

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: P392626

Luminaire Tested: **MWL-4-00-25-UNV-L935-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392626  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-6)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MWL-4-00-25-UNV-L935-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

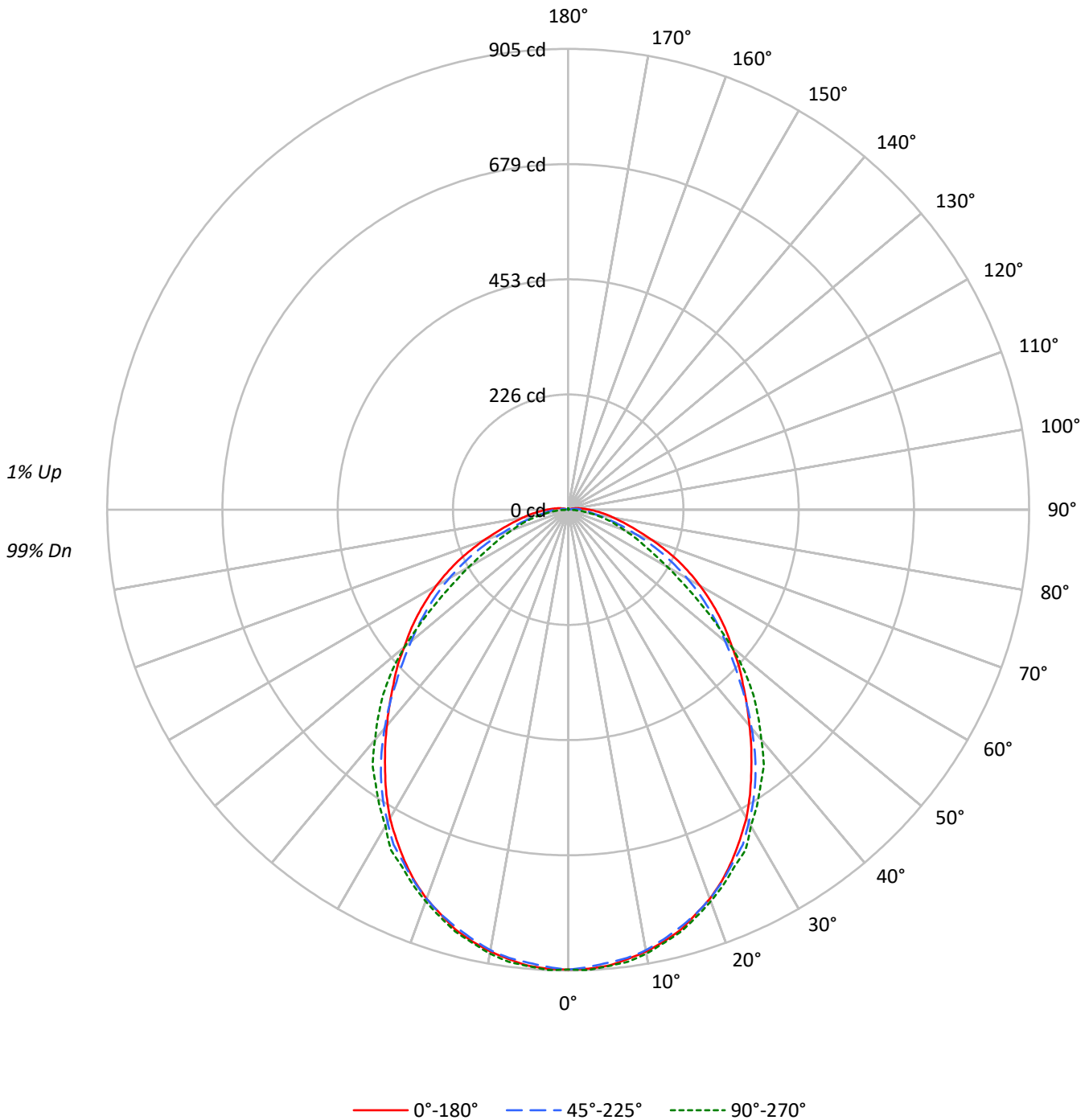
Lumens per Lamp: N/A  
Luminaire Lumens: 2134.0 lumens  
Efficiency: N/A  
Efficacy: 91.1 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.19 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: Direct

Input Watts (W): 23.432  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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  |    |
| 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  | 0  |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 110 | 110 | 110 | 105 | 105 | 105 | 101 | 101 | 101 | 99 |
| 1   | 109 | 105 | 101 | 97  | 106 | 102 | 99  | 95  | 98  | 95  | 92  | 94  | 91  | 89  | 90  | 88  | 86  | 84 |
| 2   | 100 | 92  | 86  | 80  | 97  | 90  | 84  | 79  | 87  | 82  | 77  | 83  | 79  | 75  | 80  | 77  | 74  | 71 |
| 3   | 92  | 82  | 74  | 68  | 89  | 80  | 73  | 67  | 77  | 71  | 66  | 74  | 69  | 65  | 71  | 67  | 63  | 61 |
| 4   | 84  | 73  | 65  | 58  | 82  | 72  | 64  | 58  | 69  | 62  | 57  | 67  | 61  | 56  | 64  | 59  | 55  | 53 |
| 5   | 78  | 66  | 57  | 51  | 76  | 64  | 56  | 50  | 62  | 55  | 50  | 60  | 54  | 49  | 58  | 53  | 49  | 46 |
| 6   | 72  | 59  | 51  | 45  | 70  | 58  | 50  | 45  | 57  | 49  | 44  | 55  | 48  | 44  | 53  | 47  | 43  | 41 |
| 7   | 67  | 54  | 46  | 40  | 65  | 53  | 45  | 40  | 52  | 45  | 39  | 50  | 44  | 39  | 49  | 43  | 39  | 37 |
| 8   | 63  | 50  | 41  | 36  | 61  | 49  | 41  | 36  | 47  | 40  | 35  | 46  | 40  | 35  | 45  | 39  | 35  | 33 |
| 9   | 59  | 46  | 38  | 32  | 57  | 45  | 37  | 32  | 44  | 37  | 32  | 43  | 36  | 32  | 42  | 36  | 32  | 30 |
| 10  | 55  | 42  | 35  | 30  | 54  | 42  | 34  | 29  | 41  | 34  | 29  | 40  | 33  | 29  | 39  | 33  | 29  | 27 |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 5833 | 5833 | 5833 |
| 5°  | 5776 | 5419 | 5364 |
