

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: P470163

Luminaire Tested: **VHB2-18-W-UNV-L735-CD-U**

Issue Date: 01/20/2021

Test Information

Test Method: LM-79-08
Report Number: P470163
Test Lab: INNOVATION CENTER(G3)
Issue Date: 01/20/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: VHB2-18-W-UNV-L735-CD-U
Description: VHB2 LED HIGH BAY LUMINAIRE WITH WIDE DISTRIBUTION LENS
Light Source: 3500K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

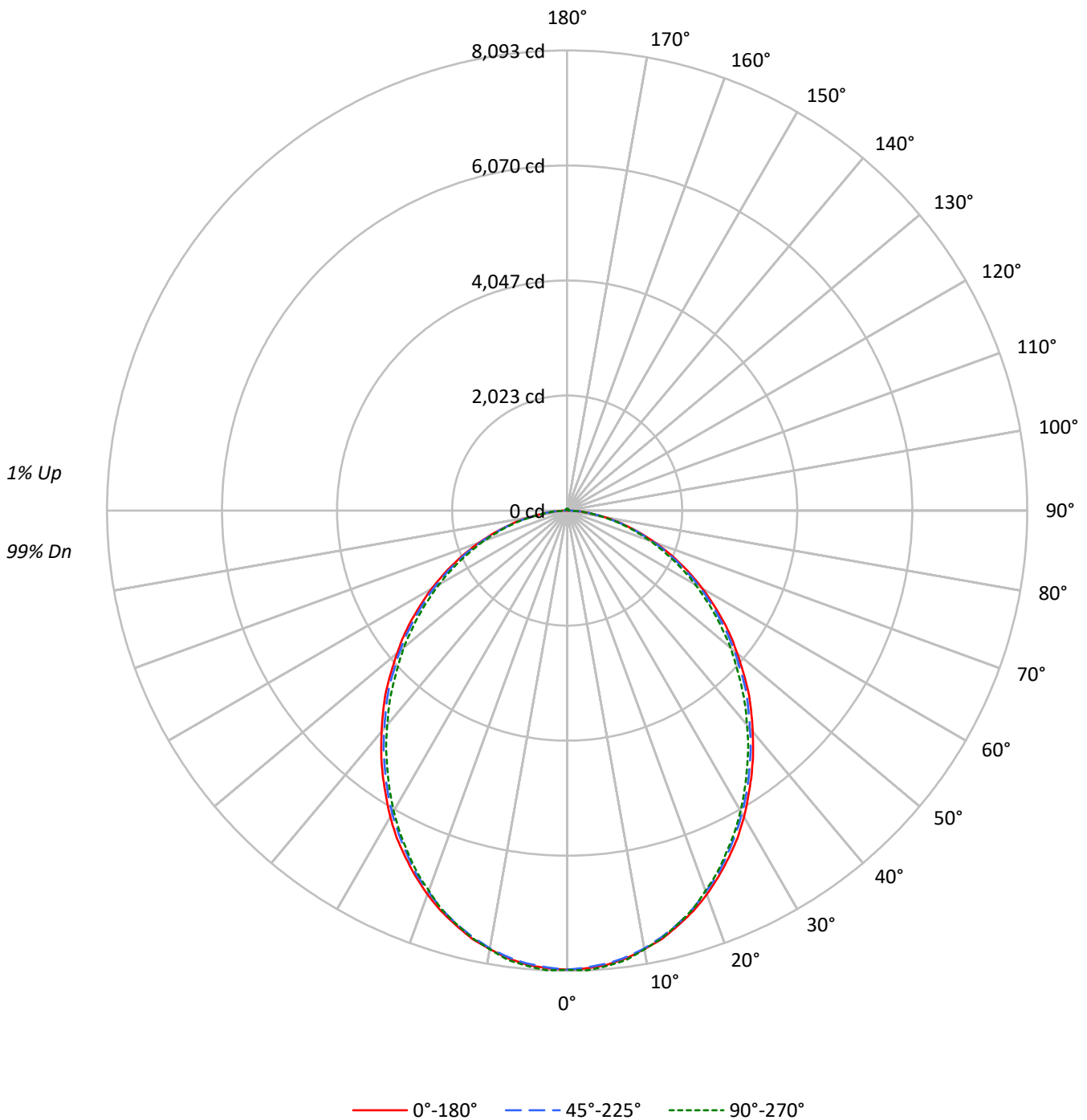
Lumens per Lamp: N/A
Luminaire Lumens: 19537.2 lumens
Efficiency: N/A
Efficacy: 159.7 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.14 / 1.25
Luminous Opening: Rectangular (W 1.17' x L: 1.5' x H: 0')
CIE Type: Direct

