

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: P290710

Luminaire Tested: **14GR-LD5-28-F1-UNV-L92765-W2A1-U-3500K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P290710  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1901-084-7)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 14GR-LD5-28-F1-UNV-L92765-W2A1-U-3500K  
Description: GRLED 1x4 TUNABLE WHITE TROFFER  
WITH F1 LENS  
Light Source: (168) 90 CRI LEDS TUNED TO 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2465.0 lumens  
Efficiency: N/A  
Efficacy: 110.4 lumens/watt  
Spacing Criteria (0/90/45): 1.18 / 1.15 / 1.23  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

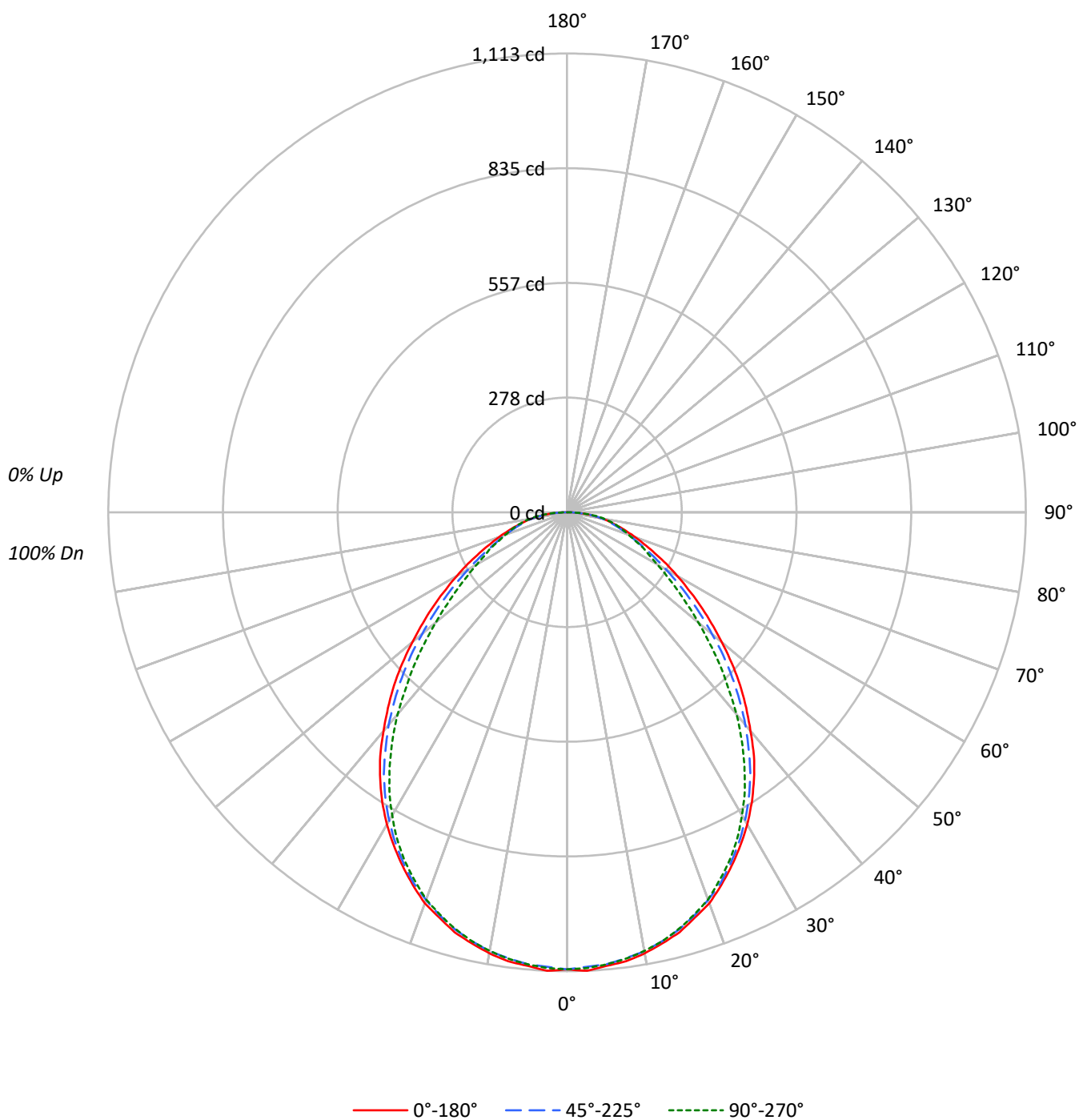
Input Watts (W): 22.32  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  |  | 88  | 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  | 64  | 58  |  | 68  | 62  | 57  |  | 66  | 61  | 57  |
| 5   | 79  | 67  | 58  | 52  | 77  | 66  | 58  | 52  |  | 64  | 57  | 51  |  | 62  | 55  | 51  |  | 60  | 54  | 50  |
| 6   | 73  | 61  | 52  | 46  | 71  | 60  | 52  | 46  |  | 58  | 51  | 45  |  | 56  | 50  | 45  |  | 55  | 49  | 45  |
| 7   | 68  | 55  | 47  | 41  | 66  | 54  | 47  | 41  |  | 53  | 46  | 41  |  | 52  | 45  | 40  |  | 50  | 44  | 40  |
| 8   | 64  | 51  | 43  | 37  | 62  | 50  | 42  | 37  |  | 49  | 42  | 37  |  | 47  | 41  | 36  |  | 46  | 41  | 36  |
| 9   | 60  | 47  | 39  | 34  | 58  | 46  | 39  | 33  |  | 45  | 38  | 33  |  | 44  | 38  | 33  |  | 43  | 37  | 33  |
| 10  | 56  | 43  | 36  | 31  | 55  | 43  | 35  | 31  |  | 42  | 35  | 30  |  | 41  | 35  | 30  |  | 40  | 34  | 30  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 2983 | 2983 | 2983 |
| 5°  | 2982 | 2972 | 2973 |
| 10° | 2967 | 2954 | 2952 |
| 15° | 2937 | 2920 | 2915 |
| 20° | 2890 | 2866 | 2862 |
