

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: P417735

Luminaire Tested: **VHB-1824-W-UNV-L740-CD-U-LEVEL2**

Issue Date: 11/17/2020

Test Information

Test Method: LM-79-08
Report Number: P417735
Test Lab: INNOVATION CENTER(G3)
Issue Date: 11/17/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: VHB-1824-W-UNV-L740-CD-U-LEVEL2
Description: VHB LED HIGH BAY LUMINAIRE WITH WIDE DISTRIBUTION LENS
Light Source: 4000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 24369.4 lumens
Efficiency: N/A
Efficacy: 153.9 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

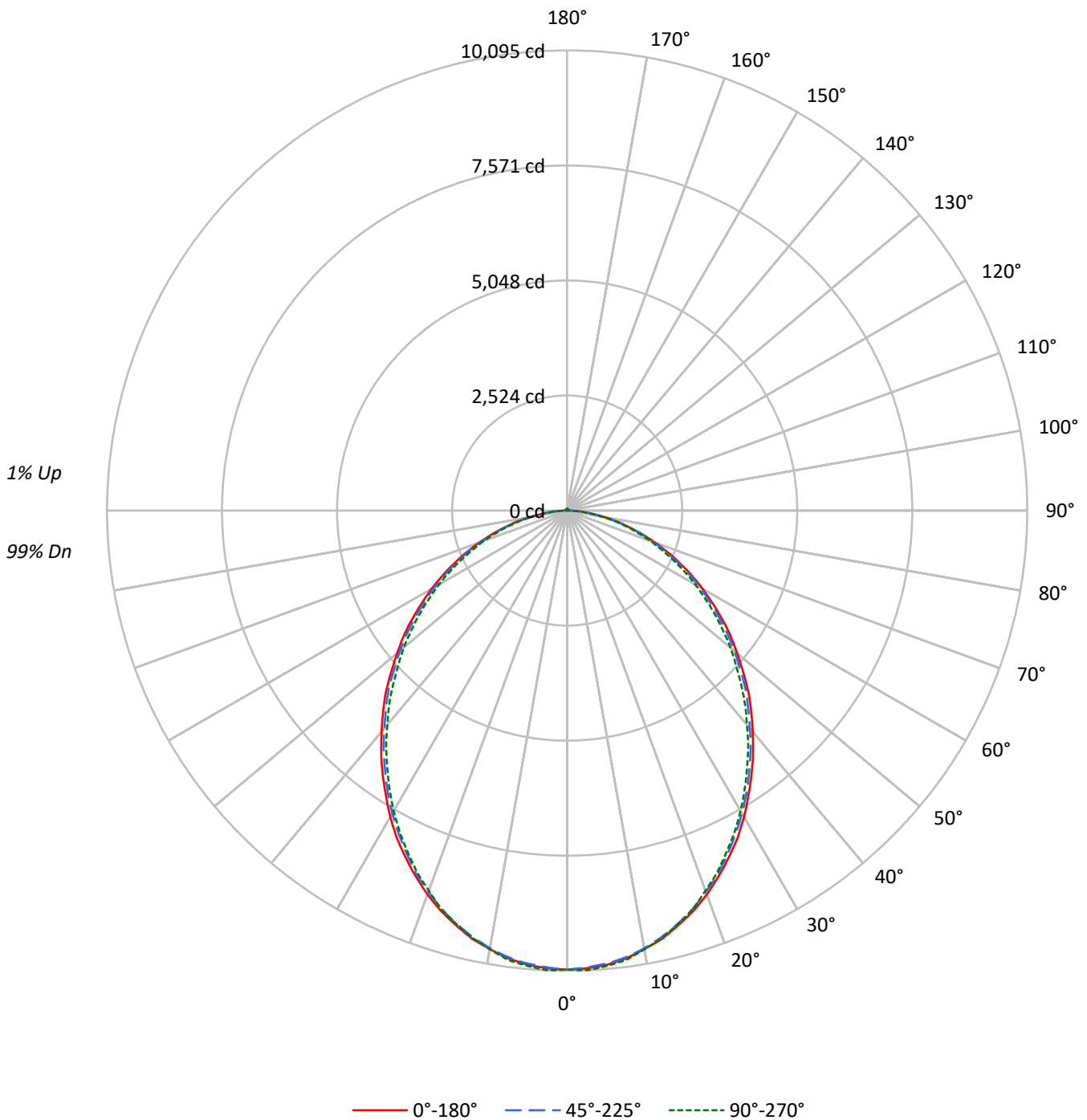
Input Watts (W): 158.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P417735

