

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: P563308

Luminaire Tested: **VHB-48-N-UNV-L840-CD**

Issue Date: 6/3/2022



Test Information

Test Method: LM-79-08
Report Number: P563308
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P364424)
Test Lab: INNOVATION CENTER
Issue Date: 6/3/2022
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: VHB-48-N-UNV-L840-CD
Description: 48000 LUMEN, VHB LED LUMINAIRE WITH, NARROW LENS AND 80CRI, 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

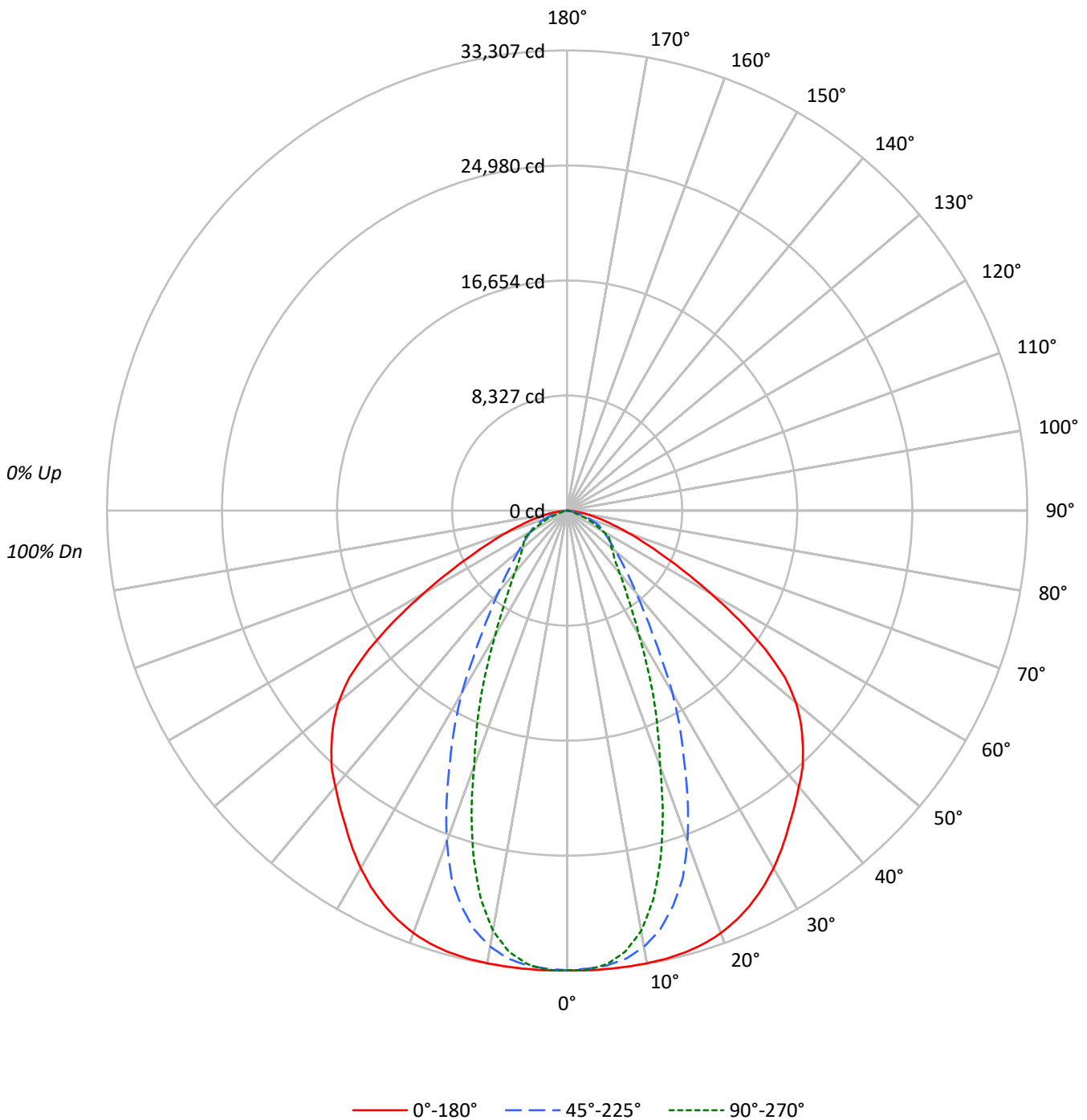
Lumens per Lamp: N/A
Luminaire Lumens: 46928.0 lumens
Efficiency: N/A
Efficacy: 144.8 lumens/watt
Spacing Criteria (0/90/45): 1.32 / 0.72 / 0.86
Luminous Opening: Rectangular (W 1.75' x L: 1.58' x H: 0')
CIE Type: Direct

