

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: P291450

Luminaire Tested: **14GR-LD5-28-A19/156-UNV-L93050-W2A1-U-3500K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P291450  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33288)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 14GR-LD5-28-A19/156-UNV-L93050-W2A1-U-3500K  
Description: GRLED 1x4 TUNABLE WHITE TROFFER  
WITH A19/156 LENS  
Light Source: (168) 90 CRI LEDS TUNED TO 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2381.0 lumens  
Efficiency: N/A  
Efficacy: 104.9 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.23 / 1.18  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

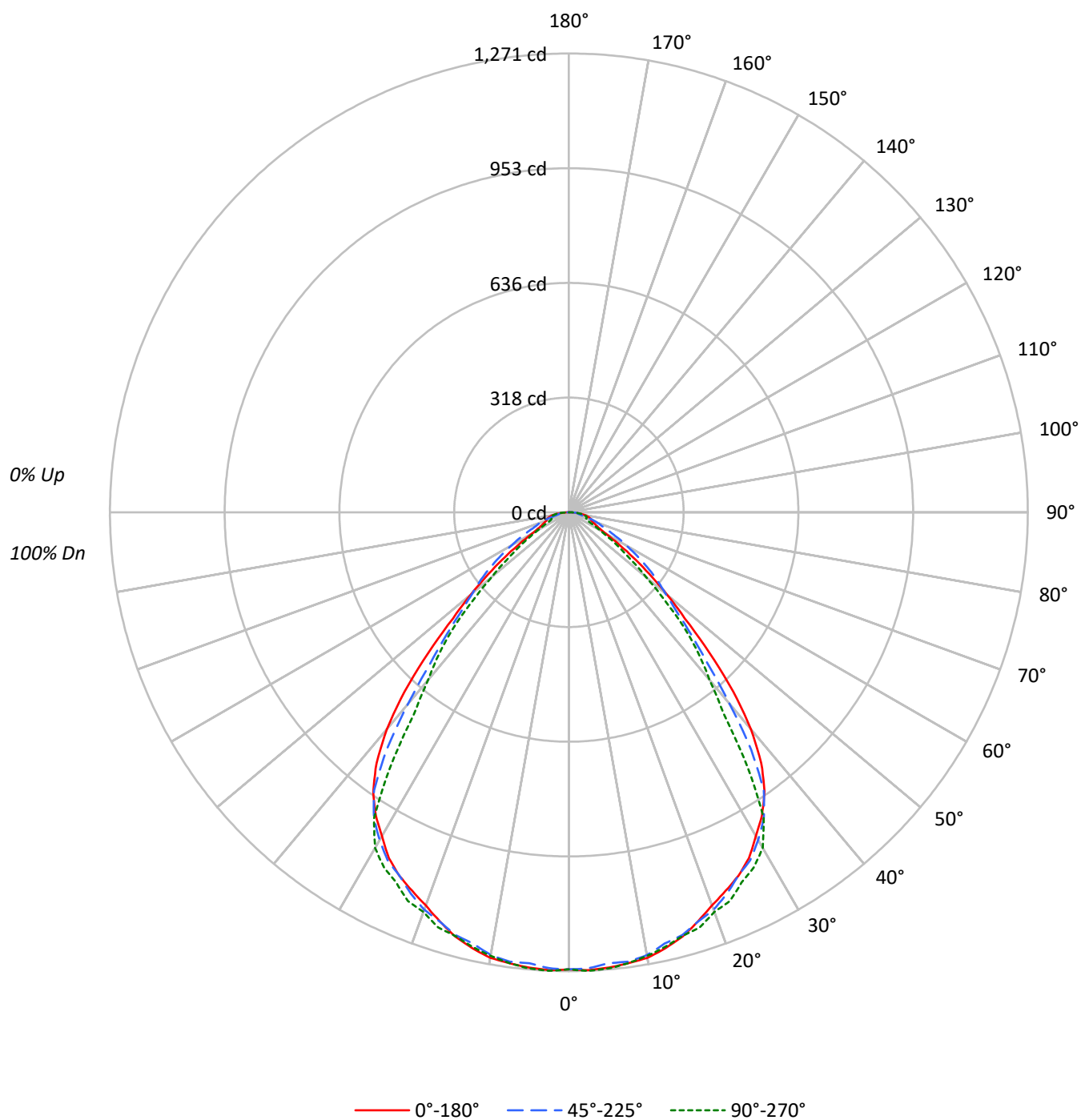
Input Watts (W): 22.692  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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  |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  |  | 50  | 30  | 10  |  | 50  |
| RCR |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 |  | 106 | 106 | 106 |  | 102 |
| 1   | 111 | 107 | 104 | 100 | 108 | 105 | 102 | 99  | 101 | 98  | 96  |  | 97  | 95  | 93  |  | 93  |
| 2   | 103 | 96  | 90  | 86  | 100 | 94  | 89  | 85  | 91  | 87  | 83  |  | 88  | 84  | 81  |  | 85  |
| 3   | 95  | 87  | 80  | 74  | 93  | 85  | 79  | 74  | 82  | 77  | 73  |  | 80  | 75  | 71  |  | 77  |
| 4   | 89  | 79  | 71  | 65  | 87  | 77  | 70  | 65  | 75  | 69  | 64  |  | 73  | 68  | 63  |  | 71  |
| 5   | 83  | 71  | 64  | 58  | 81  | 70  | 63  | 58  | 68  | 62  | 57  |  | 67  | 61  | 57  |  | 65  |
| 6   | 77  | 65  | 58  | 52  | 75  | 64  | 57  | 52  | 63  | 56  | 51  |  | 61  | 55  | 51  |  | 60  |
| 7   | 72  | 60  | 52  | 47  | 70  | 59  | 52  | 47  | 58  | 51  | 46  |  | 56  | 51  | 46  |  | 55  |
| 8   | 67  | 55  | 48  | 43  | 66  | 55  | 47  | 42  | 53  | 47  | 42  |  | 52  | 46  | 42  |  | 51  |
| 9   | 63  | 51  | 44  | 39  | 62  | 51  | 44  | 39  | 50  | 43  | 39  |  | 49  | 43  | 38  |  | 48  |
