

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: P474952

Luminaire Tested: **22CZ2-55VHE-S-UNV-L840-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P474952
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 22CZ2-55VHE-S-UNV-L840-CD1-U
Description: 2'X2' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5784.5 lumens
Efficiency: N/A
Efficacy: 150.2 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.25 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

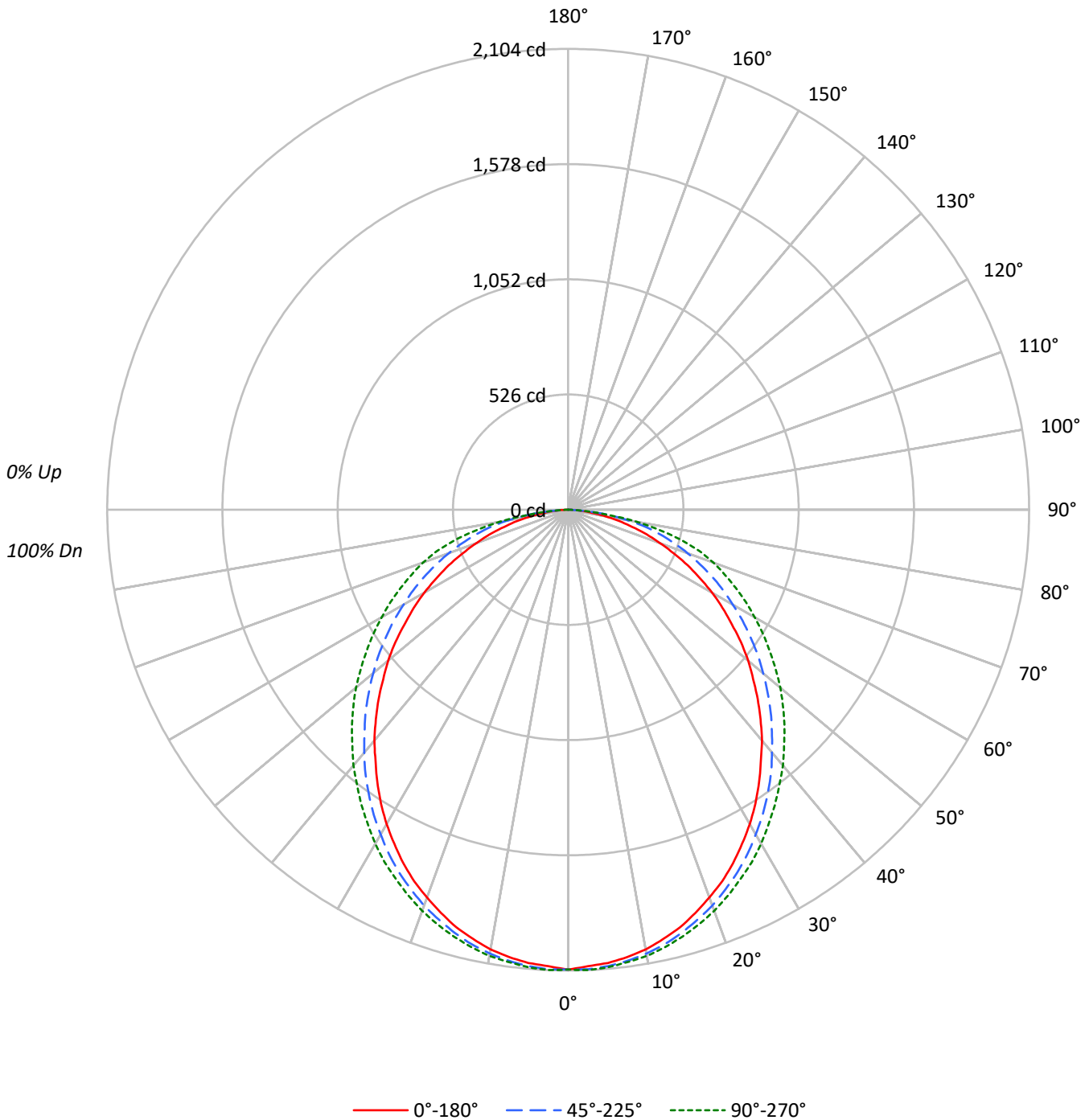
Input Watts (W): 38.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P474952