CATALOG NUMBER: VHB-1824-W-UNV-L740-CD-U-LEVEL2

Luminous Intensity Polar Plot





TEST NUMBER: P417735

CATALOG NUMBER: VHB-1824-W-UNV-L740-CD-U-LEVEL2

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 | 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° | 61943 | 61943 | 61943 |
| 5° | 61757 | 61600 | 61914 |
| 10° | 61013 | 60895 | 61030 |
| 15° | 59969 | 59767 | 59800 |
| 20° | 58663 | 58240 | 58082 |
| 25° | 56959 | 56451 | 56115 |
| 30° | 55113 | 54483 | 54041 |
| 35° | 52981 | 52295 | 51667 |
| 40° | 50839 | 50055 | 49281 |
| 45° | 48920 | 48147 | 46945 |
| 50° | 46545 | 45828 | 44761 |
| 55° | 44490 | 43525 | 42341 |
| 60° | 42191 | 41255 | 39912 |
| 65° | 39706 | 38747 | 37363 |
| 70° | 36793 | 36108 | 34854 |
| 75° | 33518 | 33066 | 31921 |
| 80° | 29966 | 29470 | 28440 |
| 85° | 25420 | 25420 | 24792 |



TEST NUMBER: P417735

CATALOG NUMBER: VHB-1824-W-UNV-L740-CD-U-LEVEL2

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 946.9 | 3.9 |
| 10°-20° | 2644.9 | 10.9 |
| 20°-30° | 3832.3 | 15.7 |
| 30°-40° | 4358.9 | 17.9 |
| 40°-50° | 4250.4 | 17.4 |
| 50°-60° | 3628.7 | 14.9 |
| 60°-70° | 2634.4 | 10.8 |
| 70°-80° | 1470.9 | 6.0 |
| 80°-90° | 413.0 | 1.7 |
| 90°-100° | 29.3 | 0.1 |
| 100°-110° | 29.0 | 0.1 |
| 110°-120° | 28.5 | 0.1 |
| 120°-130° | 27.3 | 0.1 |
| 130°-140° | 25.8 | 0.1 |
| 140°-150° | 22.3 | 0.1 |
| 150°-160° | 15.6 | 0.1 |
| 160°-170° | 8.6 | 0.0 |
| 170°-180° | 2.6 | 0.0 |
| 0°-30° | 7424.1 | 30.5 |
| 0°-40° | 11782.9 | 48.4 |
| 0°-60° | 19662.0 | 80.7 |
| 0°-90° | 24180.3 | 99.2 |
| 90°-120° | 86.8 | 0.4 |
| 90°-150° | 162.3 | 0.7 |
| 90°-180° | 189.0 | 0.8 |
| 0°-180° | 24369.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-------|-------|-------|-------|-------|------|
| 0° | 10071 | 10071 | 10071 | 10071 | 10071 | |
| 5° | 10002 | 9980 | 9977 | 10011 | 10028 | 947 |
| 15° | 9418 | 9401 | 9386 | 9385 | 9391 | 2654 |
| 25° | 8393 | 8364 | 8318 | 8288 | 8268 | 3864 |
| 35° | 7056 | 7033 | 6965 | 6900 | 6881 | 4413 |
| 45° | 5624 | 5571 | 5535 | 5432 | 5397 | 4327 |
| 55° | 4149 | 4131 | 4059 | 3974 | 3948 | 3711 |
| 65° | 2728 | 2708 | 2662 | 2600 | 2567 | 2706 |
| 75° | 1410 | 1418 | 1391 | 1357 | 1343 | 1508 |
| 85° | 360 | 368 | 360 | 350 | 351 | 394 |
| 90° | 25 | 28 | 33 | 39 | 37 | 30 |
| 95° | 11 | 19 | 28 | 33 | 34 | 11 |
| 105° | 22 | 22 | 27 | 33 | 36 | 23 |
| 115° | 25 | 25 | 28 | 32 | 34 | 25 |
| 125° | 27 | 29 | 29 | 33 | 33 | 24 |
| 135° | 30 | 33 | 34 | 34 | 34 | 24 |
| 145° | 29 | 34 | 37 | 39 | 39 | 18 |
| 155° | 28 | 30 | 36 | 37 | 37 | 13 |
| 165° | 23 | 27 | 30 | 34 | 34 | 7 |
| 175° | 25 | 25 | 27 | 28 | 29 | 2 |
| 180° | 25 | 25 | 25 | 25 | 25 | |



