

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: P688118

Luminaire Tested: FLR-HA-22-L3C3 (MED)-50-CP250

Issue Date: 5/22/2023

Test Information

Test Method: LM-79-2019
Report Number: P688118
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2207-724-14)
Test Lab: INNOVATION CENTER
Issue Date: 5/22/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: FLR-HA-22-L3C3 (MED)-50-CP250
Description: Fail-Safe - FLR Fully Luminous Recessed 2X2 5000K Luminaire at Midium Lumen setting for High Abuse
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

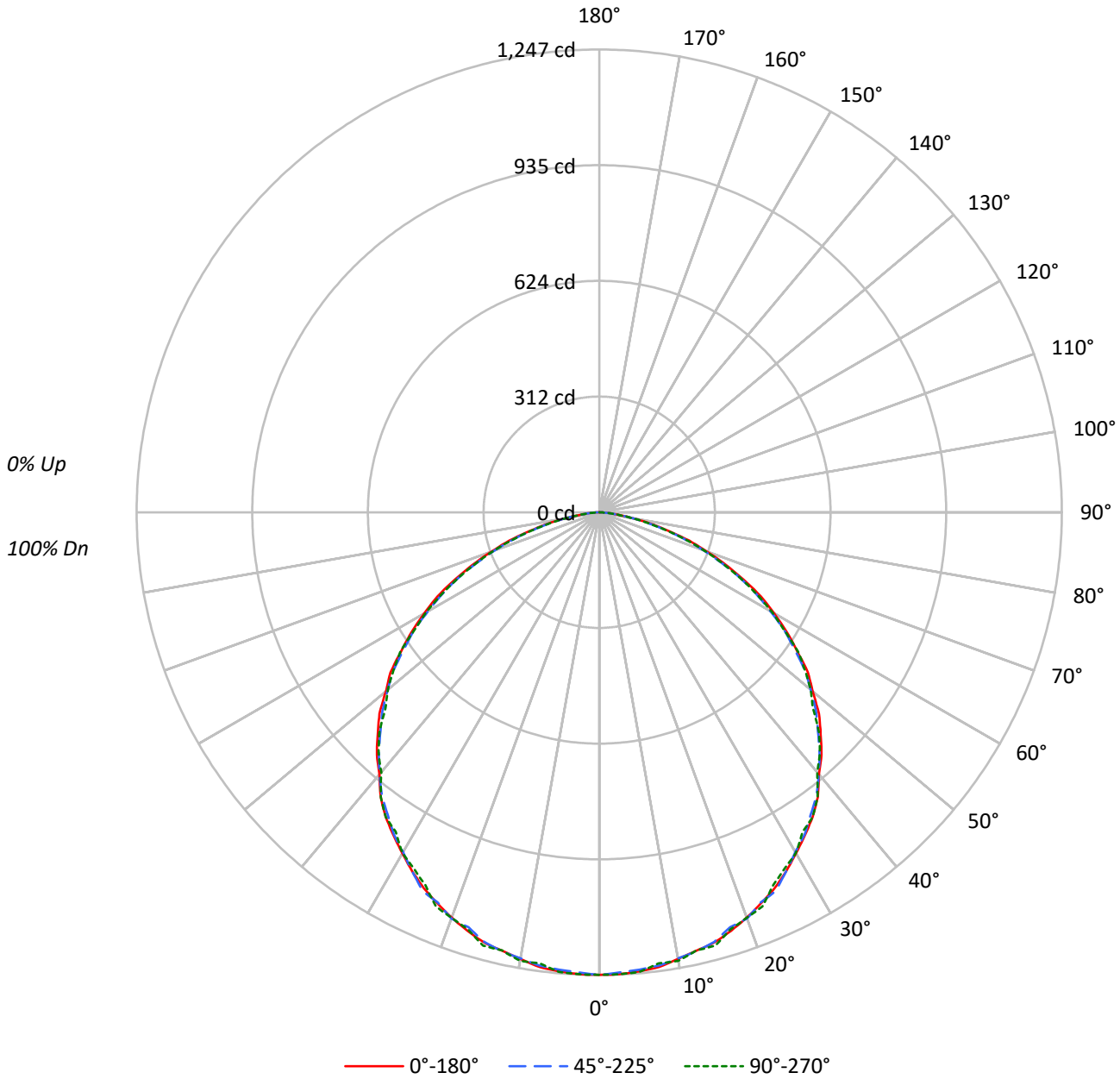
Lumens per Lamp: N/A
Luminaire Lumens: 3455.2 lumens
Efficiency: N/A
Efficacy: 114.8 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.26 / 1.38
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 30.1
Input Voltage (V): 120
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 | 109 | 105 | 101 | 97 | 107 | 102 | 99 | 95 | 98 | 95 | 92 | 94 | 92 | 90 | 91 | 89 | 87 | 85 |
| 2 | 100 | 92 | 85 | 79 | 97 | 90 | 84 | 78 | 86 | 81 | 77 | 83 | 79 | 75 | 80 | 76 | 73 | 71 |
| 3 | 91 | 81 | 73 | 66 | 88 | 79 | 72 | 66 | 76 | 70 | 64 | 73 | 68 | 63 | 71 | 66 | 62 | 60 |
| 4 | 83 | 71 | 63 | 56 | 81 | 70 | 62 | 56 | 68 | 61 | 55 | 65 | 59 | 54 | 63 | 58 | 53 | 51 |
| 5 | 76 | 64 | 55 | 48 | 74 | 63 | 54 | 48 | 61 | 53 | 48 | 59 | 52 | 47 | 57 | 51 | 46 | 44 |
| 6 | 71 | 57 | 49 | 42 | 69 | 56 | 48 | 42 | 55 | 47 | 42 | 53 | 46 | 41 | 51 | 45 | 41 | 39 |
| 7 | 65 | 52 | 43 | 37 | 64 | 51 | 43 | 37 | 50 | 42 | 37 | 48 | 42 | 37 | 47 | 41 | 36 | 34 |
| 8 | 61 | 47 | 39 | 33 | 59 | 47 | 39 | 33 | 45 | 38 | 33 | 44 | 38 | 33 | 43 | 37 | 32 | 31 |
| 9 | 57 | 44 | 35 | 30 | 55 | 43 | 35 | 30 | 42 | 35 | 30 | 41 | 34 | 29 | 40 | 34 | 29 | 27 |
| 10 | 53 | 40 | 32 | 27 | 52 | 40 | 32 | 27 | 39 | 32 | 27 | 38 | 31 | 27 | 37 | 31 | 27 | 25 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 3355 | 3355 | 3355 |
| 5° | 3355 | 3342 | 3358 |
| 10° | 3339 | 3336 | 3354 |
| 15° | 3344 | 3338 | 3368 |
| 20° | 3329 | 3336 | 3331 |
| 25° | 3320 | 3343 | 3292 |
| 30° | 3297 | 3285 | 3295 |
| 35° | 3294 | 3266 | 3294 |
| 40° | 3236 | 3234 | 3211 |
| 45° | 3214 | 3174 | 3189 |
| 50° | 3142 | 3117 | 3114 |
| 55° | 3051 | 3008 | 3070 |
| 60° | 2927 | 2863 | 2894 |
| 65° | 2729 | 2670 | 2674 |
| 70° | 2418 | 2350 | 2376 |
| 75° | 1990 | 1914 | 1942 |
| 80° | 1396 | 1365 | 1385 |
| 85° | 716 | 676 | 676 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3214 cd/sqm

