

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: P475510

Luminaire Tested: **14CZ2-48HE-SQR-UNV-L840-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P475510
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 14CZ2-48HE-SQR-UNV-L840-CD1-U
Description: 1'X4' TROFFER LED MODULE, HIGH EFFICIENCY,SQUARE LENS
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

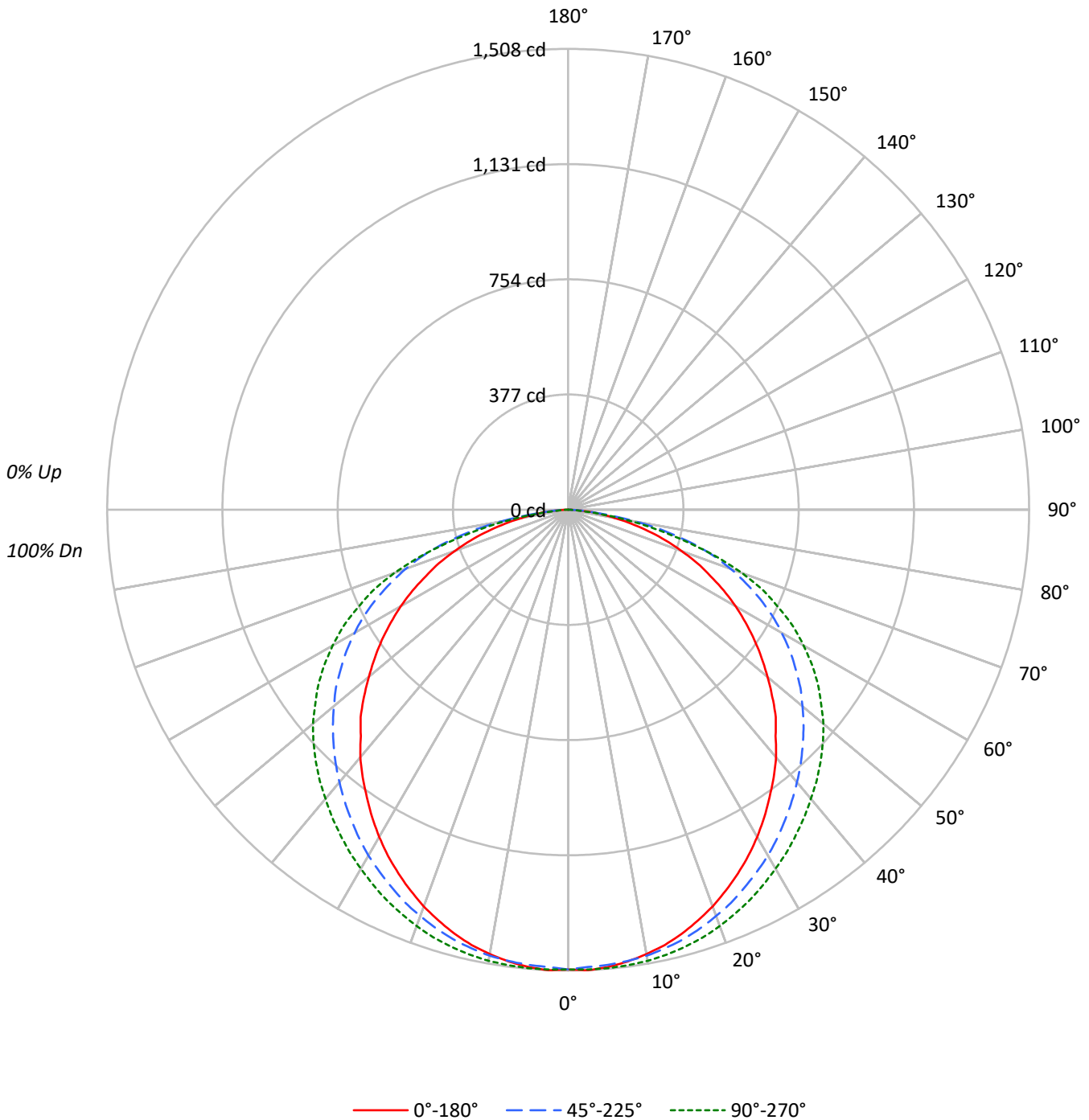
Lumens per Lamp: N/A
Luminaire Lumens: 4723.6 lumens
Efficiency: N/A
Efficacy: 132.3 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.34 / 1.43
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 35.7
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





