

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: P474554

Luminaire Tested: **24CZ2-150VHE-HRP-UNV-L850-CD1-U**

Issue Date: 01/28/2021

Test Information

Test Method: LM-79-08
Report Number: P474554
Test Lab: INNOVATION CENTER(G3)
Issue Date: 01/28/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 24CZ2-150VHE-HRP-UNV-L850-CD1-U
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS W/ HRP
INSERT
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12405.8 lumens
Efficiency: N/A
Efficacy: 113.1 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.3 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

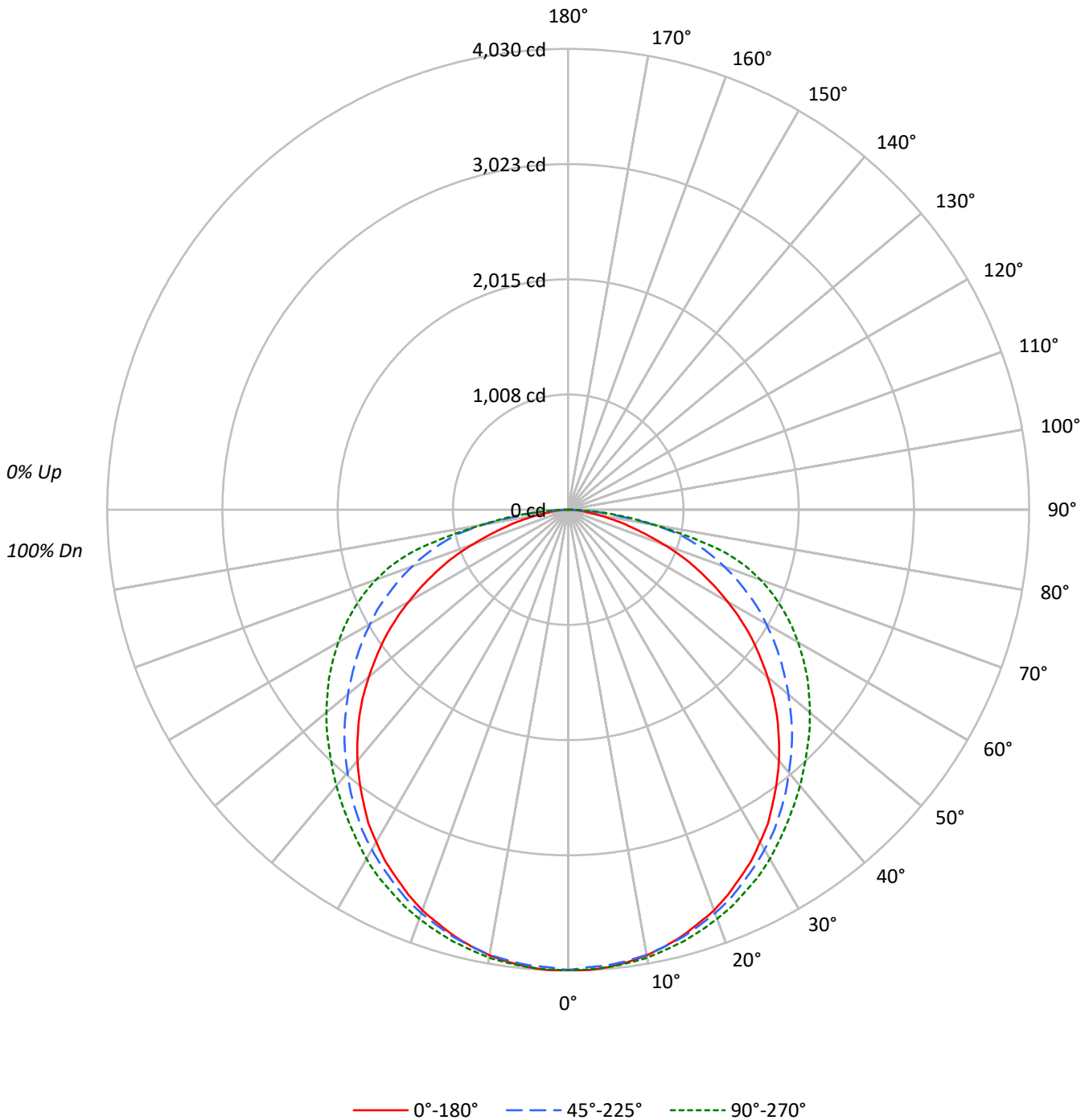
Input Watts (W): 109.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P474554