| 10° | 5674 | 5065 | 4936 |
| 15° | 5555 | 4694 | 4521 |
| 20° | 5385 | 4353 | 4124 |
| 25° | 5170 | 3996 | 3755 |
| 30° | 4921 | 3644 | 3392 |
| 35° | 4605 | 3268 | 3055 |
| 40° | 4294 | 2855 | 2706 |
| 45° | 4013 | 2444 | 2347 |
| 50° | 3752 | 2096 | 1920 |
| 55° | 3533 | 1788 | 1443 |
| 60° | 3275 | 1481 | 1067 |
| 65° | 2977 | 1173 | 791  |
| 70° | 2590 | 856  | 590  |
| 75° | 2269 | 589  | 433  |
| 80° | 2123 | 384  | 279  |
| 85° | 2151 | 284  | 122  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 85.2   | 4.0       |
| 10°-20°   | 240.4  | 11.3      |
| 20°-30°   | 352.9  | 16.5      |
| 30°-40°   | 400.7  | 18.8      |
| 40°-50°   | 376.9  | 17.7      |
| 50°-60°   | 302.1  | 14.2      |
| 60°-70°   | 200.4  | 9.4       |
| 70°-80°   | 104.0  | 4.9       |
| 80°-90°   | 44.1   | 2.1       |
| 90°-100°  | 17.0   | 0.8       |
| 100°-110° | 3.7    | 0.2       |
| 110°-120° | 1.4    | 0.1       |
| 120°-130° | 1.5    | 0.1       |
| 130°-140° | 1.3    | 0.1       |
| 140°-150° | 1.1    | 0.1       |
| 150°-160° | 0.8    | 0.0       |
| 160°-170° | 0.5    | 0.0       |
| 170°-180° | 0.2    | 0.0       |
| 0°-30°    | 678.5  | 31.8      |
| 0°-40°    | 1079.2 | 50.6      |
| 0°-60°    | 1758.2 | 82.4      |
| 0°-90°    | 2106.6 | 98.7      |
| 90°-120°  | 22.0   | 1.0       |
| 90°-150°  | 26.0   | 1.2       |
| 90°-180°  | 27.0   | 1.3       |
| 0°-180°   | 2134.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 903 | 903   | 903 | 903   | 903 |      |
| 5°   | 899 | 897   | 893 | 901   | 900 | 85   |
| 15°  | 854 | 851   | 849 | 856   | 857 | 240  |
| 25°  | 761 | 762   | 765 | 772   | 773 | 350  |
| 35°  | 627 | 629   | 641 | 658   | 659 | 392  |
| 45°  | 485 | 478   | 477 | 501   | 514 | 375  |
| 55°  | 360 | 352   | 336 | 326   | 311 | 322  |
| 65°  | 238 | 232   | 205 | 168   | 163 | 235  |
| 75°  | 126 | 110   | 92  | 78    | 82  | 136  |
| 85°  | 64  | 51    | 38  | 26    | 20  | 58   |
| 90°  | 42  | 36    | 26  | 14    | 0   | 23   |
| 95°  | 27  | 26    | 16  | 3     | 1   | 20   |
| 105° | 8   | 6     | 1   | 1     | 1   | 9    |
| 115° | 2   | 2     | 2   | 1     | 1   | 2    |
