

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: METALUX

Report Number: P291744

Luminaire Tested: **22GR-LD5-28-F1-UNV-L83050-W2A1-U-3500K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P291744  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1901-084-23)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 22GR-LD5-28-F1-UNV-L83050-W2A1-U-3500K  
Description: GRLED 2x2 TUNABLE WHITE TROFFER  
WITH F1 LENS  
Light Source: (168) 80 CRI LEDS TUNED TO 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2918.0 lumens  
Efficiency: N/A  
Efficacy: 132.4 lumens/watt  
Spacing Criteria (0/90/45): 1.14 / 1.19 / 1.24  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

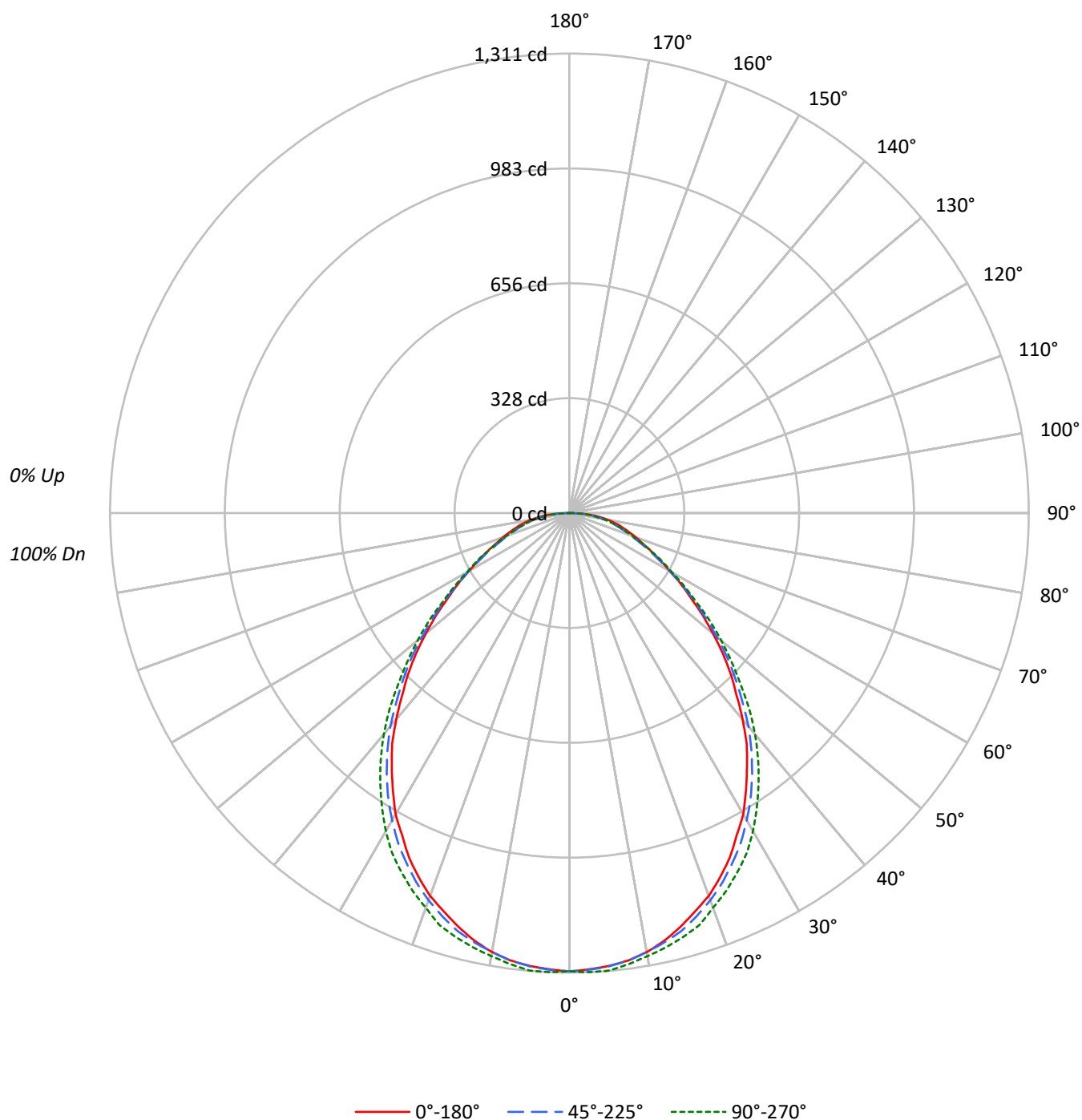
Input Watts (W): 22.041  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

