

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: P687858

Luminaire Tested: FLR-HA-24-L3C3 (LOW)-35-CA08

Issue Date: 5/22/2023

Test Information

Test Method: LM-79-2019
Report Number: P687858
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2303-938-1)
Test Lab: INNOVATION CENTER
Issue Date: 5/22/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: FLR-HA-24-L3C3 (LOW)-35-CA08
Description: Fail-Safe - FLR Fully Luminous Recessed 2X4 3500K Luminaire at Low Lumen setting for High Abuse
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

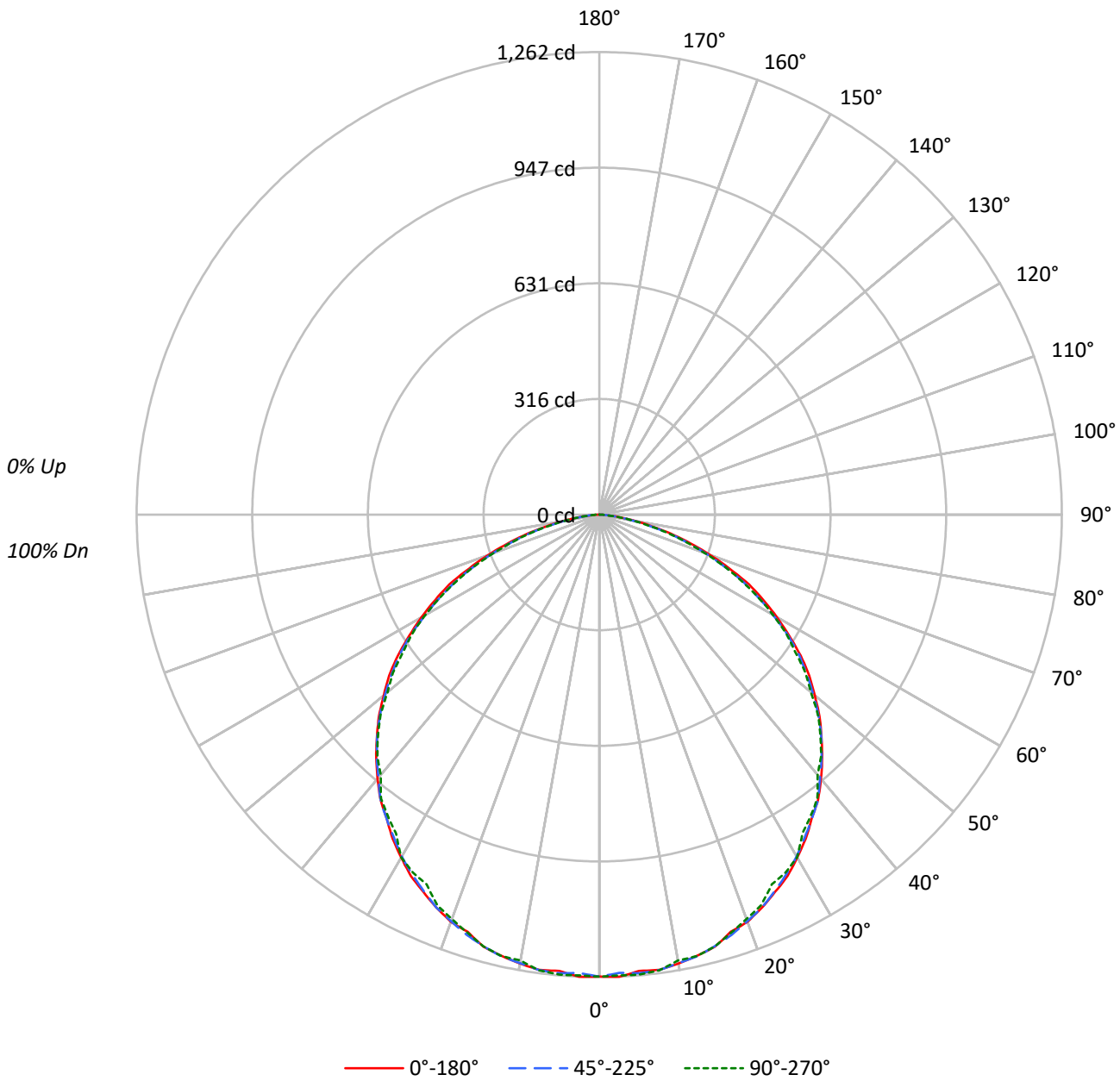
Lumens per Lamp: N/A
Luminaire Lumens: 3540.8 lumens
Efficiency: N/A
Efficacy: 127.4 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.26 / 1.39
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 27.8
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 | 89 | 91 | 89 | 87 | 85 |
| 2 | 99 | 91 | 85 | 79 | 97 | 90 | 83 | 78 | 86 | 81 | 76 | 83 | 78 | 75 | 80 | 76 | 73 | 71 |
| 3 | 91 | 80 | 72 | 66 | 88 | 79 | 71 | 65 | 76 | 69 | 64 | 73 | 68 | 63 | 70 | 66 | 62 | 60 |
| 4 | 83 | 71 | 62 | 56 | 81 | 70 | 62 | 55 | 67 | 60 | 55 | 65 | 59 | 54 | 63 | 58 | 53 | 51 |
| 5 | 76 | 64 | 55 | 48 | 74 | 62 | 54 | 48 | 60 | 53 | 47 | 58 | 52 | 47 | 57 | 51 | 46 | 44 |
| 6 | 70 | 57 | 48 | 42 | 69 | 56 | 48 | 42 | 54 | 47 | 41 | 53 | 46 | 41 | 51 | 45 | 41 | 39 |
| 7 | 65 | 52 | 43 | 37 | 64 | 51 | 43 | 37 | 49 | 42 | 37 | 48 | 41 | 36 | 47 | 41 | 36 | 34 |
| 8 | 61 | 47 | 39 | 33 | 59 | 47 | 38 | 33 | 45 | 38 | 33 | 44 | 37 | 32 | 43 | 37 | 32 | 30 |
| 9 | 57 | 43 | 35 | 30 | 55 | 43 | 35 | 30 | 42 | 34 | 29 | 41 | 34 | 29 | 40 | 34 | 29 | 27 |
| 10 | 53 | 40 | 32 | 27 | 52 | 39 | 32 | 27 | 38 | 31 | 27 | 38 | 31 | 27 | 37 | 31 | 26 | 25 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 1696 | 1696 | 1696 |
| 5° | 1688 | 1697 | 1702 |
| 10° | 1700 | 1698 | 1688 |
| 15° | 1700 | 1698 | 1699 |
| 20° | 1693 | 1691 | 1682 |
| 25° | 1686 | 1682 | 1653 |
| 30° | 1679 | 1674 | 1678 |
| 35° | 1661 | 1662 | 1650 |
| 40° | 1653 | 1645 | 1627 |
| 45° | 1632 | 1630 | 1624 |
| 50° | 1606 | 1594 | 1577 |
| 55° | 1573 | 1558 | 1529 |
| 60° | 1505 | 1473 | 1473 |
| 65° | 1436 | 1378 | 1363 |
| 70° | 1264 | 1214 | 1199 |
| 75° | 1055 | 1002 | 1012 |
| 80° | 755 | 710 | 705 |
| 85° | 394 | 363 | 383 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°
 Vertical Angle: 45°
 Luminance: 1636 cd/sqm

