

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: P974723

Luminaire Tested: FLR2-24-90HE-L835-CA080

Issue Date: 3/13/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P974723  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2411-281-3)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/13/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FLR2-24-90HE-L835-CA080  
Description: SHAPER SENSE CIRCLE  
  
Light Source:  
Ballast/Driver: -

**Summary**

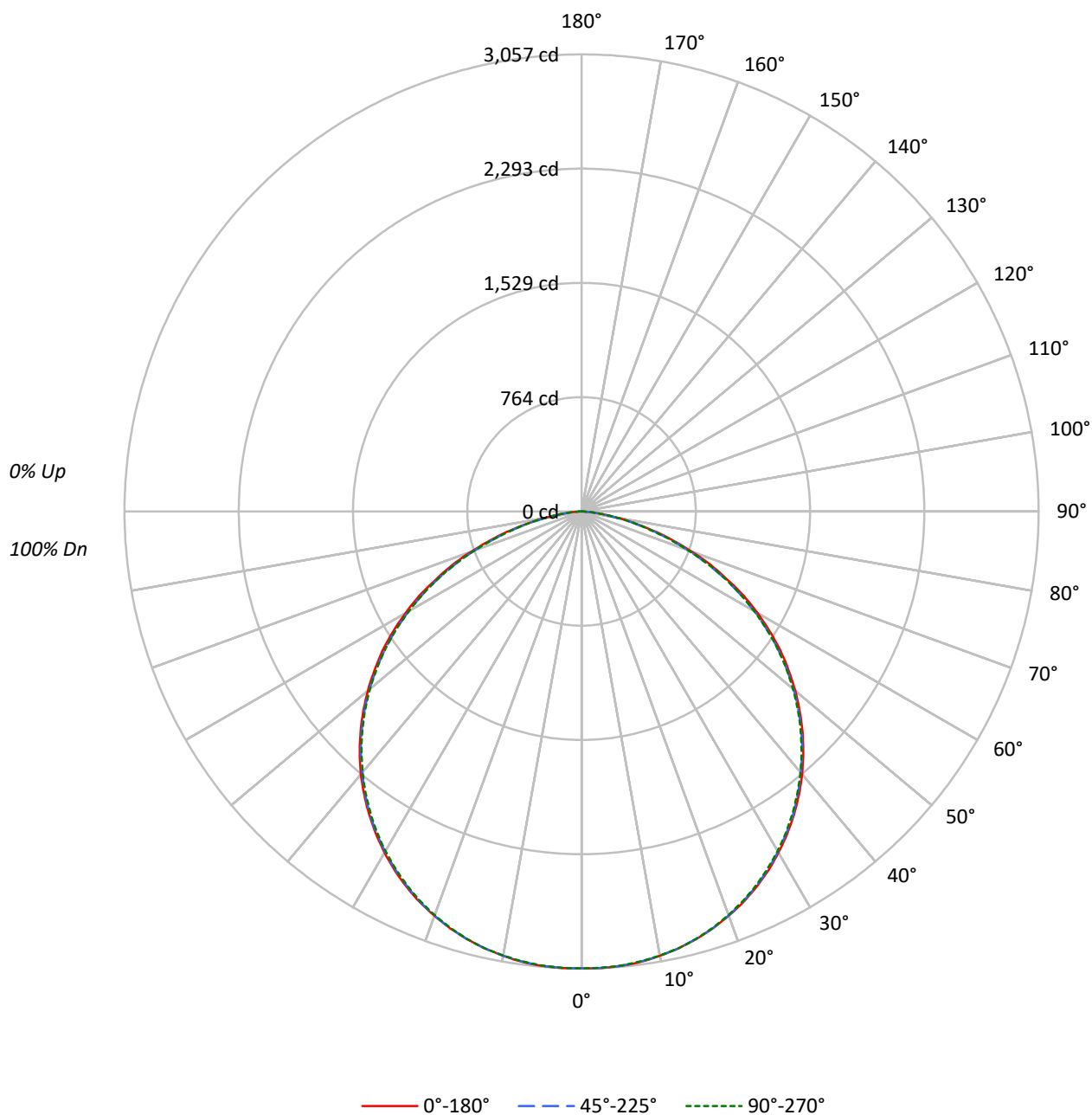
Lumens per Lamp: N/A  
Luminaire Lumens: 8639.6 lumens  
Efficiency: N/A  
Efficacy: 122.9 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.27 / 1.39  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 70.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor:  
Total Harmonic Distortion (THDi):  
Frequency (hertz): 60  
Stabilization Time: HR  
Operation Time: HR  
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  |     |     |     |    | 0   |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30 | 0   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |    | 100 |
| 1   | 109 | 105 | 100 | 97  | 106 | 102 | 99  | 95  | 98  | 95  | 92  | 94  | 92  | 89  | 91  | 89  | 87  | 85  |    | 85  |
| 2   | 99  | 91  | 85  | 79  | 97  | 89  | 83  | 78  | 86  | 81  | 76  | 83  | 78  | 75  | 80  | 76  | 73  | 71  |    | 71  |
| 3   | 91  | 80  | 72  | 66  | 88  | 79  | 71  | 65  | 76  | 69  | 64  | 73  | 68  | 63  | 70  | 66  | 62  | 60  |    | 60  |
| 4   | 83  | 71  | 62  | 56  | 81  | 70  | 62  | 55  | 67  | 60  | 55  | 65  | 59  | 54  | 63  | 57  | 53  | 51  |    | 51  |
| 5   | 76  | 64  | 55  | 48  | 74  | 62  | 54  | 48  | 60  | 53  | 47  | 58  | 52  | 47  | 56  | 51  | 46  | 44  |    | 44  |
| 6   | 70  | 57  | 48  | 42  | 69  | 56  | 48  | 42  | 54  | 47  | 41  | 53  | 46  | 41  | 51  | 45  | 41  | 38  |    | 38  |
| 7   | 65  | 52  | 43  | 37  | 64  | 51  | 43  | 37  | 49  | 42  | 37  | 48  | 41  | 36  | 47  | 41  | 36  | 34  |    | 34  |
| 8   | 61  | 47  | 39  | 33  | 59  | 47  | 38  | 33  | 45  | 38  | 33  | 44  | 37  | 32  | 43  | 37  | 32  | 30  |    | 30  |
