

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: P476002

Luminaire Tested: **22GR-LD5-24-A19/156-UNV-L840-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P476002
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 22GR-LD5-24-A19/156-UNV-L840-CD1-U
Description: GR 2'X2' LED TROFFER w/ A19/156 LENS
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2355.2 lumens
Efficiency: N/A
Efficacy: 131.6 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.22 / 1.23
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

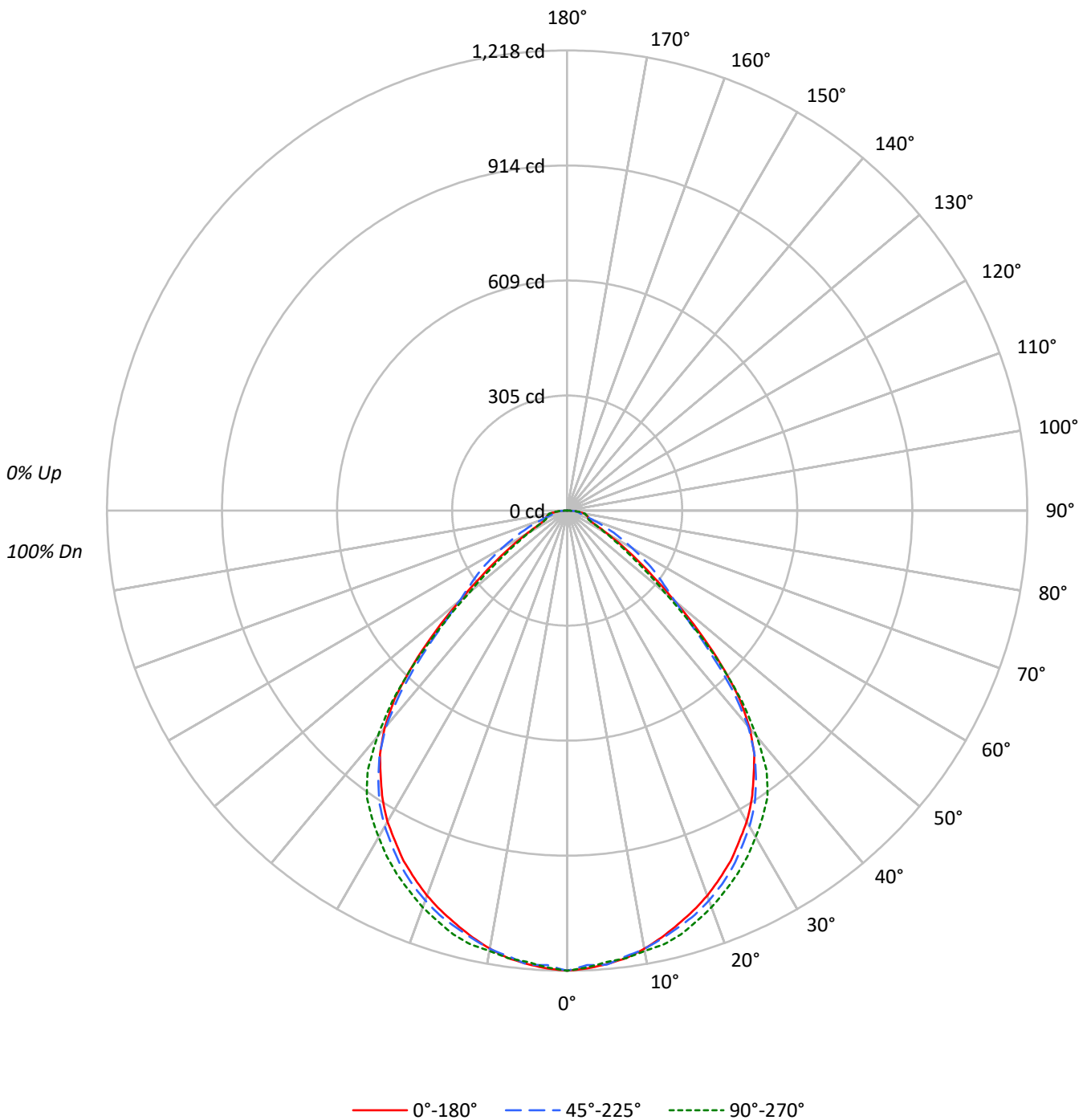
Input Watts (W): 17.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 101 | 99 | 100 | 98 | 95 | 97 | 95 | 93 | 93 | 91 | 90 | 88 |
| 2 | 103 | 96 | 90 | 85 | 100 | 94 | 89 | 84 | 91 | 86 | 82 | 87 | 84 | 81 | 84 | 82 | 79 | 77 |
| 3 | 95 | 86 | 79 | 74 | 93 | 85 | 78 | 73 | 82 | 76 | 72 | 79 | 75 | 71 | 77 | 73 | 70 | 68 |
| 4 | 88 | 78 | 70 | 65 | 86 | 77 | 70 | 64 | 74 | 68 | 63 | 72 | 67 | 63 | 70 | 65 | 62 | 60 |
| 5 | 82 | 71 | 63 | 57 | 80 | 70 | 62 | 57 | 68 | 61 | 56 | 66 | 60 | 56 | 64 | 59 | 55 | 53 |
| 6 | 76 | 65 | 57 | 51 | 75 | 64 | 56 | 51 | 62 | 55 | 50 | 60 | 54 | 50 | 59 | 54 | 50 | 48 |
| 7 | 71 | 59 | 51 | 46 | 70 | 58 | 51 | 46 | 57 | 50 | 45 | 56 | 50 | 45 | 54 | 49 | 45 | 43 |
| 8 | 67 | 54 | 47 | 41 | 65 | 54 | 46 | 41 | 53 | 46 | 41 | 51 | 45 | 41 | 50 | 45 | 41 | 39 |
| 9 | 63 | 50 | 43 | 38 | 61 | 50 | 43 | 38 | 49 | 42 | 38 | 48 | 42 | 37 | 47 | 41 | 37 | 36 |
| 10 | 59 | 47 | 39 | 35 | 58 | 46 | 39 | 35 | 45 | 39 | 34 | 44 | 38 | 34 | 44 | 38 | 34 | 33 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 3277 | 3277 | 3277 |
| 5° | 3254 | 3258 | 3240 |