| 125° | 2   | 2     | 2   | 2     | 2   | 2    |
| 135° | 2   | 2     | 2   | 2     | 2   | 1    |
| 145° | 2   | 2     | 2   | 2     | 2   | 1    |
| 155° | 2   | 2     | 2   | 2     | 2   | 1    |
| 165° | 2   | 2     | 2   | 2     | 2   | 0    |
| 175° | 1   | 2     | 2   | 2     | 2   | 0    |
| 180° | 2   | 2     | 2   | 2     | 2   |      |



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 0°     | 903.2 | 903.2 | 903.2 | 903.2 | 903.2 |
| 2.5°   | 902.3 | 900.6 | 899.0 | 908.3 | 904.8 |
| 5°     | 899.0 | 897.2 | 893.0 | 900.6 | 899.7 |
| 7.5°   | 890.4 | 888.8 | 887.9 | 893.0 | 895.5 |
| 10°    | 881.1 | 880.2 | 878.6 | 883.7 | 885.3 |
| 12.5°  | 868.4 | 870.9 | 864.2 | 869.3 | 870.9 |
| 15°    | 854.0 | 850.6 | 848.9 | 856.5 | 857.4 |
| 17.5°  | 832.8 | 835.3 | 832.8 | 837.9 | 837.9 |
| 20°    | 813.3 | 813.3 | 813.3 | 818.4 | 818.4 |
| 22.5°  | 788.7 | 791.2 | 790.4 | 794.6 | 797.1 |
| 25°    | 760.7 | 761.5 | 765.0 | 771.7 | 772.6 |
| 27.5°  | 730.2 | 733.6 | 742.0 | 749.7 | 753.9 |
| 30°    | 699.6 | 699.6 | 709.0 | 716.6 | 717.4 |
| 32.5°  | 664.0 | 664.0 | 676.8 | 689.5 | 689.5 |
| 35°    | 626.7 | 629.2 | 641.1 | 658.0 | 658.9 |
| 37.5°  | 590.2 | 588.6 | 602.1 | 621.6 | 631.0 |
| 40°    | 553.8 | 550.4 | 560.5 | 583.5 | 590.2 |
| 42.5°  | 519.0 | 513.1 | 519.0 | 541.9 | 552.1 |
| 45°    | 485.1 | 478.3 | 476.6 | 501.2 | 513.9 |
| 47.5°  | 454.6 | 445.3 | 438.4 | 454.6 | 469.8 |
| 50°    | 419.8 | 412.1 | 402.8 | 410.5 | 418.9 |
| 52.5°  | 391.0 | 381.7 | 368.9 | 369.8 | 363.8 |
| 55°    | 360.4 | 352.0 | 335.8 | 326.5 | 311.2 |
| 57.5°  | 329.9 | 323.9 | 302.8 | 283.3 | 263.7 |
| 60°    | 299.3 | 293.4 | 269.7 | 238.3 | 225.6 |
| 62.5°  | 268.8 | 264.6 | 236.6 | 201.0 | 189.9 |
| 65°    | 238.3 | 231.5 | 205.2 | 167.9 | 162.8 |
| 67.5°  | 206.1 | 199.3 | 173.0 | 141.6 | 140.7 |
| 70°    | 176.4 | 166.2 | 142.5 | 117.0 | 117.0 |
| 72.5°  | 149.3 | 136.5 | 116.1 | 96.6  | 100.1 |
| 75°    | 126.3 | 110.3 | 92.4  | 78.0  | 82.2  |
| 77.5°  | 106.8 | 89.9  | 72.1  | 61.1  | 66.2  |
| 80°    | 90.8  | 73.8  | 56.0  | 45.8  | 50.0  |
| 82.5°  | 77.1  | 61.1  | 45.8  | 32.2  | 34.8  |
| 85°    | 63.6  | 50.9  | 38.1  | 25.5  | 20.4  |
