

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: P973319

Luminaire Tested: FLR2-14-20HE-L950-CA080

Issue Date: 3/13/2025

**Test Information**

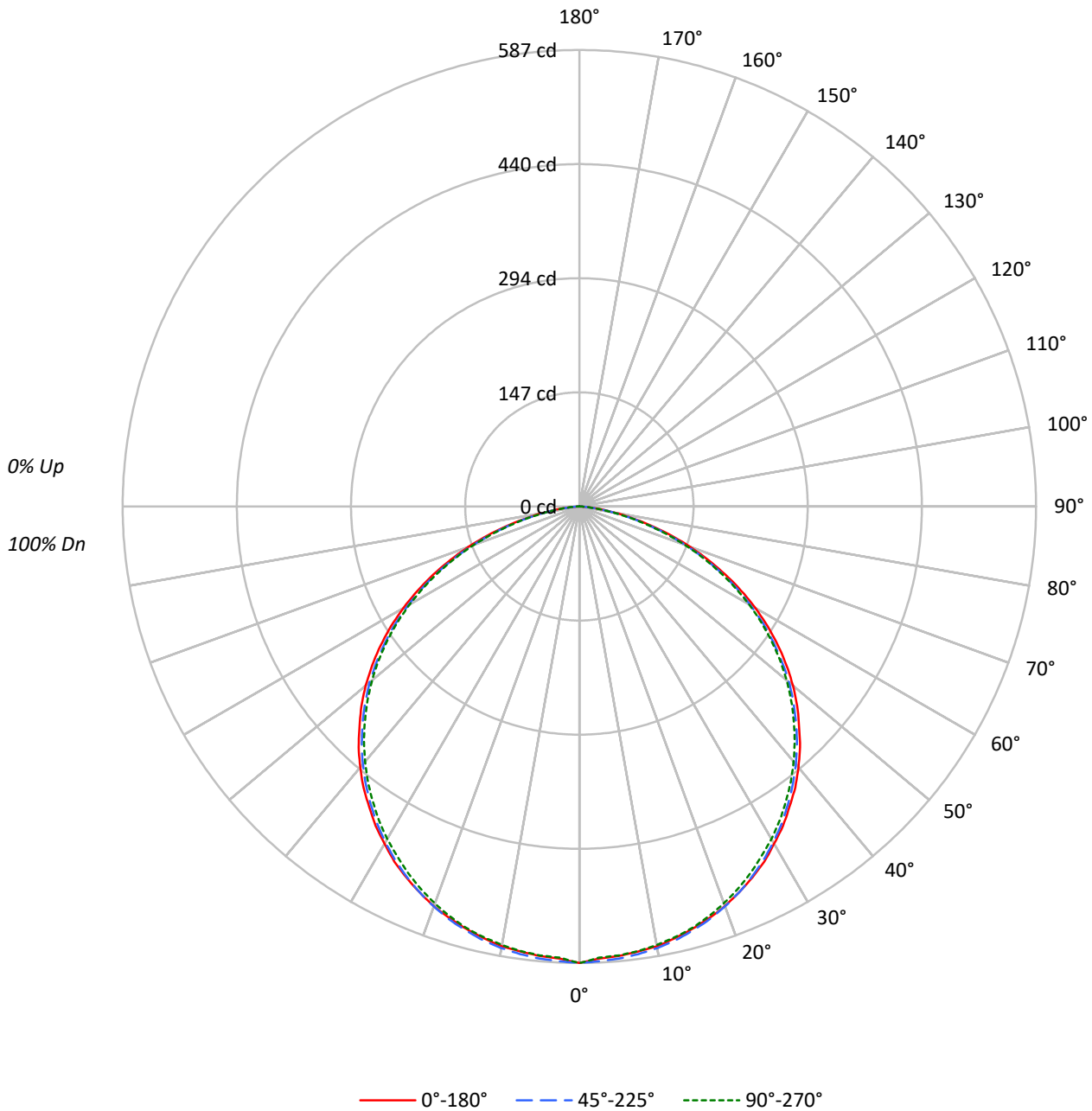
Test Method: LM-79-2019  
Report Number: P973319  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2411-281-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/13/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FLR2-14-20HE-L950-CA080  
Description: 1\*4 FLR-2.0 2000 Lumen High Efficacy at 5000CCT & 80 CRI with Clear Arylic (0.080" thickness)  
  