| 10  | 60  | 48  | 40  | 36  | 58  | 47  | 40  | 36  | 46  | 40  | 35  |  | 45  | 39  | 35  |  | 44  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 3407 | 3407 | 3407 |
| 5°  | 3419 | 3386 | 3426 |
| 10° | 3424 | 3403 | 3409 |
| 15° | 3389 | 3377 | 3385 |
| 20° | 3318 | 3354 | 3373 |
| 25° | 3298 | 3296 | 3360 |
| 30° | 3218 | 3257 | 3336 |
| 35° | 3103 | 3090 | 2840 |
| 40° | 2755 | 2432 | 2129 |
| 45° | 2091 | 1819 | 1722 |
| 50° | 1483 | 1456 | 1168 |
| 55° | 1015 | 1243 | 803  |
| 60° | 628  | 991  | 537  |
| 65° | 517  | 763  | 388  |
| 70° | 515  | 665  | 399  |
| 75° | 618  | 476  | 532  |
| 80° | 710  | 439  | 668  |
| 85° | 673  | 775  | 756  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 120.1  | 5.0       |
| 10°-20°   | 342.9  | 14.4      |
| 20°-30°   | 515.6  | 21.7      |
| 30°-40°   | 562.1  | 23.6      |
| 40°-50°   | 393.6  | 16.5      |
| 50°-60°   | 222.8  | 9.4       |
| 60°-70°   | 121.9  | 5.1       |
| 70°-80°   | 73.9   | 3.1       |
| 80°-90°   | 28.0   | 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°    | 978.7  | 41.1      |
| 0°-40°    | 1540.8 | 64.7      |
| 0°-60°    | 2157.2 | 90.6      |
| 0°-90°    | 2381.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2381.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1266 | 1266  | 1266 | 1266  | 1266 |      |
| 5°  | 1266 | 1263  | 1254 | 1268  | 1268 | 120  |
| 15° | 1216 | 1213  | 1212 | 1230  | 1215 | 342  |
| 25° | 1111 | 1113  | 1110 | 1136  | 1132 | 510  |
| 35° | 945  | 940   | 941  | 893   | 864  | 582  |
| 45° | 549  | 573   | 478  | 472   | 452  | 427  |
| 55° | 216  | 259   | 265  | 263   | 171  | 198  |
| 65° | 81   | 134   | 120  | 152   | 61   | 83   |
| 75° | 59   | 86    | 46   | 90    | 51   | 62   |
| 85° | 22   | 35    | 25   | 30    | 24   | 24   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1266.1 | 1266.1 | 1266.1 | 1266.1 | 1266.1 |