| 10° | 3218 | 3219 | 3234 |
| 15° | 3159 | 3180 | 3237 |
| 20° | 3106 | 3145 | 3200 |
| 25° | 3039 | 3086 | 3158 |
| 30° | 2954 | 2999 | 3102 |
| 35° | 2827 | 2863 | 3038 |
| 40° | 2639 | 2619 | 2741 |
| 45° | 2192 | 2068 | 2173 |
| 50° | 1544 | 1552 | 1415 |
| 55° | 1037 | 1334 | 933 |
| 60° | 669 | 1070 | 621 |
| 65° | 464 | 829 | 446 |
| 70° | 466 | 566 | 463 |
| 75° | 574 | 442 | 569 |
| 80° | 700 | 511 | 742 |
| 85° | 685 | 698 | 753 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 114.0 | 4.8 |
| 10°-20° | 322.8 | 13.7 |
| 20°-30° | 478.7 | 20.3 |
| 30°-40° | 547.6 | 23.2 |
| 40°-50° | 433.5 | 18.4 |
| 50°-60° | 236.5 | 10.0 |
| 60°-70° | 123.7 | 5.3 |
| 70°-80° | 71.5 | 3.0 |
| 80°-90° | 27.0 | 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° | 915.5 | 38.9 |
| 0°-40° | 1463.0 | 62.1 |
| 0°-60° | 2133.0 | 90.6 |
| 0°-90° | 2355.2 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2355.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1218 | 1218 | 1218 | 1218 | 1218 | |
| 5° | 1205 | 1196 | 1206 | 1202 | 1199 | 114 |
| 15° | 1134 | 1140 | 1142 | 1150 | 1162 | 320 |
| 25° | 1024 | 1025 | 1039 | 1052 | 1064 | 470 |
| 35° | 861 | 861 | 872 | 903 | 925 | 537 |
| 45° | 576 | 573 | 543 | 570 | 571 | 438 |
| 55° | 221 | 276 | 284 | 265 | 199 | 205 |
| 65° | 73 | 146 | 130 | 139 | 70 | 79 |
| 75° | 55 | 88 | 42 | 87 | 55 | 57 |
| 85° | 22 | 29 | 23 | 29 | 24 | 24 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P476002

CATALOG NUMBER: 22GR-LD5-24-A19/156-UNV-L840-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1217.9 | 1217.9 | 1217.9 | 1217.9 | 1217.9 |
| 2.5° | 1213.3 | 1206.1 | 1204.3 | 1207.9 | 1210.2 |
| 5° | 1204.8 | 1196.2 | 1206.1 | 1202.0 | 1199.3 |
