

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: P294051

Luminaire Tested: **24GR-LD5-34-A19/156-UNV-L93050-W2A1-U-4500K**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P294051
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33308)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 24GR-LD5-34-A19/156-UNV-L93050-W2A1-U-4500K
Description: GRLED 2x4 TUNABLE WHITE TROFFER
WITH A19/156 LENS
Light Source: (336) 90 CRI LEDS TUNED TO 4500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3174.0 lumens
Efficiency: N/A
Efficacy: 132.6 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.25
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

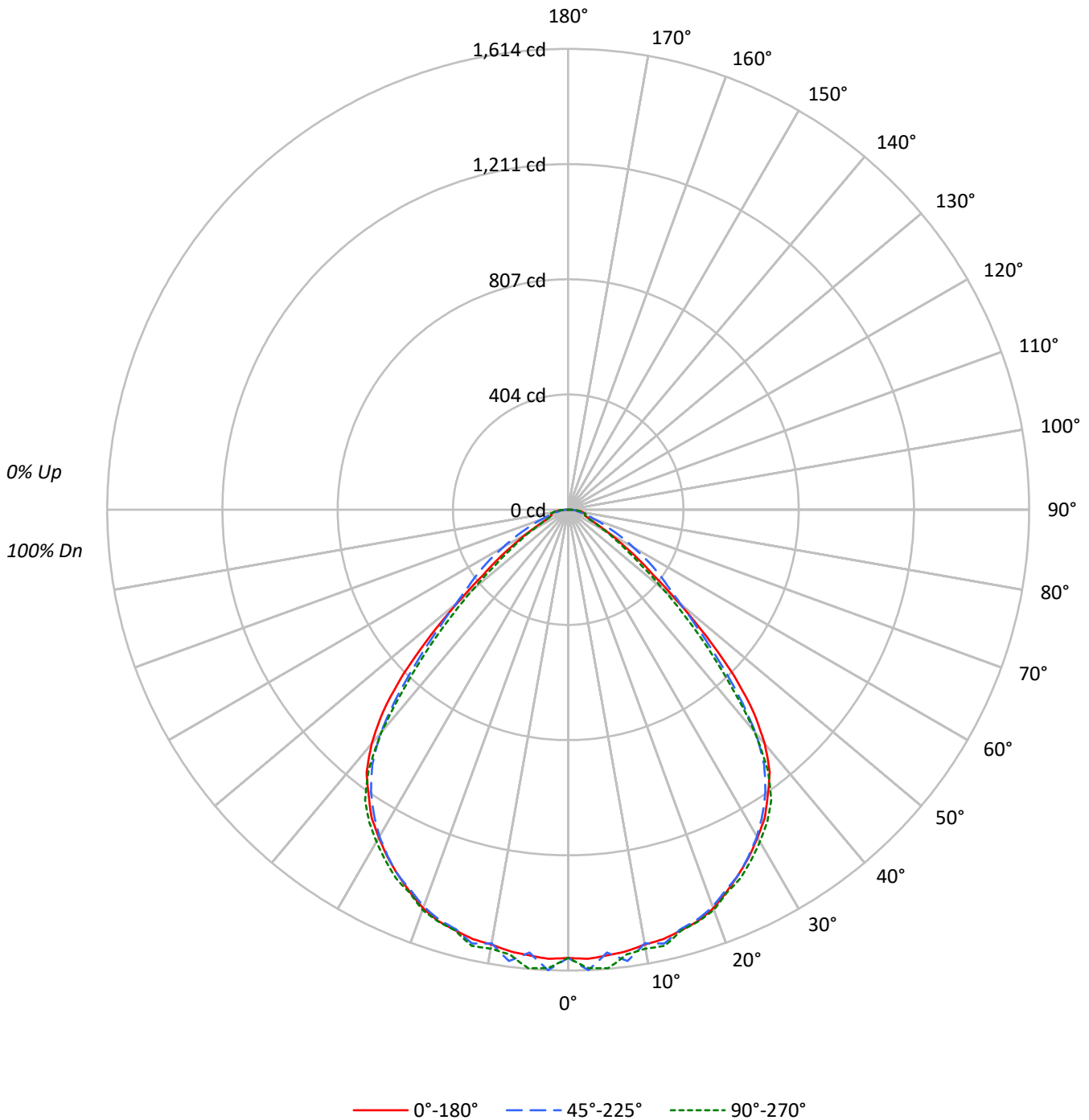
Input Watts (W): 23.935782
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P294051