Input Watts (W): 122.3
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: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P470163

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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 | 50 | 30 | 10 | 50 | 30 | 10 | 0 | | |
| RCR | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 101 | 101 | 101 | 99 | | | | | | | | |
| 1 | 109 | 104 | 100 | 97 | 106 | 102 | 98 | 95 | 98 | 95 | 92 | 94 | 91 | 89 | 90 | 88 | 86 | 84 | | | | | | | | |
| 2 | 100 | 92 | 85 | 79 | 97 | 90 | 84 | 78 | 86 | 81 | 76 | 83 | 78 | 75 | 79 | 76 | 73 | 71 | | | | | | | | |
| 3 | 91 | 81 | 73 | 67 | 89 | 79 | 72 | 66 | 76 | 70 | 65 | 73 | 68 | 64 | 71 | 66 | 62 | 60 | | | | | | | | |
| 4 | 84 | 72 | 63 | 57 | 81 | 71 | 63 | 57 | 68 | 61 | 56 | 66 | 60 | 55 | 63 | 58 | 54 | 52 | | | | | | | | |
| 5 | 77 | 65 | 56 | 49 | 75 | 63 | 55 | 49 | 61 | 54 | 48 | 59 | 53 | 48 | 57 | 52 | 47 | 45 | | | | | | | | |
| 6 | 71 | 58 | 50 | 43 | 69 | 57 | 49 | 43 | 56 | 48 | 43 | 54 | 47 | 42 | 52 | 46 | 42 | 40 | | | | | | | | |
| 7 | 66 | 53 | 45 | 39 | 65 | 52 | 44 | 38 | 51 | 43 | 38 | 49 | 43 | 38 | 48 | 42 | 37 | 35 | | | | | | | | |
| 8 | 62 | 49 | 40 | 35 | 60 | 48 | 40 | 34 | 47 | 39 | 34 | 45 | 39 | 34 | 44 | 38 | 34 | 32 | | | | | | | | |
| 9 | 58 | 45 | 37 | 31 | 56 | 44 | 36 | 31 | 43 | 36 | 31 | 42 | 35 | 31 | 41 | 35 | 31 | 29 | | | | | | | | |
| 10 | 54 | 41 | 34 | 28 | 53 | 41 | 33 | 28 | 40 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 49661 | 49661 | 49661 |
| 5° | 49511 | 49386 | 49637 |
| 10° | 48915 | 48820 | 48928 |
| 15° | 48078 | 47916 | 47942 |
| 20° | 47030 | 46691 | 46564 |
| 25° | 45665 | 45257 | 44988 |
| 30° | 44184 | 43679 | 43325 |
| 35° | 42475 | 41926 | 41422 |
| 40° | 40758 | 40130 | 39509 |
| 45° | 39220 | 38601 | 37636 |
| 50° | 37316 | 36742 | 35885 |
| 55° | 35668 | 34893 | 33945 |
| 60° | 33824 | 33074 | 31998 |
| 65° | 31834 | 31064 | 29954 |
| 70° | 29497 | 28948 | 27943 |
| 75° | 26871 | 26510 | 25592 |
| 80° | 24023 | 23629 | 22800 |
| 85° | 20381 | 20381 | 19880 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 759.1 | 3.9 |
| 10°-20° | 2120.5 | 10.9 |
| 20°-30° | 3072.4 | 15.7 |
| 30°-40° | 3494.6 | 17.9 |
| 40°-50° | 3407.6 | 17.4 |
| 50°-60° | 2909.2 | 14.9 |
| 60°-70° | 2112.0 | 10.8 |
| 70°-80° | 1179.3 | 6.0 |
| 80°-90° | 331.1 | 1.7 |
| 90°-100° | 23.5 | 0.1 |
| 100°-110° | 23.3 | 0.1 |
| 110°-120° | 22.9 | 0.1 |
| 120°-130° | 21.9 | 0.1 |
| 130°-140° | 20.7 | 0.1 |
| 140°-150° | 17.9 | 0.1 |
| 150°-160° | 12.5 | 0.1 |
| 160°-170° | 6.9 | 0.0 |
| 170°-180° | 2.1 | 0.0 |
| 0°-30° | 5951.9 | 30.5 |
| 0°-40° | 9446.5 | 48.4 |
| 0°-60° | 15763.3 | 80.7 |
| 0°-90° | 19385.6 | 99.2 |
| 90°-120° | 69.7 | 0.4 |
| 90°-150° | 130.1 | 0.7 |
| 90°-180° | 152.0 | 0.8 |
| 0°-180° | 19537.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 8074 | 8074 | 8074 | 8074 | 8074 | |
| 5° | 8019 | 8001 | 7999 | 8026 | 8039 | 759 |
| 15° | 7550 | 7537 | 7525 | 7524 | 7529 | 2128 |
| 25° | 6729 | 6705 | 6669 | 6644 | 6629 | 3098 |
| 35° | 5657 | 5638 | 5584 | 5532 | 5516 | 3538 |
| 45° | 4509 | 4466 | 4438 | 4355 | 4327 | 3469 |
| 55° | 3326 | 3312 | 3254 | 3186 | 3166 | 2975 |
| 65° | 2187 | 2171 | 2134 | 2085 | 2058 | 2169 |
| 75° | 1131 | 1137 | 1116 | 1088 | 1077 | 1209 |
| 85° | 289 | 295 | 289 | 281 | 282 | 316 |
| 90° | 20 | 22 | 26 | 32 | 30 | 24 |
| 95° | 9 | 15 | 22 | 26 | 28 | 9 |
| 105° | 17 | 17 | 21 | 26 | 28 | 18 |
| 115° | 20 | 20 | 22 | 25 | 28 | 20 |
| 125° | 21 | 23 | 23 | 26 | 26 | 20 |
| 135° | 24 | 26 | 28 | 28 | 28 | 19 |
| 145° | 23 | 28 | 30 | 32 | 32 | 15 |
| 155° | 22 | 24 | 28 | 30 | 30 | 10 |
| 165° | 18 | 21 | 24 | 28 | 28 | 5 |
| 175° | 20 | 20 | 21 | 22 | 23 | 2 |
| 180° | 20 | 20 | 20 | 20 | 20 | |



