

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: P476243

Luminaire Tested: **14GR-LD5-28-A19/156-UNV-L830-CD1-U**

Issue Date: 02/10/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P476243  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 02/10/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 14GR-LD5-28-A19/156-UNV-L830-CD1-U  
Description: GR 1'X4' LED TROFFER w/ A19/156 LENS  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2588.5 lumens  
Efficiency: N/A  
Efficacy: 111.1 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.2  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

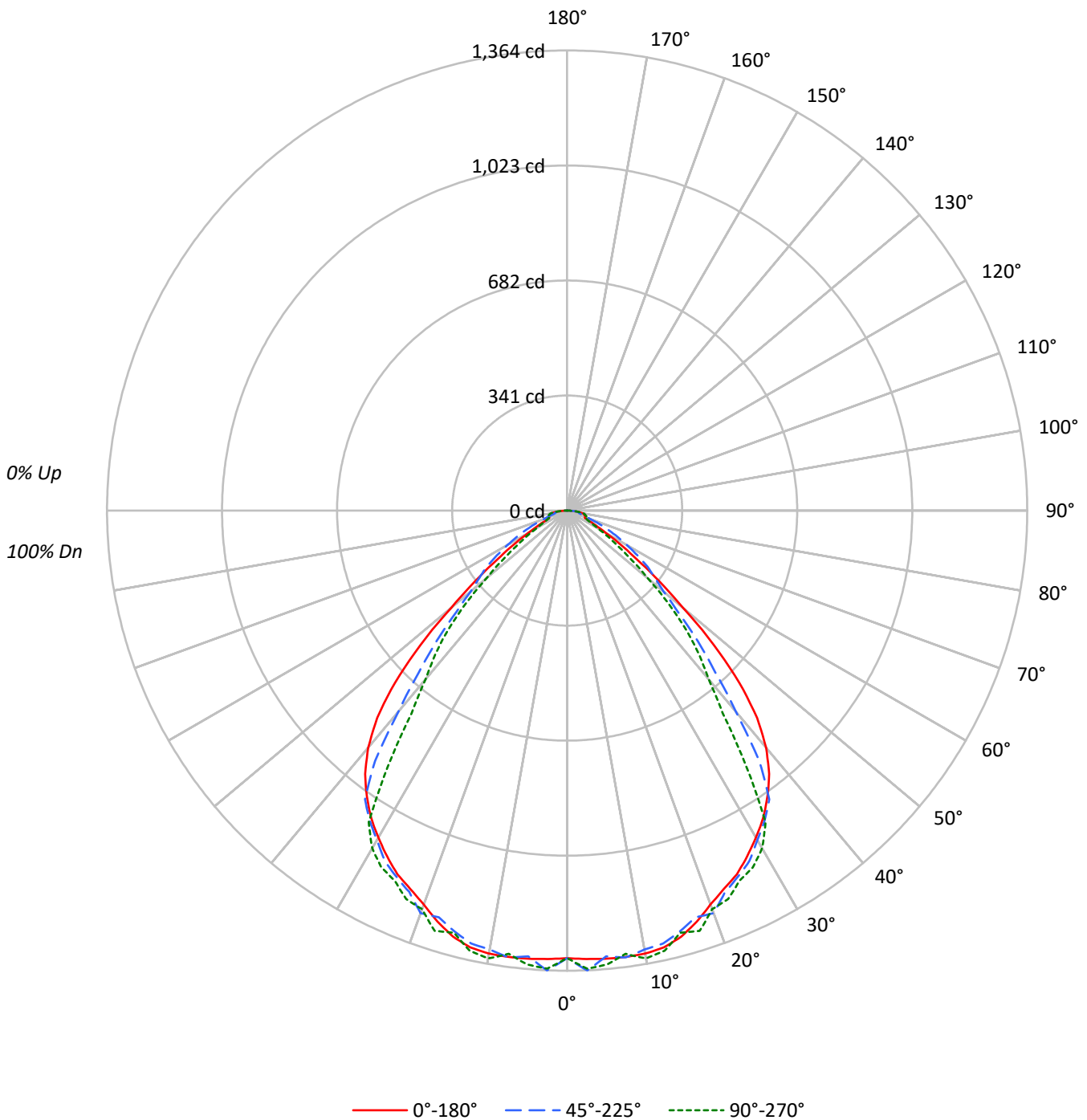
Input Watts (W): 23.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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 | 104 | 101 | 108 | 105 | 102 | 99  | 101 | 98  | 96  | 97  | 95  | 93  | 93  | 92  | 90  | 88  |    |    |    |    | 88  |   |  |   |
| 2   | 103 | 96  | 91  | 86  | 101 | 94  | 89  | 85  | 91  | 87  | 83  | 88  | 84  | 81  | 85  | 82  | 79  | 78  |    |    |    |    | 78  |   |  |   |
| 3   | 96  | 87  | 80  | 75  | 93  | 85  | 79  | 74  | 82  | 77  | 73  | 80  | 75  | 71  | 77  | 74  | 70  | 68  |    |    |    |    | 68  |   |  |   |
| 4   | 89  | 79  | 71  | 65  | 87  | 77  | 70  | 65  | 75  | 69  | 64  | 73  | 68  | 63  | 71  | 66  | 63  | 61  |    |    |    |    | 61  |   |  |   |
| 5   | 83  | 71  | 64  | 58  | 81  | 70  | 63  | 58  | 68  | 62  | 57  | 67  | 61  | 57  | 65  | 60  | 56  | 54  |    |    |    |    | 54  |   |  |   |
| 6   | 77  | 65  | 58  | 52  | 75  | 64  | 57  | 52  | 63  | 56  | 51  | 61  | 55  | 51  | 60  | 55  | 51  | 49  |    |    |    |    | 49  |   |  |   |
| 7   | 72  | 60  | 52  | 47  | 70  | 59  | 52  | 47  | 58  | 51  | 46  | 56  | 50  | 46  | 55  | 50  | 46  | 44  |    |    |    |    | 44  |   |  |   |
| 8   | 67  | 55  | 48  | 42  | 66  | 55  | 47  | 42  | 53  | 47  | 42  | 52  | 46  | 42  | 51  | 46  | 42  | 40  |    |    |    |    | 40  |   |  |   |
