

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: P974835

Luminaire Tested: FLR2-24-20HE-L840-CP187

Issue Date: 3/13/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P974835  
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: FLR2-24-20HE-L840-CP187  
Description: SHAPER SENSE CIRCLE  
  
Light Source:  
Ballast/Driver: -

**Summary**

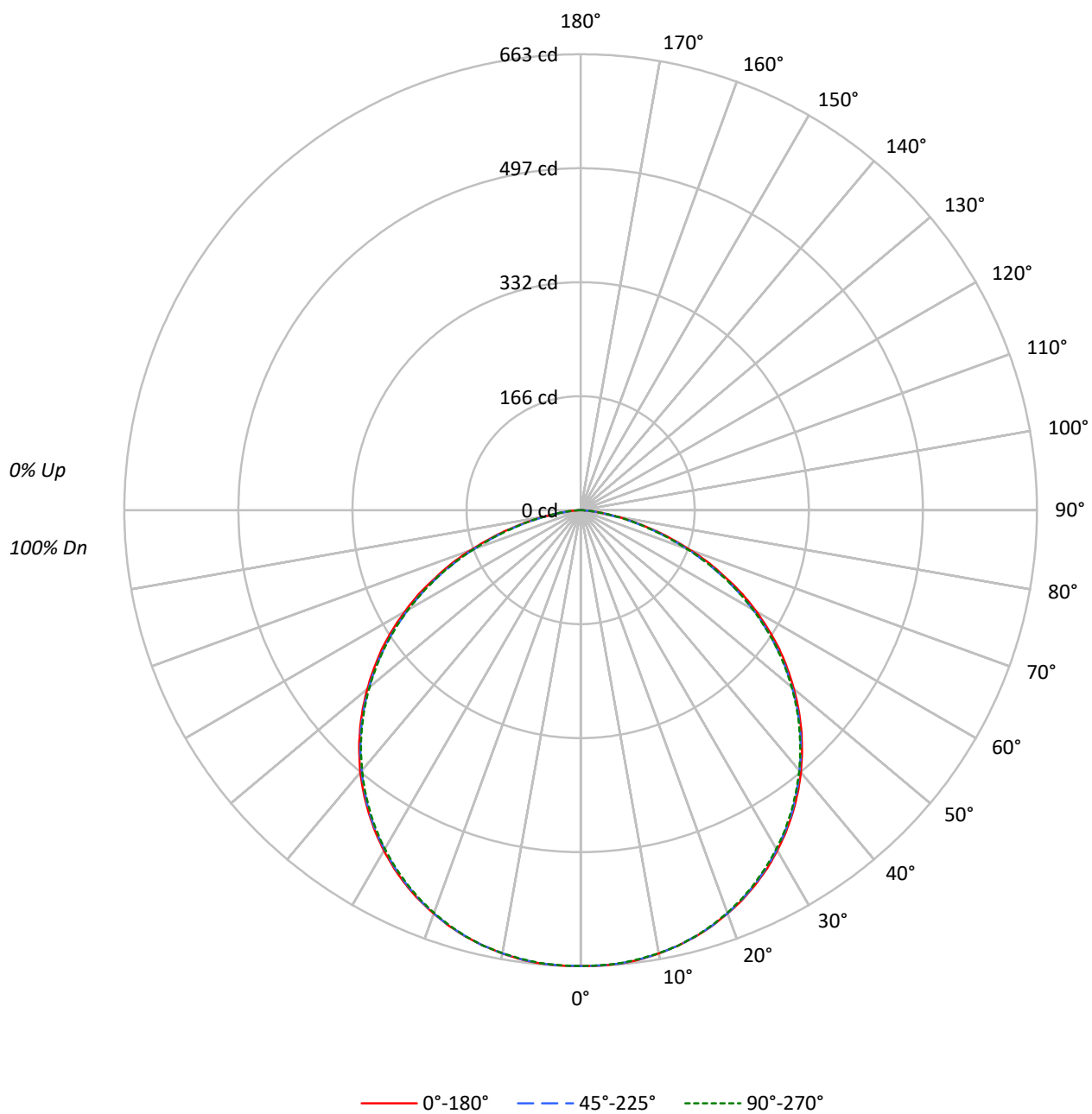
Lumens per Lamp: N/A  
Luminaire Lumens: 1873.7 lumens  
Efficiency: N/A  
Efficacy: 125.8 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.27 / 1.39  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 14.9  
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°  | 892 | 892 | 892 |
| 5°  | 894 | 894 | 893 |
| 10° | 894 | 894 | 894 |
| 15° | 895 | 894 | 894 |
| 20° | 894 | 893 | 892 |
| 25° | 892 | 890 | 889 |
| 30° | 888 | 885 | 884 |
| 35° | 882 | 880 | 877 |
| 40° | 875 | 869 | 868 |
| 45° | 863 | 858 | 856 |
| 50° | 847 | 840 | 838 |
| 55° | 827 | 815 | 814 |
| 60° | 792 | 779 | 779 |
| 65° | 741 | 724 | 726 |
| 70° | 667 | 647 | 645 |
| 75° | 560 | 538 | 535 |
| 80° | 409 | 389 | 405 |
| 85° | 232 | 213 | 216 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
Vertical Angle: 45°  
Luminance: 863 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 62.9   | 3.4       |
| 10°-20°   | 181.3  | 9.7       |
| 20°-30°   | 276.4  | 14.8      |
| 30°-40°   | 334.9  | 17.9      |
| 40°-50°   | 347.9  | 18.6      |
| 50°-60°   | 311.2  | 16.6      |
| 60°-70°   | 226.8  | 12.1      |
| 70°-80°   | 112.3  | 6.0       |
| 80°-90°   | 20.1   | 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°    | 520.6  | 27.8      |
| 0°-40°    | 855.5  | 45.7      |
| 0°-60°    | 1514.5 | 80.8      |
| 0°-90°    | 1873.7 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1873.7 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 663 | 663   | 663 | 663   | 663 |      |
| 5°  | 662 | 662   | 662 | 662   | 661 | 63   |
| 15° | 642 | 642   | 642 | 642   | 642 | 181  |
| 25° | 601 | 600   | 600 | 599   | 599 | 277  |
| 35° | 537 | 536   | 536 | 535   | 534 | 336  |
| 45° | 454 | 453   | 451 | 450   | 450 | 350  |