| 25° | 2807 | 2788 | 2768 |
| 30° | 2716 | 2683 | 2637 |
| 35° | 2597 | 2547 | 2463 |
| 40° | 2432 | 2364 | 2247 |
| 45° | 2258 | 2157 | 2000 |
| 50° | 2048 | 1921 | 1741 |
| 55° | 1853 | 1696 | 1521 |
| 60° | 1664 | 1487 | 1356 |
| 65° | 1493 | 1328 | 1299 |
| 70° | 1378 | 1236 | 1249 |
| 75° | 1316 | 1239 | 1310 |
| 80° | 1331 | 1322 | 1427 |
| 85° | 1377 | 1362 | 1519 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 104.7  | 4.2       |
| 10°-20°   | 295.9  | 12.0      |
| 20°-30°   | 432.1  | 17.5      |
| 30°-40°   | 481.4  | 19.5      |
| 40°-50°   | 433.8  | 17.6      |
| 50°-60°   | 324.3  | 13.2      |
| 60°-70°   | 213.9  | 8.7       |
| 70°-80°   | 130.6  | 5.3       |
| 80°-90°   | 48.4   | 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°    | 832.6  | 33.8      |
| 0°-40°    | 1314.0 | 53.3      |
| 0°-60°    | 2072.1 | 84.1      |
| 0°-90°    | 2465.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2465.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1109 | 1109  | 1109 | 1109  | 1109 |      |
| 5°  | 1104 | 1103  | 1100 | 1106  | 1101 | 105  |
| 15° | 1054 | 1050  | 1048 | 1054  | 1046 | 297  |
| 25° | 945  | 942   | 939  | 941   | 932  | 435  |
| 35° | 790  | 784   | 775  | 762   | 750  | 493  |
| 45° | 593  | 587   | 567  | 541   | 526  | 457  |
| 55° | 395  | 389   | 362  | 332   | 324  | 354  |
| 65° | 234  | 227   | 208  | 200   | 204  | 235  |
| 75° | 127  | 124   | 119  | 123   | 126  | 135  |
| 85° | 45   | 43    | 44   | 49    | 49   | 47   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1108.6 | 1108.6 | 1108.6 | 1108.6 | 1108.6 |
| 2.5°  | 1113.1 | 1108.0 | 1103.5 | 1110.3 | 1106.3 |
| 5°    | 1104.1 | 1102.9 | 1100.1 | 1105.7 | 1100.7 |
| 7.5°  | 1098.4 | 1094.4 | 1091.1 | 1097.8 | 1092.2 |