| 9   | 63  | 51  | 44  | 39  | 62  | 51  | 43  | 39  | 49  | 43  | 38  | 48  | 43  | 38  | 48  | 42  | 38  | 36  |    |    |    |    | 36  |   |  |   |
| 10  | 60  | 47  | 40  | 35  | 58  | 47  | 40  | 35  | 46  | 40  | 35  | 45  | 39  | 35  | 44  | 39  | 35  | 33  |    |    |    |    | 33  |   |  |   |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 3570 | 3570 | 3570 |
| 5°  | 3602 | 3583 | 3649 |
| 10° | 3643 | 3610 | 3684 |
| 15° | 3643 | 3597 | 3609 |
| 20° | 3558 | 3636 | 3601 |
| 25° | 3532 | 3556 | 3593 |
| 30° | 3478 | 3503 | 3591 |
| 35° | 3401 | 3432 | 3045 |
| 40° | 3222 | 2732 | 2289 |
| 45° | 2748 | 2083 | 1897 |
| 50° | 1878 | 1560 | 1310 |
| 55° | 1182 | 1367 | 871  |
| 60° | 715  | 1094 | 561  |
| 65° | 449  | 846  | 431  |
| 70° | 448  | 565  | 459  |
| 75° | 564  | 451  | 592  |
| 80° | 735  | 545  | 776  |
| 85° | 710  | 753  | 753  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 128.0  | 4.9       |
| 10°-20°   | 366.8  | 14.2      |
| 20°-30°   | 553.6  | 21.4      |
| 30°-40°   | 617.5  | 23.9      |
| 40°-50°   | 449.0  | 17.3      |
| 50°-60°   | 246.3  | 9.5       |
| 60°-70°   | 125.2  | 4.8       |
| 70°-80°   | 73.6   | 2.8       |
| 80°-90°   | 28.4   | 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°    | 1048.4 | 40.5      |
| 0°-40°    | 1665.9 | 64.4      |
| 0°-60°    | 2361.2 | 91.2      |
| 0°-90°    | 2588.5 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2588.5 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1326 | 1326  | 1326 | 1326  | 1326 |      |
| 5°  | 1333 | 1362  | 1326 | 1351  | 1351 | 127  |
| 15° | 1308 | 1302  | 1291 | 1318  | 1295 | 367  |
| 25° | 1190 | 1190  | 1198 | 1221  | 1210 | 547  |
| 35° | 1035 | 1034  | 1045 | 974   | 927  | 644  |
| 45° | 722  | 667   | 547  | 508   | 499  | 543  |
| 55° | 252  | 312   | 291  | 260   | 186  | 238  |
| 65° | 70   | 150   | 133  | 137   | 68   | 79   |
| 75° | 54   | 96    | 43   | 87    | 57   | 56   |
| 85° | 23   | 30    | 24   | 31    | 24   | 26   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1326.5 | 1326.5 | 1326.5 | 1326.5 | 1326.5 |