| 2.5°  | 1269.4 | 1267.8 | 1263.9 | 1271.6 | 1271.0 |
| 5°    | 1265.6 | 1263.4 | 1253.6 | 1268.3 | 1268.3 |
| 7.5°  | 1260.1 | 1254.7 | 1255.2 | 1263.4 | 1259.6 |
| 10°   | 1253.0 | 1243.8 | 1245.4 | 1247.6 | 1247.6 |
| 12.5° | 1236.7 | 1228.0 | 1223.6 | 1230.7 | 1232.9 |
| 15°   | 1216.5 | 1213.3 | 1212.2 | 1229.6 | 1214.9 |
| 17.5° | 1188.2 | 1195.3 | 1188.7 | 1202.9 | 1205.1 |
| 20°   | 1158.8 | 1172.4 | 1171.3 | 1181.1 | 1177.8 |
| 22.5° | 1134.8 | 1143.5 | 1143.5 | 1155.5 | 1165.3 |
| 25°   | 1110.8 | 1113.0 | 1110.2 | 1135.9 | 1131.5 |
| 27.5° | 1079.7 | 1078.1 | 1086.8 | 1099.9 | 1108.6 |
| 30°   | 1035.6 | 1036.1 | 1048.1 | 1065.5 | 1073.7 |
| 32.5° | 995.2  | 990.3  | 1005.0 | 1012.7 | 1004.0 |
| 35°   | 944.6  | 940.2  | 940.7  | 892.8  | 864.4  |
| 37.5° | 875.3  | 879.1  | 829.0  | 741.3  | 704.2  |
| 40°   | 784.3  | 791.9  | 692.2  | 626.8  | 606.1  |
| 42.5° | 674.2  | 676.4  | 567.4  | 546.1  | 532.5  |
| 45°   | 549.4  | 573.4  | 478.0  | 472.0  | 452.4  |
| 47.5° | 435.5  | 480.2  | 400.6  | 404.4  | 357.5  |
| 50°   | 354.3  | 399.0  | 347.7  | 349.4  | 279.1  |
| 52.5° | 280.1  | 323.8  | 306.9  | 302.0  | 219.1  |
| 55°   | 216.4  | 258.9  | 264.9  | 262.7  | 171.1  |
| 57.5° | 159.2  | 204.9  | 222.4  | 230.6  | 131.9  |
| 60°   | 116.6  | 167.3  | 184.2  | 200.6  | 99.7   |
| 62.5° | 92.7   | 145.0  | 151.0  | 175.0  | 77.4   |
| 65°   | 81.2   | 133.5  | 119.9  | 151.5  | 61.0   |
| 67.5° | 72.5   | 127.0  | 97.6   | 134.1  | 53.4   |
| 70°   | 65.4   | 114.5  | 84.5   | 119.9  | 50.7   |
| 72.5° | 65.4   | 100.3  | 66.5   | 106.3  | 51.2   |
| 75°   | 59.4   | 85.6   | 45.8   | 89.9   | 51.2   |
| 77.5° | 52.9   | 73.0   | 34.3   | 73.0   | 48.0   |
| 80°   | 45.8   | 57.2   | 28.3   | 56.1   | 43.1   |
| 82.5° | 33.8   | 43.1   | 24.5   | 42.0   | 34.9   |
| 85°   | 21.8   | 35.4   | 25.1   | 30.5   | 24.5   |
| 87.5° | 10.4   | 18.0   | 15.8   | 15.3   | 12.5   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)