| 10°   | 1086.0 | 1083.7 | 1080.9 | 1086.5 | 1080.3 |
| 12.5° | 1070.7 | 1068.5 | 1065.6 | 1072.4 | 1065.6 |
| 15°   | 1054.3 | 1050.4 | 1048.1 | 1054.3 | 1046.4 |
| 17.5° | 1030.6 | 1028.9 | 1025.5 | 1031.7 | 1023.8 |
| 20°   | 1009.1 | 1002.9 | 1000.7 | 1005.2 | 999.5  |
| 22.5° | 978.1  | 973.5  | 973.0  | 975.8  | 966.2  |
| 25°   | 945.3  | 941.9  | 939.1  | 940.8  | 932.3  |
| 27.5° | 910.8  | 906.3  | 902.9  | 902.3  | 893.3  |
| 30°   | 874.1  | 868.4  | 863.4  | 858.8  | 848.7  |
| 32.5° | 834.0  | 827.2  | 820.4  | 813.1  | 802.3  |
| 35°   | 790.5  | 783.7  | 775.2  | 761.6  | 749.8  |
| 37.5° | 744.7  | 736.8  | 723.2  | 707.4  | 695.5  |
| 40°   | 692.2  | 688.2  | 672.9  | 652.6  | 639.6  |
| 42.5° | 643.0  | 638.5  | 619.3  | 596.7  | 579.1  |
| 45°   | 593.3  | 587.1  | 566.7  | 540.7  | 525.5  |
| 47.5° | 542.4  | 536.2  | 513.6  | 481.4  | 467.8  |
| 50°   | 489.3  | 485.9  | 458.8  | 429.4  | 415.9  |
| 52.5° | 440.7  | 436.8  | 409.1  | 379.7  | 367.3  |
| 55°   | 395.0  | 388.7  | 361.6  | 331.7  | 324.3  |
| 57.5° | 349.2  | 342.4  | 317.0  | 291.6  | 286.5  |
| 60°   | 309.1  | 300.6  | 276.3  | 256.5  | 252.0  |
| 62.5° | 271.2  | 261.6  | 241.3  | 226.0  | 223.7  |
| 65°   | 234.5  | 227.1  | 208.5  | 200.0  | 204.0  |
| 67.5° | 202.8  | 195.5  | 181.9  | 178.5  | 177.4  |
| 70°   | 175.2  | 168.4  | 157.1  | 158.2  | 158.8  |
| 72.5° | 149.7  | 145.8  | 137.3  | 140.1  | 142.4  |
| 75°   | 126.6  | 124.3  | 119.2  | 123.2  | 126.0  |
| 77.5° | 105.7  | 104.0  | 101.7  | 105.1  | 109.6  |
| 80°   | 85.9   | 84.8   | 85.3   | 87.6   | 92.1   |
| 82.5° | 66.1   | 63.8   | 65.5   | 70.1   | 72.9   |
| 85°   | 44.6   | 42.9   | 44.1   | 48.6   | 49.2   |
| 87.5° | 20.9   | 20.9   | 20.3   | 23.7   | 23.7   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)