

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: P474217

Luminaire Tested: **24CZ2-60-RDP-UNV-L835-CD1-U**

Issue Date: 01/28/2021

Test Information

Test Method: LM-79-08
Report Number: P474217
Test Lab: INNOVATION CENTER(G3)
Issue Date: 01/28/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 24CZ2-60-RDP-UNV-L835-CD1-U
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS W/ RDP INSERT
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3999.3 lumens
Efficiency: N/A
Efficacy: 86.4 lumens/watt
Spacing Criteria (0/90/45): 1.26 / 1.3 / 1.41
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

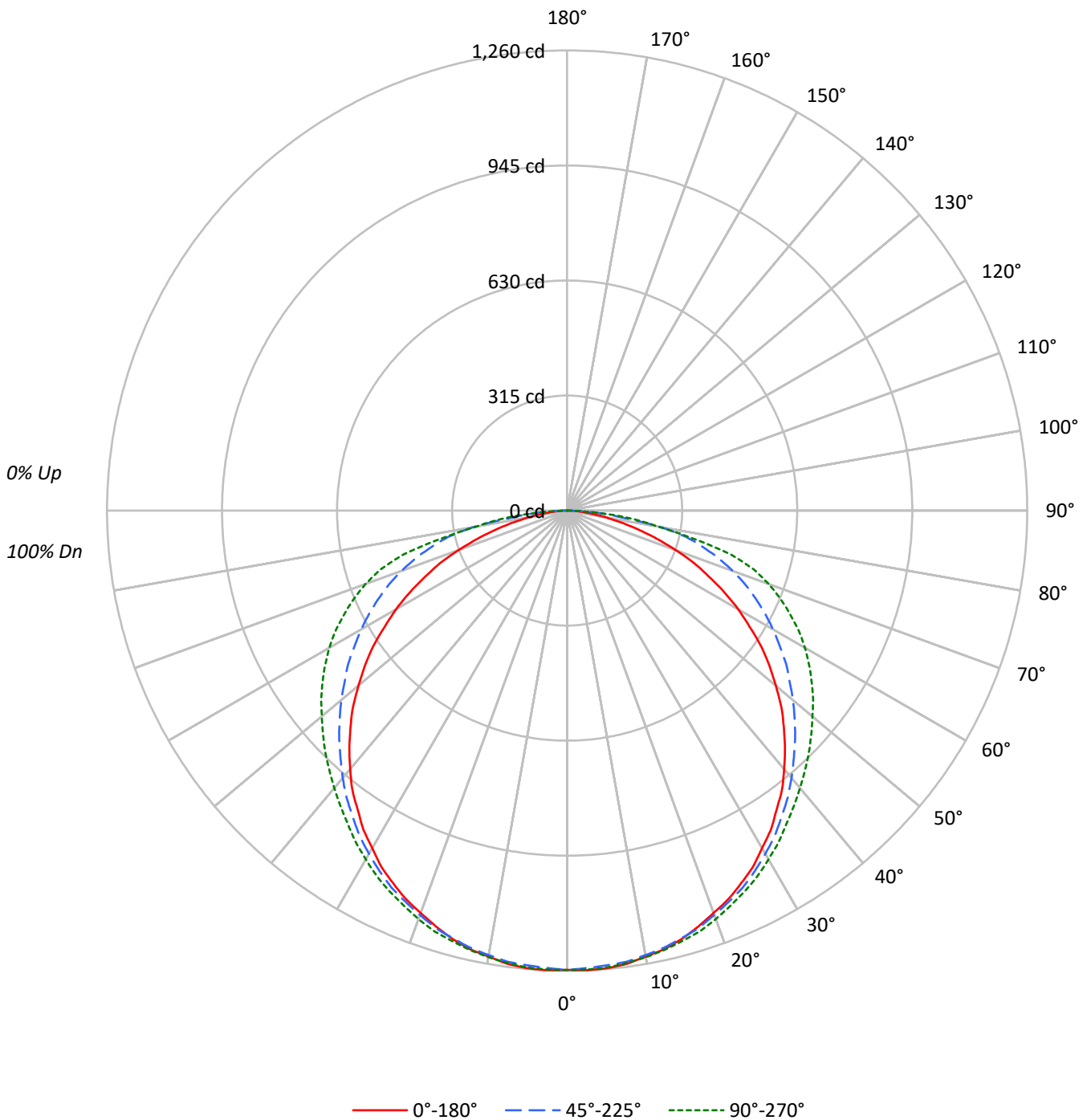
Input Watts (W): 46.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 98 | 94 | 105 | 100 | 96 | 92 | 96 | 93 | 89 | 92 | 89 | 87 | 88 | 86 | 84 | 82 |
| 2 | 97 | 89 | 81 | 75 | 95 | 87 | 80 | 74 | 83 | 77 | 72 | 80 | 75 | 71 | 77 | 73 | 69 | 67 |
| 3 | 88 | 77 | 68 | 62 | 86 | 76 | 67 | 61 | 72 | 66 | 60 | 70 | 64 | 59 | 67 | 62 | 58 | 56 |
| 4 | 81 | 68 | 59 | 52 | 78 | 67 | 58 | 51 | 64 | 57 | 51 | 62 | 55 | 50 | 59 | 54 | 49 | 47 |
| 5 | 74 | 60 | 51 | 44 | 72 | 59 | 51 | 44 | 57 | 49 | 43 | 55 | 48 | 43 | 53 | 47 | 42 | 40 |
| 6 | 68 | 54 | 45 | 38 | 66 | 53 | 45 | 38 | 51 | 44 | 38 | 50 | 43 | 37 | 48 | 42 | 37 | 35 |
| 7 | 63 | 49 | 40 | 34 | 61 | 48 | 40 | 34 | 47 | 39 | 33 | 45 | 38 | 33 | 44 | 38 | 33 | 31 |
| 8 | 59 | 45 | 36 | 30 | 57 | 44 | 36 | 30 | 43 | 35 | 30 | 41 | 34 | 29 | 40 | 34 | 29 | 27 |
| 9 | 55 | 41 | 33 | 27 | 53 | 40 | 32 | 27 | 39 | 32 | 27 | 38 | 31 | 26 | 37 | 31 | 26 | 24 |
