

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: P292548

Luminaire Tested: **22GR-LD5-43-A19/156-UNV-L83050-W2A1-U-3500K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P292548  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33284)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 22GR-LD5-43-A19/156-UNV-L83050-W2A1-U-3500K  
Description: GRLED 2x2 TUNABLE WHITE TROFFER  
WITH A19/156 LENS  
Light Source: (168) 80 CRI LEDS TUNED TO 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4287.0 lumens  
Efficiency: N/A  
Efficacy: 121.9 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.24 / 1.21  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

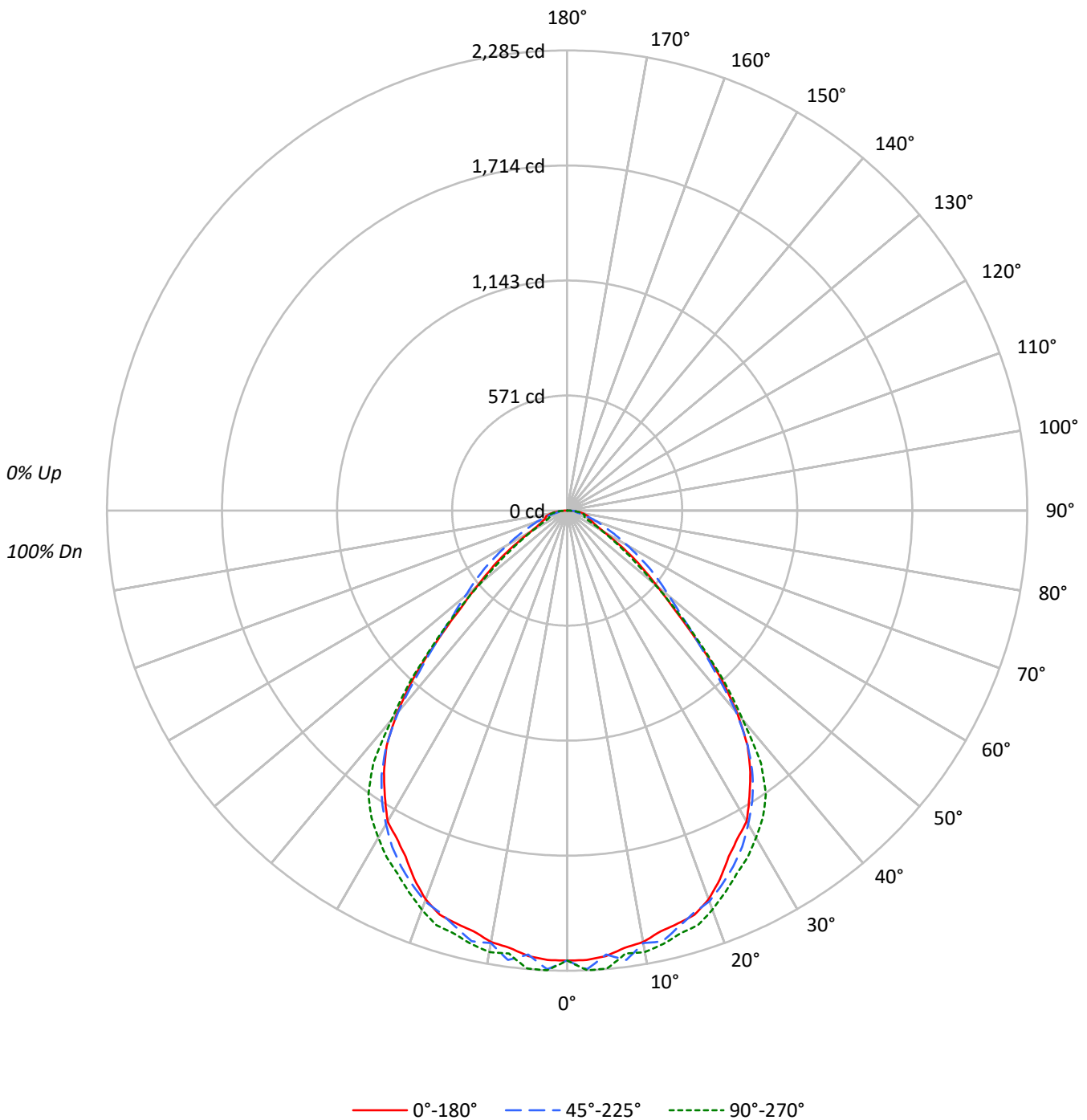
Input Watts (W): 35.154  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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   | 111 | 107 | 103 | 100 | 108 | 105 | 102 | 99  | 101 | 98  | 96  | 97  | 95  | 93  | 93  | 91  | 90  | 88  |
| 2   | 103 | 96  | 90  | 85  | 100 | 94  | 89  | 85  | 91  | 86  | 83  | 88  | 84  | 81  | 85  | 82  | 79  | 77  |
| 3   | 95  | 86  | 79  | 74  | 93  | 85  | 79  | 73  | 82  | 77  | 72  | 79  | 75  | 71  | 77  | 73  | 70  | 68  |
| 4   | 88  | 78  | 71  | 65  | 86  | 77  | 70  | 64  | 75  | 68  | 64  | 72  | 67  | 63  | 70  | 66  | 62  | 60  |
| 5   | 82  | 71  | 63  | 58  | 80  | 70  | 63  | 57  | 68  | 62  | 57  | 66  | 61  | 56  | 64  | 59  | 56  | 54  |
| 6   | 77  | 65  | 57  | 51  | 75  | 64  | 57  | 51  | 62  | 56  | 51  | 61  | 55  | 50  | 59  | 54  | 50  | 48  |
| 7   | 72  | 60  | 52  | 46  | 70  | 59  | 51  | 46  | 57  | 51  | 46  | 56  | 50  | 46  | 55  | 49  | 45  | 44  |
| 8   | 67  | 55  | 47  | 42  | 66  | 54  | 47  | 42  | 53  | 46  | 42  | 52  | 46  | 41  | 51  | 45  | 41  | 40  |
| 9   | 63  | 51  | 43  | 38  | 62  | 50  | 43  | 38  | 49  | 43  | 38  | 48  | 42  | 38  | 47  | 42  | 38  | 36  |
