

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: P475658

Luminaire Tested: **24GR-LD5-38-A19/156-UNV-L835-CD1-U**

Issue Date: 02/10/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P475658  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 02/10/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24GR-LD5-38-A19/156-UNV-L835-CD1-U  
Description: GR 2'X4' LED TROFFER w/ A19/156 LENS  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3622.2 lumens  
Efficiency: N/A  
Efficacy: 136.2 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.25 / 1.28  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

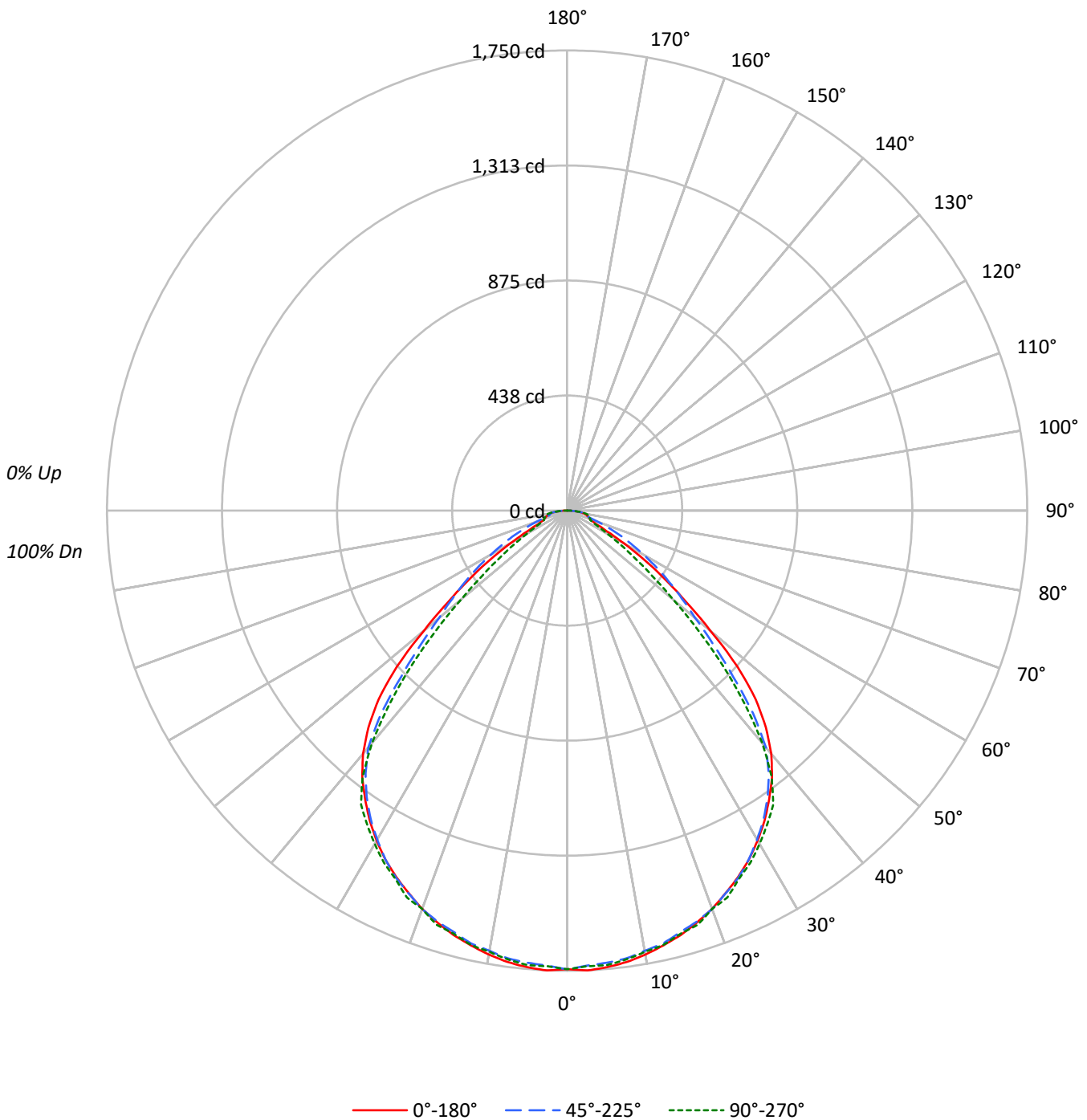
Input Watts (W): 26.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 | 104 | 101 | 98  | 100 | 98  | 95  | 96  | 94  | 92  | 93  | 91  | 90  | 88  |
| 2   | 102 | 95  | 90  | 85  | 100 | 94  | 88  | 84  | 90  | 86  | 82  | 87  | 83  | 80  | 84  | 81  | 78  | 76  |
| 3   | 95  | 86  | 79  | 73  | 92  | 84  | 78  | 73  | 81  | 76  | 71  | 79  | 74  | 70  | 76  | 72  | 69  | 67  |
| 4   | 88  | 77  | 70  | 64  | 86  | 76  | 69  | 63  | 74  | 67  | 63  | 71  | 66  | 62  | 69  | 65  | 61  | 59  |
| 5   | 81  | 70  | 62  | 56  | 79  | 69  | 62  | 56  | 67  | 60  | 55  | 65  | 59  | 55  | 63  | 58  | 54  | 52  |
| 6   | 76  | 64  | 56  | 50  | 74  | 63  | 55  | 50  | 61  | 54  | 49  | 60  | 54  | 49  | 58  | 53  | 49  | 47  |
| 7   | 71  | 58  | 50  | 45  | 69  | 58  | 50  | 45  | 56  | 49  | 44  | 55  | 49  | 44  | 53  | 48  | 44  | 42  |
| 8   | 66  | 54  | 46  | 40  | 65  | 53  | 46  | 40  | 52  | 45  | 40  | 50  | 44  | 40  | 49  | 44  | 40  | 38  |
| 9   | 62  | 49  | 42  | 37  | 61  | 49  | 42  | 37  | 48  | 41  | 37  | 47  | 41  | 36  | 46  | 40  | 36  | 34  |
| 10  | 58  | 46  | 38  | 34  | 57  | 45  | 38  | 34  | 44  | 38  | 33  | 43  | 37  | 33  | 43  | 37  | 33  | 31  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 2347 | 2347 | 2347 |