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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 117.8 | 3.4 |
| 10°-20° | 338.1 | 9.8 |
| 20°-30° | 514.1 | 14.9 |
| 30°-40° | 621.7 | 18.0 |
| 40°-50° | 644.3 | 18.6 |
| 50°-60° | 575.1 | 16.6 |
| 60°-70° | 413.0 | 12.0 |
| 70°-80° | 198.1 | 5.7 |
| 80°-90° | 32.9 | 1.0 |
| 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° | 970.1 | 28.1 |
| 0°-40° | 1591.8 | 46.1 |
| 0°-60° | 2811.2 | 81.4 |
| 0°-90° | 3455.2 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3455.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1247 | 1247 | 1247 | 1247 | 1247 | |
| 5° | 1242 | 1246 | 1237 | 1238 | 1243 | 118 |
| 15° | 1200 | 1202 | 1198 | 1198 | 1209 | 338 |
| 25° | 1118 | 1115 | 1126 | 1112 | 1109 | 515 |
| 35° | 1003 | 995 | 994 | 990 | 1003 | 626 |
| 45° | 844 | 839 | 834 | 833 | 838 | 651 |
| 55° | 650 | 643 | 641 | 640 | 654 | 583 |
| 65° | 429 | 416 | 419 | 413 | 420 | 424 |
| 75° | 191 | 179 | 184 | 184 | 187 | 207 |
| 85° | 23 | 22 | 22 | 22 | 22 | 34 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

