

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: P276321

Luminaire Tested: **24CZ2-35HE-S-UNV-L83050-W2A1-U-5000K**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P276321
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-1)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 24CZ2-35HE-S-UNV-L83050-W2A1-U-5000K
Description: CRUZE 2.0 2x4 TUNABLE WHITE LED TROFFER
WITH SMOOTH LENS
Light Source: (336) 80 CRI LEDS TUNED TO 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3708.0 lumens
Efficiency: N/A
Efficacy: 146.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

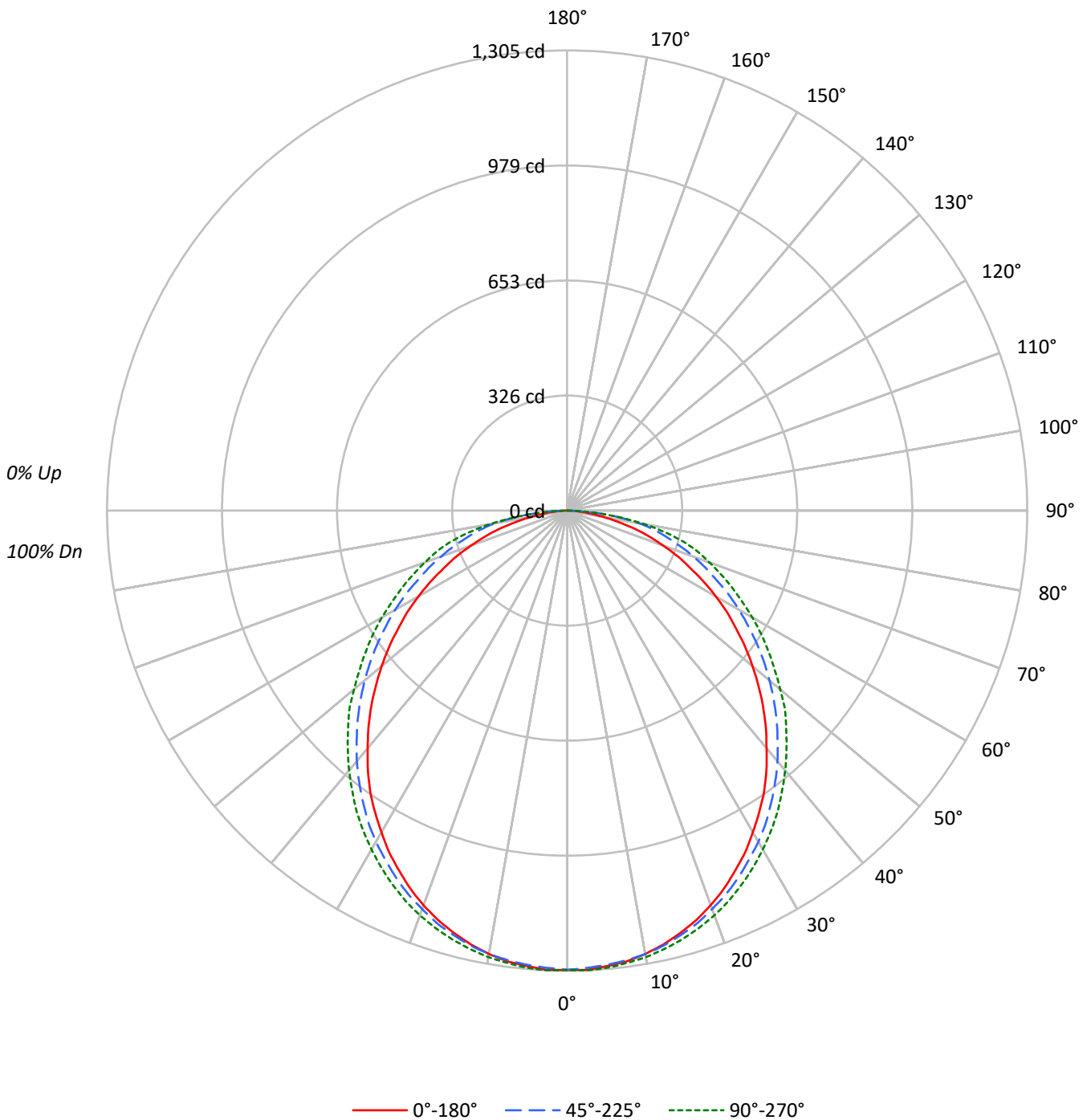
Input Watts (W): 25.36482
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 108 | 103 | 99 | 95 | 106 | 101 | 97 | 93 | 97 | 93 | 90 | 93 | 90 | 88 | 89 | 87 | 85 | 83 |
| 2 | 98 | 90 | 83 | 77 | 96 | 88 | 81 | 76 | 84 | 79 | 74 | 81 | 76 | 72 | 78 | 74 | 71 | 69 |
| 3 | 89 | 79 | 70 | 64 | 87 | 77 | 69 | 63 | 74 | 67 | 62 | 71 | 66 | 61 | 69 | 64 | 60 | 58 |
| 4 | 82 | 70 | 61 | 54 | 80 | 68 | 60 | 54 | 66 | 59 | 53 | 63 | 57 | 52 | 61 | 56 | 51 | 49 |
| 5 | 75 | 62 | 53 | 46 | 73 | 61 | 53 | 46 | 59 | 51 | 46 | 57 | 50 | 45 | 55 | 49 | 45 | 42 |
| 6 | 70 | 56 | 47 | 40 | 68 | 55 | 47 | 40 | 53 | 46 | 40 | 52 | 45 | 40 | 50 | 44 | 39 | 37 |
| 7 | 64 | 51 | 42 | 36 | 63 | 50 | 42 | 36 | 48 | 41 | 35 | 47 | 40 | 35 | 46 | 39 | 35 | 33 |
| 8 | 60 | 46 | 38 | 32 | 58 | 46 | 37 | 32 | 44 | 37 | 32 | 43 | 36 | 31 | 42 | 36 | 31 | 29 |
| 9 | 56 | 43 | 34 | 29 | 55 | 42 | 34 | 29 | 41 | 34 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 26 |
| 10 | 53 | 39 | 31 | 26 | 51 | 39 | 31 | 26 | 38 | 31 | 26 | 37 | 30 | 26 | 36 | 30 | 26 | 24 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 1753 | 1753 | 1753 |