| 5°  | 2354 | 2331 | 2343 |
| 10° | 2343 | 2323 | 2328 |
| 15° | 2327 | 2313 | 2320 |
| 20° | 2307 | 2309 | 2308 |
| 25° | 2283 | 2287 | 2294 |
| 30° | 2251 | 2244 | 2274 |
| 35° | 2200 | 2184 | 2244 |
| 40° | 2120 | 2064 | 2027 |
| 45° | 1930 | 1698 | 1602 |
| 50° | 1489 | 1331 | 1101 |
| 55° | 1058 | 1111 | 728  |
| 60° | 670  | 897  | 475  |
| 65° | 389  | 706  | 348  |
| 70° | 360  | 486  | 369  |
| 75° | 414  | 370  | 439  |
| 80° | 517  | 511  | 580  |
| 85° | 563  | 597  | 621  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 164.4  | 4.5       |
| 10°-20°   | 470.2  | 13.0      |
| 20°-30°   | 709.4  | 19.6      |
| 30°-40°   | 832.7  | 23.0      |
| 40°-50°   | 701.0  | 19.4      |
| 50°-60°   | 398.2  | 11.0      |
| 60°-70°   | 198.8  | 5.5       |
| 70°-80°   | 104.2  | 2.9       |
| 80°-90°   | 43.4   | 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°    | 1343.9 | 37.1      |
| 0°-40°    | 2176.6 | 60.1      |
| 0°-60°    | 3275.8 | 90.4      |
| 0°-90°    | 3622.2 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3622.2 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1744 | 1744  | 1744 | 1744  | 1744 |      |
| 5°  | 1743 | 1731  | 1726 | 1729  | 1735 | 165  |
| 15° | 1671 | 1667  | 1660 | 1665  | 1666 | 471  |
| 25° | 1538 | 1538  | 1540 | 1544  | 1546 | 708  |
| 35° | 1339 | 1332  | 1329 | 1352  | 1366 | 836  |
| 45° | 1014 | 974   | 892  | 877   | 842  | 764  |
| 55° | 451  | 482   | 474  | 408   | 310  | 410  |
| 65° | 122  | 253   | 222  | 188   | 109  | 139  |
| 75° | 80   | 123   | 71   | 107   | 84   | 84   |
| 85° | 36   | 44    | 39   | 49    | 40   | 39   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1744.2 | 1744.2 | 1744.2 | 1744.2 | 1744.2 |
| 2.5°  | 1750.5 | 1742.0 | 1732.4 | 1729.9 | 1734.3 |
| 5°    | 1743.1 | 1730.6 | 1726.2 | 1729.1 | 1735.0 |