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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 119.5 | 3.4 |
| 10°-20° | 343.5 | 9.7 |
| 20°-30° | 522.6 | 14.8 |
| 30°-40° | 633.2 | 17.9 |
| 40°-50° | 659.3 | 18.6 |
| 50°-60° | 590.3 | 16.7 |
| 60°-70° | 428.6 | 12.1 |
| 70°-80° | 208.1 | 5.9 |
| 80°-90° | 35.8 | 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° | 985.5 | 27.8 |
| 0°-40° | 1618.7 | 45.7 |
| 0°-60° | 2868.3 | 81.0 |
| 0°-90° | 3540.8 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3540.8 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1261 | 1261 | 1261 | 1261 | 1261 | |
| 5° | 1250 | 1257 | 1256 | 1254 | 1260 | 119 |
| 15° | 1220 | 1218 | 1219 | 1210 | 1220 | 343 |
| 25° | 1136 | 1138 | 1133 | 1131 | 1114 | 524 |
| 35° | 1011 | 1017 | 1012 | 1015 | 1005 | 635 |
| 45° | 858 | 860 | 856 | 852 | 853 | 662 |
| 55° | 671 | 666 | 664 | 657 | 652 | 597 |
| 65° | 451 | 439 | 433 | 431 | 428 | 440 |
| 75° | 203 | 198 | 193 | 193 | 195 | 216 |
| 85° | 26 | 26 | 24 | 24 | 25 | 38 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