| 9   | 57  | 43  | 35  | 30  | 55  | 43  | 35  | 30  | 42  | 34  | 29  | 41  | 34  | 29  | 39  | 33  | 29  | 27  |    | 27  |
| 10  | 53  | 40  | 32  | 27  | 52  | 39  | 32  | 27  | 38  | 31  | 27  | 38  | 31  | 26  | 37  | 31  | 26  | 25  |    | 25  |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 4113 | 4113 | 4113 |
| 5°  | 4121 | 4121 | 4118 |
| 10° | 4124 | 4123 | 4121 |
| 15° | 4125 | 4124 | 4124 |
| 20° | 4121 | 4119 | 4113 |
| 25° | 4113 | 4105 | 4098 |
| 30° | 4095 | 4083 | 4074 |
| 35° | 4068 | 4057 | 4043 |
| 40° | 4032 | 4007 | 4001 |
| 45° | 3980 | 3957 | 3945 |
| 50° | 3905 | 3875 | 3864 |
| 55° | 3813 | 3759 | 3754 |
| 60° | 3654 | 3589 | 3589 |
| 65° | 3419 | 3338 | 3349 |
| 70° | 3076 | 2982 | 2973 |
| 75° | 2583 | 2480 | 2469 |
| 80° | 1887 | 1793 | 1870 |
| 85° | 1067 | 982  | 999  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3980 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 290.2  | 3.4       |
| 10°-20°   | 835.9  | 9.7       |
| 20°-30°   | 1274.5 | 14.8      |
| 30°-40°   | 1544.1 | 17.9      |
| 40°-50°   | 1603.9 | 18.6      |
| 50°-60°   | 1434.8 | 16.6      |
| 60°-70°   | 1045.7 | 12.1      |
| 70°-80°   | 517.9  | 6.0       |
| 80°-90°   | 92.6   | 1.1       |
| 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°    | 2400.5 | 27.8      |
| 0°-40°    | 3944.6 | 45.7      |
| 0°-60°    | 6983.4 | 80.8      |
| 0°-90°    | 8639.6 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 8639.6 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 3057 | 3057  | 3057 | 3057  | 3057 |      |
| 5°  | 3051 | 3052  | 3051 | 3051  | 3049 | 290  |
| 15° | 2961 | 2960  | 2960 | 2962  | 2960 | 836  |
| 25° | 2771 | 2767  | 2765 | 2764  | 2761 | 1277 |
| 35° | 2477 | 2473  | 2470 | 2466  | 2461 | 1549 |
| 45° | 2092 | 2087  | 2080 | 2075  | 2073 | 1612 |
| 55° | 1626 | 1613  | 1602 | 1602  | 1600 | 1448 |
| 65° | 1074 | 1065  | 1049 | 1053  | 1052 | 1065 |
| 75° | 497  | 489   | 477  | 486   | 475  | 530  |
