

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: P563280

Luminaire Tested: **VHB-24-N-UNV-L835-CD**

Issue Date: 6/3/2022



**Test Information**

Test Method: LM-79-08  
Report Number: P563280  
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-24-N-UNV-L835-CD  
Description: 24000 LUMEN, VHB LED LUMINAIRE WITH, NARROW LENS AND 80CRI, 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

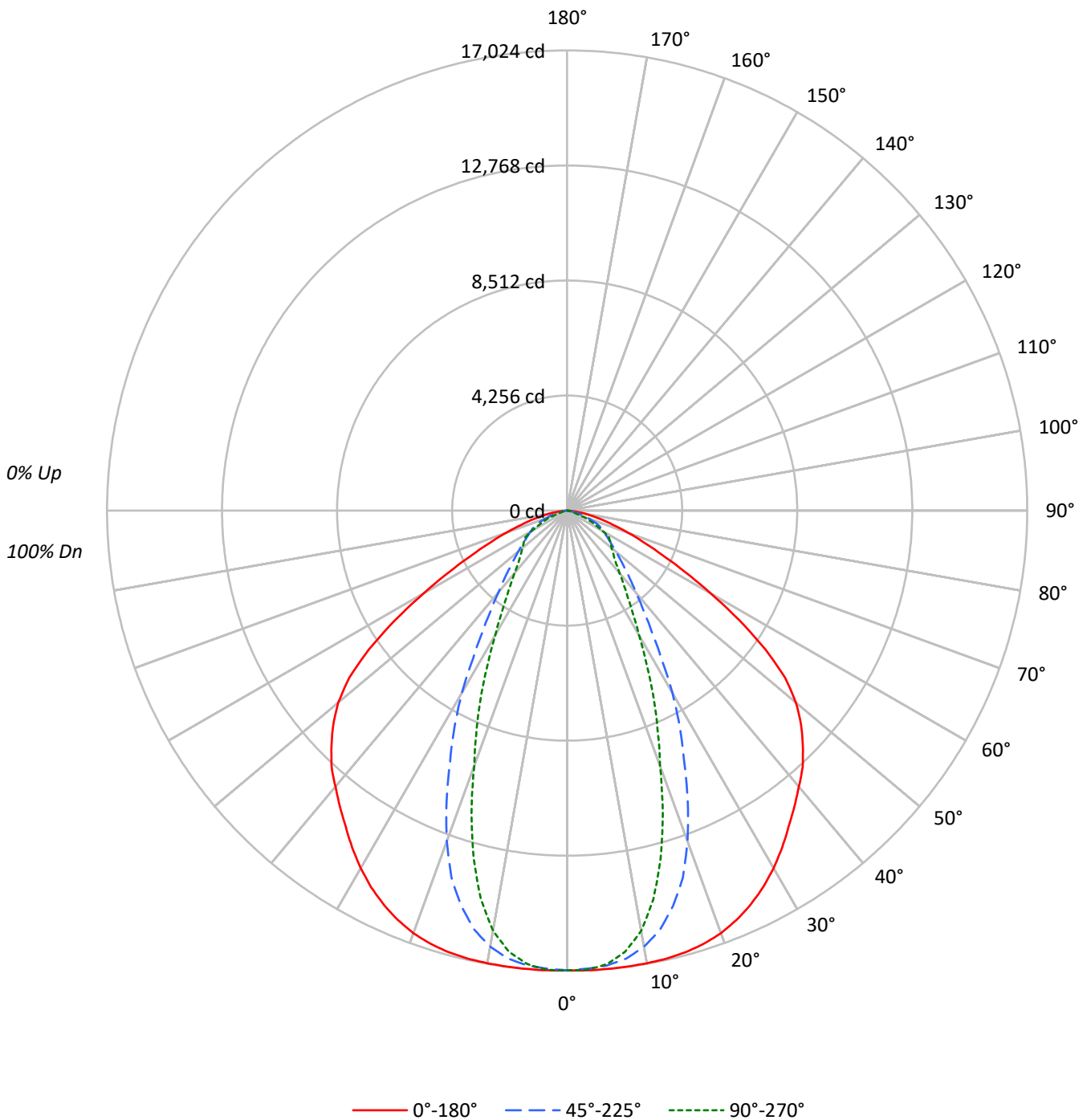
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 23986.0 lumens  
Efficiency: N/A  
Efficacy: 145.4 lumens/watt  
Spacing Criteria (0/90/45): 1.32 / 0.72 / 0.86  
Luminous Opening: Rectangular (W 1.17' x L: 1.58' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 165  
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: P563280

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### Luminous Intensity Polar Plot





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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 | 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°  | 99108  | 99108 | 99108 |
| 5°  | 99574  | 98818 | 98532 |
| 10° | 100619 | 96923 | 93383 |
| 15° | 102055 | 91320 | 80518 |
| 20° | 103154 | 80676 | 62340 |
| 25° | 103361 | 65878 | 48305 |
| 30° | 102781 | 52321 | 35751 |
| 35° | 101608 | 38771 | 27800 |
| 40° | 101449 | 30108 | 22945 |
| 45° | 101662 | 24777 | 20381 |
| 50° | 100220 | 21430 | 19440 |
| 55° | 90980  | 19103 | 19642 |
| 60° | 71529  | 18255 | 17898 |
| 65° | 53126  | 17695 | 13470 |
| 70° | 40747  | 14165 | 8222  |
| 75° | 31016  | 10102 | 4537  |
| 80° | 22775  | 4701  | 3664  |
| 85° | 14248  | 4038  | 3263  |