| 87.5°  | 51.7  | 43.2  | 31.4  | 19.5  | 6.8   |
| 90°    | 42.4  | 36.5  | 26.3  | 14.4  | 0.0   |
| 92.5°  | 33.9  | 31.4  | 21.2  | 8.5   | 0.9   |
| 95°    | 27.1  | 26.3  | 16.1  | 3.4   | 0.9   |
| 97.5°  | 21.2  | 22.1  | 11.0  | 0.9   | 0.9   |
| 100°   | 17.0  | 16.1  | 6.0   | 0.9   | 0.9   |
| 102.5° | 11.9  | 10.2  | 1.7   | 0.9   | 0.9   |
| 105°   | 7.6   | 6.0   | 0.9   | 0.9   | 0.9   |
| 107.5° | 3.4   | 1.7   | 0.9   | 0.9   | 0.9   |
| 110°   | 1.7   | 1.7   | 0.9   | 0.9   | 0.9   |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 1.7 | 1.7   | 0.9 | 0.9   | 0.9 |
| 115°   | 1.7 | 1.7   | 1.7 | 0.9   | 0.9 |
| 117.5° | 1.7 | 1.7   | 1.7 | 1.7   | 0.9 |
| 120°   | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 122.5° | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 125°   | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 127.5° | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 130°   | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 132.5° | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 135°   | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 137.5° | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 140°   | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 142.5° | 1.7 | 2.5   | 1.7 | 1.7   | 1.7 |
| 145°   | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 147.5° | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 150°   | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 152.5° | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 155°   | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 157.5° | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 160°   | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 162.5° | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 165°   | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 167.5° | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 170°   | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |
| 172.5° | 0.9 | 1.7   | 1.7 | 1.7   | 2.5 |
| 175°   | 0.9 | 1.7   | 1.7 | 1.7   | 2.5 |
| 177.5° | 0.9 | 1.7   | 1.7 | 1.7   | 2.5 |
| 180°   | 1.7 | 1.7   | 1.7 | 1.7   | 1.7 |

(END OF REPORT)