

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: P292628

Luminaire Tested: **22GR-LD5-28-A19/156-UNV-L93050-W2A1-U-4500K**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P292628
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-LD5-28-A19/156-UNV-L93050-W2A1-U-4500K
Description: GRLED 2x2 TUNABLE WHITE TROFFER
WITH A19/156 LENS
Light Source: (168) 90 CRI LEDS TUNED TO 4500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2683.0 lumens
Efficiency: N/A
Efficacy: 116.8 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

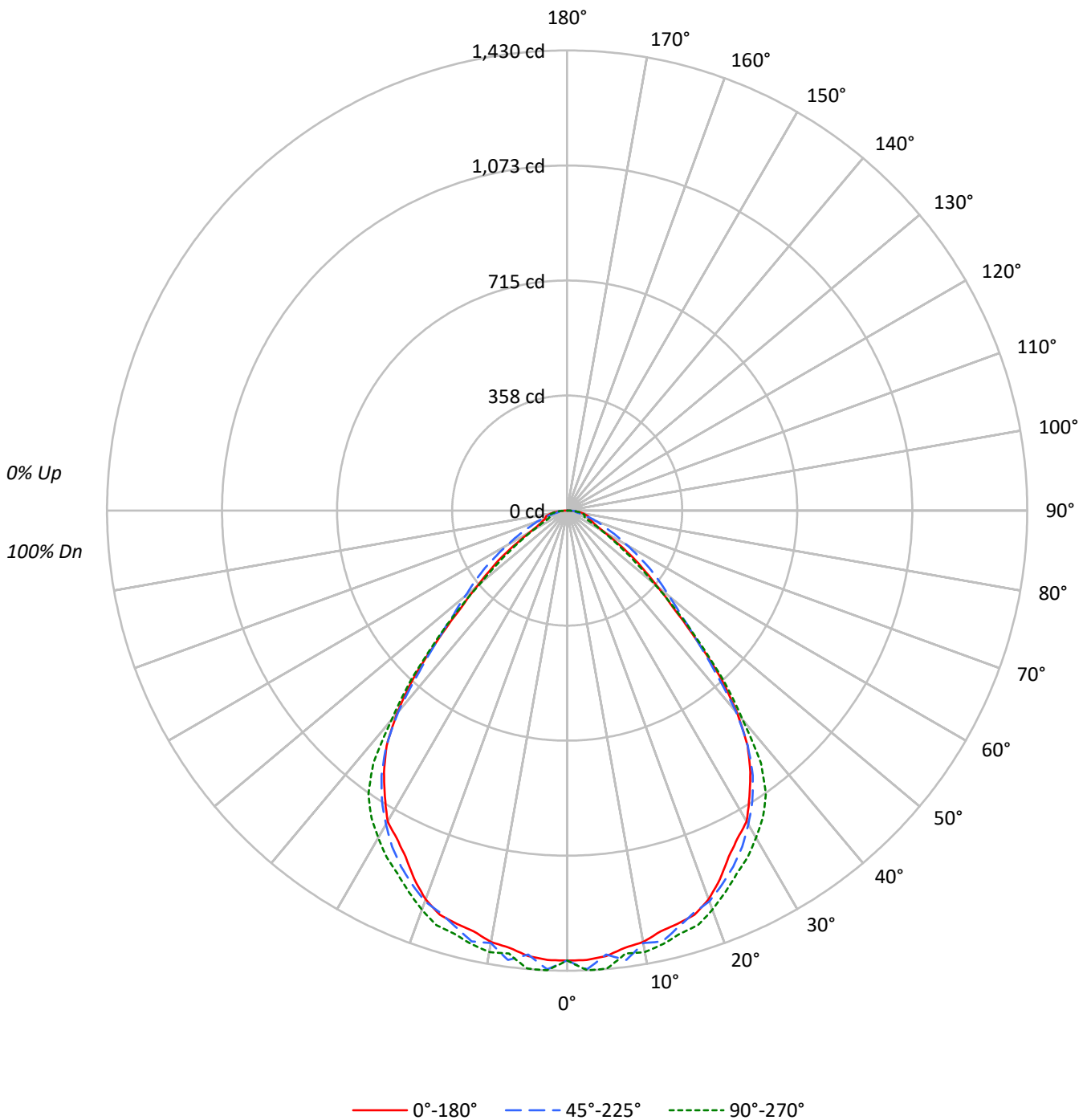
Input Watts (W): 22.971
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 3763 | 3763 | 3763 |
| 5° | 3753 | 3741 | 3859 |
| 10° | 3719 | 3729 | 3807 |
| 15° | 3702 | 3730 | 3790 |
| 20° | 3682 | 3700 | 3780 |
| 25° | 3525 | 3624 | 3700 |
| 30° | 3467 | 3498 | 3648 |
| 35° | 3260 | 3302 | 3536 |
| 40° | 2889 | 2869 | 2982 |
| 45° | 2158 | 2163 | 2223 |
| 50° | 1519 | 1728 | 1472 |
| 55° | 1121 | 1459 | 1005 |
| 60° | 701 | 1153 | 657 |
| 65° | 572 | 914 | 459 |
| 70° | 567 | 761 | 452 |
| 75° | 703 | 558 | 585 |
| 80° | 784 | 440 | 714 |
| 85° | 781 | 821 | 800 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 133.1 | 5.0 |
| 10°-20° | 379.1 | 14.1 |
| 20°-30° | 561.5 | 20.9 |
| 30°-40° | 629.0 | 23.4 |
| 40°-50° | 462.2 | 17.2 |
| 50°-60° | 258.3 | 9.6 |
| 60°-70° | 144.0 | 5.4 |
| 70°-80° | 84.6 | 3.2 |
| 80°-90° | 31.1 | 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° | 1073.8 | 40.0 |
| 0°-40° | 1702.8 | 63.5 |
| 0°-60° | 2423.3 | 90.3 |
| 0°-90° | 2683.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2683.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1398 | 1398 | 1398 | 1398 | 1398 | |
| 5° | 1390 | 1415 | 1385 | 1414 | 1429 | 131 |
| 15° | 1329 | 1337 | 1339 | 1359 | 1360 | 375 |
| 25° | 1187 | 1197 | 1221 | 1238 | 1246 | 550 |
| 35° | 992 | 993 | 1005 | 1051 | 1076 | 615 |
| 45° | 567 | 613 | 568 | 609 | 584 | 443 |
| 55° | 239 | 291 | 311 | 310 | 214 | 213 |