TEST NUMBER: P563280

CATALOG NUMBER: VHB-24-N-UNV-L835-CD

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 1597.9  | 6.7       |
| 10°-20°   | 4206.4  | 17.5      |
| 20°-30°   | 5079.7  | 21.2      |
| 30°-40°   | 4541.9  | 18.9      |
| 40°-50°   | 3556.6  | 14.8      |
| 50°-60°   | 2687.3  | 11.2      |
| 60°-70°   | 1596.1  | 6.7       |
| 70°-80°   | 613.4   | 2.6       |
| 80°-90°   | 106.6   | 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°    | 10884.1 | 45.4      |
| 0°-40°    | 15426.0 | 64.3      |
| 0°-60°    | 21670.0 | 90.3      |
| 0°-90°    | 23986.0 | 100.0     |
| 90°-120°  | 0.0     | 0.0       |
| 90°-150°  | 0.0     | 0.0       |
| 90°-180°  | 0.0     | 0.0       |
| 0°-180°   | 23986.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°    | 22.5° | 45°   | 67.5° | 90°   | Flux |
|-----|-------|-------|-------|-------|-------|------|
| 0°  | 17008 | 17008 | 17008 | 17008 | 17008 |      |
| 5°  | 17023 | 16948 | 16894 | 16871 | 16845 | ###  |
| 15° | 16917 | 16359 | 15137 | 13872 | 13347 | 4780 |
| 25° | 16076 | 14185 | 10246 | 8078  | 7513  | 7402 |
| 35° | 14283 | 10164 | 5450  | 4250  | 3908  | 8957 |
| 45° | 12336 | 5256  | 3007  | 2540  | 2473  | 9496 |
| 55° | 8955  | 2852  | 1880  | 1873  | 1933  | 7864 |
| 65° | 3853  | 1601  | 1283  | 1070  | 977   | 3970 |
| 75° | 1378  | 770   | 449   | 222   | 202   | 1508 |
| 85° | 213   | 74    | 60    | 53    | 49    | 284  |
| 90° | 0     | 0     | 0     | 0     | 0     |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 22.5°   | 45°     | 67.5°   | 90°     |
|-------|---------|---------|---------|---------|---------|
| 0°    | 17007.9 | 17007.9 | 17007.9 | 17007.9 | 17007.9 |
| 2.5°  | 17024.0 | 16967.8 | 16963.4 | 16999.5 | 17004.9 |
| 5°    | 17022.8 | 16948.5 | 16893.5 | 16871.3 | 16844.6 |
| 7.5°  | 17017.5 | 16905.2 | 16719.5 | 16541.4 | 16458.7 |
| 10°   | 17004.9 | 16805.4 | 16380.2 | 15975.1 | 15782.0 |
| 12.5° | 16977.2 | 16627.2 | 15876.3 | 15131.9 | 14726.7 |
| 15°   | 16916.8 | 16358.9 | 15137.3 | 13871.9 | 13346.9 |
| 17.5° | 16807.4 | 15988.7 | 14231.5 | 12445.5 | 11769.8 |
| 20°   | 16634.7 | 15517.9 | 13009.8 | 10818.7 | 10052.9 |
| 22.5° | 16386.4 | 14902.9 | 11663.9 | 9354.0  | 8742.1  |
| 25°   | 16075.8 | 14184.9 | 10246.0 | 8078.1  | 7512.9  |
| 27.5° | 15706.8 | 13346.9 | 9024.1  | 6890.4  | 6333.5  |
| 30°   | 15275.1 | 12368.0 | 7775.9  | 5768.2  | 5313.3  |
| 32.5° | 14792.5 | 11337.2 | 6472.6  | 4912.4  | 4538.1  |
| 35°   | 14283.4 | 10164.3 | 5450.2  | 4249.6  | 3908.0  |
| 37.5° | 13804.0 | 8908.5  | 4615.6  | 3663.2  | 3423.4  |
| 40°   | 13336.5 | 7589.3  | 3958.0  | 3199.7  | 3016.3  |
| 42.5° | 12895.2 | 6327.3  | 3455.3  | 2811.6  | 2691.6  |
| 45°   | 12336.3 | 5256.1  | 3006.6  | 2540.1  | 2473.2  |
| 47.5° | 11743.4 | 4436.2  | 2650.2  | 2319.3  | 2296.1  |
| 50°   | 11055.1 | 3778.8  | 2363.9  | 2127.5  | 2144.4  |
| 52.5° | 10162.1 | 3259.1  | 2092.4  | 1991.6  | 2041.6  |
| 55°   | 8955.3  | 2851.9  | 1880.3  | 1872.8  | 1933.4  |
| 57.5° | 7541.5  | 2462.6  | 1712.7  | 1759.5  | 1827.3  |
| 60°   | 6137.5  | 2149.8  | 1566.4  | 1634.2  | 1535.7  |
| 62.5° | 4902.9  | 1862.4  | 1427.6  | 1303.3  | 1218.7  |
| 65°   | 3853.0  | 1601.3  | 1283.3  | 1070.2  | 976.9   |
| 67.5° | 3072.4  | 1358.5  | 1079.6  | 851.6   | 774.2   |
| 70°   | 2391.6  | 1142.2  | 831.4   | 639.5   | 482.6   |
| 72.5° | 1832.7  | 954.6   | 649.0   | 363.8   | 274.7   |
| 75°   | 1377.6  | 770.0   | 448.7   | 221.7   | 201.5   |
| 77.5° | 982.1   | 571.7   | 239.6   | 160.1   | 148.5   |
| 80°   | 678.7   | 367.0   | 140.1   | 115.6   | 109.2   |
| 82.5° | 421.0   | 177.2   | 95.5    | 82.7    | 77.5    |
| 85°   | 213.1   | 74.2    | 60.4    | 53.0    | 48.8    |
| 87.5° | 71.0    | 36.1    | 27.5    | 25.5    | 23.3    |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |

(END OF REPORT)