

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: P475302

Luminaire Tested: **22CZ2-65VHE-SQR-UNV-L840-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P475302
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 22CZ2-65VHE-SQR-UNV-L840-CD1-U
Description: 2'X2' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SQUARE LENS
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6300.3 lumens
Efficiency: N/A
Efficacy: 137.9 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.31 / 1.37
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

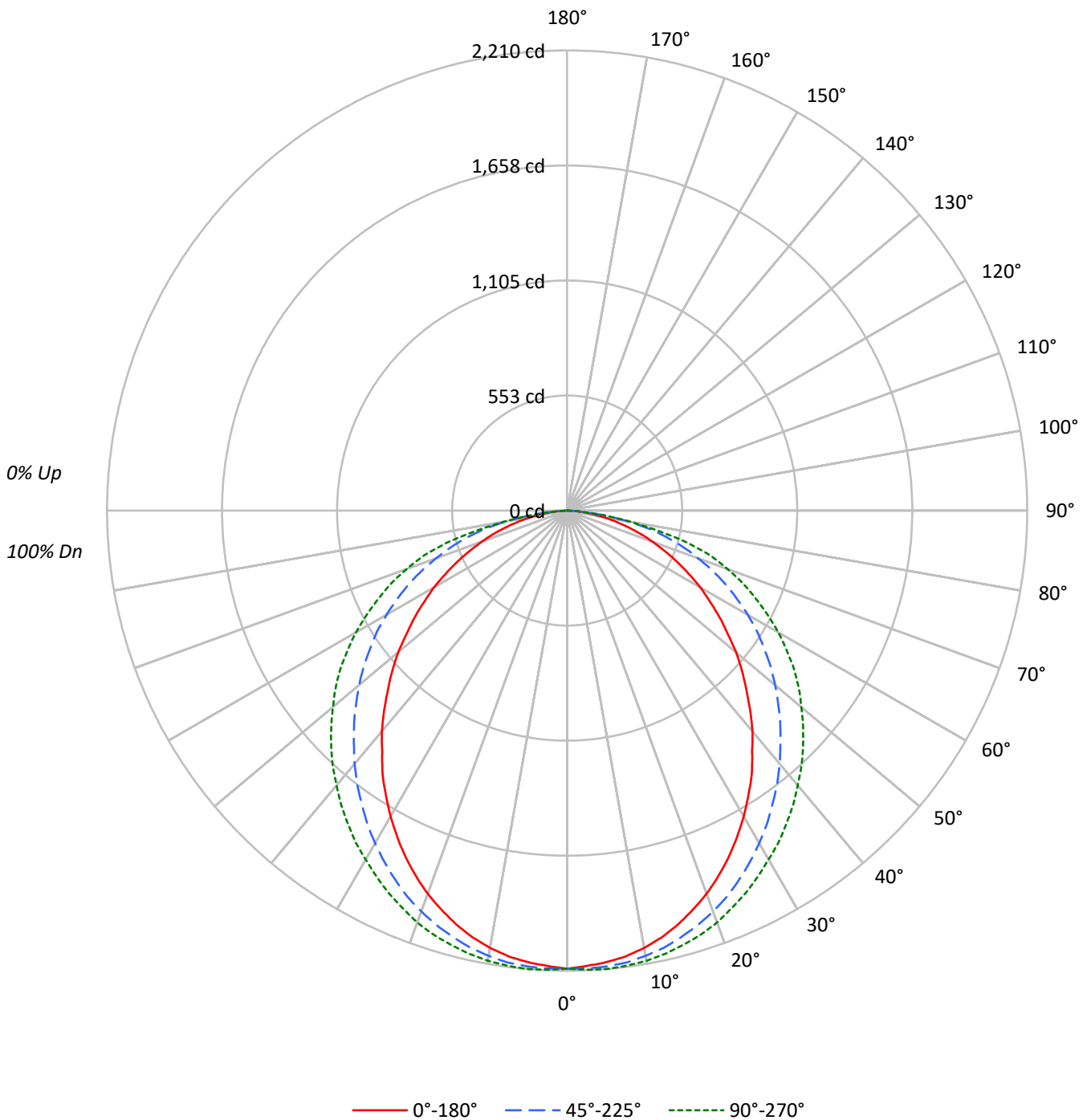
Input Watts (W): 45.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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 | 109 | 104 | 99 | 95 | 106 | 101 | 97 | 94 | 97 | 94 | 91 | 93 | 91 | 88 | 90 | 87 | 85 | 83 |
| 2 | 99 | 90 | 83 | 77 | 96 | 88 | 82 | 76 | 85 | 79 | 75 | 81 | 77 | 73 | 78 | 75 | 71 | 69 |
| 3 | 90 | 79 | 71 | 64 | 87 | 77 | 70 | 63 | 74 | 68 | 62 | 72 | 66 | 61 | 69 | 64 | 60 | 58 |
| 4 | 82 | 70 | 61 | 54 | 80 | 68 | 60 | 54 | 66 | 59 | 53 | 64 | 57 | 52 | 61 | 56 | 51 | 49 |
| 5 | 75 | 62 | 53 | 46 | 73 | 61 | 53 | 46 | 59 | 51 | 46 | 57 | 50 | 45 | 55 | 49 | 45 | 43 |
| 6 | 70 | 56 | 47 | 41 | 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° | 5922 | 5922 | 5922 |
| 5° | 5880 | 5937 | 5970 |
| 10° | 5826 | 5932 | 5997 |
| 15° | 5732 | 5906 | 6015 |
| 20° | 5609 | 5866 | 6028 |
| 25° | 5452 | 5806 | 6019 |
| 30° | 5268 | 5733 | 6012 |
| 35° | 5078 | 5648 | 6032 |
| 40° | 4863 | 5578 | 6051 |
| 45° | 4631 | 5508 | 6100 |
| 50° | 4431 | 5458 | 6146 |
| 55° | 4195 | 5415 | 6244 |
| 60° | 3975 | 5392 | 6309 |
| 65° | 3712 | 5349 | 6358 |
| 70° | 3411 | 5269 | 6446 |
| 75° | 3079 | 5130 | 6216 |
| 80° | 2641 | 4544 | 4682 |
| 85° | 2124 | 2677 | 2124 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 208.6 | 3.3 |
| 10°-20° | 596.5 | 9.5 |
| 20°-30° | 896.0 | 14.2 |
| 30°-40° | 1068.6 | 17.0 |
| 40°-50° | 1104.8 | 17.5 |
| 50°-60° | 1015.7 | 16.1 |
| 60°-70° | 808.6 | 12.8 |
| 70°-80° | 494.0 | 7.8 |
| 80°-90° | 107.4 | 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° | 1701.2 | 27.0 |
| 0°-40° | 2769.7 | 44.0 |
| 0°-60° | 4890.3 | 77.6 |
| 0°-90° | 6300.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 6300.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2201 | 2201 | 2201 | 2201 | 2201 | |
| 5° | 2177 | 2183 | 2198 | 2207 | 2210 | 206 |
| 15° | 2057 | 2081 | 2120 | 2150 | 2159 | 579 |
| 25° | 1836 | 1881 | 1956 | 2010 | 2027 | 845 |
| 35° | 1546 | 1612 | 1719 | 1809 | 1836 | 964 |
| 45° | 1217 | 1304 | 1447 | 1564 | 1603 | 941 |
| 55° | 894 | 993 | 1154 | 1286 | 1331 | 800 |
| 65° | 583 | 682 | 840 | 957 | 999 | 578 |
| 75° | 296 | 383 | 493 | 580 | 598 | 315 |
| 85° | 69 | 84 | 87 | 75 | 69 | 79 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P475302