CATALOG NUMBER: 24GR-LD5-34-A19/156-UNV-L93050-W2A1-U-4500K

Luminous Intensity Polar Plot





TEST NUMBER: P294051

CATALOG NUMBER: 24GR-LD5-34-A19/156-UNV-L93050-W2A1-U-4500K

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 | 92 | 90 | 88 | | | | | 88 | | | |
| 2 | 103 | 96 | 90 | 86 | 100 | 94 | 89 | 85 | 91 | 86 | 83 | 88 | 84 | 81 | 85 | 82 | 79 | 77 | | | | | 77 | | | |
| 3 | 95 | 86 | 79 | 74 | 93 | 85 | 78 | 73 | 82 | 77 | 72 | 79 | 75 | 71 | 77 | 73 | 70 | 68 | | | | | 68 | | | |
| 4 | 88 | 78 | 71 | 65 | 86 | 77 | 70 | 64 | 74 | 68 | 64 | 72 | 67 | 63 | 70 | 66 | 62 | 60 | | | | | 60 | | | |
| 5 | 82 | 71 | 63 | 57 | 80 | 70 | 62 | 57 | 68 | 61 | 56 | 66 | 60 | 56 | 64 | 59 | 55 | 53 | | | | | 53 | | | |
| 6 | 76 | 65 | 57 | 51 | 75 | 64 | 56 | 51 | 62 | 55 | 50 | 60 | 55 | 50 | 59 | 54 | 50 | 48 | | | | | 48 | | | |
| 7 | 71 | 59 | 51 | 46 | 70 | 58 | 51 | 46 | 57 | 50 | 45 | 56 | 50 | 45 | 54 | 49 | 45 | 43 | | | | | 43 | | | |
| 8 | 67 | 55 | 47 | 42 | 65 | 54 | 47 | 41 | 53 | 46 | 41 | 51 | 45 | 41 | 50 | 45 | 41 | 39 | | | | | 39 | | | |
| 9 | 63 | 50 | 43 | 38 | 61 | 50 | 43 | 38 | 49 | 42 | 38 | 48 | 42 | 37 | 47 | 41 | 37 | 36 | | | | | 36 | | | |
| 10 | 59 | 47 | 39 | 35 | 58 | 46 | 39 | 35 | 45 | 39 | 34 | 44 | 38 | 34 | 44 | 38 | 34 | 33 | | | | | 33 | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 2112 | 2112 | 2112 |
| 5° | 2116 | 2103 | 2177 |
| 10° | 2113 | 2107 | 2132 |
| 15° | 2125 | 2118 | 2126 |
| 20° | 2127 | 2118 | 2136 |
| 25° | 2094 | 2095 | 2116 |
| 30° | 2059 | 2053 | 2086 |
| 35° | 2001 | 1977 | 2036 |
| 40° | 1879 | 1795 | 1785 |
| 45° | 1558 | 1409 | 1337 |
| 50° | 1048 | 1069 | 913 |
| 55° | 691 | 897 | 599 |
| 60° | 443 | 708 | 410 |
| 65° | 286 | 540 | 278 |
| 70° | 253 | 387 | 253 |
| 75° | 326 | 307 | 329 |
| 80° | 399 | 265 | 418 |
| 85° | 465 | 394 | 488 |



TEST NUMBER: P294051

CATALOG NUMBER: 24GR-LD5-34-A19/156-UNV-L93050-W2A1-U-4500K

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 150.3 | 4.7 |
| 10°-20° | 431.5 | 13.6 |
| 20°-30° | 649.6 | 20.5 |
| 30°-40° | 752.9 | 23.7 |
| 40°-50° | 588.1 | 18.5 |
| 50°-60° | 314.1 | 9.9 |
| 60°-70° | 161.5 | 5.1 |
| 70°-80° | 91.3 | 2.9 |
| 80°-90° | 34.7 | 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° | 1231.3 | 38.8 |
| 0°-40° | 1984.2 | 62.5 |
| 0°-60° | 2886.4 | 90.9 |
| 0°-90° | 3174.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3174.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1570 | 1570 | 1570 | 1570 | 1570 | |
| 5° | 1567 | 1611 | 1557 | 1600 | 1612 | 149 |
| 15° | 1526 | 1535 | 1520 | 1530 | 1527 | 431 |
| 25° | 1410 | 1406 | 1411 | 1409 | 1425 | 650 |
| 35° | 1218 | 1213 | 1204 | 1227 | 1240 | 759 |
| 45° | 819 | 819 | 741 | 734 | 702 | 617 |
| 55° | 295 | 373 | 382 | 345 | 255 | 272 |
| 65° | 90 | 187 | 170 | 187 | 87 | 99 |
| 75° | 63 | 118 | 59 | 110 | 63 | 64 |
| 85° | 30 | 39 | 26 | 39 | 32 | 31 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P294051

