.4 |
| 57.5° | 383.3 | 370.4 | 334.5 | 292.9 | 278.5 |
| 60° | 341.7 | 323.0 | 292.9 | 257.0 | 245.5 |
| 62.5° | 295.8 | 281.4 | 255.6 | 225.4 | 239.8 |
| 65° | 254.1 | 239.8 | 216.8 | 221.1 | 183.8 |
| 67.5° | 208.2 | 201.0 | 180.9 | 160.8 | 155.1 |
| 70° | 169.4 | 160.8 | 153.6 | 132.1 | 126.3 |
| 72.5° | 135.0 | 126.3 | 116.3 | 104.8 | 100.5 |
| 75° | 101.9 | 94.8 | 89.0 | 84.7 | 93.3 |
| 77.5° | 70.3 | 67.5 | 63.2 | 58.9 | 57.4 |
| 80° | 45.9 | 44.5 | 43.1 | 41.6 | 40.2 |
| 82.5° | 27.3 | 27.3 | 27.3 | 27.3 | 27.3 |
| 85° | 14.4 | 15.8 | 17.2 | 18.7 | 20.1 |
| 87.5° | 8.6 | 8.6 | 10.0 | 11.5 | 12.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)