

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: P688123

Luminaire Tested: FLR-HA-24-55-40-CP250

Issue Date: 5/22/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P688123  
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-24-55-40-CP250  
Description: Fail-Safe - FLR Fully Luminous Recessed 2X4 4000K Luminaire for High Abuse  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

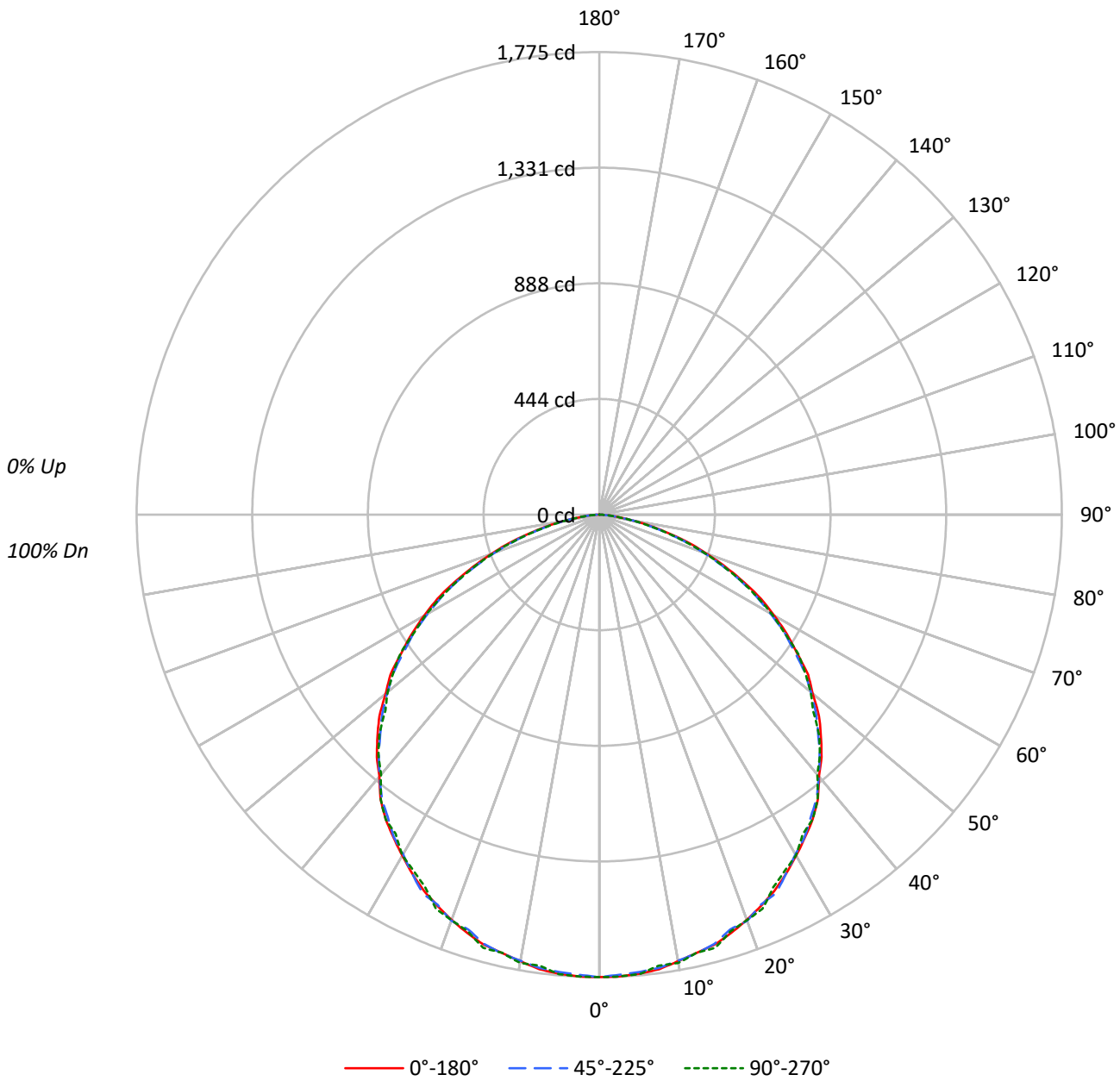
Lumens per Lamp: N/A  
Luminaire Lumens: 4920.1 lumens  
Efficiency: N/A  
Efficacy: 105.1 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.26 / 1.38  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 46.8  
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



TEST NUMBER: P688123  
CATALOG NUMBER: FLR-HA-24-55-40-CP250

### Luminous Intensity Polar Plot



TEST NUMBER: P688123  
 CATALOG NUMBER: FLR-HA-24-55-40-CP250

**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°  | 2388 | 2388 | 2388 |
| 5°  | 2389 | 2380 | 2391 |
| 10° | 2378 | 2375 | 2388 |
| 15° | 2381 | 2377 | 2398 |
| 20° | 2370 | 2376 | 2371 |
| 25° | 2364 | 2380 | 2344 |
| 30° | 2348 | 2339 | 2346 |
| 35° | 2346 | 2325 | 2346 |
| 40° | 2304 | 2303 | 2286 |
| 45° | 2288 | 2260 | 2270 |
| 50° | 2237 | 2219 | 2217 |
| 55° | 2173 | 2142 | 2186 |
| 60° | 2084 | 2038 | 2061 |
| 65° | 1943 | 1901 | 1904 |
| 70° | 1721 | 1674 | 1692 |
| 75° | 1417 | 1363 | 1383 |
| 80° | 994  | 972  | 986  |
| 85° | 509  | 480  | 480  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2288 cd/sqm

