

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: P974888

Luminaire Tested: FLR2-24-90HE-L840-CA125

Issue Date: 3/13/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P974888  
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-L840-CA125  
Description: SHAPER SENSE CIRCLE  
  
Light Source:  
Ballast/Driver: -

**Summary**

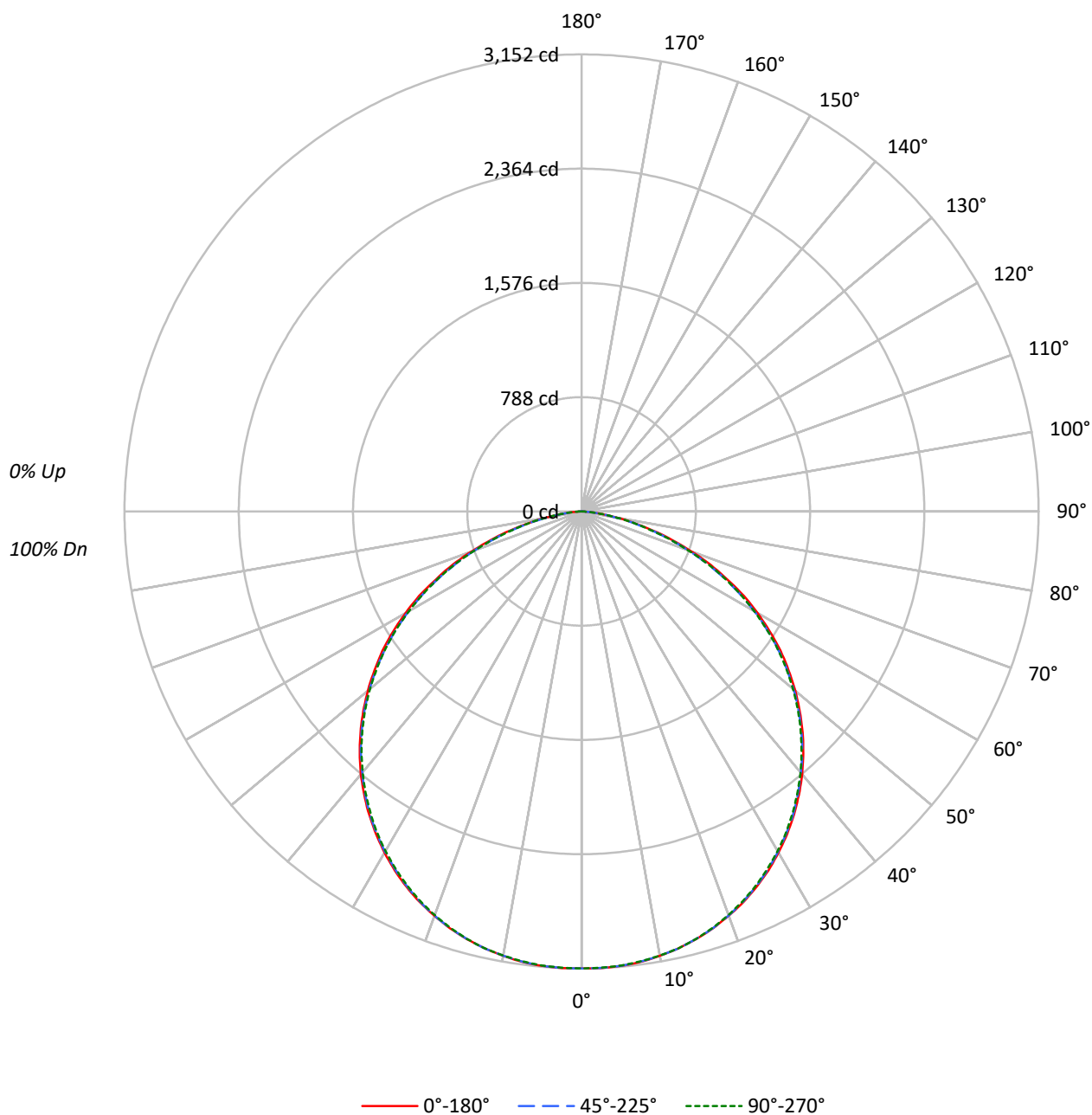
Lumens per Lamp: N/A  
Luminaire Lumens: 8908.4 lumens  
Efficiency: N/A  
Efficacy: 126.7 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.27 / 1.39  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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°  | 4241 | 4241 | 4241 |
| 5°  | 4249 | 4249 | 4246 |
| 10° | 4252 | 4251 | 4249 |
| 15° | 4254 | 4252 | 4252 |
| 20° | 4249 | 4248 | 4241 |
| 25° | 4241 | 4233 | 4226 |
| 30° | 4222 | 4210 | 4201 |
| 35° | 4195 | 4183 | 4169 |
| 40° | 4158 | 4132 | 4126 |
| 45° | 4104 | 4080 | 4067 |
| 50° | 4027 | 3996 | 3984 |
| 55° | 3932 | 3876 | 3871 |
| 60° | 3768 | 3701 | 3701 |
| 65° | 3525 | 3442 | 3453 |
| 70° | 3172 | 3074 | 3065 |
| 75° | 2663 | 2558 | 2546 |
| 80° | 1946 | 1849 | 1928 |
| 85° | 1099 | 1013 | 1030 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4104 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 299.2  | 3.4       |
| 10°-20°   | 861.9  | 9.7       |
| 20°-30°   | 1314.1 | 14.8      |
| 30°-40°   | 1592.2 | 17.9      |
| 40°-50°   | 1653.8 | 18.6      |
| 50°-60°   | 1479.5 | 16.6      |
| 60°-70°   | 1078.3 | 12.1      |
| 70°-80°   | 534.0  | 6.0       |
| 80°-90°   | 95.4   | 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°    | 2475.2 | 27.8      |
| 0°-40°    | 4067.4 | 45.7      |
| 0°-60°    | 7200.7 | 80.8      |
| 0°-90°    | 8908.4 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 8908.4 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 3152 | 3152  | 3152 | 3152  | 3152 |      |
| 5°  | 3146 | 3147  | 3146 | 3146  | 3144 | 299  |
| 15° | 3054 | 3052  | 3052 | 3055  | 3052 | 862  |
| 25° | 2857 | 2853  | 2851 | 2850  | 2847 | 1317 |
| 35° | 2554 | 2550  | 2547 | 2542  | 2538 | 1597 |
| 45° | 2157 | 2152  | 2144 | 2140  | 2138 | 1662 |
| 55° | 1676 | 1664  | 1652 | 1652  | 1650 | 1493 |