Light Source:  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1643.1 lumens  
Efficiency: N/A  
Efficacy: 111.0 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.25 / 1.38  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 14.8  
Input Voltage (V): 120  
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  |     |     |    |    | 10 | 0   |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 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 |    |    |    | 100 |
| 1   | 109 | 105 | 101 | 97  | 107 | 102 | 99  | 95  | 98  | 95  | 92  | 94  | 92  | 89  | 91  | 89  | 87  |     |    |    | 85 |     |
| 2   | 99  | 91  | 85  | 79  | 97  | 90  | 83  | 78  | 86  | 81  | 76  | 83  | 78  | 75  | 80  | 76  | 73  |     |    |    | 71 |     |
| 3   | 91  | 80  | 72  | 66  | 88  | 79  | 71  | 65  | 76  | 69  | 64  | 73  | 68  | 63  | 70  | 66  | 62  |     |    |    | 60 |     |
| 4   | 83  | 71  | 62  | 56  | 81  | 70  | 62  | 55  | 67  | 60  | 55  | 65  | 59  | 54  | 63  | 58  | 53  |     |    |    | 51 |     |
| 5   | 76  | 64  | 55  | 48  | 74  | 62  | 54  | 48  | 60  | 53  | 47  | 58  | 52  | 47  | 57  | 51  | 46  |     |    |    | 44 |     |
| 6   | 70  | 57  | 48  | 42  | 69  | 56  | 48  | 42  | 54  | 47  | 41  | 53  | 46  | 41  | 51  | 45  | 41  |     |    |    | 39 |     |
| 7   | 65  | 52  | 43  | 37  | 64  | 51  | 43  | 37  | 49  | 42  | 37  | 48  | 41  | 36  | 47  | 41  | 36  |     |    |    | 34 |     |
| 8   | 61  | 47  | 39  | 33  | 59  | 47  | 38  | 33  | 45  | 38  | 33  | 44  | 37  | 32  | 43  | 37  | 32  |     |    |    | 30 |     |
| 9   | 57  | 43  | 35  | 30  | 55  | 43  | 35  | 30  | 42  | 34  | 29  | 41  | 34  | 29  | 40  | 34  | 29  |     |    |    | 27 |     |
| 10  | 53  | 40  | 32  | 27  | 52  | 39  | 32  | 27  | 38  | 32  | 27  | 38  | 31  | 27  | 37  | 31  | 26  |     |    |    | 25 |     |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 1580 | 1580 | 1580 |
| 5°  | 1567 | 1576 | 1565 |
| 10° | 1569 | 1576 | 1564 |
| 15° | 1567 | 1573 | 1563 |
| 20° | 1566 | 1568 | 1555 |
| 25° | 1563 | 1560 | 1545 |
| 30° | 1556 | 1549 | 1534 |
| 35° | 1548 | 1536 | 1521 |
| 40° | 1539 | 1520 | 1505 |
| 45° | 1520 | 1499 | 1483 |
| 50° | 1500 | 1473 | 1456 |
| 55° | 1462 | 1429 | 1415 |
| 60° | 1406 | 1366 | 1355 |
| 65° | 1317 | 1278 | 1264 |
| 70° | 1187 | 1139 | 1130 |
| 75° | 995  | 945  | 935  |
| 80° | 724  | 674  | 656  |
| 85° | 383  | 337  | 309  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1520 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 55.6   | 3.4       |
| 10°-20°   | 159.7  | 9.7       |
| 20°-30°   | 242.6  | 14.8      |
| 30°-40°   | 293.5  | 17.9      |
| 40°-50°   | 305.0  | 18.6      |
| 50°-60°   | 273.1  | 16.6      |
