

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: P183397

Luminaire Tested: **MAO-G-24-2-LD4-2-STD**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P183397  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P34511)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MAO-G-24-2-LD4-2-STD  
Description:  
Light Source: 2UT217042A8404A  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3225.6 lumens  
Efficiency: N/A  
Efficacy: 93.2 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.26 / 1.34  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

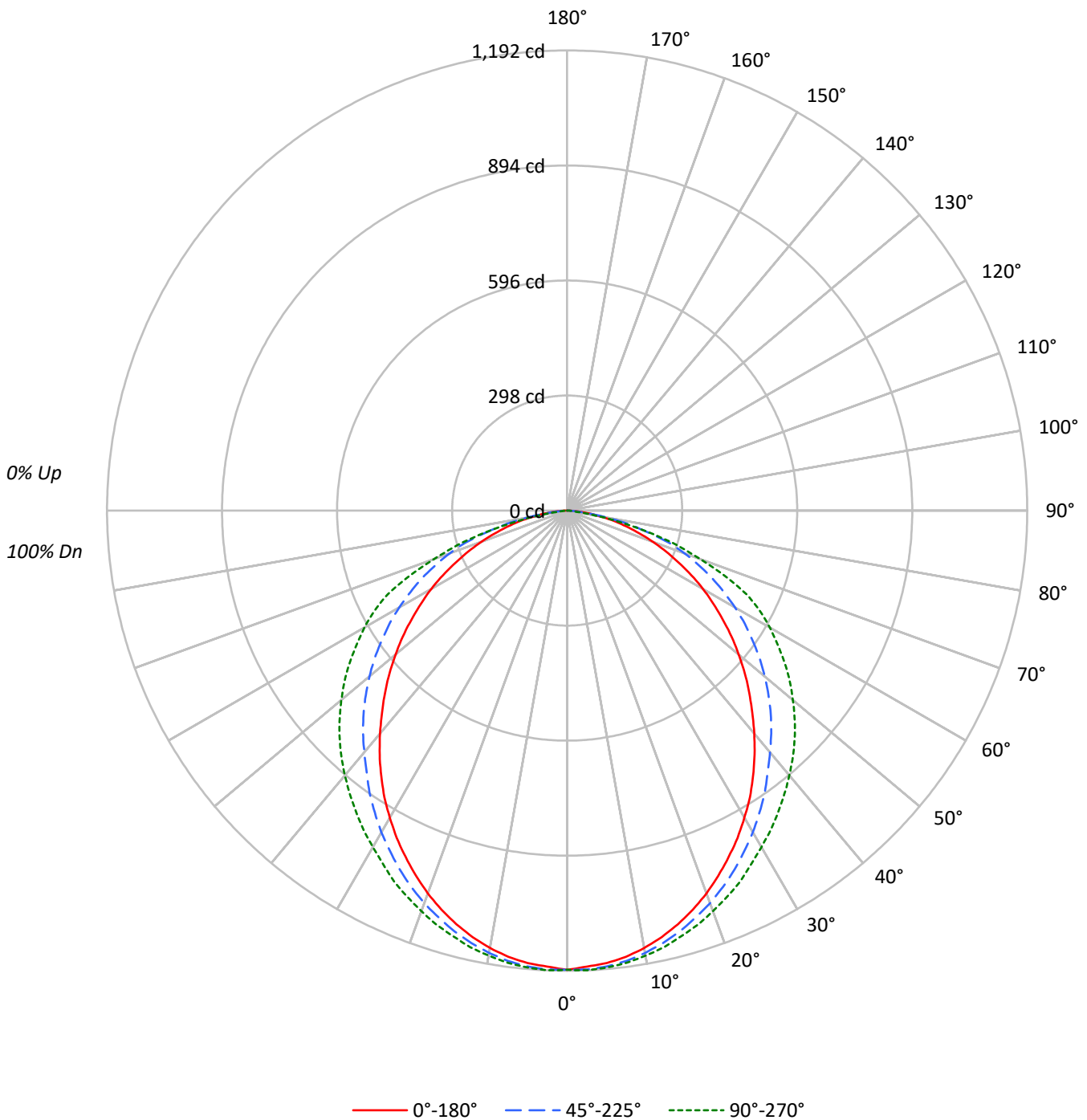
Input Watts (W): 34.6  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| RF  | 20  |     |     |     | 20  |     |     |     | 20  |     |     |     | 20  |     |     |     | 20  |     |
| 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 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1   | 109 | 104 | 100 | 96  | 106 | 102 | 98  | 95  | 98  | 95  | 92  | 94  | 91  | 89  | 90  | 88  | 86  | 84  |
| 2   | 99  | 91  | 84  | 79  | 97  | 89  | 83  | 78  | 86  | 80  | 76  | 82  | 78  | 74  | 79  | 76  | 72  | 70  |
| 3   | 90  | 80  | 72  | 65  | 88  | 78  | 71  | 65  | 75  | 69  | 64  | 73  | 67  | 62  | 70  | 65  | 61  | 59  |
| 4   | 83  | 71  | 62  | 55  | 80  | 69  | 61  | 55  | 67  | 60  | 54  | 65  | 58  | 53  | 62  | 57  | 53  | 51  |
| 5   | 76  | 63  | 54  | 48  | 74  | 62  | 54  | 47  | 60  | 53  | 47  | 58  | 51  | 46  | 56  | 50  | 46  | 44  |
| 6   | 70  | 57  | 48  | 42  | 68  | 56  | 48  | 41  | 54  | 47  | 41  | 52  | 46  | 41  | 51  | 45  | 40  | 38  |
| 7   | 65  | 52  | 43  | 37  | 63  | 51  | 42  | 37  | 49  | 42  | 36  | 48  | 41  | 36  | 46  | 40  | 36  | 34  |
| 8   | 61  | 47  | 39  | 33  | 59  | 46  | 38  | 33  | 45  | 38  | 32  | 44  | 37  | 32  | 43  | 37  | 32  | 30  |
| 9   | 57  | 43  | 35  | 29  | 55  | 43  | 35  | 29  | 42  | 34  | 29  | 40  | 34  | 29  | 39  | 33  | 29  | 27  |