TEST NUMBER: P470163

CATALOG NUMBER: VHB2-18-W-UNV-L735-CD-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|--------|--------|--------|--------|--------|
| 0° | 8073.9 | 8073.9 | 8073.9 | 8073.9 | 8073.9 |
| 2.5° | 8057.6 | 8036.2 | 8040.3 | 8066.7 | 8093.2 |
| 5° | 8018.9 | 8000.6 | 7998.6 | 8026.1 | 8039.3 |
| 7.5° | 7943.7 | 7924.4 | 7923.4 | 7954.9 | 7970.1 |
| 10° | 7831.8 | 7826.8 | 7816.6 | 7837.9 | 7833.9 |
| 12.5° | 7714.9 | 7686.4 | 7681.3 | 7698.6 | 7699.7 |
| 15° | 7550.2 | 7537.0 | 7524.8 | 7523.7 | 7528.8 |
| 17.5° | 7381.4 | 7352.9 | 7345.8 | 7341.7 | 7351.9 |
| 20° | 7185.1 | 7153.6 | 7133.3 | 7129.2 | 7113.9 |
| 22.5° | 6962.4 | 6943.1 | 6923.8 | 6890.2 | 6893.3 |
| 25° | 6728.6 | 6705.2 | 6668.6 | 6644.2 | 6628.9 |
| 27.5° | 6489.6 | 6453.0 | 6414.3 | 6392.0 | 6378.8 |
| 30° | 6221.1 | 6198.8 | 6150.0 | 6108.3 | 6100.1 |
| 32.5° | 5936.4 | 5921.2 | 5872.4 | 5835.8 | 5811.3 |
| 35° | 5656.8 | 5638.5 | 5583.6 | 5531.7 | 5516.5 |
| 37.5° | 5372.1 | 5349.7 | 5302.9 | 5257.2 | 5231.7 |
| 40° | 5076.2 | 5059.9 | 4997.9 | 4942.9 | 4920.6 |
| 42.5° | 4790.4 | 4769.1 | 4713.1 | 4646.0 | 4632.8 |
| 45° | 4508.8 | 4466.0 | 4437.6 | 4355.2 | 4326.7 |
| 47.5° | 4196.6 | 4185.4 | 4124.4 | 4058.3 | 4026.8 |
| 50° | 3899.7 | 3892.5 | 3839.7 | 3765.4 | 3750.2 |
| 52.5° | 3627.1 | 3598.7 | 3549.9 | 3482.7 | 3448.2 |
| 55° | 3326.1 | 3311.9 | 3253.9 | 3185.8 | 3165.5 |
| 57.5° | 3031.3 | 3031.3 | 2969.2 | 2911.3 | 2876.7 |
| 60° | 2749.6 | 2732.3 | 2688.6 | 2632.6 | 2601.1 |
| 62.5° | 2465.9 | 2451.6 | 2414.0 | 2358.1 | 2329.6 |
| 65° | 2187.3 | 2171.0 | 2134.4 | 2084.6 | 2058.1 |
| 67.5° | 1920.8 | 1901.5 | 1878.1 | 1813.1 | 1795.8 |
| 70° | 1640.2 | 1636.1 | 1609.7 | 1564.9 | 1553.8 |
| 72.5° | 1388.0 | 1383.9 | 1353.4 | 1313.8 | 1301.6 |
| 75° | 1130.7 | 1136.8 | 1115.5 | 1088.0 | 1076.9 |
| 77.5° | 907.0 | 900.9 | 880.6 | 864.3 | 845.0 |
| 80° | 678.2 | 676.2 | 667.1 | 644.7 | 643.7 |
| 82.5° | 468.8 | 476.9 | 469.8 | 453.5 | 447.4 |
| 85° | 288.8 | 294.9 | 288.8 | 280.7 | 281.7 |
| 87.5° | 129.1 | 131.2 | 124.1 | 111.9 | 103.7 |
| 90° | 20.3 | 22.4 | 26.4 | 31.5 | 29.5 |
| 92.5° | 7.1 | 15.3 | 22.4 | 26.4 | 27.5 |
| 95° | 9.2 | 15.3 | 22.4 | 26.4 | 27.5 |
| 97.5° | 13.2 | 15.3 | 22.4 | 26.4 | 28.5 |
| 100° | 15.3 | 16.3 | 22.4 | 26.4 | 28.5 |
| 102.5° | 16.3 | 16.3 | 22.4 | 26.4 | 28.5 |
| 105° | 17.3 | 17.3 | 21.4 | 26.4 | 28.5 |
| 107.5° | 18.3 | 17.3 | 21.4 | 26.4 | 28.5 |
| 110° | 18.3 | 18.3 | 21.4 | 26.4 | 27.5 |