| 65° | 90 | 159 | 144 | 184 | 72 | 93 |
| 75° | 68 | 96 | 54 | 108 | 56 | 68 |
| 85° | 25 | 37 | 27 | 34 | 26 | 28 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1398.3 | 1398.3 | 1398.3 | 1398.3 | 1398.3 |
| 2.5° | 1397.7 | 1410.3 | 1426.8 | 1428.6 | 1429.9 |
| 5° | 1389.5 | 1415.4 | 1385.0 | 1413.5 | 1428.6 |
| 7.5° | 1370.5 | 1386.3 | 1408.4 | 1380.0 | 1388.2 |
| 10° | 1361.0 | 1364.8 | 1364.8 | 1400.2 | 1393.2 |
| 12.5° | 1339.5 | 1364.8 | 1371.1 | 1364.2 | 1379.3 |
| 15° | 1328.8 | 1337.0 | 1338.9 | 1359.1 | 1360.4 |
| 17.5° | 1316.8 | 1314.9 | 1310.4 | 1325.0 | 1350.9 |
| 20° | 1285.8 | 1278.8 | 1292.1 | 1309.8 | 1319.9 |
| 22.5° | 1240.3 | 1242.2 | 1258.0 | 1272.5 | 1283.9 |
| 25° | 1187.2 | 1196.7 | 1220.7 | 1237.7 | 1246.0 |
| 27.5° | 1147.3 | 1161.3 | 1177.7 | 1197.9 | 1214.4 |
| 30° | 1115.7 | 1114.5 | 1125.9 | 1154.9 | 1173.9 |
| 32.5° | 1054.4 | 1058.8 | 1070.9 | 1105.6 | 1132.2 |
| 35° | 992.5 | 993.1 | 1005.1 | 1050.6 | 1076.5 |
| 37.5° | 921.0 | 916.0 | 922.9 | 972.2 | 989.3 |
| 40° | 822.4 | 823.7 | 816.7 | 851.5 | 849.0 |
| 42.5° | 707.4 | 717.5 | 681.5 | 727.0 | 723.8 |
| 45° | 567.0 | 613.2 | 568.3 | 608.8 | 584.1 |
| 47.5° | 447.6 | 515.8 | 478.5 | 508.2 | 462.1 |
| 50° | 362.9 | 433.0 | 412.8 | 426.1 | 351.5 |
| 52.5° | 297.7 | 354.6 | 361.0 | 364.1 | 274.4 |
| 55° | 239.0 | 290.8 | 311.0 | 310.4 | 214.3 |
| 57.5° | 176.4 | 236.4 | 259.8 | 269.3 | 162.5 |
| 60° | 130.2 | 196.6 | 214.3 | 235.2 | 122.0 |
| 62.5° | 104.9 | 172.6 | 177.0 | 206.1 | 92.9 |
| 65° | 89.8 | 159.3 | 143.5 | 184.0 | 72.1 |
| 67.5° | 79.7 | 148.6 | 116.9 | 164.4 | 61.3 |
| 70° | 72.1 | 132.1 | 96.7 | 147.3 | 57.5 |
| 72.5° | 70.2 | 112.5 | 74.6 | 131.5 | 56.9 |
| 75° | 67.6 | 95.5 | 53.7 | 108.1 | 56.3 |
| 77.5° | 58.2 | 81.5 | 38.6 | 83.4 | 52.5 |
| 80° | 50.6 | 65.1 | 28.4 | 62.6 | 46.1 |
| 82.5° | 39.2 | 49.3 | 25.3 | 47.4 | 37.3 |
| 85° | 25.3 | 37.3 | 26.6 | 34.1 | 25.9 |
| 87.5° | 12.0 | 20.9 | 19.0 | 18.3 | 13.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)