CATALOG NUMBER: 24GR-LD5-34-A19/156-UNV-L93050-W2A1-U-4500K

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1569.5 | 1569.5 | 1569.5 | 1569.5 | 1569.5 |
| 2.5° | 1574.5 | 1603.1 | 1614.3 | 1600.5 | 1606.7 |
| 5° | 1566.9 | 1610.7 | 1556.7 | 1599.5 | 1611.8 |
| 7.5° | 1559.8 | 1555.2 | 1594.4 | 1553.7 | 1571.0 |
| 10° | 1546.5 | 1549.6 | 1541.9 | 1571.0 | 1560.8 |
| 12.5° | 1540.4 | 1558.2 | 1556.7 | 1541.9 | 1564.4 |
| 15° | 1525.6 | 1535.3 | 1520.5 | 1530.2 | 1526.6 |
| 17.5° | 1510.8 | 1506.2 | 1504.7 | 1508.8 | 1512.4 |
| 20° | 1485.3 | 1470.1 | 1479.2 | 1480.2 | 1491.5 |
| 22.5° | 1448.6 | 1439.5 | 1441.5 | 1450.7 | 1451.7 |
| 25° | 1410.4 | 1405.8 | 1411.4 | 1409.4 | 1425.2 |
| 27.5° | 1370.7 | 1364.5 | 1368.1 | 1375.8 | 1385.4 |
| 30° | 1325.3 | 1323.8 | 1321.2 | 1327.8 | 1342.6 |
| 32.5° | 1280.4 | 1268.2 | 1266.2 | 1279.9 | 1296.7 |
| 35° | 1218.2 | 1212.6 | 1203.5 | 1227.4 | 1239.7 |
| 37.5° | 1159.1 | 1141.8 | 1127.0 | 1141.3 | 1146.4 |
| 40° | 1069.9 | 1056.7 | 1022.0 | 1023.5 | 1016.4 |
| 42.5° | 960.3 | 950.6 | 884.4 | 872.7 | 852.8 |
| 45° | 818.6 | 819.1 | 740.6 | 734.0 | 702.4 |
| 47.5° | 654.0 | 683.0 | 614.7 | 607.1 | 560.2 |
| 50° | 500.6 | 553.1 | 510.7 | 498.5 | 436.3 |
| 52.5° | 375.7 | 452.6 | 439.4 | 412.9 | 327.2 |
| 55° | 294.6 | 372.6 | 382.3 | 344.6 | 255.4 |
| 57.5° | 221.7 | 306.9 | 322.7 | 291.6 | 197.3 |
| 60° | 164.6 | 258.4 | 263.0 | 250.8 | 152.4 |
| 62.5° | 122.3 | 219.7 | 213.6 | 215.1 | 113.2 |
| 65° | 89.7 | 187.1 | 169.7 | 186.6 | 87.2 |
| 67.5° | 73.4 | 162.1 | 132.0 | 161.6 | 70.9 |
| 70° | 64.2 | 143.7 | 98.4 | 142.2 | 64.2 |
| 72.5° | 62.2 | 132.0 | 78.0 | 126.4 | 62.7 |
| 75° | 62.7 | 117.7 | 59.1 | 110.1 | 63.2 |
| 77.5° | 57.6 | 96.8 | 44.9 | 93.8 | 60.1 |
| 80° | 51.5 | 73.4 | 34.2 | 74.4 | 54.0 |
| 82.5° | 43.8 | 53.5 | 27.5 | 55.1 | 45.4 |
| 85° | 30.1 | 39.2 | 25.5 | 39.2 | 31.6 |
| 87.5° | 14.3 | 23.4 | 15.8 | 22.4 | 16.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)