| 65° | 1107 | 1098  | 1081 | 1086  | 1085 | 1098 |
| 75° | 512  | 504   | 492  | 501   | 490  | 546  |
| 85° | 71   | 66    | 66   | 67    | 67   | 99   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 3152.0 | 3152.0 | 3152.0 | 3152.0 | 3152.0 |
| 2.5°  | 3152.0 | 3150.8 | 3150.8 | 3152.0 | 3149.7 |
| 5°    | 3146.3 | 3147.4 | 3146.3 | 3146.3 | 3144.0 |
| 7.5°  | 3133.9 | 3132.7 | 3131.6 | 3132.7 | 3129.3 |
| 10°   | 3112.4 | 3112.4 | 3111.2 | 3112.4 | 3110.1 |
| 12.5° | 3086.4 | 3086.4 | 3086.4 | 3087.5 | 3086.4 |
| 15°   | 3053.6 | 3052.4 | 3052.4 | 3054.7 | 3052.4 |
| 17.5° | 3015.1 | 3014.0 | 3014.0 | 3012.9 | 3010.6 |
| 20°   | 2967.6 | 2967.6 | 2966.5 | 2965.4 | 2962.0 |
| 22.5° | 2916.7 | 2915.6 | 2912.2 | 2912.2 | 2907.7 |
| 25°   | 2856.8 | 2853.4 | 2851.1 | 2850.0 | 2846.6 |
| 27.5° | 2791.2 | 2786.7 | 2783.3 | 2781.0 | 2777.6 |
| 30°   | 2717.7 | 2713.2 | 2709.8 | 2706.4 | 2704.1 |
| 32.5° | 2638.5 | 2636.2 | 2630.6 | 2629.5 | 2624.9 |
| 35°   | 2553.7 | 2550.3 | 2546.9 | 2542.4 | 2537.9 |
| 37.5° | 2463.2 | 2459.8 | 2451.9 | 2449.6 | 2446.2 |
| 40°   | 2367.1 | 2362.6 | 2352.4 | 2352.4 | 2349.0 |
| 42.5° | 2264.2 | 2259.6 | 2252.9 | 2248.3 | 2246.1 |
| 45°   | 2156.7 | 2152.2 | 2144.3 | 2139.8 | 2137.5 |
| 47.5° | 2042.5 | 2039.1 | 2030.1 | 2026.7 | 2023.3 |
| 50°   | 1923.7 | 1919.2 | 1909.0 | 1906.8 | 1903.4 |
| 52.5° | 1799.3 | 1797.1 | 1783.5 | 1782.4 | 1779.0 |
| 55°   | 1676.1 | 1663.6 | 1652.3 | 1652.3 | 1650.1 |
| 57.5° | 1540.4 | 1531.3 | 1516.6 | 1516.6 | 1514.3 |
| 60°   | 1400.1 | 1392.2 | 1375.2 | 1377.5 | 1375.2 |
| 62.5° | 1263.3 | 1246.3 | 1230.5 | 1237.3 | 1231.6 |
| 65°   | 1107.2 | 1098.2 | 1081.2 | 1085.7 | 1084.6 |
| 67.5° | 964.7  | 947.7  | 931.9  | 941.0  | 936.4  |
| 70°   | 806.4  | 797.3  | 781.5  | 790.5  | 779.2  |
| 72.5° | 657.1  | 649.2  | 633.3  | 643.5  | 632.2  |
| 75°   | 512.3  | 504.4  | 492.0  | 501.0  | 489.7  |
| 77.5° | 375.5  | 369.8  | 358.5  | 367.6  | 369.8  |
| 80°   | 251.1  | 244.3  | 238.6  | 246.5  | 248.8  |
| 82.5° | 147.0  | 142.5  | 140.2  | 141.4  | 147.0  |
| 85°   | 71.2   | 65.6   | 65.6   | 66.7   | 66.7   |
| 87.5° | 19.2   | 17.0   | 19.2   | 20.4   | 21.5   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)