CATALOG NUMBER: 24CZ2-150VHE-HRP-UNV-L850-CD1-U

Luminous Intensity Polar Plot





TEST NUMBER: P474554

CATALOG NUMBER: 24CZ2-150VHE-HRP-UNV-L850-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 | 108 | 103 | 98 | 94 | 105 | 101 | 96 | 93 | 96 | 93 | 90 | 92 | 90 | 87 | 89 | 86 | 84 | 82 |
| 2 | 98 | 89 | 82 | 76 | 95 | 87 | 80 | 75 | 83 | 78 | 73 | 80 | 75 | 71 | 77 | 73 | 70 | 67 |
| 3 | 89 | 78 | 69 | 62 | 86 | 76 | 68 | 62 | 73 | 66 | 61 | 70 | 64 | 59 | 68 | 63 | 58 | 56 |
| 4 | 81 | 68 | 59 | 52 | 79 | 67 | 59 | 52 | 65 | 57 | 51 | 62 | 56 | 50 | 60 | 54 | 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 | 42 | 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 | 38 | 31 | 27 | 25 |
| 10 | 52 | 38 | 30 | 25 | 50 | 38 | 30 | 25 | 37 | 30 | 25 | 36 | 29 | 24 | 35 | 29 | 24 | 23 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 5416 | 5416 | 5416 |
| 5° | 5423 | 5401 | 5423 |
| 10° | 5407 | 5400 | 5435 |
| 15° | 5375 | 5390 | 5440 |
| 20° | 5340 | 5376 | 5451 |
| 25° | 5274 | 5351 | 5459 |
| 30° | 5212 | 5333 | 5479 |
| 35° | 5127 | 5306 | 5485 |
| 40° | 5035 | 5273 | 5537 |
| 45° | 4921 | 5267 | 5623 |
| 50° | 4762 | 5262 | 5773 |
| 55° | 4593 | 5299 | 5982 |
| 60° | 4332 | 5381 | 6247 |
| 65° | 4002 | 5507 | 6598 |
| 70° | 3494 | 5700 | 7029 |
| 75° | 2835 | 5994 | 7263 |
| 80° | 2094 | 5877 | 5877 |
| 85° | 1604 | 4329 | 4888 |



TEST NUMBER: P474554

CATALOG NUMBER: 24CZ2-150VHE-HRP-UNV-L850-CD1-U

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 381.3 | 3.1 |
| 10°-20° | 1094.9 | 8.8 |
| 20°-30° | 1666.9 | 13.4 |
| 30°-40° | 2024.0 | 16.3 |
| 40°-50° | 2138.4 | 17.2 |
| 50°-60° | 2017.8 | 16.3 |
| 60°-70° | 1677.7 | 13.5 |
| 70°-80° | 1103.8 | 8.9 |
| 80°-90° | 300.9 | 2.4 |
| 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° | 3143.2 | 25.3 |
| 0°-40° | 5167.2 | 41.7 |
| 0°-60° | 9323.4 | 75.2 |
| 0°-90° | 12405.8 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 12405.8 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 4025 | 4025 | 4025 | 4025 | 4025 | |
| 5° | 4015 | 4015 | 3999 | 4015 | 4015 | 381 |
| 15° | 3859 | 3864 | 3869 | 3906 | 3906 | 1088 |
| 25° | 3552 | 3573 | 3604 | 3667 | 3677 | 1639 |
| 35° | 3122 | 3158 | 3230 | 3313 | 3340 | 1954 |
| 45° | 2586 | 2639 | 2768 | 2903 | 2955 | 1992 |
| 55° | 1958 | 2041 | 2259 | 2472 | 2550 | 1744 |
| 65° | 1257 | 1402 | 1730 | 1984 | 2072 | 1242 |
| 75° | 545 | 795 | 1153 | 1366 | 1397 | 588 |
| 85° | 104 | 229 | 280 | 312 | 317 | 127 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P474554

