

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: P293576

Luminaire Tested: **24GR-LD5-72-A-UNV-L93050-W2A1-U-4000K**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P293576
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33306)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 24GR-LD5-72-A-UNV-L93050-W2A1-U-4000K
Description: GRLED 2x4 TUNABLE WHITE TROFFER
WITH A LENS
Light Source: (336) 90 CRI LEDS TUNED TO 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6715.0 lumens
Efficiency: N/A
Efficacy: 124.6 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.2 / 1.26
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

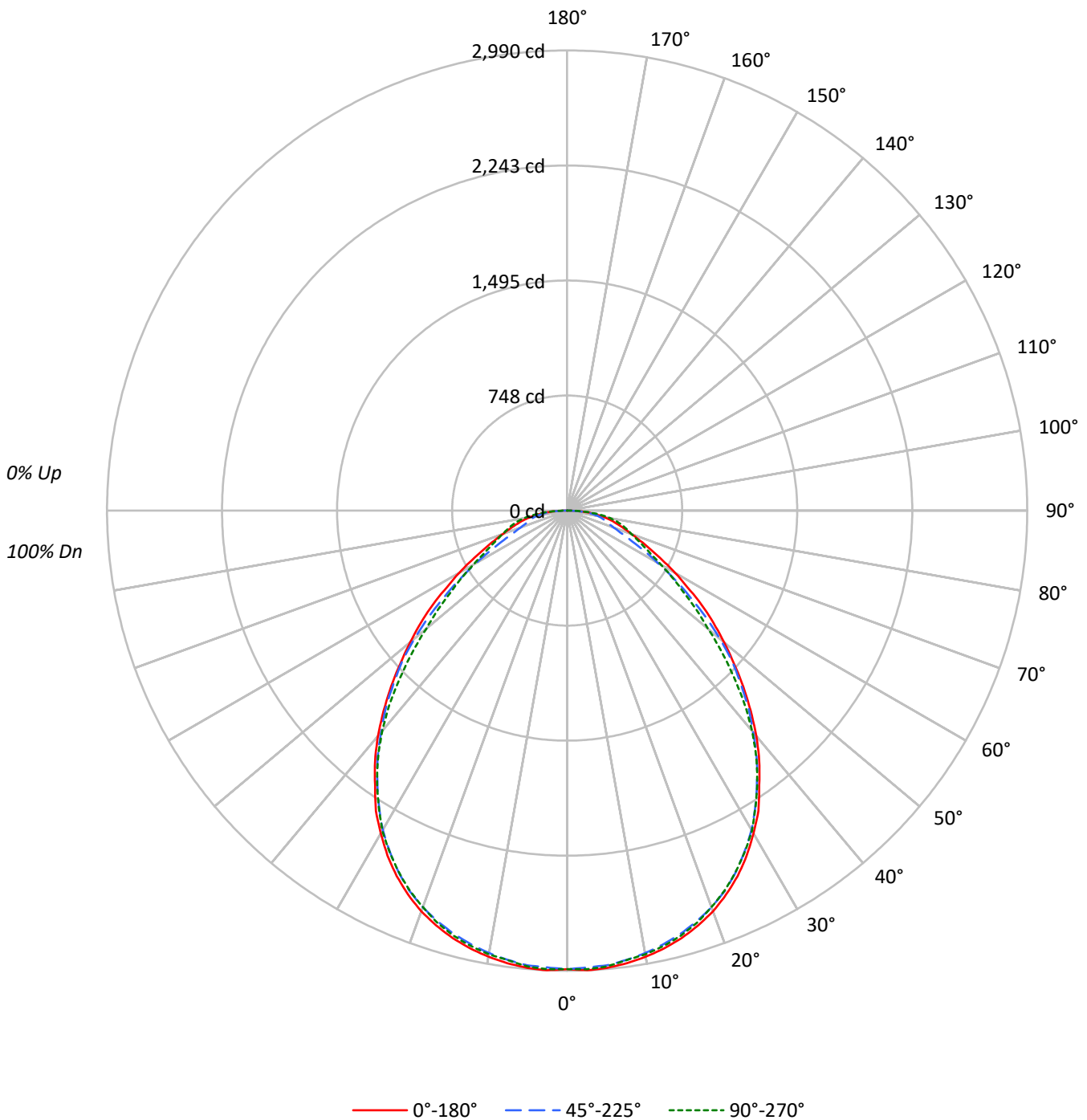
Input Watts (W): 53.91117
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 110 | 105 | 101 | 98 | 107 | 103 | 99 | 96 | 99 | 96 | 93 | 95 | 93 | 90 | 91 | 89 | 88 | 86 |
| 2 | 101 | 93 | 87 | 82 | 98 | 91 | 86 | 81 | 88 | 83 | 79 | 85 | 81 | 77 | 82 | 78 | 75 | 73 |
| 3 | 93 | 83 | 75 | 69 | 90 | 81 | 74 | 69 | 79 | 73 | 68 | 76 | 71 | 67 | 73 | 69 | 65 | 63 |
| 4 | 86 | 74 | 66 | 60 | 83 | 73 | 65 | 60 | 71 | 64 | 59 | 68 | 63 | 58 | 66 | 61 | 57 | 55 |
| 5 | 79 | 67 | 59 | 53 | 77 | 66 | 58 | 52 | 64 | 57 | 52 | 62 | 56 | 51 | 60 | 55 | 51 | 49 |
| 6 | 73 | 61 | 53 | 46 | 72 | 60 | 52 | 46 | 58 | 51 | 46 | 57 | 50 | 45 | 55 | 49 | 45 | 43 |
| 7 | 68 | 56 | 47 | 42 | 67 | 55 | 47 | 41 | 53 | 46 | 41 | 52 | 46 | 41 | 51 | 45 | 41 | 39 |
| 8 | 64 | 51 | 43 | 37 | 62 | 50 | 43 | 37 | 49 | 42 | 37 | 48 | 41 | 37 | 47 | 41 | 37 | 35 |
| 9 | 60 | 47 | 39 | 34 | 58 | 46 | 39 | 34 | 45 | 38 | 34 | 44 | 38 | 33 | 43 | 38 | 33 | 32 |
| 10 | 56 | 44 | 36 | 31 | 55 | 43 | 36 | 31 | 42 | 35 | 31 | 41 | 35 | 31 | 40 | 35 | 30 | 29 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 4009 | 4009 | 4009 |