| 7.5°  | 1731.7 | 1718.8 | 1718.1 | 1712.9 | 1721.8 |
| 10°   | 1714.7 | 1706.3 | 1700.0 | 1702.9 | 1704.0 |
| 12.5° | 1693.4 | 1690.8 | 1686.0 | 1681.9 | 1691.9 |
| 15°   | 1670.9 | 1666.8 | 1660.2 | 1664.6 | 1665.7 |
| 17.5° | 1642.1 | 1639.9 | 1638.8 | 1642.1 | 1651.7 |
| 20°   | 1611.5 | 1611.5 | 1612.6 | 1613.3 | 1611.9 |
| 22.5° | 1575.0 | 1573.9 | 1575.4 | 1578.3 | 1592.3 |
| 25°   | 1537.7 | 1538.5 | 1540.3 | 1544.4 | 1545.5 |
| 27.5° | 1496.4 | 1496.8 | 1496.1 | 1500.1 | 1509.7 |
| 30°   | 1448.9 | 1447.4 | 1444.4 | 1453.3 | 1463.6 |
| 32.5° | 1397.2 | 1394.3 | 1391.0 | 1404.6 | 1415.7 |
| 35°   | 1339.3 | 1332.0 | 1329.4 | 1351.9 | 1366.3 |
| 37.5° | 1280.0 | 1264.9 | 1259.3 | 1275.9 | 1277.8 |
| 40°   | 1207.0 | 1184.5 | 1175.2 | 1159.0 | 1154.2 |
| 42.5° | 1119.2 | 1096.0 | 1046.2 | 1021.1 | 1003.4 |
| 45°   | 1014.1 | 973.5  | 892.4  | 876.9  | 841.9  |
| 47.5° | 878.4  | 835.2  | 754.1  | 720.9  | 681.1  |
| 50°   | 711.3  | 686.3  | 636.1  | 594.8  | 525.9  |
| 52.5° | 568.6  | 573.8  | 550.2  | 493.0  | 407.5  |
| 55°   | 451.0  | 482.3  | 473.5  | 408.2  | 310.5  |
| 57.5° | 347.0  | 414.5  | 403.8  | 335.9  | 237.1  |
| 60°   | 248.9  | 355.1  | 333.4  | 276.6  | 176.6  |
| 62.5° | 170.7  | 303.1  | 273.3  | 228.3  | 135.3  |
| 65°   | 122.1  | 253.0  | 221.6  | 188.1  | 109.2  |
| 67.5° | 100.3  | 206.9  | 170.0  | 159.7  | 95.1   |
| 70°   | 91.5   | 166.7  | 123.5  | 139.4  | 93.7   |
| 72.5° | 87.0   | 139.8  | 90.7   | 122.1  | 89.2   |
| 75°   | 79.7   | 122.8  | 71.2   | 106.9  | 84.4   |
| 77.5° | 73.8   | 106.2  | 66.4   | 93.7   | 82.2   |
| 80°   | 66.7   | 84.1   | 66.0   | 79.3   | 74.9   |
| 82.5° | 53.8   | 61.2   | 55.7   | 64.9   | 60.5   |
| 85°   | 36.5   | 43.5   | 38.7   | 49.0   | 40.2   |
| 87.5° | 18.1   | 21.4   | 17.3   | 23.2   | 17.7   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)