

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: P474277

Luminaire Tested: **24CZ2-70HE-RDP-UNV-L840-CD1-U**

Issue Date: 01/28/2021

Test Information

Test Method: LM-79-08
Report Number: P474277
Test Lab: INNOVATION CENTER(G3)
Issue Date: 01/28/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 24CZ2-70HE-RDP-UNV-L840-CD1-U
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY,SMOOTH LENS W/ RDP INSERT
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4928.0 lumens
Efficiency: N/A
Efficacy: 100.0 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

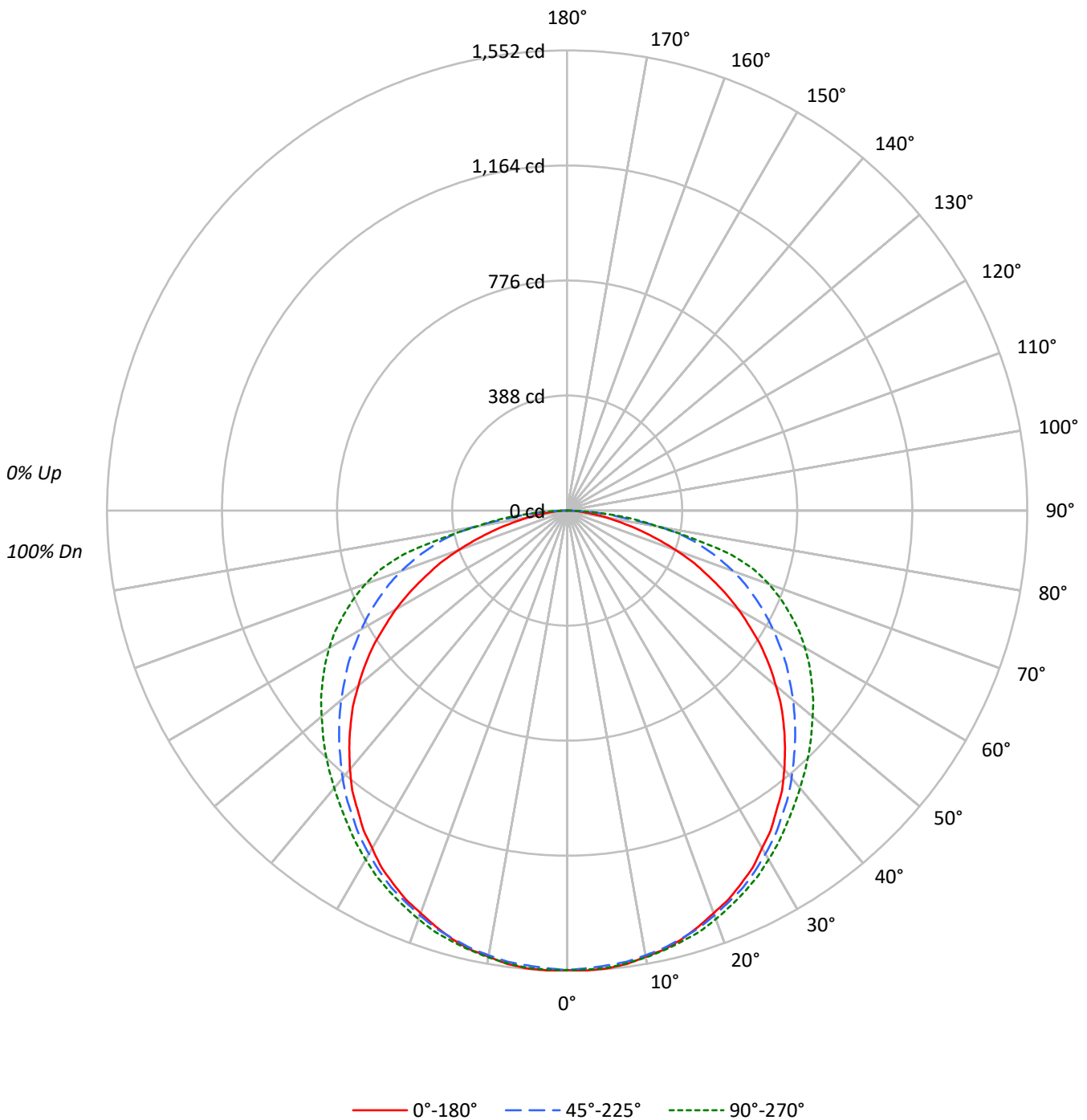
Input Watts (W): 49.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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° | 2085 | 2085 | 2085 |
| 5° | 2093 | 2080 | 2090 |
| 10° | 2087 | 2081 | 2091 |
| 15° | 2084 | 2080 | 2094 |
| 20° | 2068 | 2079 | 2100 |
| 25° | 2061 | 2083 | 2105 |
| 30° | 2043 | 2077 | 2111 |
| 35° | 2023 | 2072 | 2120 |
| 40° | 2001 | 2069 | 2147 |
| 45° | 1968 | 2070 | 2195 |
| 50° | 1924 | 2083 | 2262 |
| 55° | 1875 | 2116 | 2362 |
| 60° | 1796 | 2157 | 2493 |
| 65° | 1681 | 2233 | 2646 |
| 70° | 1529 | 2337 | 2846 |
| 75° | 1295 | 2465 | 2974 |
| 80° | 1024 | 2480 | 2405 |
| 85° | 755 | 1888 | 2115 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 147.0 | 3.0 |
| 10°-20° | 423.1 | 8.6 |
| 20°-30° | 647.0 | 13.1 |
| 30°-40° | 790.9 | 16.0 |
| 40°-50° | 843.0 | 17.1 |
| 50°-60° | 806.0 | 16.4 |
| 60°-70° | 682.7 | 13.9 |
| 70°-80° | 458.9 | 9.3 |
| 80°-90° | 129.5 | 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° | 1217.1 | 24.7 |
| 0°-40° | 2008.0 | 40.7 |
| 0°-60° | 3656.9 | 74.2 |
| 0°-90° | 4928.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4928.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1550 | 1550 | 1550 | 1550 | 1550 | |
| 5° | 1550 | 1547 | 1540 | 1547 | 1547 | 147 |
| 15° | 1496 | 1496 | 1494 | 1506 | 1503 | 422 |
| 25° | 1388 | 1393 | 1403 | 1415 | 1418 | 640 |
| 35° | 1232 | 1242 | 1261 | 1286 | 1291 | 772 |
| 45° | 1034 | 1051 | 1088 | 1134 | 1154 | 798 |
| 55° | 799 | 829 | 902 | 973 | 1007 | 712 |
| 65° | 528 | 582 | 701 | 794 | 831 | 524 |
| 75° | 249 | 340 | 474 | 555 | 572 | 267 |
| 85° | 49 | 100 | 122 | 132 | 137 | 61 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P474277