| 55° | 352 | 350   | 348 | 348   | 347 | 314  |
| 65° | 233 | 231   | 227 | 228   | 228 | 231  |
| 75° | 108 | 106   | 104 | 105   | 103 | 115  |
| 85° | 15  | 14    | 14  | 14    | 14  | 21   |
| 90° | 0   | 0     | 0   | 0     | 0   |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 662.9 | 662.9 | 662.9 | 662.9 | 662.9 |
| 2.5°  | 662.9 | 662.7 | 662.7 | 662.9 | 662.5 |
| 5°    | 661.8 | 662.0 | 661.8 | 661.8 | 661.3 |
| 7.5°  | 659.1 | 658.9 | 658.7 | 658.9 | 658.2 |
| 10°   | 654.6 | 654.6 | 654.4 | 654.6 | 654.1 |
| 12.5° | 649.1 | 649.1 | 649.1 | 649.4 | 649.1 |
| 15°   | 642.3 | 642.0 | 642.0 | 642.5 | 642.0 |
| 17.5° | 634.2 | 633.9 | 633.9 | 633.7 | 633.2 |
| 20°   | 624.2 | 624.2 | 623.9 | 623.7 | 623.0 |
| 22.5° | 613.5 | 613.2 | 612.5 | 612.5 | 611.6 |
| 25°   | 600.9 | 600.1 | 599.7 | 599.4 | 598.7 |
| 27.5° | 587.1 | 586.1 | 585.4 | 584.9 | 584.2 |
| 30°   | 571.6 | 570.7 | 569.9 | 569.2 | 568.7 |
| 32.5° | 555.0 | 554.5 | 553.3 | 553.0 | 552.1 |
| 35°   | 537.1 | 536.4 | 535.7 | 534.7 | 533.8 |
| 37.5° | 518.1 | 517.4 | 515.7 | 515.2 | 514.5 |
| 40°   | 497.9 | 496.9 | 494.8 | 494.8 | 494.1 |
| 42.5° | 476.2 | 475.3 | 473.8 | 472.9 | 472.4 |
| 45°   | 453.6 | 452.7 | 451.0 | 450.1 | 449.6 |
| 47.5° | 429.6 | 428.9 | 427.0 | 426.3 | 425.6 |
| 50°   | 404.6 | 403.7 | 401.5 | 401.0 | 400.3 |
| 52.5° | 378.5 | 378.0 | 375.1 | 374.9 | 374.2 |
| 55°   | 352.5 | 349.9 | 347.5 | 347.5 | 347.1 |
| 57.5° | 324.0 | 322.1 | 319.0 | 319.0 | 318.5 |
| 60°   | 294.5 | 292.8 | 289.3 | 289.7 | 289.3 |
| 62.5° | 265.7 | 262.1 | 258.8 | 260.2 | 259.0 |
| 65°   | 232.9 | 231.0 | 227.4 | 228.4 | 228.1 |
| 67.5° | 202.9 | 199.3 | 196.0 | 197.9 | 197.0 |
| 70°   | 169.6 | 167.7 | 164.4 | 166.3 | 163.9 |
| 72.5° | 138.2 | 136.5 | 133.2 | 135.3 | 133.0 |
| 75°   | 107.8 | 106.1 | 103.5 | 105.4 | 103.0 |
| 77.5° | 79.0  | 77.8  | 75.4  | 77.3  | 77.8  |
| 80°   | 52.8  | 51.4  | 50.2  | 51.9  | 52.3  |
| 82.5° | 30.9  | 30.0  | 29.5  | 29.7  | 30.9  |
| 85°   | 15.0  | 13.8  | 13.8  | 14.0  | 14.0  |
| 87.5° | 4.0   | 3.6   | 4.0   | 4.3   | 4.5   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)