CATALOG NUMBER: 22CZ2-55VHE-S-UNV-L840-CD1-U

Luminous Intensity Polar Plot





TEST NUMBER: P474952

CATALOG NUMBER: 22CZ2-55VHE-S-UNV-L840-CD1-U

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 | 88 | 85 | 83 |
| 2 | 99 | 90 | 83 | 77 | 96 | 88 | 82 | 77 | 85 | 79 | 75 | | 81 | 77 | 73 | | 78 | 75 | 71 | 69 |
| 3 | 90 | 79 | 71 | 64 | 87 | 78 | 70 | 64 | 75 | 68 | 63 | | 72 | 66 | 61 | | 69 | 64 | 60 | 58 |
| 4 | 82 | 70 | 61 | 54 | 80 | 69 | 60 | 54 | 66 | 59 | 53 | | 64 | 58 | 53 | | 62 | 56 | 52 | 50 |
| 5 | 76 | 63 | 54 | 47 | 74 | 62 | 53 | 47 | 59 | 52 | 46 | | 57 | 51 | 46 | | 56 | 50 | 45 | 43 |
| 6 | 70 | 56 | 47 | 41 | 68 | 55 | 47 | 41 | 54 | 46 | 40 | | 52 | 45 | 40 | | 50 | 44 | 40 | 38 |
| 7 | 65 | 51 | 42 | 36 | 63 | 50 | 42 | 36 | 49 | 41 | 36 | | 47 | 41 | 36 | | 46 | 40 | 35 | 33 |
| 8 | 60 | 47 | 38 | 32 | 59 | 46 | 38 | 32 | 45 | 37 | 32 | | 43 | 37 | 32 | | 42 | 36 | 32 | 30 |
| 9 | 56 | 43 | 35 | 29 | 55 | 42 | 34 | 29 | 41 | 34 | 29 | | 40 | 33 | 29 | | 39 | 33 | 29 | 27 |
| 10 | 53 | 40 | 32 | 26 | 52 | 39 | 32 | 26 | 38 | 31 | 26 | | 37 | 31 | 26 | | 36 | 30 | 26 | 24 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 5651 | 5651 | 5651 |
| 5° | 5612 | 5649 | 5665 |
| 10° | 5569 | 5623 | 5654 |
| 15° | 5499 | 5573 | 5620 |
| 20° | 5396 | 5508 | 5580 |
| 25° | 5287 | 5424 | 5524 |
| 30° | 5150 | 5320 | 5472 |
| 35° | 4989 | 5210 | 5403 |
| 40° | 4834 | 5084 | 5355 |
| 45° | 4656 | 4976 | 5311 |
| 50° | 4489 | 4864 | 5292 |
| 55° | 4275 | 4768 | 5267 |
| 60° | 4083 | 4671 | 5289 |
| 65° | 3833 | 4617 | 5366 |
| 70° | 3502 | 4559 | 5540 |
| 75° | 3144 | 4527 | 5545 |
| 80° | 2647 | 4274 | 4925 |
| 85° | 1988 | 2896 | 2680 |



TEST NUMBER: P474952

CATALOG NUMBER: 22CZ2-55VHE-S-UNV-L840-CD1-U

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 198.3 | 3.4 |
| 10°-20° | 563.2 | 9.7 |
| 20°-30° | 839.8 | 14.5 |
| 30°-40° | 990.9 | 17.1 |
| 40°-50° | 1009.6 | 17.5 |
| 50°-60° | 910.5 | 15.7 |
| 60°-70° | 715.0 | 12.4 |
| 70°-80° | 447.0 | 7.7 |
| 80°-90° | 110.2 | 1.9 |
| 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° | 1601.3 | 27.7 |
| 0°-40° | 2592.2 | 44.8 |
| 0°-60° | 4512.2 | 78.0 |
| 0°-90° | 5784.5 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 5784.5 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2100 | 2100 | 2100 | 2100 | 2100 | |
| 5° | 2077 | 2082 | 2091 | 2096 | 2097 | 197 |
| 15° | 1974 | 1981 | 2000 | 2014 | 2017 | 556 |
| 25° | 1781 | 1790 | 1827 | 1853 | 1860 | 819 |
| 35° | 1519 | 1540 | 1586 | 1629 | 1645 | 950 |
| 45° | 1224 | 1244 | 1308 | 1370 | 1396 | 944 |
| 55° | 911 | 941 | 1016 | 1095 | 1123 | 817 |
| 65° | 602 | 634 | 725 | 806 | 843 | 594 |
| 75° | 302 | 344 | 435 | 510 | 533 | 323 |
| 85° | 64 | 83 | 94 | 92 | 87 | 78 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P474952