TEST NUMBER: P417735

CATALOG NUMBER: VHB-1824-W-UNV-L740-CD-U-LEVEL2

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|---------|---------|---------|---------|---------|
| 0° | 10070.8 | 10070.8 | 10070.8 | 10070.8 | 10070.8 |
| 2.5° | 10050.5 | 10023.9 | 10028.9 | 10061.9 | 10094.9 |
| 5° | 10002.3 | 9979.5 | 9976.9 | 10011.2 | 10027.7 |
| 7.5° | 9908.4 | 9884.4 | 9883.1 | 9922.4 | 9941.4 |
| 10° | 9768.9 | 9762.6 | 9749.9 | 9776.5 | 9771.5 |
| 12.5° | 9623.1 | 9587.6 | 9581.2 | 9602.8 | 9604.0 |
| 15° | 9417.6 | 9401.1 | 9385.9 | 9384.6 | 9391.0 |
| 17.5° | 9207.0 | 9171.5 | 9162.7 | 9157.6 | 9170.3 |
| 20° | 8962.3 | 8922.9 | 8897.6 | 8892.5 | 8873.5 |
| 22.5° | 8684.5 | 8660.4 | 8636.3 | 8594.4 | 8598.2 |
| 25° | 8392.8 | 8363.6 | 8317.9 | 8287.5 | 8268.5 |
| 27.5° | 8094.7 | 8049.0 | 8000.8 | 7972.9 | 7956.4 |
| 30° | 7759.8 | 7731.9 | 7671.1 | 7619.1 | 7608.9 |
| 32.5° | 7404.7 | 7385.7 | 7324.8 | 7279.1 | 7248.7 |
| 35° | 7055.9 | 7033.1 | 6964.6 | 6899.9 | 6880.9 |
| 37.5° | 6700.8 | 6672.9 | 6614.5 | 6557.4 | 6525.7 |
| 40° | 6331.7 | 6311.4 | 6234.0 | 6165.5 | 6137.6 |
| 42.5° | 5975.3 | 5948.6 | 5878.9 | 5795.1 | 5778.7 |
| 45° | 5623.9 | 5570.6 | 5535.1 | 5432.4 | 5396.9 |
| 47.5° | 5234.5 | 5220.6 | 5144.5 | 5062.0 | 5022.7 |
| 50° | 4864.2 | 4855.3 | 4789.3 | 4696.7 | 4677.7 |
| 52.5° | 4524.2 | 4488.7 | 4427.9 | 4344.1 | 4301.0 |
| 55° | 4148.8 | 4131.1 | 4058.8 | 3973.8 | 3948.4 |
| 57.5° | 3781.0 | 3781.0 | 3703.6 | 3631.3 | 3588.2 |
| 60° | 3429.7 | 3408.1 | 3353.6 | 3283.8 | 3244.5 |
| 62.5° | 3075.8 | 3058.0 | 3011.1 | 2941.3 | 2905.8 |
| 65° | 2728.2 | 2708.0 | 2662.3 | 2600.1 | 2567.2 |
| 67.5° | 2395.9 | 2371.8 | 2342.7 | 2261.5 | 2239.9 |
| 70° | 2045.9 | 2040.8 | 2007.8 | 1952.0 | 1938.1 |
| 72.5° | 1731.3 | 1726.2 | 1688.2 | 1638.7 | 1623.5 |
| 75° | 1410.4 | 1418.0 | 1391.4 | 1357.1 | 1343.2 |
| 77.5° | 1131.4 | 1123.8 | 1098.4 | 1078.1 | 1054.0 |
| 80° | 846.0 | 843.5 | 832.0 | 804.1 | 802.9 |
| 82.5° | 584.7 | 594.9 | 586.0 | 565.7 | 558.1 |
| 85° | 360.2 | 367.8 | 360.2 | 350.1 | 351.3 |
| 87.5° | 161.1 | 163.6 | 154.7 | 139.5 | 129.4 |
| 90° | 25.4 | 27.9 | 33.0 | 39.3 | 36.8 |
| 92.5° | 8.9 | 19.0 | 27.9 | 33.0 | 34.2 |
| 95° | 11.4 | 19.0 | 27.9 | 33.0 | 34.2 |
| 97.5° | 16.5 | 19.0 | 27.9 | 33.0 | 35.5 |
| 100° | 19.0 | 20.3 | 27.9 | 33.0 | 35.5 |
| 102.5° | 20.3 | 20.3 | 27.9 | 33.0 | 35.5 |
| 105° | 21.6 | 21.6 | 26.6 | 33.0 | 35.5 |
| 107.5° | 22.8 | 21.6 | 26.6 | 33.0 | 35.5 |
| 110° | 22.8 | 22.8 | 26.6 | 33.0 | 34.2 |



