

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: P294081

Luminaire Tested: **24GR-LD5-72-A19/156-UNV-L93050-W2A1-U-4500K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P294081  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33308)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24GR-LD5-72-A19/156-UNV-L93050-W2A1-U-4500K  
Description: GRLED 2x4 TUNABLE WHITE TROFFER  
WITH A19/156 LENS  
Light Source: (336) 90 CRI LEDS TUNED TO 4500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6573.0 lumens  
Efficiency: N/A  
Efficacy: 120.1 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.25  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

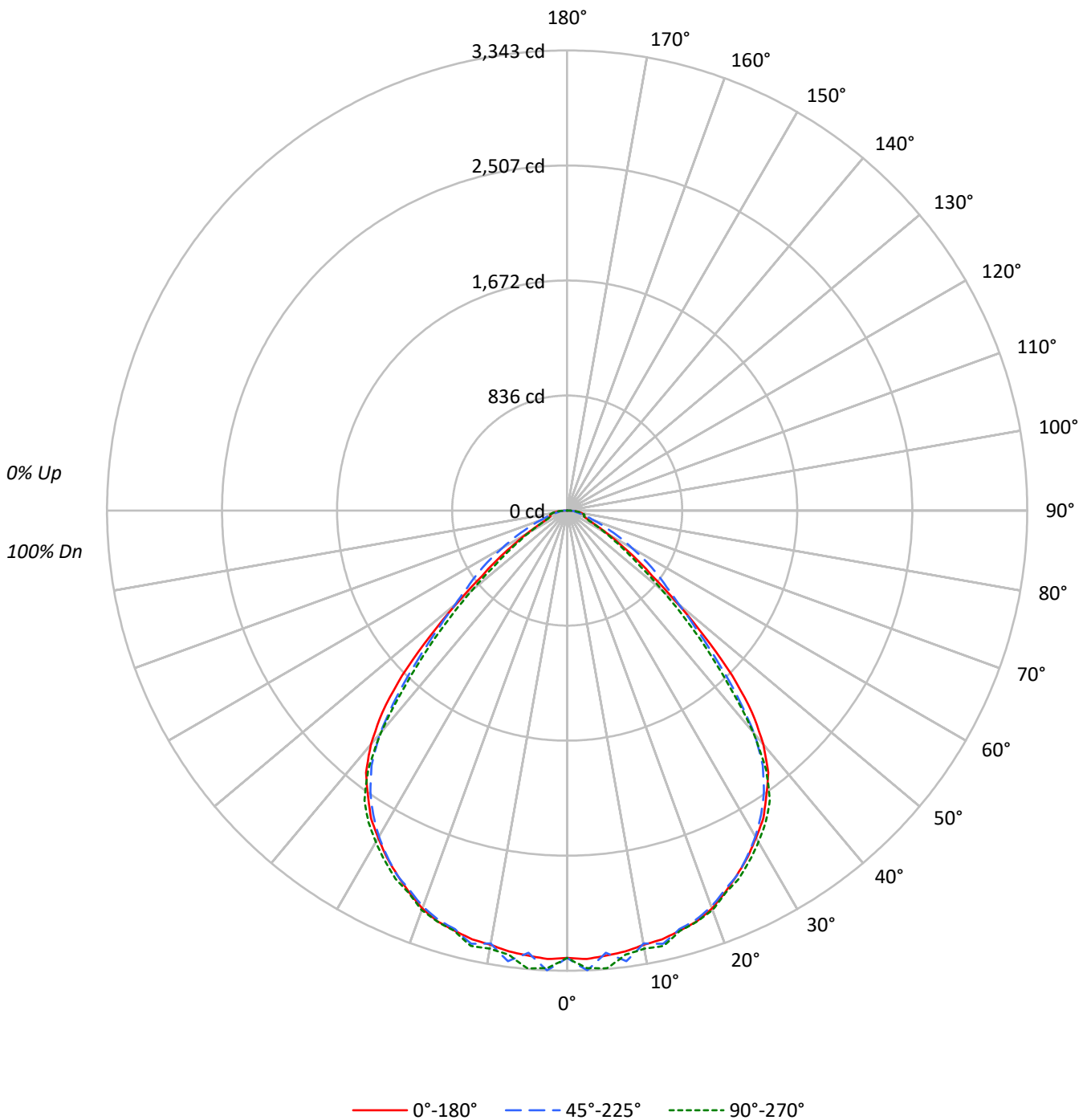
Input Watts (W): 54.75189  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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   | 111 | 107 | 103 | 100 | 108 | 105 | 102 | 99  | 101 | 98  | 96  | 97  | 95  | 93  | 93  | 92  | 90  | 88  |    |    |    |    | 88  |   |  |   |
| 2   | 103 | 96  | 90  | 86  | 100 | 94  | 89  | 85  | 91  | 86  | 83  | 88  | 84  | 81  | 85  | 82  | 79  | 77  |    |    |    |    | 77  |   |  |   |
| 3   | 95  | 86  | 79  | 74  | 93  | 85  | 78  | 73  | 82  | 77  | 72  | 79  | 75  | 71  | 77  | 73  | 70  | 68  |    |    |    |    | 68  |   |  |   |
| 4   | 88  | 78  | 71  | 65  | 86  | 77  | 70  | 64  | 74  | 68  | 64  | 72  | 67  | 63  | 70  | 66  | 62  | 60  |    |    |    |    | 60  |   |  |   |
| 5   | 82  | 71  | 63  | 57  | 80  | 70  | 62  | 57  | 68  | 61  | 56  | 66  | 60  | 56  | 64  | 59  | 55  | 53  |    |    |    |    | 53  |   |  |   |
| 6   | 76  | 65  | 57  | 51  | 75  | 64  | 56  | 51  | 62  | 55  | 50  | 60  | 55  | 50  | 59  | 54  | 50  | 48  |    |    |    |    | 48  |   |  |   |
| 7   | 71  | 59  | 51  | 46  | 70  | 58  | 51  | 46  | 57  | 50  | 45  | 56  | 50  | 45  | 54  | 49  | 45  | 43  |    |    |    |    | 43  |   |  |   |
| 8   | 67  | 55  | 47  | 42  | 65  | 54  | 47  | 41  | 53  | 46  | 41  | 51  | 45  | 41  | 50  | 45  | 41  | 39  |    |    |    |    | 39  |   |  |   |
