

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P708896

Luminaire Tested: **22APR-X-X-UNV-RL930**

Issue Date: 09/12/2023



**Test Information**

Test Method: LM-79-08  
Report Number: P708896  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 09/12/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 22APR-X-X-UNV-RL930  
Description: ArcMed Patient Recessed 2x2 Fixture READING Light  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

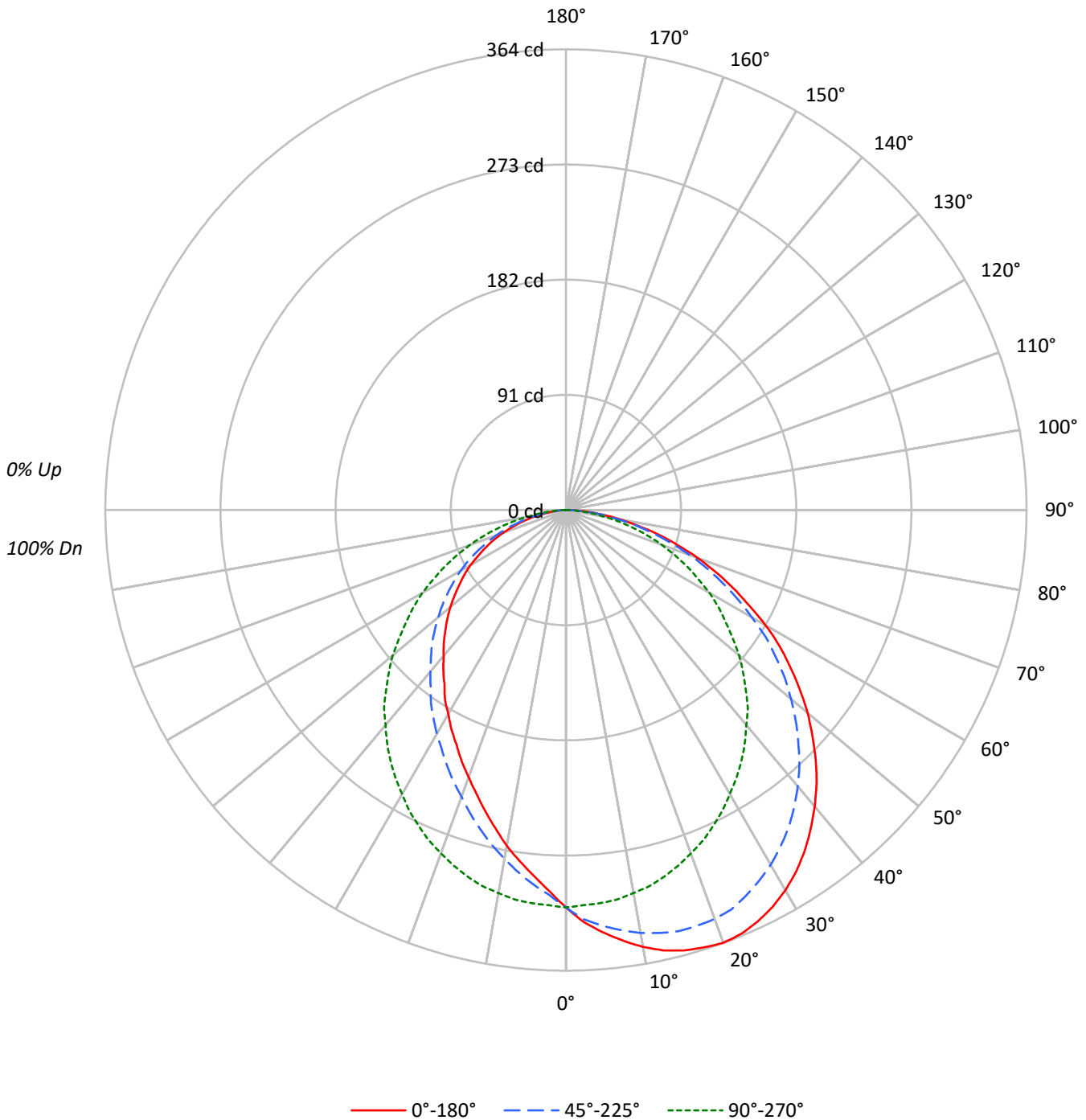
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 875.9 lumens  
Efficiency: N/A  
Efficacy: 62.6 lumens/watt  
Spacing Criteria (0/90/45): 1.26 / 1.23 / 1.37  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