TEST NUMBER: P475510

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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 | 89 | 82 | 76 | 95 | 87 | 81 | 75 | 84 | 78 | 74 | | 81 | 76 | 72 | | 77 | 74 | 70 | 68 |
| 3 | 89 | 78 | 69 | 63 | 86 | 76 | 68 | 62 | 73 | 67 | 61 | | 70 | 65 | 60 | | 68 | 63 | 59 | 57 |
| 4 | 81 | 69 | 60 | 53 | 79 | 67 | 59 | 52 | 65 | 57 | 51 | | 62 | 56 | 51 | | 60 | 55 | 50 | 48 |
| 5 | 74 | 61 | 52 | 45 | 72 | 60 | 51 | 45 | 58 | 50 | 44 | | 56 | 49 | 44 | | 54 | 48 | 43 | 41 |
| 6 | 69 | 55 | 46 | 39 | 67 | 54 | 45 | 39 | 52 | 44 | 38 | | 50 | 43 | 38 | | 49 | 43 | 38 | 36 |
| 7 | 63 | 50 | 41 | 34 | 62 | 49 | 40 | 34 | 47 | 39 | 34 | | 46 | 39 | 34 | | 44 | 38 | 33 | 31 |
| 8 | 59 | 45 | 36 | 30 | 57 | 44 | 36 | 30 | 43 | 36 | 30 | | 42 | 35 | 30 | | 41 | 34 | 30 | 28 |
| 9 | 55 | 41 | 33 | 27 | 54 | 41 | 33 | 27 | 40 | 32 | 27 | | 39 | 32 | 27 | | 37 | 31 | 27 | 25 |
| 10 | 52 | 38 | 30 | 25 | 50 | 38 | 30 | 25 | 37 | 29 | 24 | | 36 | 29 | 24 | | 35 | 29 | 24 | 22 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 4049 | 4049 | 4049 |
| 5° | 4057 | 4039 | 4068 |
| 10° | 4034 | 4049 | 4096 |
| 15° | 4002 | 4054 | 4124 |
| 20° | 3957 | 4052 | 4152 |
| 25° | 3901 | 4051 | 4182 |
| 30° | 3842 | 4062 | 4215 |
| 35° | 3772 | 4066 | 4268 |
| 40° | 3716 | 4090 | 4338 |
| 45° | 3655 | 4132 | 4441 |
| 50° | 3562 | 4188 | 4562 |
| 55° | 3491 | 4261 | 4680 |
| 60° | 3402 | 4343 | 4788 |
| 65° | 3270 | 4416 | 4840 |
| 70° | 3096 | 4449 | 4754 |
| 75° | 2829 | 4299 | 4105 |
| 80° | 2377 | 3513 | 3059 |
| 85° | 1729 | 1772 | 1152 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 142.9 | 3.0 |
| 10°-20° | 411.8 | 8.7 |
| 20°-30° | 629.6 | 13.3 |
| 30°-40° | 772.7 | 16.4 |
| 40°-50° | 831.0 | 17.6 |
| 50°-60° | 797.7 | 16.9 |
| 60°-70° | 660.8 | 14.0 |
| 70°-80° | 396.1 | 8.4 |
| 80°-90° | 81.1 | 1.7 |
| 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° | 1184.2 | 25.1 |
| 0°-40° | 1956.9 | 41.4 |
| 0°-60° | 3585.6 | 75.9 |
| 0°-90° | 4723.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4723.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1504 | 1504 | 1504 | 1504 | 1504 | |
| 5° | 1502 | 1499 | 1495 | 1507 | 1506 | 143 |
| 15° | 1436 | 1443 | 1455 | 1478 | 1480 | 405 |
| 25° | 1314 | 1335 | 1364 | 1400 | 1408 | 605 |
| 35° | 1148 | 1187 | 1238 | 1286 | 1299 | 719 |
| 45° | 960 | 1011 | 1086 | 1146 | 1167 | 738 |
| 55° | 744 | 815 | 908 | 975 | 998 | 665 |
| 65° | 514 | 598 | 694 | 748 | 760 | 509 |
| 75° | 272 | 355 | 414 | 404 | 395 | 288 |
| 85° | 56 | 81 | 57 | 39 | 37 | 71 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P475510