TEST NUMBER: P470163

CATALOG NUMBER: VHB2-18-W-UNV-L735-CD-U

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|------|-------|------|-------|------|
| 112.5° | 19.3 | 19.3 | 22.4 | 25.4 | 27.5 |
| 115° | 20.3 | 20.3 | 22.4 | 25.4 | 27.5 |
| 117.5° | 20.3 | 21.4 | 22.4 | 26.4 | 27.5 |
| 120° | 21.4 | 22.4 | 22.4 | 26.4 | 26.4 |
| 122.5° | 21.4 | 23.4 | 23.4 | 26.4 | 26.4 |
| 125° | 21.4 | 23.4 | 23.4 | 26.4 | 26.4 |
| 127.5° | 22.4 | 24.4 | 23.4 | 26.4 | 26.4 |
| 130° | 23.4 | 24.4 | 25.4 | 26.4 | 26.4 |
| 132.5° | 23.4 | 25.4 | 26.4 | 27.5 | 26.4 |
| 135° | 24.4 | 26.4 | 27.5 | 27.5 | 27.5 |
| 137.5° | 25.4 | 26.4 | 28.5 | 28.5 | 28.5 |
| 140° | 25.4 | 27.5 | 28.5 | 29.5 | 29.5 |
| 142.5° | 23.4 | 27.5 | 28.5 | 30.5 | 30.5 |
| 145° | 23.4 | 27.5 | 29.5 | 31.5 | 31.5 |
| 147.5° | 22.4 | 26.4 | 28.5 | 31.5 | 31.5 |
| 150° | 22.4 | 25.4 | 28.5 | 30.5 | 30.5 |
| 152.5° | 23.4 | 24.4 | 28.5 | 29.5 | 30.5 |
| 155° | 22.4 | 24.4 | 28.5 | 29.5 | 29.5 |
| 157.5° | 21.4 | 23.4 | 27.5 | 29.5 | 30.5 |
| 160° | 20.3 | 23.4 | 26.4 | 29.5 | 29.5 |
| 162.5° | 19.3 | 22.4 | 25.4 | 28.5 | 29.5 |
| 165° | 18.3 | 21.4 | 24.4 | 27.5 | 27.5 |
| 167.5° | 18.3 | 21.4 | 23.4 | 25.4 | 26.4 |
| 170° | 19.3 | 20.3 | 22.4 | 23.4 | 24.4 |
| 172.5° | 20.3 | 20.3 | 22.4 | 22.4 | 22.4 |
| 175° | 20.3 | 20.3 | 21.4 | 22.4 | 23.4 |
| 177.5° | 21.4 | 20.3 | 20.3 | 22.4 | 22.4 |
| 180° | 20.3 | 20.3 | 20.3 | 20.3 | 20.3 |

(END OF REPORT)