Input Watts (W): 14  
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: 25 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  |     |     |     | 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 | 102 | 102 | 102 | 100 |
| 1   | 109 | 104 | 100 | 96  | 106 | 102 | 98  | 94  | 98  | 94  | 91  | 94  | 91  | 89  | 90  | 88  | 86  | 86  | 86  | 86  | 84  |
| 2   | 99  | 91  | 84  | 78  | 96  | 89  | 83  | 77  | 85  | 80  | 75  | 82  | 78  | 74  | 79  | 75  | 72  | 72  | 72  | 72  | 70  |
| 3   | 90  | 80  | 72  | 65  | 88  | 78  | 71  | 64  | 75  | 69  | 63  | 72  | 67  | 62  | 70  | 65  | 61  | 61  | 61  | 61  | 59  |
| 4   | 83  | 71  | 62  | 55  | 80  | 69  | 61  | 55  | 67  | 60  | 54  | 64  | 58  | 53  | 62  | 57  | 53  | 53  | 53  | 53  | 50  |
| 5   | 76  | 63  | 54  | 47  | 74  | 62  | 54  | 47  | 60  | 52  | 47  | 58  | 51  | 46  | 56  | 50  | 46  | 46  | 46  | 46  | 44  |
| 6   | 70  | 57  | 48  | 41  | 68  | 56  | 47  | 41  | 54  | 47  | 41  | 52  | 46  | 41  | 51  | 45  | 40  | 40  | 40  | 40  | 38  |
| 7   | 65  | 52  | 43  | 37  | 63  | 51  | 42  | 36  | 49  | 42  | 36  | 48  | 41  | 36  | 46  | 40  | 36  | 36  | 36  | 36  | 34  |
| 8   | 61  | 47  | 39  | 33  | 59  | 46  | 38  | 33  | 45  | 38  | 32  | 44  | 37  | 32  | 43  | 37  | 32  | 32  | 32  | 32  | 30  |
| 9   | 57  | 43  | 35  | 29  | 55  | 43  | 35  | 29  | 41  | 34  | 29  | 40  | 34  | 29  | 39  | 33  | 29  | 29  | 29  | 29  | 27  |
| 10  | 53  | 40  | 32  | 27  | 52  | 39  | 32  | 27  | 38  | 31  | 26  | 37  | 31  | 26  | 36  | 31  | 26  | 26  | 26  | 26  | 24  |