| 10 | 51 | 38 | 30 | 24 | 50 | 37 | 29 | 24 | 36 | 29 | 24 | 35 | 29 | 24 | 34 | 28 | 24 | 22 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 1692 | 1692 | 1692 |
| 5° | 1699 | 1688 | 1696 |
| 10° | 1694 | 1689 | 1697 |
| 15° | 1691 | 1688 | 1699 |
| 20° | 1679 | 1687 | 1704 |
| 25° | 1673 | 1690 | 1708 |
| 30° | 1658 | 1686 | 1714 |
| 35° | 1642 | 1681 | 1720 |
| 40° | 1624 | 1679 | 1742 |
| 45° | 1597 | 1680 | 1781 |
| 50° | 1561 | 1690 | 1836 |
| 55° | 1521 | 1717 | 1917 |
| 60° | 1457 | 1751 | 2023 |
| 65° | 1364 | 1812 | 2147 |
| 70° | 1241 | 1897 | 2310 |
| 75° | 1051 | 2000 | 2413 |
| 80° | 831 | 2013 | 1952 |
| 85° | 613 | 1531 | 1715 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 119.3 | 3.0 |
| 10°-20° | 343.4 | 8.6 |
| 20°-30° | 525.0 | 13.1 |
| 30°-40° | 641.8 | 16.0 |
| 40°-50° | 684.1 | 17.1 |
| 50°-60° | 654.1 | 16.4 |
| 60°-70° | 554.1 | 13.9 |
| 70°-80° | 372.4 | 9.3 |
| 80°-90° | 105.1 | 2.6 |
| 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° | 987.7 | 24.7 |
| 0°-40° | 1629.5 | 40.7 |
| 0°-60° | 2967.7 | 74.2 |
| 0°-90° | 3999.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3999.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1258 | 1258 | 1258 | 1258 | 1258 | |
| 5° | 1258 | 1256 | 1250 | 1256 | 1256 | 119 |
| 15° | 1214 | 1214 | 1212 | 1222 | 1220 | 342 |
| 25° | 1127 | 1131 | 1139 | 1149 | 1150 | 519 |
| 35° | 1000 | 1008 | 1024 | 1043 | 1047 | 626 |
| 45° | 839 | 853 | 883 | 920 | 936 | 647 |
| 55° | 649 | 672 | 732 | 790 | 817 | 578 |
| 65° | 428 | 472 | 569 | 645 | 674 | 425 |
| 75° | 202 | 276 | 385 | 450 | 464 | 217 |
| 85° | 40 | 81 | 99 | 107 | 111 | 49 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P474217