| 9   | 63  | 50  | 43  | 38  | 61  | 50  | 43  | 38  | 49  | 42  | 38  | 48  | 42  | 37  | 47  | 41  | 37  | 36  |    |    |    |    | 36  |   |  |   |
| 10  | 59  | 47  | 39  | 35  | 58  | 46  | 39  | 35  | 45  | 39  | 34  | 44  | 38  | 34  | 44  | 38  | 34  | 33  |    |    |    |    | 33  |   |  |   |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 4373 | 4373 | 4373 |
| 5°  | 4383 | 4354 | 4508 |
| 10° | 4376 | 4363 | 4416 |
| 15° | 4401 | 4386 | 4404 |
| 20° | 4404 | 4386 | 4423 |
| 25° | 4336 | 4339 | 4382 |
| 30° | 4264 | 4251 | 4320 |
| 35° | 4144 | 4094 | 4217 |
| 40° | 3892 | 3717 | 3697 |
| 45° | 3226 | 2919 | 2768 |
| 50° | 2170 | 2214 | 1891 |
| 55° | 1431 | 1857 | 1241 |
| 60° | 918  | 1466 | 849  |
| 65° | 592  | 1119 | 575  |
| 70° | 523  | 801  | 523  |
| 75° | 675  | 636  | 680  |
| 80° | 826  | 548  | 867  |
| 85° | 962  | 815  | 1010 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 311.2  | 4.7       |
| 10°-20°   | 893.5  | 13.6      |
| 20°-30°   | 1345.2 | 20.5      |
| 30°-40°   | 1559.2 | 23.7      |
| 40°-50°   | 1218.0 | 18.5      |
| 50°-60°   | 650.4  | 9.9       |
| 60°-70°   | 334.4  | 5.1       |
| 70°-80°   | 189.2  | 2.9       |
| 80°-90°   | 71.8   | 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°    | 2550.0 | 38.8      |
| 0°-40°    | 4109.2 | 62.5      |
| 0°-60°    | 5977.5 | 90.9      |
| 0°-90°    | 6573.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 6573.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 3250 | 3250  | 3250 | 3250  | 3250 |      |
| 5°  | 3245 | 3336  | 3224 | 3312  | 3338 | 309  |
| 15° | 3159 | 3179  | 3149 | 3169  | 3162 | 892  |
| 25° | 2921 | 2911  | 2923 | 2919  | 2951 | 1346 |
| 35° | 2523 | 2511  | 2492 | 2542  | 2567 | 1573 |
| 45° | 1695 | 1696  | 1534 | 1520  | 1455 | 1277 |
| 55° | 610  | 772   | 792  | 714   | 529  | 563  |
| 65° | 186  | 387   | 352  | 386   | 180  | 204  |
| 75° | 130  | 244   | 122  | 228   | 131  | 132  |
