

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: P291889

Luminaire Tested: **22GR-LD5-28-F1-UNV-L92765-W2A1-U-5000K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P291889  
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-L92765-W2A1-U-5000K  
Description: GRLED 2x2 TUNABLE WHITE TROFFER  
WITH F1 LENS  
Light Source: (168) 90 CRI LEDS TUNED TO 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2697.0 lumens  
Efficiency: N/A  
Efficacy: 119.3 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

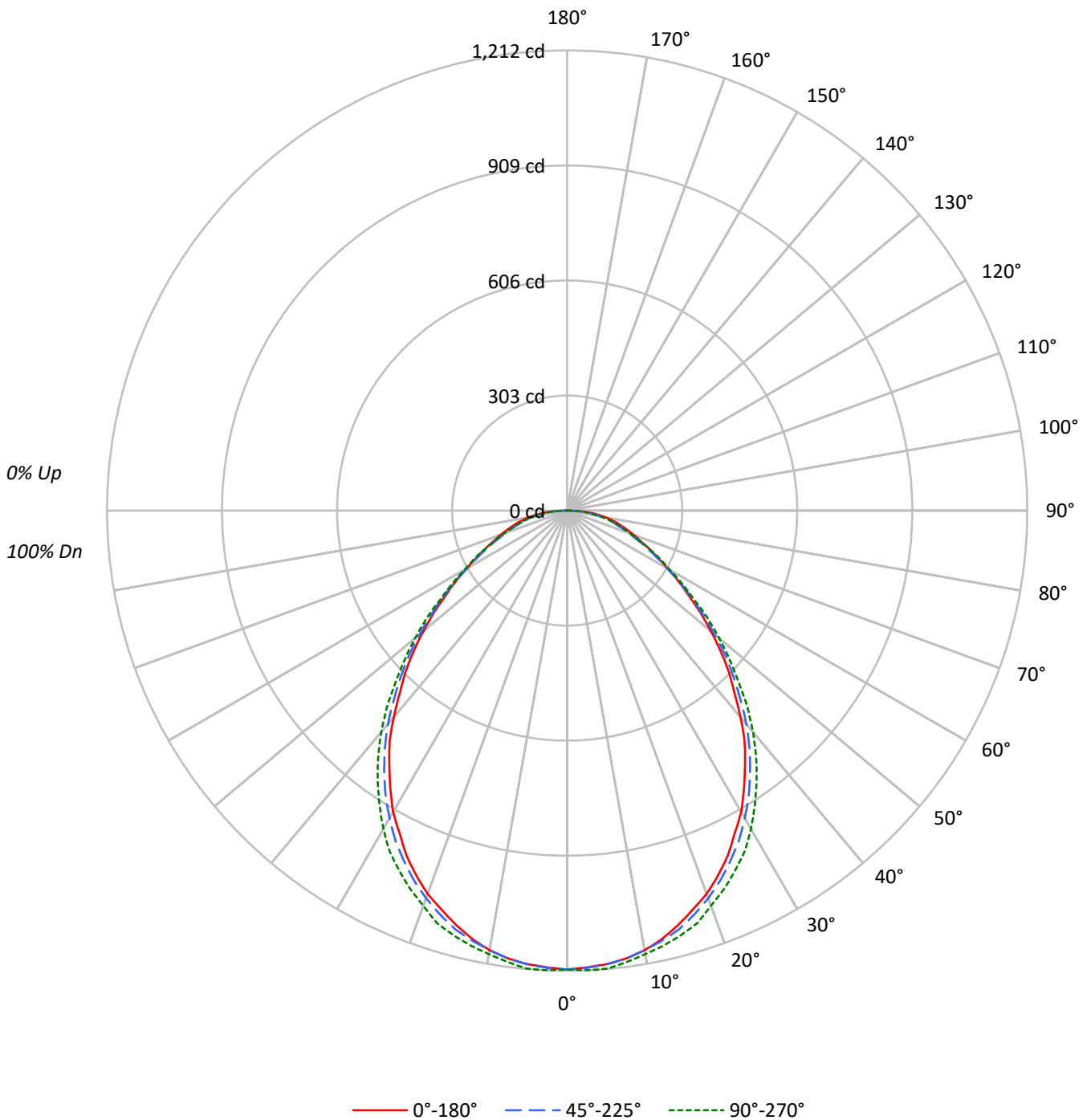
Input Watts (W): 22.599  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  |     |     |    |    | 10 |    |     |   |  | 0 |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 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 | 100 |    |    |    |    | 100 |   |  |   |
| 1   | 110 | 105 | 101 | 98  | 107 | 103 | 99  | 96  | 99  | 96  | 93  | 95  | 92  | 90  | 91  | 89  | 87  | 85  |    |    |    |    | 85  |   |  |   |
| 2   | 101 | 93  | 87  | 81  | 98  | 91  | 85  | 80  | 87  | 83  | 78  | 84  | 80  | 77  | 81  | 78  | 75  | 73  |    |    |    |    | 73  |   |  |   |
| 3   | 92  | 83  | 75  | 69  | 90  | 81  | 74  | 68  | 78  | 72  | 67  | 75  | 70  | 66  | 73  | 69  | 65  | 63  |    |    |    |    | 63  |   |  |   |
| 4   | 85  | 74  | 66  | 59  | 83  | 73  | 65  | 59  | 70  | 63  | 58  | 68  | 62  | 57  | 66  | 61  | 57  | 55  |    |    |    |    | 55  |   |  |   |
| 5   | 79  | 67  | 58  | 52  | 77  | 66  | 58  | 52  | 63  | 56  | 51  | 62  | 55  | 51  | 60  | 54  | 50  | 48  |    |    |    |    | 48  |   |  |   |
| 6   | 73  | 60  | 52  | 46  | 71  | 59  | 51  | 46  | 58  | 51  | 45  | 56  | 50  | 45  | 55  | 49  | 45  | 43  |    |    |    |    | 43  |   |  |   |
| 7   | 68  | 55  | 47  | 41  | 66  | 54  | 46  | 41  | 53  | 46  | 41  | 51  | 45  | 40  | 50  | 44  | 40  | 38  |    |    |    |    | 38  |   |  |   |
| 8   | 63  | 51  | 42  | 37  | 62  | 50  | 42  | 37  | 49  | 42  | 37  | 47  | 41  | 36  | 46  | 40  | 36  | 34  |    |    |    |    | 34  |   |  |   |