| 10  | 53  | 40  | 32  | 27  | 52  | 39  | 32  | 27  | 38  | 31  | 27  | 37  | 31  | 26  | 37  | 31  | 26  | 25  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 3201 | 3201 | 3201 |
| 5°  | 3178 | 3202 | 3209 |
| 10° | 3144 | 3179 | 3199 |
| 15° | 3090 | 3144 | 3180 |
| 20° | 3022 | 3099 | 3162 |
| 25° | 2940 | 3046 | 3148 |
| 30° | 2854 | 2990 | 3127 |
| 35° | 2758 | 2932 | 3132 |
| 40° | 2649 | 2872 | 3146 |
| 45° | 2538 | 2838 | 3173 |
| 50° | 2427 | 2799 | 3197 |
| 55° | 2307 | 2750 | 3228 |
| 60° | 2187 | 2704 | 3265 |
| 65° | 2032 | 2639 | 3266 |
| 70° | 1864 | 2550 | 2870 |
| 75° | 1643 | 2235 | 2303 |
| 80° | 1350 | 1640 | 1224 |
| 85° | 982  | 679  | 377  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 112.3  | 3.5       |
| 10°-20°   | 317.8  | 9.9       |
| 20°-30°   | 472.4  | 14.6      |
| 30°-40°   | 559.5  | 17.3      |
| 40°-50°   | 576.9  | 17.9      |
| 50°-60°   | 527.0  | 16.3      |
| 60°-70°   | 409.5  | 12.7      |
| 70°-80°   | 214.7  | 6.7       |
| 80°-90°   | 35.6   | 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°    | 902.5  | 28.0      |
| 0°-40°    | 1462.0 | 45.3      |
| 0°-60°    | 2565.9 | 79.5      |
| 0°-90°    | 3225.6 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3225.6 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1190 | 1190  | 1190 | 1190  | 1190 |      |
| 5°  | 1176 | 1180  | 1186 | 1188  | 1188 | 111  |
| 15° | 1109 | 1116  | 1128 | 1140  | 1142 | 312  |
| 25° | 990  | 1001  | 1026 | 1050  | 1060 | 456  |
| 35° | 840  | 854   | 892  | 934   | 953  | 525  |
| 45° | 667  | 690   | 746  | 804   | 834  | 515  |
| 55° | 492  | 525   | 586  | 655   | 688  | 441  |
| 65° | 319  | 354   | 414  | 483   | 513  | 317  |
| 75° | 158  | 182   | 215  | 226   | 222  | 169  |
| 85° | 32   | 34    | 22   | 16    | 12   | 40   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1189.6 | 1189.6 | 1189.6 | 1189.6 | 1189.6 |