TEST NUMBER: P688123  
 CATALOG NUMBER: FLR-HA-24-55-40-CP250

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 167.8  | 3.4       |
| 10°-20°   | 481.5  | 9.8       |
| 20°-30°   | 732.0  | 14.9      |
| 30°-40°   | 885.3  | 18.0      |
| 40°-50°   | 917.4  | 18.6      |
| 50°-60°   | 819.0  | 16.6      |
| 60°-70°   | 588.1  | 12.0      |
| 70°-80°   | 282.1  | 5.7       |
| 80°-90°   | 46.8   | 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°    | 1381.3 | 28.1      |
| 0°-40°    | 2266.7 | 46.1      |
| 0°-60°    | 4003.1 | 81.4      |
| 0°-90°    | 4920.1 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4920.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1775 | 1775  | 1775 | 1775  | 1775 |      |
| 5°  | 1768 | 1774  | 1762 | 1763  | 1770 | 168  |
| 15° | 1709 | 1711  | 1706 | 1706  | 1721 | 482  |
| 25° | 1592 | 1588  | 1603 | 1584  | 1579 | 733  |
| 35° | 1428 | 1417  | 1416 | 1410  | 1428 | 891  |
| 45° | 1203 | 1194  | 1188 | 1186  | 1193 | 927  |
| 55° | 926  | 916   | 913  | 911   | 932  | 830  |
| 65° | 610  | 592   | 597  | 588   | 598  | 603  |
| 75° | 273  | 255   | 262  | 262   | 266  | 295  |
| 85° | 33   | 31    | 31   | 31    | 31   | 49   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

TEST NUMBER: P688123  
 CATALOG NUMBER: FLR-HA-24-55-40-CP250

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1775.1 | 1775.1 | 1775.1 | 1775.1 | 1775.1 |
| 2.5°  | 1774.1 | 1776.0 | 1767.5 | 1765.6 | 1774.1 |
| 5°    | 1768.5 | 1774.1 | 1761.9 | 1762.8 | 1770.4 |
| 7.5°  | 1760.0 | 1756.2 | 1754.3 | 1760.9 | 1745.8 |
| 10°   | 1740.2 | 1748.7 | 1738.3 | 1733.6 | 1747.7 |
| 12.5° | 1723.2 | 1724.1 | 1725.1 | 1727.0 | 1722.2 |
| 15°   | 1709.0 | 1710.9 | 1706.2 | 1706.2 | 1721.3 |
| 17.5° | 1683.6 | 1687.4 | 1669.4 | 1680.7 | 1677.0 |
| 20°   | 1655.3 | 1651.5 | 1659.1 | 1656.2 | 1656.2 |
| 22.5° | 1624.2 | 1624.2 | 1620.4 | 1622.3 | 1637.4 |
| 25°   | 1592.1 | 1588.3 | 1603.4 | 1583.6 | 1578.9 |
| 27.5° | 1553.4 | 1549.6 | 1553.4 | 1543.0 | 1541.2 |
| 30°   | 1511.0 | 1501.5 | 1505.3 | 1506.3 | 1510.0 |
| 32.5° | 1469.5 | 1460.0 | 1466.6 | 1460.0 | 1453.4 |
| 35°   | 1428.0 | 1416.7 | 1415.7 | 1410.1 | 1428.0 |
| 37.5° | 1378.0 | 1365.7 | 1370.4 | 1352.5 | 1377.0 |
| 40°   | 1312.0 | 1304.4 | 1311.0 | 1305.4 | 1301.6 |
| 42.5° | 1262.9 | 1254.4 | 1251.6 | 1247.8 | 1253.5 |
| 45°   | 1202.6 | 1194.1 | 1187.5 | 1186.5 | 1193.1 |
| 47.5° | 1144.1 | 1122.4 | 1128.0 | 1119.6 | 1112.0 |
| 50°   | 1068.6 | 1063.0 | 1060.1 | 1051.6 | 1059.2 |
| 52.5° | 1010.1 | 989.4  | 994.1  | 986.6  | 995.1  |
| 55°   | 926.2  | 915.8  | 913.0  | 911.1  | 931.9  |
| 57.5° | 853.6  | 840.4  | 842.3  | 837.5  | 840.4  |
| 60°   | 774.4  | 762.1  | 757.4  | 756.4  | 765.9  |
| 62.5° | 699.8  | 674.4  | 678.1  | 677.2  | 681.9  |
| 65°   | 610.2  | 592.3  | 597.0  | 588.5  | 598.0  |
| 67.5° | 524.4  | 506.5  | 508.4  | 506.5  | 511.2  |
| 70°   | 437.6  | 417.8  | 425.4  | 421.6  | 430.1  |
| 72.5° | 362.2  | 338.6  | 345.2  | 338.6  | 346.1  |
| 75°   | 272.6  | 254.7  | 262.2  | 262.2  | 266.0  |
| 77.5° | 200.9  | 184.9  | 190.5  | 188.6  | 192.4  |
| 80°   | 128.3  | 121.7  | 125.4  | 122.6  | 127.3  |
| 82.5° | 73.6   | 68.9   | 68.9   | 70.7   | 71.7   |
| 85°   | 33.0   | 31.1   | 31.1   | 31.1   | 31.1   |
| 87.5° | 8.5    | 8.5    | 8.5    | 8.5    | 8.5    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)