| 7.5° | 1194.8 | 1191.6 | 1189.8 | 1196.2 | 1194.8 |
| 10° | 1177.6 | 1173.1 | 1178.1 | 1181.7 | 1183.5 |
| 12.5° | 1156.8 | 1159.1 | 1160.0 | 1171.3 | 1176.7 |
| 15° | 1133.8 | 1139.7 | 1141.5 | 1150.5 | 1161.8 |
| 17.5° | 1110.3 | 1111.6 | 1122.5 | 1134.2 | 1139.7 |
| 20° | 1084.5 | 1086.8 | 1098.1 | 1108.9 | 1117.5 |
| 22.5° | 1054.2 | 1056.9 | 1070.9 | 1083.2 | 1090.4 |
| 25° | 1023.5 | 1024.8 | 1039.3 | 1052.4 | 1063.7 |
| 27.5° | 986.4 | 993.6 | 1002.2 | 1020.3 | 1032.5 |
| 30° | 950.7 | 955.2 | 965.2 | 985.1 | 998.2 |
| 32.5° | 908.7 | 910.5 | 923.1 | 944.8 | 962.4 |
| 35° | 860.7 | 860.7 | 871.6 | 903.2 | 924.9 |
| 37.5° | 813.3 | 806.9 | 815.5 | 851.7 | 867.1 |
| 40° | 751.3 | 746.8 | 745.5 | 770.3 | 780.3 |
| 42.5° | 675.4 | 666.8 | 651.4 | 676.7 | 684.9 |
| 45° | 575.9 | 572.8 | 543.4 | 570.1 | 571.0 |
| 47.5° | 472.0 | 474.2 | 441.2 | 467.9 | 448.0 |
| 50° | 368.9 | 392.4 | 370.7 | 382.0 | 338.1 |
| 52.5° | 287.1 | 330.9 | 322.8 | 318.3 | 258.6 |
| 55° | 221.1 | 276.2 | 284.3 | 264.9 | 198.9 |
| 57.5° | 168.6 | 235.5 | 240.5 | 226.9 | 151.4 |
| 60° | 124.3 | 198.9 | 198.9 | 192.6 | 115.3 |
| 62.5° | 92.7 | 170.9 | 161.8 | 163.6 | 88.2 |
| 65° | 72.8 | 146.5 | 130.2 | 139.2 | 70.1 |
| 67.5° | 61.0 | 122.1 | 98.6 | 120.2 | 61.0 |
| 70° | 59.2 | 106.2 | 71.9 | 108.5 | 58.8 |
| 72.5° | 58.8 | 97.6 | 53.8 | 98.6 | 59.2 |
| 75° | 55.2 | 88.2 | 42.5 | 86.8 | 54.7 |
| 77.5° | 50.6 | 73.2 | 35.3 | 73.2 | 51.1 |
| 80° | 45.2 | 55.6 | 33.0 | 57.0 | 47.9 |
| 82.5° | 34.8 | 39.8 | 29.4 | 40.2 | 37.1 |
| 85° | 22.2 | 28.9 | 22.6 | 29.4 | 24.4 |
| 87.5° | 9.9 | 15.4 | 9.9 | 15.8 | 10.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)