| 10  | 59  | 47  | 40  | 35  | 58  | 47  | 40  | 35  | 46  | 39  | 35  | 45  | 39  | 35  | 44  | 39  | 35  | 33  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 6012 | 6012 | 6012 |
| 5°  | 5997 | 5978 | 6166 |
| 10° | 5942 | 5959 | 6083 |
| 15° | 5915 | 5960 | 6056 |
| 20° | 5883 | 5912 | 6040 |
| 25° | 5632 | 5791 | 5911 |
| 30° | 5540 | 5590 | 5828 |
| 35° | 5209 | 5276 | 5651 |
| 40° | 4616 | 4584 | 4765 |
| 45° | 3448 | 3456 | 3552 |
| 50° | 2427 | 2761 | 2351 |
| 55° | 1791 | 2332 | 1606 |
| 60° | 1120 | 1843 | 1049 |
| 65° | 913  | 1460 | 733  |
| 70° | 906  | 1216 | 723  |
| 75° | 1124 | 893  | 935  |
| 80° | 1252 | 705  | 1142 |
| 85° | 1247 | 1309 | 1278 |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 212.7  | 5.0       |
| 10°-20°   | 605.8  | 14.1      |
| 20°-30°   | 897.3  | 20.9      |
| 30°-40°   | 1005.0 | 23.4      |
| 40°-50°   | 738.5  | 17.2      |
| 50°-60°   | 412.8  | 9.6       |
| 60°-70°   | 230.1  | 5.4       |
| 70°-80°   | 135.2  | 3.2       |
| 80°-90°   | 49.7   | 1.2       |
| 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°    | 1715.8 | 40.0      |
| 0°-40°    | 2720.8 | 63.5      |
| 0°-60°    | 3872.1 | 90.3      |
| 0°-90°    | 4287.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4287.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 2234 | 2234  | 2234 | 2234  | 2234 |      |
| 5°  | 2220 | 2262  | 2213 | 2258  | 2283 | 210  |
| 15° | 2123 | 2136  | 2139 | 2172  | 2174 | 600  |
| 25° | 1897 | 1912  | 1950 | 1978  | 1991 | 879  |
| 35° | 1586 | 1587  | 1606 | 1679  | 1720 | 982  |
| 45° | 906  | 980   | 908  | 973   | 933  | 708  |
| 55° | 382  | 465   | 497  | 496   | 342  | 341  |
| 65° | 143  | 254   | 229  | 294   | 115  | 148  |
| 75° | 108  | 152   | 86   | 173   | 90   | 109  |
| 85° | 40   | 60    | 42   | 54    | 41   | 44   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 2234.3 | 2234.3 | 2234.3 | 2234.3 | 2234.3 |
| 2.5°  | 2233.3 | 2253.5 | 2279.7 | 2282.7 | 2284.8 |