CATALOG NUMBER: 22CZ2-55VHE-S-UNV-L840-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2099.8 | 2099.8 | 2099.8 | 2099.8 | 2099.8 |
| 2.5° | 2085.8 | 2090.0 | 2099.8 | 2104.0 | 2104.0 |
| 5° | 2077.4 | 2081.6 | 2091.4 | 2095.6 | 2097.0 |
| 7.5° | 2060.6 | 2066.2 | 2077.4 | 2083.0 | 2083.0 |
| 10° | 2038.2 | 2045.2 | 2057.8 | 2066.2 | 2069.0 |
| 12.5° | 2007.4 | 2015.8 | 2032.6 | 2042.4 | 2045.2 |
| 15° | 1973.8 | 1980.8 | 2000.4 | 2014.4 | 2017.2 |
| 17.5° | 1930.4 | 1941.6 | 1962.6 | 1980.8 | 1985.0 |
| 20° | 1884.2 | 1896.8 | 1923.4 | 1944.4 | 1948.6 |
| 22.5° | 1836.6 | 1846.4 | 1875.8 | 1901.0 | 1906.6 |
| 25° | 1780.6 | 1790.4 | 1826.8 | 1853.4 | 1860.4 |
| 27.5° | 1719.0 | 1735.8 | 1772.2 | 1803.0 | 1814.2 |
| 30° | 1657.4 | 1674.2 | 1712.0 | 1748.4 | 1761.0 |
| 32.5° | 1590.2 | 1608.4 | 1651.8 | 1689.6 | 1702.2 |
| 35° | 1518.8 | 1539.8 | 1586.0 | 1629.4 | 1644.8 |
| 37.5° | 1444.6 | 1468.4 | 1520.2 | 1566.4 | 1583.2 |
| 40° | 1376.0 | 1392.8 | 1447.4 | 1500.6 | 1524.4 |
| 42.5° | 1299.1 | 1321.5 | 1376.0 | 1436.2 | 1458.6 |
| 45° | 1223.5 | 1244.5 | 1307.5 | 1370.4 | 1395.6 |
| 47.5° | 1145.1 | 1171.7 | 1234.7 | 1304.7 | 1329.9 |
| 50° | 1072.3 | 1094.7 | 1161.9 | 1236.1 | 1264.1 |
| 52.5° | 993.9 | 1017.7 | 1090.5 | 1167.5 | 1192.7 |
| 55° | 911.3 | 940.7 | 1016.3 | 1094.7 | 1122.7 |
| 57.5° | 835.7 | 863.7 | 943.5 | 1024.7 | 1054.1 |
| 60° | 758.7 | 786.7 | 867.9 | 950.5 | 982.7 |
| 62.5° | 677.5 | 709.7 | 797.9 | 877.7 | 914.1 |
| 65° | 601.9 | 634.1 | 725.1 | 806.3 | 842.7 |
| 67.5° | 522.1 | 559.9 | 650.9 | 736.3 | 772.7 |
| 70° | 445.1 | 489.9 | 579.5 | 663.5 | 704.1 |
| 72.5° | 376.6 | 413.0 | 506.7 | 594.9 | 628.5 |
| 75° | 302.4 | 344.4 | 435.4 | 509.5 | 533.3 |
| 77.5° | 239.4 | 275.8 | 362.6 | 411.6 | 427.0 |
| 80° | 170.8 | 211.4 | 275.8 | 305.2 | 317.8 |
| 82.5° | 113.4 | 147.0 | 187.6 | 193.2 | 190.4 |
| 85° | 64.4 | 82.6 | 93.8 | 92.4 | 86.8 |
| 87.5° | 25.2 | 28.0 | 21.0 | 12.6 | 9.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)