CATALOG NUMBER: 24CZ2-60-RDP-UNV-L835-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1257.7 | 1257.7 | 1257.7 | 1257.7 | 1257.7 |
| 2.5° | 1259.7 | 1259.7 | 1253.8 | 1257.7 | 1257.7 |
| 5° | 1257.7 | 1255.7 | 1249.8 | 1255.7 | 1255.7 |
| 7.5° | 1251.8 | 1249.8 | 1245.8 | 1251.8 | 1249.8 |
| 10° | 1239.9 | 1239.9 | 1235.9 | 1241.8 | 1241.8 |
| 12.5° | 1229.9 | 1228.0 | 1226.0 | 1233.9 | 1231.9 |
| 15° | 1214.1 | 1214.1 | 1212.1 | 1222.0 | 1220.0 |
| 17.5° | 1194.2 | 1196.2 | 1198.2 | 1206.1 | 1208.1 |
| 20° | 1172.4 | 1176.3 | 1178.3 | 1190.2 | 1190.2 |
| 22.5° | 1152.5 | 1154.5 | 1158.5 | 1170.4 | 1170.4 |
| 25° | 1126.7 | 1130.7 | 1138.6 | 1148.6 | 1150.5 |
| 27.5° | 1100.9 | 1102.9 | 1112.8 | 1126.7 | 1128.7 |
| 30° | 1067.2 | 1073.1 | 1085.1 | 1100.9 | 1102.9 |
| 32.5° | 1037.4 | 1043.4 | 1057.3 | 1073.1 | 1077.1 |
| 35° | 999.7 | 1007.6 | 1023.5 | 1043.4 | 1047.3 |
| 37.5° | 966.0 | 971.9 | 991.8 | 1013.6 | 1019.6 |
| 40° | 924.5 | 936.2 | 956.0 | 981.8 | 991.8 |
| 42.5° | 882.8 | 894.7 | 918.5 | 952.1 | 964.0 |
| 45° | 839.1 | 853.0 | 882.8 | 920.5 | 936.2 |
| 47.5° | 795.5 | 811.4 | 845.1 | 888.8 | 906.6 |
| 50° | 745.9 | 765.7 | 807.4 | 857.0 | 876.9 |
| 52.5° | 698.2 | 722.0 | 767.7 | 823.3 | 849.1 |
| 55° | 648.6 | 672.4 | 732.0 | 789.5 | 817.3 |
| 57.5° | 593.0 | 624.8 | 690.3 | 755.8 | 785.6 |
| 60° | 541.6 | 571.2 | 650.6 | 722.0 | 751.8 |
| 62.5° | 486.1 | 525.8 | 610.9 | 686.3 | 716.1 |
| 65° | 428.5 | 472.2 | 569.2 | 644.6 | 674.4 |
| 67.5° | 376.9 | 424.5 | 527.7 | 603.0 | 632.7 |
| 70° | 315.4 | 374.9 | 482.1 | 557.3 | 587.1 |
| 72.5° | 257.8 | 323.3 | 434.5 | 507.9 | 535.7 |
| 75° | 202.2 | 275.7 | 384.8 | 450.3 | 464.2 |
| 77.5° | 150.8 | 228.0 | 333.2 | 361.0 | 351.1 |
| 80° | 107.2 | 182.6 | 259.8 | 245.9 | 251.9 |
| 82.5° | 69.5 | 138.9 | 160.8 | 182.6 | 188.4 |
| 85° | 39.7 | 81.4 | 99.2 | 107.2 | 111.1 |
| 87.5° | 17.9 | 29.8 | 39.7 | 39.7 | 37.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)