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

|     | 0°   | 90° | 180° |
|-----|------|-----|------|
| 0°  | 845  | 845 | 845  |
| 5°  | 905  | 842 | 784  |
| 10° | 958  | 840 | 736  |
| 15° | 1003 | 835 | 686  |
| 20° | 1042 | 827 | 643  |
| 25° | 1065 | 817 | 607  |
| 30° | 1078 | 805 | 578  |
| 35° | 1080 | 794 | 550  |
| 40° | 1074 | 779 | 528  |
| 45° | 1062 | 765 | 513  |
| 50° | 1044 | 748 | 499  |
| 55° | 1016 | 723 | 482  |
| 60° | 981  | 705 | 469  |
| 65° | 929  | 673 | 445  |
| 70° | 873  | 633 | 415  |
| 75° | 796  | 573 | 371  |
| 80° | 691  | 496 | 299  |
| 85° | 574  | 392 | 207  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 29.8   | 3.4       |
| 10°-20°   | 85.3   | 9.7       |
| 20°-30°   | 128.6  | 14.7      |
| 30°-40°   | 153.6  | 17.5      |
| 40°-50°   | 157.6  | 18.0      |
| 50°-60°   | 141.0  | 16.1      |
| 60°-70°   | 105.9  | 12.1      |
| 70°-80°   | 59.2   | 6.8       |
| 80°-90°   | 15.1   | 1.7       |
| 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°    | 243.7  | 27.8      |
| 0°-40°    | 397.3  | 45.4      |
| 0°-60°    | 695.8  | 79.4      |
| 0°-90°    | 875.9  | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 875.9  | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 45° | 90° | 135° | 180° | Flux |
|-----|-----|-----|-----|------|------|------|
| 0°  | 314 | 314 | 314 | 314  | 314  |      |
| 5°  | 335 | 330 | 312 | 297  | 290  | 32   |
| 15° | 360 | 344 | 300 | 261  | 246  | 102  |
| 25° | 359 | 336 | 275 | 222  | 205  | 165  |
| 35° | 329 | 307 | 242 | 186  | 167  | 205  |
| 45° | 279 | 260 | 201 | 150  | 135  | 215  |
| 55° | 216 | 202 | 154 | 114  | 103  | 194  |
| 65° | 146 | 137 | 106 | 77   | 70   | 144  |
| 75° | 77  | 71  | 55  | 39   | 36   | 81   |
| 85° | 19  | 17  | 13  | 8    | 7    | 22   |
| 90° | 0   | 0   | 0   | 0    | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   | 112.5° | 135°  | 157.5° | 180°  |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|
| 0°    | 314.0 | 314.0 | 314.0 | 314.0 | 314.0 | 314.0  | 314.0 | 314.0  | 314.0 |
| 2.5°  | 325.9 | 324.4 | 323.7 | 318.5 | 312.5 | 310.3  | 304.4 | 304.4  | 301.4 |
| 5°    | 334.9 | 333.4 | 329.7 | 321.5 | 311.8 | 305.1  | 296.9 | 293.9  | 290.2 |
| 7.5°  | 343.1 | 340.1 | 334.9 | 323.0 | 310.3 | 299.9  | 288.7 | 283.5  | 279.8 |
| 10°   | 350.5 | 347.5 | 339.3 | 324.4 | 307.3 | 293.9  | 279.8 | 273.1  | 269.4 |
| 12.5° | 356.4 | 352.7 | 342.3 | 324.4 | 304.4 | 286.5  | 270.9 | 261.9  | 257.5 |
| 15°   | 360.2 | 356.4 | 344.5 | 323.7 | 299.9 | 279.8  | 261.2 | 251.5  | 246.3 |
| 17.5° | 362.4 | 357.9 | 344.5 | 321.5 | 294.7 | 271.6  | 251.5 | 240.4  | 235.1 |
| 20°   | 363.9 | 358.7 | 343.8 | 317.7 | 288.7 | 263.4  | 241.1 | 230.7  | 224.7 |
| 22.5° | 362.4 | 356.4 | 341.6 | 314.0 | 282.8 | 254.5  | 232.2 | 220.3  | 215.1 |
| 25°   | 358.7 | 353.5 | 336.4 | 308.1 | 275.3 | 246.3  | 222.5 | 209.8  | 204.6 |
| 27.5° | 353.5 | 348.3 | 330.4 | 301.4 | 267.9 | 237.4  | 212.8 | 200.2  | 195.7 |
| 30°   | 346.8 | 340.8 | 323.7 | 293.9 | 259.0 | 227.7  | 203.9 | 191.2  | 186.0 |
| 32.5° | 338.6 | 332.6 | 315.5 | 286.5 | 250.8 | 218.8  | 195.0 | 182.3  | 177.9 |
| 35°   | 328.9 | 323.7 | 306.6 | 276.1 | 241.8 | 209.8  | 186.0 | 171.9  | 167.4 |
| 37.5° | 317.7 | 312.5 | 296.2 | 267.1 | 232.2 | 200.9  | 175.6 | 163.7  | 159.2 |
| 40°   | 305.8 | 300.6 | 285.0 | 256.0 | 221.8 | 191.2  | 166.7 | 154.8  | 150.3 |
| 42.5° | 293.2 | 288.0 | 273.1 | 245.6 | 212.8 | 181.6  | 157.8 | 146.6  | 142.9 |
| 45°   | 279.1 | 274.6 | 259.7 | 233.7 | 200.9 | 170.4  | 149.6 | 138.4  | 134.7 |
| 47.5° | 264.2 | 259.7 | 246.3 | 221.8 | 189.8 | 160.7  | 140.6 | 130.2  | 127.2 |
| 50°   | 249.3 | 244.8 | 232.2 | 208.4 | 178.6 | 150.3  | 131.7 | 122.0  | 119.1 |
| 52.5° | 232.9 | 229.2 | 218.0 | 195.7 | 165.9 | 140.6  | 122.8 | 114.6  | 110.9 |
| 55°   | 216.5 | 212.8 | 202.4 | 182.3 | 154.0 | 131.0  | 113.9 | 105.7  | 102.7 |
| 57.5° | 200.2 | 197.2 | 187.5 | 166.7 | 142.9 | 120.6  | 104.9 | 97.5   | 95.3  |
| 60°   | 182.3 | 179.3 | 169.7 | 152.5 | 131.0 | 110.1  | 96.0  | 89.3   | 87.1  |
| 62.5° | 163.0 | 160.7 | 153.3 | 137.7 | 117.6 | 99.7   | 87.1  | 80.4   | 78.1  |
| 65°   | 145.9 | 143.6 | 136.9 | 123.5 | 105.7 | 89.3   | 77.4  | 72.2   | 69.9  |
| 67.5° | 128.0 | 126.5 | 120.6 | 108.6 | 93.0  | 78.9   | 67.7  | 63.3   | 61.8  |
| 70°   | 110.9 | 109.4 | 104.2 | 93.8  | 80.4  | 67.7   | 58.8  | 54.3   | 52.8  |
| 72.5° | 93.0  | 93.0  | 87.8  | 78.9  | 68.5  | 56.6   | 49.1  | 46.1   | 43.9  |
| 75°   | 76.6  | 75.2  | 71.4  | 64.7  | 55.1  | 46.1   | 39.4  | 36.5   | 35.7  |
| 77.5° | 59.5  | 59.5  | 56.6  | 50.6  | 43.9  | 35.7   | 31.3  | 28.3   | 27.5  |
| 80°   | 44.6  | 44.6  | 41.7  | 37.2  | 32.0  | 26.0   | 22.3  | 20.8   | 19.3  |
| 82.5° | 30.5  | 30.5  | 28.3  | 24.6  | 21.6  | 17.1   | 14.9  | 13.4   | 12.7  |
| 85°   | 18.6  | 17.9  | 17.1  | 14.9  | 12.7  | 9.7    | 8.2   | 7.4    | 6.7   |
| 87.5° | 8.9   | 8.9   | 8.2   | 6.0   | 5.2   | 3.7    | 3.0   | 2.2    | 2.2   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0   | 0.0    | 0.0   |

(END OF REPORT)