TEST NUMBER: P687858
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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1260.6 | 1260.6 | 1260.6 | 1260.6 | 1260.6 |
| 2.5° | 1262.5 | 1261.8 | 1251.6 | 1256.1 | 1258.6 |
| 5° | 1249.7 | 1257.4 | 1256.1 | 1253.6 | 1259.9 |
| 7.5° | 1252.9 | 1249.7 | 1253.6 | 1252.9 | 1254.2 |
| 10° | 1244.0 | 1240.8 | 1242.7 | 1243.4 | 1235.7 |
| 12.5° | 1233.2 | 1231.3 | 1234.5 | 1237.0 | 1233.8 |
| 15° | 1220.5 | 1217.9 | 1219.2 | 1210.3 | 1219.8 |
| 17.5° | 1193.7 | 1200.1 | 1202.0 | 1196.9 | 1196.3 |
| 20° | 1182.3 | 1180.4 | 1181.0 | 1179.1 | 1174.7 |
| 22.5° | 1160.7 | 1168.3 | 1160.7 | 1156.8 | 1153.7 |
| 25° | 1135.8 | 1138.4 | 1133.3 | 1131.4 | 1113.6 |
| 27.5° | 1112.3 | 1111.7 | 1105.9 | 1105.9 | 1100.8 |
| 30° | 1080.5 | 1076.0 | 1077.3 | 1072.2 | 1079.8 |
| 32.5° | 1048.7 | 1049.3 | 1043.6 | 1045.5 | 1031.5 |
| 35° | 1011.1 | 1016.8 | 1011.8 | 1014.9 | 1004.8 |
| 37.5° | 980.6 | 976.8 | 980.6 | 975.5 | 977.4 |
| 40° | 941.1 | 939.8 | 936.7 | 937.9 | 926.5 |
| 42.5° | 900.4 | 898.5 | 897.9 | 895.3 | 895.9 |
| 45° | 857.8 | 859.7 | 856.5 | 852.0 | 853.3 |
| 47.5° | 815.1 | 817.0 | 811.3 | 805.6 | 809.4 |
| 50° | 767.4 | 768.7 | 761.7 | 759.8 | 753.4 |
| 52.5° | 722.2 | 716.5 | 712.7 | 709.5 | 708.9 |
| 55° | 670.7 | 665.6 | 664.3 | 656.7 | 651.6 |
| 57.5° | 613.4 | 612.1 | 608.3 | 602.6 | 605.1 |
| 60° | 559.3 | 554.2 | 547.2 | 546.0 | 547.2 |
| 62.5° | 504.0 | 498.2 | 489.3 | 491.9 | 489.3 |
| 65° | 451.2 | 439.1 | 432.7 | 431.4 | 428.2 |
| 67.5° | 383.7 | 374.8 | 369.7 | 367.8 | 369.1 |
| 70° | 321.3 | 320.7 | 308.6 | 306.7 | 304.8 |
| 72.5° | 260.9 | 255.8 | 248.8 | 248.2 | 247.5 |
| 75° | 203.0 | 198.5 | 192.8 | 193.4 | 194.7 |
| 77.5° | 146.4 | 141.9 | 136.8 | 138.7 | 136.2 |
| 80° | 97.4 | 96.1 | 91.6 | 91.0 | 91.0 |
| 82.5° | 57.9 | 55.4 | 52.8 | 52.8 | 53.5 |
| 85° | 25.5 | 26.1 | 23.5 | 23.5 | 24.8 |
| 87.5° | 6.4 | 7.0 | 6.4 | 6.4 | 6.4 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)