

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: P688389

Luminaire Tested: FLR-HA-24-45-35-CA125

Issue Date: 5/22/2023

Test Information

Test Method: LM-79-2019
Report Number: P688389
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2303-938-2)
Test Lab: INNOVATION CENTER
Issue Date: 5/22/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: FLR-HA-24-45-35-CA125
Description: Fail-Safe - FLR Fully Luminous Recessed 2X4 3500K Luminaire for High Abuse
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

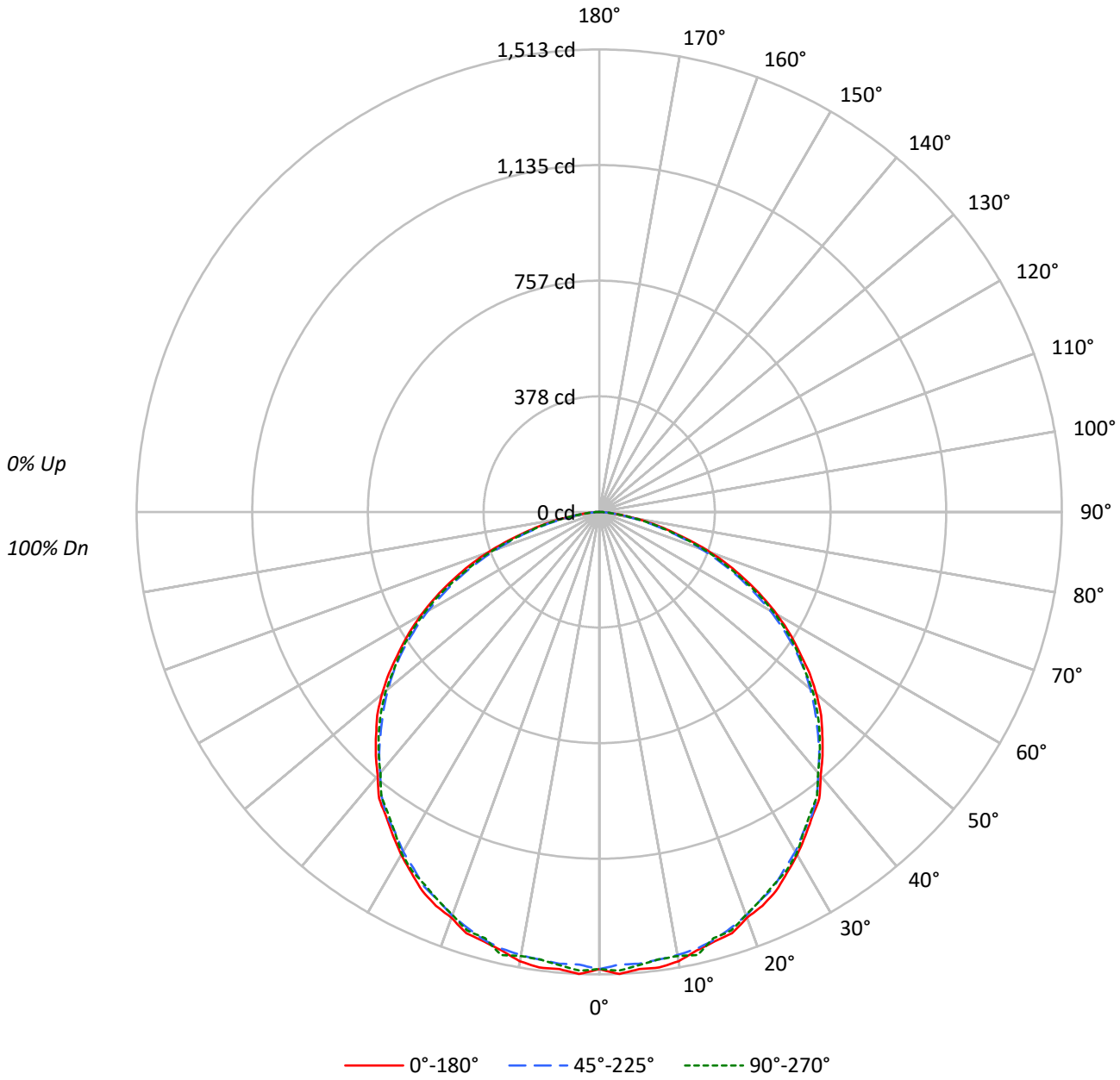
Lumens per Lamp: N/A
Luminaire Lumens: 4202.4 lumens
Efficiency: N/A
Efficacy: 108.3 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.27 / 1.38
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 38.8
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