| 85° | 69   | 64    | 64   | 65    | 65   | 96   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 3056.9 | 3056.9 | 3056.9 | 3056.9 | 3056.9 |
| 2.5°  | 3056.9 | 3055.8 | 3055.8 | 3056.9 | 3054.7 |
| 5°    | 3051.4 | 3052.5 | 3051.4 | 3051.4 | 3049.2 |
| 7.5°  | 3039.3 | 3038.2 | 3037.1 | 3038.2 | 3034.9 |
| 10°   | 3018.5 | 3018.5 | 3017.4 | 3018.5 | 3016.3 |
| 12.5° | 2993.2 | 2993.2 | 2993.2 | 2994.3 | 2993.2 |
| 15°   | 2961.4 | 2960.3 | 2960.3 | 2962.5 | 2960.3 |
| 17.5° | 2924.1 | 2923.0 | 2923.0 | 2922.0 | 2919.8 |
| 20°   | 2878.1 | 2878.1 | 2877.0 | 2875.9 | 2872.6 |
| 22.5° | 2828.7 | 2827.6 | 2824.3 | 2824.3 | 2819.9 |
| 25°   | 2770.6 | 2767.3 | 2765.1 | 2764.0 | 2760.7 |
| 27.5° | 2707.0 | 2702.6 | 2699.3 | 2697.1 | 2693.8 |
| 30°   | 2635.7 | 2631.3 | 2628.0 | 2624.7 | 2622.5 |
| 32.5° | 2558.9 | 2556.7 | 2551.2 | 2550.1 | 2545.7 |
| 35°   | 2476.6 | 2473.3 | 2470.1 | 2465.7 | 2461.3 |
| 37.5° | 2388.9 | 2385.6 | 2377.9 | 2375.7 | 2372.4 |
| 40°   | 2295.7 | 2291.3 | 2281.4 | 2281.4 | 2278.1 |
| 42.5° | 2195.9 | 2191.5 | 2184.9 | 2180.5 | 2178.3 |
| 45°   | 2091.7 | 2087.3 | 2079.6 | 2075.2 | 2073.0 |
| 47.5° | 1980.9 | 1977.6 | 1968.8 | 1965.5 | 1962.2 |
| 50°   | 1865.7 | 1861.3 | 1851.4 | 1849.3 | 1846.0 |
| 52.5° | 1745.1 | 1742.9 | 1729.7 | 1728.6 | 1725.3 |
| 55°   | 1625.5 | 1613.4 | 1602.5 | 1602.5 | 1600.3 |
| 57.5° | 1493.9 | 1485.1 | 1470.8 | 1470.8 | 1468.7 |
| 60°   | 1357.9 | 1350.2 | 1333.7 | 1335.9 | 1333.7 |
| 62.5° | 1225.2 | 1208.7 | 1193.3 | 1199.9 | 1194.4 |
| 65°   | 1073.8 | 1065.0 | 1048.6 | 1053.0 | 1051.9 |
| 67.5° | 935.6  | 919.1  | 903.8  | 912.6  | 908.2  |
| 70°   | 782.0  | 773.3  | 757.9  | 766.7  | 755.7  |
| 72.5° | 637.3  | 629.6  | 614.2  | 624.1  | 613.1  |
| 75°   | 496.9  | 489.2  | 477.1  | 485.9  | 474.9  |
| 77.5° | 364.1  | 358.7  | 347.7  | 356.5  | 358.7  |
| 80°   | 243.5  | 236.9  | 231.4  | 239.1  | 241.3  |
| 82.5° | 142.6  | 138.2  | 136.0  | 137.1  | 142.6  |
| 85°   | 69.1   | 63.6   | 63.6   | 64.7   | 64.7   |
| 87.5° | 18.6   | 16.5   | 18.6   | 19.7   | 20.8   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)