| 85° | 62   | 81    | 53   | 81    | 65   | 64   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 3250.2 | 3250.2 | 3250.2 | 3250.2 | 3250.2 |
| 2.5°  | 3260.7 | 3319.8 | 3343.1 | 3314.6 | 3327.2 |
| 5°    | 3244.9 | 3335.7 | 3223.8 | 3312.4 | 3337.8 |
| 7.5°  | 3230.1 | 3220.6 | 3301.9 | 3217.4 | 3253.3 |
| 10°   | 3202.7 | 3209.0 | 3193.2 | 3253.3 | 3232.2 |
| 12.5° | 3190.0 | 3226.9 | 3223.8 | 3193.2 | 3239.6 |
| 15°   | 3159.4 | 3179.4 | 3148.8 | 3168.9 | 3161.5 |
| 17.5° | 3128.8 | 3119.3 | 3116.1 | 3124.5 | 3131.9 |
| 20°   | 3076.0 | 3044.3 | 3063.3 | 3065.4 | 3088.7 |
| 22.5° | 3000.0 | 2981.0 | 2985.2 | 3004.2 | 3006.3 |
| 25°   | 2920.8 | 2911.3 | 2922.9 | 2918.7 | 2951.4 |
| 27.5° | 2838.5 | 2825.8 | 2833.2 | 2849.0 | 2869.1 |
| 30°   | 2744.5 | 2741.4 | 2736.1 | 2749.8 | 2780.4 |
| 32.5° | 2651.6 | 2626.3 | 2622.1 | 2650.6 | 2685.4 |
| 35°   | 2522.9 | 2511.2 | 2492.2 | 2541.9 | 2567.2 |
| 37.5° | 2400.4 | 2364.5 | 2333.9 | 2363.5 | 2374.0 |
| 40°   | 2215.7 | 2188.2 | 2116.5 | 2119.6 | 2104.8 |
| 42.5° | 1988.7 | 1968.7 | 1831.4 | 1807.2 | 1766.0 |
| 45°   | 1695.3 | 1696.3 | 1533.8 | 1520.0 | 1454.6 |
| 47.5° | 1354.3 | 1414.5 | 1273.0 | 1257.2 | 1160.1 |
| 50°   | 1036.6 | 1145.3 | 1057.7 | 1032.4 | 903.6  |
| 52.5° | 778.0  | 937.4  | 909.9  | 855.0  | 677.7  |
| 55°   | 610.1  | 771.6  | 791.7  | 713.6  | 528.9  |
| 57.5° | 459.2  | 635.5  | 668.2  | 603.8  | 408.5  |
| 60°   | 341.0  | 535.2  | 544.7  | 519.4  | 315.6  |
| 62.5° | 253.3  | 455.0  | 442.3  | 445.5  | 234.3  |
| 65°   | 185.8  | 387.4  | 351.5  | 386.3  | 180.5  |
| 67.5° | 152.0  | 335.7  | 273.4  | 334.6  | 146.7  |
| 70°   | 133.0  | 297.7  | 203.7  | 294.5  | 133.0  |
| 72.5° | 128.8  | 273.4  | 161.5  | 261.8  | 129.8  |
| 75°   | 129.8  | 243.8  | 122.4  | 228.0  | 130.9  |
| 77.5° | 119.3  | 200.6  | 92.9   | 194.2  | 124.6  |
| 80°   | 106.6  | 152.0  | 70.7   | 154.1  | 111.9  |
| 82.5° | 90.8   | 110.8  | 57.0   | 114.0  | 93.9   |
| 85°   | 62.3   | 81.3   | 52.8   | 81.3   | 65.4   |
| 87.5° | 29.6   | 48.6   | 32.7   | 46.4   | 33.8   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)