| 9   | 59  | 47  | 39  | 33  | 58  | 46  | 39  | 33  | 45  | 38  | 33  | 44  | 38  | 33  | 43  | 37  | 33  | 31  |    |    |    |    | 31  |   |  |   |
| 10  | 56  | 43  | 36  | 31  | 55  | 43  | 35  | 30  | 42  | 35  | 30  | 41  | 35  | 30  | 40  | 34  | 30  | 28  |    |    |    |    | 28  |   |  |   |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 3252 | 3252 | 3252 |
| 5°  | 3238 | 3241 | 3271 |
| 10° | 3213 | 3211 | 3242 |
| 15° | 3148 | 3179 | 3226 |
| 20° | 3076 | 3111 | 3172 |
| 25° | 2974 | 3022 | 3107 |
| 30° | 2849 | 2907 | 3008 |
| 35° | 2682 | 2759 | 2857 |
| 40° | 2496 | 2581 | 2674 |
| 45° | 2291 | 2358 | 2431 |
| 50° | 2067 | 2119 | 2186 |
| 55° | 1834 | 1878 | 1909 |
| 60° | 1644 | 1647 | 1680 |
| 65° | 1515 | 1463 | 1515 |
| 70° | 1462 | 1355 | 1394 |
| 75° | 1488 | 1327 | 1353 |
| 80° | 1604 | 1392 | 1392 |
| 85° | 1778 | 1473 | 1454 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 114.0  | 4.2       |
| 10°-20°   | 321.6  | 11.9      |
| 20°-30°   | 469.3  | 17.4      |
| 30°-40°   | 525.4  | 19.5      |
| 40°-50°   | 478.2  | 17.7      |
| 50°-60°   | 359.9  | 13.3      |
| 60°-70°   | 234.9  | 8.7       |
| 70°-80°   | 140.9  | 5.2       |
| 80°-90°   | 52.8   | 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°    | 904.9  | 33.6      |
| 0°-40°    | 1430.3 | 53.0      |
| 0°-60°    | 2268.4 | 84.1      |
| 0°-90°    | 2697.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2697.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1209 | 1209  | 1209 | 1209  | 1209 |      |
| 5°  | 1199 | 1197  | 1200 | 1204  | 1211 | 114  |
| 15° | 1130 | 1131  | 1141 | 1150  | 1158 | 318  |
| 25° | 1002 | 1005  | 1018 | 1036  | 1046 | 460  |
| 35° | 816  | 824   | 840  | 860   | 870  | 510  |
| 45° | 602  | 608   | 620  | 632   | 639  | 464  |
| 55° | 391  | 396   | 400  | 406   | 407  | 353  |
| 65° | 238  | 235   | 230  | 234   | 238  | 238  |
| 75° | 143  | 138   | 128  | 128   | 130  | 152  |
| 85° | 58   | 56    | 48   | 45    | 47   | 59   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1208.6 | 1208.6 | 1208.6 | 1208.6 | 1208.6 |