TEST NUMBER: P688389

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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 | 91 | 85 | 79 | 97 | 90 | 83 | 78 | 86 | 81 | 76 | 83 | 79 | 75 | 80 | 76 | 73 | 71 |
| 3 | 91 | 80 | 72 | 66 | 88 | 79 | 71 | 65 | 76 | 69 | 64 | 73 | 68 | 63 | 71 | 66 | 62 | 60 |
| 4 | 83 | 71 | 63 | 56 | 81 | 70 | 62 | 56 | 67 | 60 | 55 | 65 | 59 | 54 | 63 | 58 | 53 | 51 |
| 5 | 76 | 64 | 55 | 48 | 74 | 63 | 54 | 48 | 60 | 53 | 47 | 58 | 52 | 47 | 57 | 51 | 46 | 44 |
| 6 | 71 | 57 | 48 | 42 | 69 | 56 | 48 | 42 | 55 | 47 | 41 | 53 | 46 | 41 | 51 | 45 | 41 | 39 |
| 7 | 65 | 52 | 43 | 37 | 64 | 51 | 43 | 37 | 50 | 42 | 37 | 48 | 41 | 36 | 47 | 41 | 36 | 34 |
| 8 | 61 | 47 | 39 | 33 | 59 | 47 | 39 | 33 | 45 | 38 | 33 | 44 | 37 | 33 | 43 | 37 | 32 | 30 |
| 9 | 57 | 43 | 35 | 30 | 55 | 43 | 35 | 30 | 42 | 35 | 29 | 41 | 34 | 29 | 40 | 34 | 29 | 27 |
| 10 | 53 | 40 | 32 | 27 | 52 | 40 | 32 | 27 | 39 | 32 | 27 | 38 | 31 | 27 | 37 | 31 | 26 | 25 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 2013 | 2013 | 2013 |
| 5° | 2027 | 2004 | 2010 |
| 10° | 2039 | 2012 | 2016 |
| 15° | 2027 | 2020 | 2011 |
| 20° | 2023 | 2012 | 2009 |
| 25° | 2031 | 2009 | 2000 |
| 30° | 2012 | 1993 | 2006 |
| 35° | 1996 | 1991 | 1977 |
| 40° | 1979 | 1958 | 1955 |
| 45° | 1964 | 1922 | 1939 |
| 50° | 1942 | 1887 | 1907 |
| 55° | 1874 | 1831 | 1852 |
| 60° | 1806 | 1738 | 1776 |
| 65° | 1688 | 1594 | 1633 |
| 70° | 1525 | 1400 | 1463 |
| 75° | 1247 | 1141 | 1180 |
| 80° | 894 | 800 | 836 |
| 85° | 489 | 420 | 431 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1964 cd/sqm