| 2.5°  | 1330.6 | 1357.7 | 1364.5 | 1364.5 | 1359.0 |
| 5°    | 1333.3 | 1361.7 | 1326.5 | 1350.9 | 1350.9 |
| 7.5°  | 1334.6 | 1338.7 | 1336.0 | 1341.4 | 1325.2 |
| 10°   | 1333.3 | 1323.8 | 1321.1 | 1355.0 | 1348.2 |
| 12.5° | 1326.5 | 1289.9 | 1314.3 | 1303.5 | 1336.0 |
| 15°   | 1307.5 | 1302.1 | 1291.3 | 1318.4 | 1295.3 |
| 17.5° | 1277.7 | 1280.4 | 1264.2 | 1277.7 | 1306.2 |
| 20°   | 1242.5 | 1254.7 | 1269.6 | 1273.7 | 1257.4 |
| 22.5° | 1214.0 | 1218.1 | 1223.5 | 1237.1 | 1246.6 |
| 25°   | 1189.7 | 1189.7 | 1197.8 | 1220.8 | 1210.0 |
| 27.5° | 1155.8 | 1158.5 | 1170.7 | 1177.5 | 1192.4 |
| 30°   | 1119.2 | 1121.9 | 1127.3 | 1158.5 | 1155.8 |
| 32.5° | 1081.3 | 1084.0 | 1089.4 | 1109.7 | 1094.8 |
| 35°   | 1035.2 | 1033.8 | 1044.7 | 974.2  | 926.8  |
| 37.5° | 983.7  | 982.4  | 934.9  | 802.1  | 757.4  |
| 40°   | 917.3  | 911.9  | 777.8  | 673.4  | 651.7  |
| 42.5° | 833.3  | 810.3  | 650.4  | 589.4  | 578.6  |
| 45°   | 722.2  | 666.6  | 547.4  | 508.1  | 498.6  |
| 47.5° | 590.8  | 548.8  | 445.8  | 428.2  | 405.1  |
| 50°   | 448.5  | 451.2  | 372.6  | 360.4  | 313.0  |
| 52.5° | 342.8  | 375.3  | 327.9  | 304.9  | 242.5  |
| 55°   | 252.0  | 311.6  | 291.3  | 260.2  | 185.6  |
| 57.5° | 187.0  | 258.8  | 246.6  | 223.6  | 142.3  |
| 60°   | 132.8  | 215.4  | 203.2  | 192.4  | 104.3  |
| 62.5° | 96.2   | 180.2  | 166.7  | 162.6  | 79.9   |
| 65°   | 70.5   | 150.4  | 132.8  | 136.9  | 67.7   |
| 67.5° | 56.9   | 126.0  | 100.3  | 119.2  | 58.3   |
| 70°   | 56.9   | 112.5  | 71.8   | 105.7  | 58.3   |
| 72.5° | 56.9   | 105.7  | 56.9   | 96.2   | 61.0   |
| 75°   | 54.2   | 96.2   | 43.4   | 86.7   | 56.9   |
| 77.5° | 50.1   | 78.6   | 36.6   | 74.5   | 54.2   |
| 80°   | 47.4   | 58.3   | 35.2   | 58.3   | 50.1   |
| 82.5° | 36.6   | 40.6   | 32.5   | 43.4   | 39.3   |
| 85°   | 23.0   | 29.8   | 24.4   | 31.2   | 24.4   |
| 87.5° | 10.8   | 16.3   | 10.8   | 16.3   | 10.8   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)