| 5° | 4028 | 4006 | 4016 |
| 10° | 4021 | 3988 | 4000 |
| 15° | 4006 | 3965 | 3982 |
| 20° | 3967 | 3927 | 3926 |
| 25° | 3890 | 3849 | 3846 |
| 30° | 3762 | 3723 | 3731 |
| 35° | 3573 | 3532 | 3537 |
| 40° | 3360 | 3302 | 3282 |
| 45° | 3079 | 3038 | 2918 |
| 50° | 2784 | 2708 | 2504 |
| 55° | 2499 | 2275 | 2159 |
| 60° | 2189 | 1831 | 1898 |
| 65° | 1909 | 1440 | 1747 |
| 70° | 1747 | 1257 | 1747 |
| 75° | 1747 | 1338 | 1925 |
| 80° | 1897 | 1575 | 2194 |
| 85° | 2083 | 1777 | 2354 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 282.1 | 4.2 |
| 10°-20° | 805.2 | 12.0 |
| 20°-30° | 1193.9 | 17.8 |
| 30°-40° | 1346.8 | 20.1 |
| 40°-50° | 1219.8 | 18.2 |
| 50°-60° | 880.0 | 13.1 |
| 60°-70° | 525.5 | 7.8 |
| 70°-80° | 324.8 | 4.8 |
| 80°-90° | 136.8 | 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° | 2281.2 | 34.0 |
| 0°-40° | 3628.0 | 54.0 |
| 0°-60° | 5727.9 | 85.3 |
| 0°-90° | 6715.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 6715.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2979 | 2979 | 2979 | 2979 | 2979 | |
| 5° | 2982 | 2978 | 2966 | 2963 | 2973 | 283 |
| 15° | 2876 | 2858 | 2847 | 2848 | 2859 | 811 |
| 25° | 2620 | 2606 | 2592 | 2583 | 2590 | 1204 |
| 35° | 2175 | 2172 | 2150 | 2152 | 2154 | 1361 |
| 45° | 1618 | 1608 | 1596 | 1557 | 1533 | 1247 |
| 55° | 1065 | 1032 | 970 | 922 | 920 | 951 |
| 65° | 600 | 528 | 452 | 514 | 549 | 603 |
| 75° | 336 | 292 | 257 | 321 | 370 | 359 |
| 85° | 135 | 118 | 115 | 150 | 152 | 141 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2979.4 | 2979.4 | 2979.4 | 2979.4 | 2979.4 |
| 2.5° | 2989.7 | 2981.4 | 2971.1 | 2977.3 | 2982.5 |
| 5° | 2982.5 | 2978.3 | 2965.9 | 2962.8 | 2973.1 |