|     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |     |     |  |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|--|-----|-----|-----|--|-----|-----|-----|
| RF  | 20  |     |     |     | 20  |     |     |     |  | 20  |     |     |  |     | 20  |     |  |     |     | 20  |
| RC  | 80  |     |     |     | 70  |     |     |     |  | 50  |     |     |  |     | 30  |     |  |     |     | 0   |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  |  | 50  | 30  | 10  |  | 50  | 30  | 10  |  | 50  | 30  | 10  |
| RCR |     |     |     |     |     |     |     |     |  |     |     |     |  |     |     |     |  |     |     |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 |  | 111 | 111 | 111 |  | 106 | 106 | 106 |  | 102 | 102 | 102 |
| 1   | 110 | 105 | 101 | 98  | 107 | 103 | 99  | 96  |  | 99  | 96  | 93  |  | 95  | 92  | 90  |  | 91  | 89  | 87  |
| 2   | 101 | 93  | 87  | 81  | 98  | 91  | 85  | 80  |  | 87  | 83  | 78  |  | 84  | 80  | 77  |  | 81  | 78  | 75  |
| 3   | 92  | 83  | 75  | 69  | 90  | 81  | 74  | 68  |  | 78  | 72  | 67  |  | 75  | 70  | 66  |  | 73  | 69  | 65  |
| 4   | 85  | 74  | 66  | 59  | 83  | 73  | 65  | 59  |  | 70  | 63  | 58  |  | 68  | 62  | 57  |  | 66  | 61  | 57  |
| 5   | 79  | 67  | 58  | 52  | 77  | 66  | 58  | 52  |  | 63  | 56  | 51  |  | 62  | 55  | 51  |  | 60  | 54  | 50  |
| 6   | 73  | 60  | 52  | 46  | 71  | 59  | 51  | 46  |  | 58  | 51  | 45  |  | 56  | 50  | 45  |  | 55  | 49  | 45  |
| 7   | 68  | 55  | 47  | 41  | 66  | 54  | 46  | 41  |  | 53  | 46  | 41  |  | 51  | 45  | 40  |  | 50  | 44  | 40  |
| 8   | 63  | 51  | 42  | 37  | 62  | 50  | 42  | 37  |  | 49  | 42  | 37  |  | 47  | 41  | 36  |  | 46  | 40  | 36  |
| 9   | 59  | 47  | 39  | 33  | 58  | 46  | 39  | 33  |  | 45  | 38  | 33  |  | 44  | 38  | 33  |  | 43  | 37  | 33  |
| 10  | 56  | 43  | 36  | 31  | 55  | 43  | 35  | 30  |  | 42  | 35  | 30  |  | 41  | 35  | 30  |  | 40  | 34  | 30  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 3519 | 3519 | 3519 |
| 5°  | 3503 | 3507 | 3539 |
| 10° | 3476 | 3474 | 3507 |
| 15° | 3406 | 3439 | 3490 |
| 20° | 3328 | 3367 | 3432 |
| 25° | 3218 | 3270 | 3361 |
| 30° | 3082 | 3145 | 3255 |
| 35° | 2902 | 2985 | 3091 |
| 40° | 2701 | 2792 | 2894 |
| 45° | 2479 | 2551 | 2630 |
| 50° | 2236 | 2292 | 2365 |
| 55° | 1984 | 2031 | 2066 |
| 60° | 1778 | 1782 | 1818 |
| 65° | 1639 | 1584 | 1639 |
| 70° | 1582 | 1466 | 1508 |
| 75° | 1609 | 1436 | 1463 |
| 80° | 1734 | 1506 | 1506 |
| 85° | 1924 | 1593 | 1572 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 123.3  | 4.2       |
| 10°-20°   | 347.9  | 11.9      |
| 20°-30°   | 507.8  | 17.4      |
| 30°-40°   | 568.5  | 19.5      |
| 40°-50°   | 517.4  | 17.7      |
| 50°-60°   | 389.4  | 13.3      |
| 60°-70°   | 254.1  | 8.7       |
| 70°-80°   | 152.4  | 5.2       |
| 80°-90°   | 57.1   | 2.0       |