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1549.8 | 1549.8 | 1549.8 | 1549.8 | 1549.8 |
| 2.5° | 1552.2 | 1552.2 | 1544.9 | 1549.8 | 1549.8 |
| 5° | 1549.8 | 1547.4 | 1540.0 | 1547.4 | 1547.4 |
| 7.5° | 1542.5 | 1540.0 | 1535.1 | 1542.5 | 1540.0 |
| 10° | 1527.8 | 1527.8 | 1522.9 | 1530.2 | 1530.2 |
| 12.5° | 1515.6 | 1513.1 | 1510.7 | 1520.4 | 1518.0 |
| 15° | 1496.0 | 1496.0 | 1493.5 | 1505.8 | 1503.3 |
| 17.5° | 1471.5 | 1474.0 | 1476.4 | 1486.2 | 1488.7 |
| 20° | 1444.6 | 1449.5 | 1452.0 | 1466.6 | 1466.6 |
| 22.5° | 1420.2 | 1422.6 | 1427.5 | 1442.2 | 1442.2 |
| 25° | 1388.4 | 1393.3 | 1403.1 | 1415.3 | 1417.7 |
| 27.5° | 1356.6 | 1359.0 | 1371.3 | 1388.4 | 1390.8 |
| 30° | 1315.0 | 1322.4 | 1337.0 | 1356.6 | 1359.0 |
| 32.5° | 1278.3 | 1285.7 | 1302.8 | 1322.4 | 1327.2 |
| 35° | 1231.9 | 1241.6 | 1261.2 | 1285.7 | 1290.6 |
| 37.5° | 1190.3 | 1197.6 | 1222.1 | 1249.0 | 1256.3 |
| 40° | 1139.2 | 1153.6 | 1178.1 | 1209.9 | 1222.1 |
| 42.5° | 1087.8 | 1102.5 | 1131.8 | 1173.2 | 1187.8 |
| 45° | 1034.0 | 1051.1 | 1087.8 | 1134.3 | 1153.6 |
| 47.5° | 980.2 | 999.8 | 1041.3 | 1095.2 | 1117.2 |
| 50° | 919.1 | 943.5 | 994.9 | 1056.0 | 1080.5 |
| 52.5° | 860.4 | 889.7 | 946.0 | 1014.4 | 1046.2 |
| 55° | 799.2 | 828.6 | 901.9 | 972.9 | 1007.1 |
| 57.5° | 730.8 | 769.9 | 850.6 | 931.3 | 968.0 |
| 60° | 667.4 | 703.9 | 801.7 | 889.7 | 926.4 |
| 62.5° | 598.9 | 647.8 | 752.8 | 845.7 | 882.4 |
| 65° | 528.0 | 581.8 | 701.4 | 794.3 | 831.0 |
| 67.5° | 464.4 | 523.1 | 650.3 | 743.0 | 779.7 |
| 70° | 388.6 | 462.0 | 594.0 | 686.7 | 723.4 |
| 72.5° | 317.7 | 398.4 | 535.3 | 625.8 | 660.1 |
| 75° | 249.2 | 339.7 | 474.2 | 554.9 | 572.0 |
| 77.5° | 185.9 | 281.0 | 410.6 | 444.9 | 432.6 |
| 80° | 132.1 | 225.0 | 320.1 | 303.0 | 310.4 |
| 82.5° | 85.6 | 171.2 | 198.1 | 225.0 | 232.1 |
| 85° | 48.9 | 100.3 | 122.3 | 132.1 | 137.0 |
| 87.5° | 22.0 | 36.7 | 48.9 | 48.9 | 46.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)