| 5°    | 2220.1 | 2261.5 | 2213.1 | 2258.5 | 2282.7 |
| 7.5°  | 2189.8 | 2215.1 | 2250.4 | 2205.0 | 2218.1 |
| 10°   | 2174.7 | 2180.7 | 2180.7 | 2237.3 | 2226.2 |
| 12.5° | 2140.3 | 2180.7 | 2190.8 | 2179.7 | 2204.0 |
| 15°   | 2123.2 | 2136.3 | 2139.3 | 2171.6 | 2173.7 |
| 17.5° | 2104.0 | 2100.9 | 2093.9 | 2117.1 | 2158.5 |
| 20°   | 2054.5 | 2043.4 | 2064.6 | 2092.9 | 2109.0 |
| 22.5° | 1981.7 | 1984.8 | 2010.0 | 2033.3 | 2051.4 |
| 25°   | 1896.9 | 1912.1 | 1950.4 | 1977.7 | 1990.8 |
| 27.5° | 1833.3 | 1855.5 | 1881.8 | 1914.1 | 1940.3 |
| 30°   | 1782.8 | 1780.7 | 1798.9 | 1845.4 | 1875.7 |
| 32.5° | 1684.8 | 1691.9 | 1711.1 | 1766.6 | 1809.0 |
| 35°   | 1585.8 | 1586.8 | 1606.0 | 1678.7 | 1720.1 |
| 37.5° | 1471.7 | 1463.6 | 1474.7 | 1553.5 | 1580.8 |
| 40°   | 1314.1 | 1316.1 | 1305.0 | 1360.6 | 1356.5 |
| 42.5° | 1130.3 | 1146.4 | 1088.9 | 1161.6 | 1156.5 |
| 45°   | 906.0  | 979.8  | 908.0  | 972.7  | 933.3  |
| 47.5° | 715.1  | 824.2  | 764.6  | 812.1  | 738.4  |
| 50°   | 579.8  | 691.9  | 659.6  | 680.8  | 561.6  |
| 52.5° | 475.7  | 566.6  | 576.7  | 581.8  | 438.4  |
| 55°   | 381.8  | 464.6  | 497.0  | 495.9  | 342.4  |
| 57.5° | 281.8  | 377.8  | 415.1  | 430.3  | 259.6  |
| 60°   | 208.1  | 314.1  | 342.4  | 375.7  | 194.9  |
| 62.5° | 167.7  | 275.7  | 282.8  | 329.3  | 148.5  |
| 65°   | 143.4  | 254.5  | 229.3  | 293.9  | 115.1  |
| 67.5° | 127.3  | 237.4  | 186.9  | 262.6  | 98.0   |
| 70°   | 115.1  | 211.1  | 154.5  | 235.3  | 91.9   |
| 72.5° | 112.1  | 179.8  | 119.2  | 210.1  | 90.9   |
| 75°   | 108.1  | 152.5  | 85.9   | 172.7  | 89.9   |
| 77.5° | 92.9   | 130.3  | 61.6   | 133.3  | 83.8   |
| 80°   | 80.8   | 104.0  | 45.5   | 100.0  | 73.7   |
| 82.5° | 62.6   | 78.8   | 40.4   | 75.8   | 59.6   |
| 85°   | 40.4   | 59.6   | 42.4   | 54.5   | 41.4   |
| 87.5° | 19.2   | 33.3   | 30.3   | 29.3   | 21.2   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)