| 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°    | 979.0  | 33.6      |
| 0°-40°    | 1547.5 | 53.0      |
| 0°-60°    | 2454.3 | 84.1      |
| 0°-90°    | 2918.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2918.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1308 | 1308  | 1308 | 1308  | 1308 |      |
| 5°  | 1297 | 1295  | 1298 | 1303  | 1310 | 123  |
| 15° | 1222 | 1224  | 1235 | 1245  | 1253 | 344  |
| 25° | 1084 | 1087  | 1101 | 1121  | 1132 | 498  |
| 35° | 883  | 891   | 909  | 930   | 941  | 552  |
| 45° | 652  | 658   | 670  | 684   | 691  | 502  |
| 55° | 423  | 429   | 433  | 439   | 440  | 382  |
| 65° | 257  | 255   | 249  | 253   | 257  | 257  |
| 75° | 155  | 150   | 138  | 139   | 141  | 164  |
| 85° | 62   | 60    | 52   | 49    | 51   | 64   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1307.6 | 1307.6 | 1307.6 | 1307.6 | 1307.6 |
| 2.5°  | 1302.9 | 1302.3 | 1304.3 | 1307.6 | 1311.0 |
| 5°    | 1296.9 | 1294.9 | 1298.2 | 1302.9 | 1310.3 |
| 7.5°  | 1287.5 | 1287.5 | 1287.5 | 1296.2 | 1297.6 |
| 10°   | 1272.1 | 1273.4 | 1271.4 | 1280.1 | 1283.5 |
| 12.5° | 1250.0 | 1250.6 | 1254.7 | 1263.4 | 1269.4 |
| 15°   | 1222.5 | 1223.8 | 1234.6 | 1244.6 | 1252.7 |
| 17.5° | 1191.7 | 1196.4 | 1206.4 | 1222.5 | 1232.6 |
| 20°   | 1162.2 | 1167.5 | 1175.6 | 1193.0 | 1198.4 |
| 22.5° | 1124.6 | 1130.7 | 1140.7 | 1156.1 | 1167.5 |
| 25°   | 1083.8 | 1087.1 | 1101.2 | 1121.3 | 1132.0 |
| 27.5° | 1034.8 | 1042.2 | 1059.6 | 1080.4 | 1095.2 |
| 30°   | 991.9  | 996.0  | 1012.0 | 1036.2 | 1047.6 |
| 32.5° | 937.7  | 949.7  | 963.1  | 984.6  | 995.3  |
| 35°   | 883.4  | 891.4  | 908.8  | 930.3  | 941.0  |
| 37.5° | 831.1  | 835.8  | 853.2  | 871.3  | 884.7  |
| 40°   | 768.8  | 777.5  | 794.9  | 814.3  | 823.7  |
| 42.5° | 706.4  | 719.2  | 730.6  | 750.0  | 760.0  |
| 45°   | 651.5  | 658.2  | 670.2  | 684.3  | 691.0  |
| 47.5° | 593.8  | 597.2  | 611.2  | 620.0  | 627.3  |
| 50°   | 534.2  | 538.2  | 547.6  | 556.3  | 565.0  |
| 52.5° | 479.2  | 482.6  | 488.6  | 496.6  | 505.4  |
| 55°   | 422.9  | 428.9  | 433.0  | 439.0  | 440.3  |
| 57.5° | 377.3  | 376.7  | 379.4  | 384.0  | 388.7  |
| 60°   | 330.4  | 331.8  | 331.1  | 335.8  | 337.8  |
| 62.5° | 291.6  | 290.9  | 286.9  | 293.6  | 298.9  |
| 65°   | 257.4  | 254.7  | 248.7  | 252.7  | 257.4  |
| 67.5° | 225.9  | 224.5  | 214.5  | 217.8  | 221.8  |
| 70°   | 201.1  | 196.4  | 186.3  | 188.3  | 191.7  |
| 72.5° | 176.9  | 171.6  | 161.5  | 162.2  | 164.2  |
| 75°   | 154.8  | 149.5  | 138.1  | 138.7  | 140.7  |
| 77.5° | 134.0  | 127.3  | 117.3  | 115.9  | 117.3  |
| 80°   | 111.9  | 105.9  | 97.2   | 93.2   | 97.2   |
| 82.5° | 89.1   | 85.8   | 75.7   | 71.7   | 73.1   |
| 85°   | 62.3   | 60.3   | 51.6   | 48.9   | 50.9   |
| 87.5° | 28.8   | 30.8   | 26.1   | 24.1   | 24.8   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)