| 60°-70°   | 199.2  | 12.1      |
| 70°-80°   | 98.1   | 6.0       |
| 80°-90°   | 16.4   | 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°    | 457.9  | 27.9      |
| 0°-40°    | 751.4  | 45.7      |
| 0°-60°    | 1329.4 | 80.9      |
| 0°-90°    | 1643.1 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 1643.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 587 | 587   | 587 | 587   | 587 |      |
| 5°  | 580 | 587   | 584 | 589   | 580 | 55   |
| 15° | 562 | 567   | 564 | 569   | 561 | 159  |
| 25° | 526 | 529   | 525 | 528   | 520 | 243  |
| 35° | 471 | 472   | 468 | 469   | 463 | 295  |
| 45° | 400 | 399   | 394 | 395   | 390 | 308  |
| 55° | 312 | 309   | 304 | 304   | 302 | 278  |
| 65° | 207 | 204   | 201 | 199   | 198 | 204  |
| 75° | 96  | 94    | 91  | 90    | 90  | 102  |
| 85° | 12  | 12    | 11  | 10    | 10  | 18   |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 587.1 | 587.1 | 587.1 | 587.1 | 587.1 |
| 2.5°  | 581.9 | 588.5 | 585.3 | 591.2 | 580.7 |
| 5°    | 580.2 | 586.6 | 583.6 | 589.2 | 579.5 |
| 7.5°  | 577.3 | 583.9 | 580.7 | 586.1 | 576.8 |
| 10°   | 574.2 | 580.0 | 576.6 | 581.9 | 572.5 |
| 12.5° | 568.6 | 574.4 | 571.3 | 576.1 | 567.4 |
| 15°   | 562.3 | 567.4 | 564.5 | 569.3 | 561.1 |
| 17.5° | 555.0 | 559.8 | 556.7 | 561.1 | 552.8 |
| 20°   | 547.0 | 550.8 | 547.4 | 551.1 | 543.1 |
| 22.5° | 537.0 | 540.6 | 537.0 | 539.4 | 532.4 |
| 25°   | 526.3 | 529.0 | 525.3 | 527.8 | 520.5 |
| 27.5° | 514.9 | 516.3 | 512.7 | 514.6 | 507.1 |
| 30°   | 500.8 | 502.5 | 498.6 | 501.0 | 493.7 |
| 32.5° | 487.2 | 488.2 | 483.8 | 485.7 | 479.2 |
| 35°   | 471.1 | 472.1 | 467.5 | 469.4 | 462.9 |
| 37.5° | 455.8 | 455.6 | 450.7 | 452.0 | 446.4 |
| 40°   | 438.1 | 437.9 | 432.8 | 433.7 | 428.4 |
| 42.5° | 419.9 | 418.9 | 414.0 | 414.5 | 409.7 |
| 45°   | 399.5 | 399.0 | 393.9 | 394.6 | 389.7 |
| 47.5° | 379.8 | 378.3 | 373.2 | 373.5 | 369.3 |
| 50°   | 358.4 | 356.2 | 351.8 | 351.4 | 347.7 |
| 52.5° | 335.6 | 333.1 | 328.3 | 327.8 | 325.1 |
| 55°   | 311.7 | 309.1 | 304.5 | 303.7 | 301.5 |
| 57.5° | 287.2 | 283.8 | 280.2 | 278.7 | 277.0 |
| 60°   | 261.2 | 258.0 | 253.9 | 252.5 | 251.7 |
| 62.5° | 234.2 | 231.1 | 227.9 | 226.5 | 225.5 |
| 65°   | 206.8 | 204.3 | 200.7 | 199.2 | 198.5 |
| 67.5° | 178.8 | 176.6 | 173.2 | 171.5 | 171.3 |
| 70°   | 150.9 | 148.7 | 144.8 | 143.8 | 143.6 |
| 72.5° | 123.0 | 121.0 | 117.4 | 116.4 | 116.4 |
| 75°   | 95.7  | 94.0  | 90.9  | 89.9  | 89.9  |
| 77.5° | 70.0  | 68.5  | 66.1  | 64.9  | 64.9  |
| 80°   | 46.7  | 45.7  | 43.5  | 42.5  | 42.3  |
| 82.5° | 27.0  | 26.5  | 24.5  | 23.6  | 24.1  |
| 85°   | 12.4  | 11.9  | 10.9  | 9.7   | 10.0  |
| 87.5° | 3.2   | 2.9   | 2.2   | 1.7   | 2.2   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)