CATALOG NUMBER: 24CZ2-150VHE-HRP-UNV-L850-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 4025.0 | 4025.0 | 4025.0 | 4025.0 | 4025.0 |
| 2.5° | 4030.4 | 4025.0 | 4004.2 | 4025.0 | 4025.0 |
| 5° | 4014.9 | 4014.9 | 3998.9 | 4014.9 | 4014.9 |
| 7.5° | 3988.8 | 3988.8 | 3978.1 | 3998.9 | 3998.9 |
| 10° | 3957.3 | 3957.3 | 3952.5 | 3978.1 | 3978.1 |
| 12.5° | 3911.0 | 3915.7 | 3911.0 | 3941.9 | 3941.9 |
| 15° | 3858.7 | 3864.0 | 3869.4 | 3905.6 | 3905.6 |
| 17.5° | 3791.6 | 3801.7 | 3812.3 | 3853.4 | 3858.7 |
| 20° | 3729.2 | 3734.0 | 3754.8 | 3801.7 | 3807.0 |
| 22.5° | 3646.0 | 3661.5 | 3687.6 | 3734.0 | 3750.0 |
| 25° | 3552.2 | 3573.0 | 3604.5 | 3666.8 | 3676.9 |
| 27.5° | 3464.3 | 3479.7 | 3521.3 | 3589.0 | 3609.8 |
| 30° | 3355.0 | 3381.1 | 3432.8 | 3500.5 | 3526.6 |
| 32.5° | 3251.0 | 3277.2 | 3339.5 | 3412.0 | 3432.8 |
| 35° | 3121.5 | 3157.8 | 3230.3 | 3313.4 | 3339.5 |
| 37.5° | 2996.8 | 3033.0 | 3121.5 | 3214.8 | 3246.2 |
| 40° | 2866.7 | 2908.3 | 3002.1 | 3110.9 | 3152.4 |
| 42.5° | 2726.5 | 2783.6 | 2887.5 | 3006.9 | 3053.8 |
| 45° | 2586.3 | 2638.6 | 2768.1 | 2903.0 | 2955.2 |
| 47.5° | 2436.0 | 2498.4 | 2638.6 | 2799.6 | 2861.9 |
| 50° | 2275.0 | 2352.9 | 2513.8 | 2690.3 | 2758.0 |
| 52.5° | 2114.1 | 2202.0 | 2383.8 | 2581.0 | 2654.0 |
| 55° | 1957.9 | 2041.0 | 2259.0 | 2472.3 | 2550.1 |
| 57.5° | 1786.8 | 1890.7 | 2129.5 | 2357.7 | 2436.0 |
| 60° | 1609.8 | 1724.4 | 1999.5 | 2238.3 | 2321.4 |
| 62.5° | 1433.4 | 1563.4 | 1874.7 | 2114.1 | 2202.0 |
| 65° | 1256.9 | 1402.4 | 1729.7 | 1984.0 | 2072.5 |
| 67.5° | 1085.3 | 1246.3 | 1594.3 | 1849.1 | 1937.1 |
| 70° | 888.1 | 1090.6 | 1448.8 | 1698.3 | 1786.8 |
| 72.5° | 706.3 | 940.3 | 1308.6 | 1542.6 | 1620.5 |
| 75° | 545.3 | 794.8 | 1153.0 | 1365.7 | 1397.1 |
| 77.5° | 399.8 | 649.2 | 992.0 | 1064.5 | 1069.8 |
| 80° | 270.3 | 519.2 | 758.5 | 747.9 | 758.5 |
| 82.5° | 176.4 | 389.7 | 477.6 | 535.2 | 540.0 |
| 85° | 103.9 | 228.7 | 280.4 | 311.8 | 316.6 |
| 87.5° | 51.7 | 77.8 | 98.6 | 103.9 | 114.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)