| 7.5° | 2966.9 | 2956.5 | 2945.1 | 2950.3 | 2946.2 |
| 10° | 2943.1 | 2933.7 | 2919.2 | 2920.2 | 2927.5 |
| 12.5° | 2914.0 | 2902.6 | 2887.0 | 2891.2 | 2897.4 |
| 15° | 2875.6 | 2858.0 | 2846.6 | 2847.6 | 2859.0 |
| 17.5° | 2826.9 | 2813.4 | 2798.9 | 2802.0 | 2807.2 |
| 20° | 2770.9 | 2763.6 | 2742.8 | 2736.6 | 2741.8 |
| 22.5° | 2700.3 | 2686.8 | 2675.4 | 2672.3 | 2673.3 |
| 25° | 2620.4 | 2605.9 | 2592.4 | 2583.1 | 2590.3 |
| 27.5° | 2527.1 | 2514.6 | 2497.0 | 2493.9 | 2500.1 |
| 30° | 2421.3 | 2411.9 | 2396.4 | 2392.2 | 2401.5 |
| 32.5° | 2313.4 | 2297.8 | 2276.0 | 2276.0 | 2278.1 |
| 35° | 2175.4 | 2172.3 | 2150.5 | 2151.5 | 2153.6 |
| 37.5° | 2050.9 | 2036.4 | 2023.9 | 2011.5 | 2017.7 |
| 40° | 1912.9 | 1896.3 | 1879.7 | 1871.4 | 1868.3 |
| 42.5° | 1764.6 | 1752.1 | 1744.9 | 1714.8 | 1707.5 |
| 45° | 1618.3 | 1607.9 | 1596.5 | 1557.1 | 1533.3 |
| 47.5° | 1468.9 | 1466.9 | 1457.5 | 1388.0 | 1364.2 |
| 50° | 1329.9 | 1326.8 | 1293.6 | 1220.0 | 1196.1 |
| 52.5° | 1198.2 | 1177.4 | 1133.9 | 1061.2 | 1057.1 |
| 55° | 1065.4 | 1032.2 | 970.0 | 922.2 | 920.2 |
| 57.5° | 925.3 | 885.9 | 822.6 | 796.7 | 810.2 |
| 60° | 813.3 | 753.1 | 680.5 | 683.6 | 705.4 |
| 62.5° | 697.1 | 629.7 | 558.1 | 589.2 | 615.2 |
| 65° | 599.6 | 528.0 | 452.3 | 513.5 | 548.8 |
| 67.5° | 514.5 | 448.2 | 375.5 | 457.5 | 491.7 |
| 70° | 444.0 | 390.1 | 319.5 | 405.6 | 444.0 |
| 72.5° | 388.0 | 338.2 | 283.2 | 364.1 | 408.7 |
| 75° | 336.1 | 291.5 | 257.3 | 320.6 | 370.3 |
| 77.5° | 291.5 | 247.9 | 232.4 | 283.2 | 332.0 |
| 80° | 244.8 | 205.4 | 203.3 | 246.9 | 283.2 |
| 82.5° | 190.9 | 163.9 | 163.9 | 206.4 | 228.2 |
| 85° | 134.9 | 118.3 | 115.1 | 150.4 | 152.5 |
| 87.5° | 69.5 | 66.4 | 60.2 | 78.8 | 78.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)