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2200.7 | 2200.7 | 2200.7 | 2200.7 | 2200.7 |
| 2.5° | 2188.8 | 2191.8 | 2200.7 | 2207.0 | 2207.0 |
| 5° | 2176.9 | 2182.9 | 2197.7 | 2207.0 | 2210.0 |
| 7.5° | 2159.0 | 2168.0 | 2188.8 | 2200.7 | 2204.0 |
| 10° | 2132.2 | 2144.1 | 2170.9 | 2188.8 | 2194.8 |
| 12.5° | 2099.1 | 2117.0 | 2150.1 | 2173.9 | 2179.9 |
| 15° | 2057.4 | 2081.3 | 2120.0 | 2150.1 | 2159.0 |
| 17.5° | 2009.5 | 2039.3 | 2087.2 | 2123.3 | 2135.2 |
| 20° | 1958.5 | 1988.6 | 2048.5 | 2090.2 | 2105.1 |
| 22.5° | 1899.0 | 1937.7 | 2006.5 | 2054.5 | 2066.4 |
| 25° | 1836.1 | 1880.8 | 1955.5 | 2009.5 | 2027.3 |
| 27.5° | 1767.3 | 1821.2 | 1901.9 | 1967.8 | 1982.7 |
| 30° | 1695.5 | 1752.4 | 1845.0 | 1916.8 | 1934.7 |
| 32.5° | 1620.7 | 1686.5 | 1785.1 | 1865.9 | 1890.0 |
| 35° | 1545.9 | 1611.7 | 1719.3 | 1809.3 | 1836.1 |
| 37.5° | 1459.2 | 1537.0 | 1656.7 | 1749.4 | 1782.2 |
| 40° | 1384.4 | 1459.2 | 1587.9 | 1689.5 | 1722.6 |
| 42.5° | 1300.7 | 1381.4 | 1516.1 | 1626.6 | 1665.7 |
| 45° | 1217.0 | 1303.7 | 1447.3 | 1564.1 | 1602.8 |
| 47.5° | 1139.2 | 1225.9 | 1375.5 | 1498.3 | 1537.0 |
| 50° | 1058.5 | 1148.2 | 1303.7 | 1429.4 | 1468.1 |
| 52.5° | 971.8 | 1070.4 | 1231.9 | 1357.6 | 1402.6 |
| 55° | 894.1 | 992.7 | 1154.1 | 1285.8 | 1330.8 |
| 57.5° | 813.3 | 914.9 | 1082.7 | 1208.1 | 1250.1 |
| 60° | 738.5 | 837.1 | 1001.9 | 1124.4 | 1172.3 |
| 62.5° | 657.8 | 759.4 | 920.9 | 1040.6 | 1085.6 |
| 65° | 583.0 | 682.0 | 840.1 | 956.9 | 998.6 |
| 67.5° | 508.2 | 607.2 | 756.4 | 867.3 | 914.9 |
| 70° | 433.5 | 532.4 | 669.7 | 777.6 | 819.3 |
| 72.5° | 367.9 | 454.6 | 586.0 | 684.9 | 723.6 |
| 75° | 296.1 | 382.8 | 493.4 | 580.0 | 597.9 |
| 77.5° | 230.3 | 308.1 | 400.7 | 439.4 | 445.7 |
| 80° | 170.4 | 230.3 | 293.2 | 302.1 | 302.1 |
| 82.5° | 113.5 | 158.5 | 182.3 | 185.3 | 182.3 |
| 85° | 68.8 | 83.7 | 86.7 | 74.8 | 68.8 |
| 87.5° | 23.8 | 23.8 | 14.9 | 8.9 | 3.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)