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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 141.8 | 3.4 |
| 10°-20° | 408.7 | 9.7 |
| 20°-30° | 622.0 | 14.8 |
| 30°-40° | 754.3 | 17.9 |
| 40°-50° | 784.2 | 18.7 |
| 50°-60° | 700.9 | 16.7 |
| 60°-70° | 505.3 | 12.0 |
| 70°-80° | 243.5 | 5.8 |
| 80°-90° | 41.7 | 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° | 1172.6 | 27.9 |
| 0°-40° | 1926.9 | 45.9 |
| 0°-60° | 3412.0 | 81.2 |
| 0°-90° | 4202.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4202.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1496 | 1496 | 1496 | 1496 | 1496 | |
| 5° | 1501 | 1488 | 1484 | 1491 | 1488 | 143 |
| 15° | 1455 | 1444 | 1450 | 1442 | 1444 | 412 |
| 25° | 1368 | 1347 | 1353 | 1346 | 1347 | 629 |
| 35° | 1215 | 1202 | 1212 | 1205 | 1204 | 762 |
| 45° | 1032 | 1018 | 1010 | 1014 | 1019 | 796 |
| 55° | 799 | 788 | 781 | 778 | 790 | 716 |
| 65° | 530 | 517 | 501 | 505 | 513 | 525 |
| 75° | 240 | 233 | 220 | 222 | 227 | 258 |
| 85° | 32 | 29 | 27 | 28 | 28 | 44 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1495.8 | 1495.8 | 1495.8 | 1495.8 | 1495.8 |
| 2.5° | 1513.1 | 1501.0 | 1482.2 | 1491.2 | 1501.8 |
| 5° | 1501.0 | 1488.2 | 1483.7 | 1491.2 | 1488.2 |
| 7.5° | 1503.3 | 1483.7 | 1477.7 | 1486.0 | 1476.9 |
| 10° | 1492.7 | 1475.4 | 1472.4 | 1476.1 | 1475.4 |
| 12.5° | 1470.1 | 1466.3 | 1464.1 | 1458.0 | 1484.4 |
| 15° | 1455.0 | 1444.5 | 1450.5 | 1441.5 | 1443.7 |
| 17.5° | 1445.2 | 1420.3 | 1427.9 | 1426.4 | 1436.2 |
| 20° | 1412.8 | 1406.8 | 1405.2 | 1400.7 | 1403.0 |
| 22.5° | 1394.7 | 1380.4 | 1375.8 | 1374.3 | 1375.8 |
| 25° | 1368.3 | 1347.2 | 1353.2 | 1346.4 | 1347.2 |
| 27.5° | 1330.6 | 1307.2 | 1314.7 | 1314.0 | 1324.5 |
| 30° | 1295.1 | 1277.8 | 1283.1 | 1278.5 | 1291.3 |
| 32.5° | 1255.1 | 1240.1 | 1242.3 | 1241.6 | 1243.1 |
| 35° | 1215.2 | 1201.6 | 1212.1 | 1204.6 | 1203.8 |
| 37.5° | 1182.7 | 1155.6 | 1169.9 | 1161.6 | 1170.7 |
| 40° | 1126.9 | 1116.4 | 1114.8 | 1109.6 | 1113.3 |
| 42.5° | 1080.9 | 1067.3 | 1065.1 | 1068.1 | 1068.1 |
| 45° | 1031.9 | 1018.3 | 1010.0 | 1014.5 | 1019.0 |
| 47.5° | 984.4 | 967.0 | 956.4 | 958.7 | 967.8 |
| 50° | 927.8 | 905.2 | 901.4 | 904.4 | 911.2 |
| 52.5° | 866.7 | 848.6 | 843.3 | 842.5 | 845.6 |
| 55° | 798.8 | 788.2 | 780.7 | 778.4 | 789.7 |
| 57.5° | 737.7 | 721.9 | 712.8 | 716.6 | 727.1 |
| 60° | 671.3 | 654.0 | 645.7 | 648.7 | 660.0 |
| 62.5° | 601.9 | 584.6 | 571.8 | 577.8 | 590.6 |
| 65° | 530.3 | 517.4 | 500.8 | 504.6 | 512.9 |
| 67.5° | 460.9 | 446.5 | 429.2 | 431.5 | 440.5 |
| 70° | 387.7 | 372.6 | 356.0 | 359.8 | 371.9 |
| 72.5° | 310.8 | 301.0 | 285.9 | 287.4 | 297.9 |
| 75° | 239.9 | 233.1 | 219.5 | 221.8 | 227.0 |
| 77.5° | 178.0 | 169.0 | 158.4 | 160.7 | 167.5 |
| 80° | 115.4 | 112.4 | 103.3 | 104.8 | 107.9 |
| 82.5° | 65.6 | 65.6 | 61.9 | 60.3 | 64.1 |
| 85° | 31.7 | 29.4 | 27.2 | 27.9 | 27.9 |
| 87.5° | 7.5 | 8.3 | 7.5 | 6.8 | 7.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)