| 5° | 1751 | 1747 | 1758 |
| 10° | 1744 | 1744 | 1757 |
| 15° | 1728 | 1736 | 1754 |
| 20° | 1705 | 1722 | 1749 |
| 25° | 1673 | 1705 | 1738 |
| 30° | 1636 | 1685 | 1724 |
| 35° | 1600 | 1658 | 1710 |
| 40° | 1545 | 1630 | 1690 |
| 45° | 1495 | 1598 | 1672 |
| 50° | 1437 | 1568 | 1652 |
| 55° | 1373 | 1539 | 1636 |
| 60° | 1309 | 1515 | 1632 |
| 65° | 1226 | 1489 | 1642 |
| 70° | 1135 | 1496 | 1686 |
| 75° | 1016 | 1525 | 1782 |
| 80° | 821 | 1616 | 1743 |
| 85° | 618 | 1419 | 1382 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 123.3 | 3.3 |
| 10°-20° | 352.4 | 9.5 |
| 20°-30° | 529.7 | 14.3 |
| 30°-40° | 631.0 | 17.0 |
| 40°-50° | 645.8 | 17.4 |
| 50°-60° | 581.4 | 15.7 |
| 60°-70° | 456.6 | 12.3 |
| 70°-80° | 296.3 | 8.0 |
| 80°-90° | 91.6 | 2.5 |
| 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° | 1005.4 | 27.1 |
| 0°-40° | 1636.4 | 44.1 |
| 0°-60° | 2863.5 | 77.2 |
| 0°-90° | 3708.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3708.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1303 | 1303 | 1303 | 1303 | 1303 | |
| 5° | 1297 | 1299 | 1293 | 1300 | 1302 | 123 |
| 15° | 1240 | 1244 | 1246 | 1257 | 1259 | 350 |
| 25° | 1127 | 1137 | 1148 | 1167 | 1171 | 519 |
| 35° | 974 | 986 | 1009 | 1034 | 1041 | 608 |
| 45° | 786 | 804 | 840 | 872 | 879 | 606 |
| 55° | 585 | 611 | 656 | 690 | 697 | 525 |
| 65° | 385 | 415 | 468 | 506 | 516 | 383 |
| 75° | 196 | 233 | 293 | 333 | 343 | 207 |
| 85° | 40 | 74 | 92 | 90 | 90 | 48 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1302.6 | 1302.6 | 1302.6 | 1302.6 | 1302.6 |
| 2.5° | 1303.8 | 1303.8 | 1297.9 | 1303.8 | 1305.0 |
| 5° | 1296.8 | 1299.1 | 1293.2 | 1300.3 | 1301.5 |