Input Watts (W): 324
Input Voltage (V): NR
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: P563308

CATALOG NUMBER: VHB-48-N-UNV-L840-CD

Luminous Intensity Polar Plot





TEST NUMBER: P563308

CATALOG NUMBER: VHB-48-N-UNV-L840-CD

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 | 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 | | | | | 100 | | | |
| 1 | 111 | 108 | 104 | 101 | 109 | 105 | 102 | 100 | 101 | 99 | 96 | 97 | 95 | 94 | 94 | 92 | 91 | 89 | | | | | 89 | | | |
| 2 | 103 | 97 | 91 | 87 | 101 | 95 | 90 | 86 | 91 | 87 | 84 | 88 | 85 | 82 | 85 | 83 | 80 | 78 | | | | | 78 | | | |
| 3 | 96 | 87 | 81 | 75 | 94 | 86 | 80 | 75 | 83 | 78 | 73 | 80 | 76 | 72 | 78 | 74 | 71 | 69 | | | | | 69 | | | |
| 4 | 89 | 79 | 72 | 66 | 87 | 78 | 71 | 66 | 76 | 70 | 65 | 74 | 68 | 64 | 71 | 67 | 64 | 62 | | | | | 62 | | | |
| 5 | 83 | 72 | 65 | 59 | 81 | 71 | 64 | 59 | 69 | 63 | 58 | 68 | 62 | 58 | 66 | 61 | 57 | 55 | | | | | 55 | | | |
| 6 | 78 | 66 | 59 | 53 | 76 | 66 | 58 | 53 | 64 | 57 | 53 | 62 | 57 | 52 | 61 | 56 | 52 | 50 | | | | | 50 | | | |
| 7 | 73 | 61 | 54 | 48 | 71 | 61 | 53 | 48 | 59 | 53 | 48 | 58 | 52 | 48 | 57 | 51 | 47 | 46 | | | | | 46 | | | |
| 8 | 69 | 57 | 49 | 44 | 67 | 56 | 49 | 44 | 55 | 49 | 44 | 54 | 48 | 44 | 53 | 47 | 44 | 42 | | | | | 42 | | | |
| 9 | 65 | 53 | 46 | 41 | 63 | 52 | 45 | 41 | 51 | 45 | 41 | 50 | 44 | 40 | 49 | 44 | 40 | 39 | | | | | 39 | | | |
| 10 | 61 | 49 | 42 | 38 | 60 | 49 | 42 | 38 | 48 | 42 | 38 | 47 | 41 | 37 | 46 | 41 | 37 | 36 | | | | | 36 | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 129269 | 129269 | 129269 |
| 5° | 129876 | 128890 | 128517 |
| 10° | 131240 | 126419 | 121802 |
| 15° | 133112 | 119110 | 105022 |
| 20° | 134546 | 105227 | 81311 |
| 25° | 134816 | 85925 | 63005 |
| 30° | 134059 | 68244 | 46632 |
| 35° | 132529 | 50569 | 36261 |
| 40° | 132322 | 39270 | 29926 |
| 45° | 132600 | 32318 | 26584 |
| 50° | 130718 | 27951 | 25356 |
| 55° | 118667 | 24916 | 25620 |
| 60° | 93296 | 23812 | 23345 |
| 65° | 69295 | 23079 | 17568 |
| 70° | 53147 | 18476 | 10725 |
| 75° | 40454 | 13177 | 5917 |
| 80° | 29705 | 6130 | 4779 |
| 85° | 18583 | 5269 | 4252 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 3126.3 | 6.7 |
| 10°-20° | 8229.8 | 17.5 |
| 20°-30° | 9938.4 | 21.2 |
| 30°-40° | 8886.1 | 18.9 |
| 40°-50° | 6958.5 | 14.8 |
| 50°-60° | 5257.6 | 11.2 |
| 60°-70° | 3122.7 | 6.7 |
| 70°-80° | 1200.1 | 2.6 |
| 80°-90° | 208.5 | 0.4 |
| 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° | 21294.5 | 45.4 |
| 0°-40° | 30180.6 | 64.3 |
| 0°-60° | 42396.8 | 90.3 |
| 0°-90° | 46928.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 46928.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-------|-------|-------|-------|-------|-------|
| 0° | 33276 | 33276 | 33276 | 33276 | 33276 | |
| 5° | 33305 | 33159 | 33052 | 33008 | 32956 | ### |
| 15° | 33097 | 32006 | 29616 | 27140 | 26113 | 9352 |
| 25° | 31452 | 27752 | 20046 | 15805 | 14699 | 14481 |
| 35° | 27945 | 19886 | 10663 | 8314 | 7646 | 17524 |
| 45° | 24136 | 10284 | 5882 | 4970 | 4839 | 18578 |
| 55° | 17521 | 5580 | 3679 | 3664 | 3783 | 15386 |
| 65° | 7538 | 3133 | 2511 | 2094 | 1911 | 7767 |
| 75° | 2695 | 1506 | 878 | 434 | 394 | 2951 |
| 85° | 417 | 145 | 118 | 104 | 95 | 556 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P563308