TEST NUMBER: P417735

CATALOG NUMBER: VHB-1824-W-UNV-L740-CD-U-LEVEL2

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|------|-------|------|-------|------|
| 112.5° | 24.1 | 24.1 | 27.9 | 31.7 | 34.2 |
| 115° | 25.4 | 25.4 | 27.9 | 31.7 | 34.2 |
| 117.5° | 25.4 | 26.6 | 27.9 | 33.0 | 34.2 |
| 120° | 26.6 | 27.9 | 27.9 | 33.0 | 33.0 |
| 122.5° | 26.6 | 29.2 | 29.2 | 33.0 | 33.0 |
| 125° | 26.6 | 29.2 | 29.2 | 33.0 | 33.0 |
| 127.5° | 27.9 | 30.4 | 29.2 | 33.0 | 33.0 |
| 130° | 29.2 | 30.4 | 31.7 | 33.0 | 33.0 |
| 132.5° | 29.2 | 31.7 | 33.0 | 34.2 | 33.0 |
| 135° | 30.4 | 33.0 | 34.2 | 34.2 | 34.2 |
| 137.5° | 31.7 | 33.0 | 35.5 | 35.5 | 35.5 |
| 140° | 31.7 | 34.2 | 35.5 | 36.8 | 36.8 |
| 142.5° | 29.2 | 34.2 | 35.5 | 38.1 | 38.1 |
| 145° | 29.2 | 34.2 | 36.8 | 39.3 | 39.3 |
| 147.5° | 27.9 | 33.0 | 35.5 | 39.3 | 39.3 |
| 150° | 27.9 | 31.7 | 35.5 | 38.1 | 38.1 |
| 152.5° | 29.2 | 30.4 | 35.5 | 36.8 | 38.1 |
| 155° | 27.9 | 30.4 | 35.5 | 36.8 | 36.8 |
| 157.5° | 26.6 | 29.2 | 34.2 | 36.8 | 38.1 |
| 160° | 25.4 | 29.2 | 33.0 | 36.8 | 36.8 |
| 162.5° | 24.1 | 27.9 | 31.7 | 35.5 | 36.8 |
| 165° | 22.8 | 26.6 | 30.4 | 34.2 | 34.2 |
| 167.5° | 22.8 | 26.6 | 29.2 | 31.7 | 33.0 |
| 170° | 24.1 | 25.4 | 27.9 | 29.2 | 30.4 |
| 172.5° | 25.4 | 25.4 | 27.9 | 27.9 | 27.9 |
| 175° | 25.4 | 25.4 | 26.6 | 27.9 | 29.2 |
| 177.5° | 26.6 | 25.4 | 25.4 | 27.9 | 27.9 |
| 180° | 25.4 | 25.4 | 25.4 | 25.4 | 25.4 |

(END OF REPORT)