| 7.5° | 1289.7 | 1289.7 | 1286.2 | 1293.2 | 1294.4 |
| 10° | 1276.7 | 1277.9 | 1276.7 | 1285.0 | 1286.2 |
| 12.5° | 1260.2 | 1262.6 | 1263.8 | 1272.0 | 1273.2 |
| 15° | 1240.2 | 1243.8 | 1246.1 | 1256.7 | 1259.1 |
| 17.5° | 1217.8 | 1221.4 | 1227.3 | 1239.0 | 1241.4 |
| 20° | 1190.8 | 1195.5 | 1202.5 | 1217.8 | 1221.4 |
| 22.5° | 1161.3 | 1166.0 | 1177.8 | 1191.9 | 1197.8 |
| 25° | 1127.2 | 1136.6 | 1148.4 | 1167.2 | 1170.7 |
| 27.5° | 1093.0 | 1101.2 | 1116.6 | 1136.6 | 1141.3 |
| 30° | 1053.0 | 1065.9 | 1084.8 | 1104.8 | 1109.5 |
| 32.5° | 1014.1 | 1027.0 | 1049.4 | 1070.6 | 1076.5 |
| 35° | 974.0 | 985.8 | 1009.4 | 1034.1 | 1041.2 |
| 37.5° | 928.1 | 943.4 | 969.3 | 994.1 | 1001.1 |
| 40° | 879.8 | 898.7 | 928.1 | 954.0 | 962.3 |
| 42.5° | 833.9 | 853.9 | 883.3 | 911.6 | 921.0 |
| 45° | 785.6 | 804.4 | 839.8 | 871.6 | 878.6 |
| 47.5° | 736.1 | 757.3 | 795.0 | 826.8 | 838.6 |
| 50° | 686.7 | 709.0 | 749.1 | 782.1 | 789.1 |
| 52.5° | 637.2 | 660.7 | 703.1 | 738.5 | 742.0 |
| 55° | 585.4 | 611.3 | 656.0 | 690.2 | 697.3 |
| 57.5° | 538.3 | 560.6 | 608.9 | 644.3 | 652.5 |
| 60° | 486.4 | 511.2 | 563.0 | 596.0 | 606.6 |
| 62.5° | 437.0 | 462.9 | 517.1 | 550.0 | 559.5 |
| 65° | 385.1 | 414.6 | 467.6 | 506.5 | 515.9 |
| 67.5° | 340.4 | 368.7 | 425.2 | 462.9 | 472.3 |
| 70° | 288.6 | 320.4 | 380.4 | 419.3 | 428.7 |
| 72.5° | 243.8 | 276.8 | 336.9 | 374.5 | 388.7 |
| 75° | 195.5 | 233.2 | 293.3 | 333.3 | 342.7 |
| 77.5° | 148.4 | 192.0 | 253.2 | 283.8 | 283.8 |
| 80° | 106.0 | 151.9 | 208.5 | 222.6 | 225.0 |
| 82.5° | 69.5 | 114.2 | 154.3 | 153.1 | 153.1 |
| 85° | 40.0 | 74.2 | 91.9 | 89.5 | 89.5 |
| 87.5° | 15.3 | 30.6 | 33.0 | 33.0 | 31.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)