CATALOG NUMBER: VHB-48-N-UNV-L840-CD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|---------|---------|---------|---------|---------|
| 0° | 33275.5 | 33275.5 | 33275.5 | 33275.5 | 33275.5 |
| 2.5° | 33307.0 | 33197.0 | 33188.4 | 33259.1 | 33269.7 |
| 5° | 33304.6 | 33159.3 | 33051.8 | 33008.2 | 32956.0 |
| 7.5° | 33294.4 | 33074.5 | 32711.4 | 32362.7 | 32201.0 |
| 10° | 33269.7 | 32879.4 | 32047.5 | 31254.8 | 30877.1 |
| 12.5° | 33215.5 | 32530.8 | 31061.7 | 29605.1 | 28812.4 |
| 15° | 33097.3 | 32005.9 | 29615.7 | 27139.9 | 26112.9 |
| 17.5° | 32883.3 | 31281.5 | 27843.5 | 24349.3 | 23027.4 |
| 20° | 32545.3 | 30360.5 | 25453.3 | 21166.5 | 19668.3 |
| 22.5° | 32059.7 | 29157.1 | 22820.1 | 18300.8 | 17103.8 |
| 25° | 31451.9 | 27752.4 | 20046.0 | 15804.7 | 14698.7 |
| 27.5° | 30729.9 | 26112.9 | 17655.4 | 13480.8 | 12391.4 |
| 30° | 29885.4 | 24197.8 | 15213.4 | 11285.4 | 10395.4 |
| 32.5° | 28941.2 | 22180.9 | 12663.4 | 9610.9 | 8878.7 |
| 35° | 27945.2 | 19886.2 | 10663.1 | 8314.2 | 7646.0 |
| 37.5° | 27007.2 | 17429.3 | 9030.3 | 7167.0 | 6697.8 |
| 40° | 26092.5 | 14848.3 | 7743.7 | 6260.1 | 5901.2 |
| 42.5° | 25229.1 | 12379.2 | 6760.2 | 5500.8 | 5266.0 |
| 45° | 24135.7 | 10283.5 | 5882.4 | 4969.6 | 4838.8 |
| 47.5° | 22975.6 | 8679.3 | 5185.1 | 4537.7 | 4492.2 |
| 50° | 21628.9 | 7393.1 | 4624.9 | 4162.4 | 4195.4 |
| 52.5° | 19881.9 | 6376.3 | 4093.7 | 3896.6 | 3994.4 |
| 55° | 17520.7 | 5579.7 | 3678.7 | 3664.2 | 3782.7 |
| 57.5° | 14754.8 | 4818.0 | 3350.9 | 3442.4 | 3575.1 |
| 60° | 12007.8 | 4206.0 | 3064.7 | 3197.4 | 3004.6 |
| 62.5° | 9592.5 | 3643.8 | 2793.0 | 2550.0 | 2384.3 |
| 65° | 7538.4 | 3133.0 | 2510.7 | 2093.8 | 1911.2 |
| 67.5° | 6011.2 | 2657.9 | 2112.2 | 1666.2 | 1514.7 |
| 70° | 4679.1 | 2234.7 | 1626.6 | 1251.2 | 944.2 |
| 72.5° | 3585.7 | 1867.6 | 1269.7 | 711.8 | 537.5 |
| 75° | 2695.2 | 1506.4 | 877.9 | 433.8 | 394.2 |
| 77.5° | 1921.4 | 1118.5 | 468.8 | 313.3 | 290.5 |
| 80° | 1327.8 | 718.1 | 274.0 | 226.1 | 213.6 |
| 82.5° | 823.7 | 346.7 | 186.9 | 161.8 | 151.5 |
| 85° | 416.9 | 145.3 | 118.2 | 103.6 | 95.4 |
| 87.5° | 139.0 | 70.7 | 53.8 | 49.9 | 45.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)