TEST NUMBER: P688118
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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1246.6 | 1246.6 | 1246.6 | 1246.6 | 1246.6 |
| 2.5° | 1245.9 | 1247.2 | 1241.3 | 1239.9 | 1245.9 |
| 5° | 1241.9 | 1245.9 | 1237.3 | 1238.0 | 1243.3 |
| 7.5° | 1236.0 | 1233.3 | 1232.0 | 1236.6 | 1226.0 |
| 10° | 1222.1 | 1228.0 | 1220.7 | 1217.4 | 1227.4 |
| 12.5° | 1210.1 | 1210.8 | 1211.5 | 1212.8 | 1209.5 |
| 15° | 1200.2 | 1201.5 | 1198.2 | 1198.2 | 1208.8 |
| 17.5° | 1182.3 | 1185.0 | 1172.4 | 1180.3 | 1177.7 |
| 20° | 1162.5 | 1159.8 | 1165.1 | 1163.1 | 1163.1 |
| 22.5° | 1140.6 | 1140.6 | 1137.9 | 1139.3 | 1149.9 |
| 25° | 1118.1 | 1115.4 | 1126.0 | 1112.1 | 1108.8 |
| 27.5° | 1090.9 | 1088.3 | 1090.9 | 1083.6 | 1082.3 |
| 30° | 1061.1 | 1054.5 | 1057.1 | 1057.8 | 1060.4 |
| 32.5° | 1032.0 | 1025.3 | 1030.0 | 1025.3 | 1020.7 |
| 35° | 1002.8 | 994.9 | 994.2 | 990.2 | 1002.8 |
| 37.5° | 967.7 | 959.1 | 962.4 | 949.8 | 967.1 |
| 40° | 921.3 | 916.1 | 920.7 | 916.7 | 914.1 |
| 42.5° | 886.9 | 880.9 | 879.0 | 876.3 | 880.3 |
| 45° | 844.5 | 838.6 | 833.9 | 833.3 | 837.9 |
| 47.5° | 803.4 | 788.2 | 792.2 | 786.2 | 780.9 |
| 50° | 750.5 | 746.5 | 744.5 | 738.5 | 743.8 |
| 52.5° | 709.4 | 694.8 | 698.1 | 692.8 | 698.8 |
| 55° | 650.4 | 643.2 | 641.2 | 639.8 | 654.4 |
| 57.5° | 599.4 | 590.2 | 591.5 | 588.2 | 590.2 |
| 60° | 543.8 | 535.2 | 531.9 | 531.2 | 537.8 |
| 62.5° | 491.5 | 473.6 | 476.2 | 475.6 | 478.9 |
| 65° | 428.6 | 416.0 | 419.3 | 413.3 | 419.9 |
| 67.5° | 368.3 | 355.7 | 357.0 | 355.7 | 359.0 |
| 70° | 307.3 | 293.4 | 298.7 | 296.1 | 302.0 |
| 72.5° | 254.3 | 237.8 | 242.4 | 237.8 | 243.1 |
| 75° | 191.4 | 178.8 | 184.1 | 184.1 | 186.8 |
| 77.5° | 141.1 | 129.8 | 133.8 | 132.5 | 135.1 |
| 80° | 90.1 | 85.4 | 88.1 | 86.1 | 89.4 |
| 82.5° | 51.7 | 48.4 | 48.4 | 49.7 | 50.3 |
| 85° | 23.2 | 21.9 | 21.9 | 21.9 | 21.9 |
| 87.5° | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)