CATALOG NUMBER: 14CZ2-48HE-SQR-UNV-L840-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1504.5 | 1504.5 | 1504.5 | 1504.5 | 1504.5 |
| 2.5° | 1508.5 | 1504.5 | 1497.8 | 1508.5 | 1505.8 |
| 5° | 1501.8 | 1499.1 | 1495.1 | 1507.1 | 1505.8 |
| 7.5° | 1491.1 | 1491.1 | 1489.8 | 1504.5 | 1503.1 |
| 10° | 1476.4 | 1479.1 | 1481.8 | 1499.1 | 1499.1 |
| 12.5° | 1459.1 | 1461.8 | 1469.8 | 1489.8 | 1491.1 |
| 15° | 1436.4 | 1443.1 | 1455.1 | 1477.8 | 1480.4 |
| 17.5° | 1409.8 | 1420.4 | 1436.4 | 1463.1 | 1467.1 |
| 20° | 1381.7 | 1393.8 | 1415.1 | 1444.4 | 1449.8 |
| 22.5° | 1348.4 | 1365.7 | 1392.4 | 1423.1 | 1429.8 |
| 25° | 1313.7 | 1335.1 | 1364.4 | 1400.4 | 1408.4 |
| 27.5° | 1276.4 | 1301.7 | 1336.4 | 1373.7 | 1383.1 |
| 30° | 1236.4 | 1265.7 | 1307.1 | 1347.1 | 1356.4 |
| 32.5° | 1193.7 | 1228.4 | 1273.7 | 1317.7 | 1329.7 |
| 35° | 1148.3 | 1187.0 | 1237.7 | 1285.7 | 1299.1 |
| 37.5° | 1104.3 | 1145.7 | 1201.7 | 1253.7 | 1268.4 |
| 40° | 1057.7 | 1101.7 | 1164.3 | 1219.0 | 1235.0 |
| 42.5° | 1004.3 | 1057.7 | 1125.7 | 1184.4 | 1203.0 |
| 45° | 960.3 | 1011.0 | 1085.7 | 1145.7 | 1167.0 |
| 47.5° | 905.6 | 964.3 | 1044.3 | 1108.3 | 1129.7 |
| 50° | 850.9 | 917.6 | 1000.3 | 1067.0 | 1089.7 |
| 52.5° | 797.6 | 865.6 | 957.6 | 1023.0 | 1043.0 |
| 55° | 744.2 | 814.9 | 908.3 | 975.0 | 997.6 |
| 57.5° | 688.2 | 765.6 | 860.3 | 926.9 | 945.6 |
| 60° | 632.2 | 709.5 | 806.9 | 870.9 | 889.6 |
| 62.5° | 573.5 | 656.2 | 753.6 | 812.2 | 830.9 |
| 65° | 513.5 | 597.5 | 693.5 | 748.2 | 760.2 |
| 67.5° | 457.5 | 542.8 | 629.5 | 680.2 | 692.2 |
| 70° | 393.5 | 484.1 | 565.5 | 602.8 | 604.2 |
| 72.5° | 334.8 | 418.8 | 496.1 | 506.8 | 504.2 |
| 75° | 272.1 | 354.8 | 413.5 | 404.1 | 394.8 |
| 77.5° | 210.7 | 294.8 | 325.4 | 298.8 | 292.1 |
| 80° | 153.4 | 229.4 | 226.7 | 201.4 | 197.4 |
| 82.5° | 105.4 | 158.7 | 130.7 | 106.7 | 98.7 |
| 85° | 56.0 | 81.4 | 57.4 | 38.7 | 37.3 |
| 87.5° | 21.3 | 20.0 | 12.0 | 8.0 | 8.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)