| 2.5°  | 1182.2 | 1184.7 | 1189.6 | 1192.0 | 1192.0 |
| 5°    | 1176.5 | 1179.8 | 1185.5 | 1187.9 | 1187.9 |
| 7.5°  | 1166.0 | 1169.2 | 1176.5 | 1181.4 | 1181.4 |
| 10°   | 1150.5 | 1155.4 | 1163.5 | 1170.0 | 1170.8 |
| 12.5° | 1131.8 | 1137.5 | 1147.2 | 1156.2 | 1158.6 |
| 15°   | 1109.0 | 1115.5 | 1128.5 | 1139.9 | 1141.5 |
| 17.5° | 1083.7 | 1091.0 | 1105.7 | 1120.4 | 1125.2 |
| 20°   | 1055.2 | 1063.4 | 1082.1 | 1099.2 | 1104.1 |
| 22.5° | 1023.5 | 1033.2 | 1055.2 | 1076.4 | 1082.9 |
| 25°   | 990.1  | 1000.7 | 1025.9 | 1050.3 | 1060.1 |
| 27.5° | 955.9  | 967.3  | 994.2  | 1022.7 | 1032.4 |
| 30°   | 918.4  | 930.6  | 962.4  | 993.3  | 1006.4 |
| 32.5° | 881.0  | 893.2  | 927.4  | 963.2  | 981.1  |
| 35°   | 839.5  | 854.1  | 892.4  | 933.9  | 953.4  |
| 37.5° | 797.9  | 815.0  | 853.3  | 904.6  | 924.9  |
| 40°   | 754.0  | 772.7  | 817.5  | 873.7  | 895.6  |
| 42.5° | 710.0  | 730.4  | 782.5  | 840.3  | 865.5  |
| 45°   | 666.8  | 689.6  | 745.8  | 804.4  | 833.8  |
| 47.5° | 624.5  | 646.5  | 707.6  | 770.2  | 799.6  |
| 50°   | 579.7  | 604.1  | 668.5  | 735.2  | 763.7  |
| 52.5° | 537.4  | 567.5  | 628.6  | 696.2  | 727.1  |
| 55°   | 491.8  | 525.2  | 586.2  | 655.4  | 688.0  |
| 57.5° | 448.6  | 483.6  | 545.5  | 615.5  | 646.5  |
| 60°   | 406.3  | 439.7  | 502.4  | 573.2  | 606.6  |
| 62.5° | 363.1  | 397.3  | 457.6  | 528.4  | 563.4  |
| 65°   | 319.2  | 354.2  | 414.4  | 482.8  | 513.0  |
| 67.5° | 276.8  | 309.4  | 368.8  | 432.3  | 442.1  |
| 70°   | 236.9  | 264.6  | 324.1  | 360.7  | 364.8  |
| 72.5° | 196.2  | 223.1  | 275.2  | 289.9  | 298.8  |
| 75°   | 158.0  | 181.6  | 215.0  | 226.4  | 221.5  |
| 77.5° | 123.8  | 142.5  | 162.8  | 154.7  | 146.6  |
| 80°   | 87.1   | 101.0  | 105.8  | 91.2   | 79.0   |
| 82.5° | 57.8   | 66.0   | 56.2   | 36.6   | 24.4   |
| 85°   | 31.8   | 34.2   | 22.0   | 15.5   | 12.2   |
| 87.5° | 12.2   | 13.0   | 9.8    | 7.3    | 6.5    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)