| 2.5°  | 1204.2 | 1203.6 | 1205.5 | 1208.6 | 1211.7 |
| 5°    | 1198.7 | 1196.8 | 1199.9 | 1204.2 | 1211.1 |
| 7.5°  | 1190.0 | 1190.0 | 1190.0 | 1198.1 | 1199.3 |
| 10°   | 1175.8 | 1177.0 | 1175.1 | 1183.2 | 1186.3 |
| 12.5° | 1155.3 | 1155.9 | 1159.6 | 1167.7 | 1173.3 |
| 15°   | 1129.9 | 1131.2 | 1141.1 | 1150.4 | 1157.8 |
| 17.5° | 1101.4 | 1105.8 | 1115.0 | 1129.9 | 1139.2 |
| 20°   | 1074.2 | 1079.1 | 1086.5 | 1102.7 | 1107.6 |
| 22.5° | 1039.5 | 1045.0 | 1054.3 | 1068.6 | 1079.1 |
| 25°   | 1001.7 | 1004.8 | 1017.8 | 1036.4 | 1046.3 |
| 27.5° | 956.5  | 963.3  | 979.4  | 998.6  | 1012.2 |
| 30°   | 916.8  | 920.5  | 935.4  | 957.7  | 968.2  |
| 32.5° | 866.6  | 877.8  | 890.2  | 910.0  | 919.9  |
| 35°   | 816.5  | 823.9  | 840.0  | 859.8  | 869.7  |
| 37.5° | 768.1  | 772.5  | 788.6  | 805.3  | 817.7  |
| 40°   | 710.5  | 718.6  | 734.7  | 752.7  | 761.3  |
| 42.5° | 652.9  | 664.7  | 675.2  | 693.2  | 702.5  |
| 45°   | 602.1  | 608.3  | 619.5  | 632.5  | 638.7  |
| 47.5° | 548.8  | 551.9  | 565.0  | 573.0  | 579.8  |
| 50°   | 493.7  | 497.4  | 506.1  | 514.2  | 522.2  |
| 52.5° | 442.9  | 446.0  | 451.6  | 459.0  | 467.1  |
| 55°   | 390.9  | 396.5  | 400.2  | 405.8  | 407.0  |
| 57.5° | 348.8  | 348.1  | 350.6  | 355.0  | 359.3  |
| 60°   | 305.4  | 306.6  | 306.0  | 310.4  | 312.2  |
| 62.5° | 269.5  | 268.8  | 265.1  | 271.3  | 276.3  |
| 65°   | 237.9  | 235.4  | 229.8  | 233.5  | 237.9  |
| 67.5° | 208.8  | 207.5  | 198.2  | 201.3  | 205.0  |
| 70°   | 185.8  | 181.5  | 172.2  | 174.1  | 177.2  |
| 72.5° | 163.5  | 158.6  | 149.3  | 149.9  | 151.8  |
| 75°   | 143.1  | 138.1  | 127.6  | 128.2  | 130.1  |
| 77.5° | 123.9  | 117.7  | 108.4  | 107.2  | 108.4  |
| 80°   | 103.5  | 97.9   | 89.8   | 86.1   | 89.8   |
| 82.5° | 82.4   | 79.3   | 70.0   | 66.3   | 67.5   |
| 85°   | 57.6   | 55.8   | 47.7   | 45.2   | 47.1   |
| 87.5° | 26.6   | 28.5   | 24.2   | 22.3   | 22.9   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)