

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: P730681

Luminaire Tested: **HBLED-LD5-24HE-N-UNV-L850**

Issue Date: 11/13/2023

**Test Information**

Test Method: LM-79-08  
Report Number: P730681  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P23767)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/13/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: HBLED-LD5-24HE-N-UNV-L850  
Description: 24000 LUMEN, HE HBLED WITH NARROW DISTRIBUTION  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 24129.0 lumens  
Efficiency: N/A  
Efficacy: 168.7 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 0.62 / 0.77  
Luminous Opening: Rectangular (W 1.67' x L: 4' x H: 0')  
CIE Type: Direct

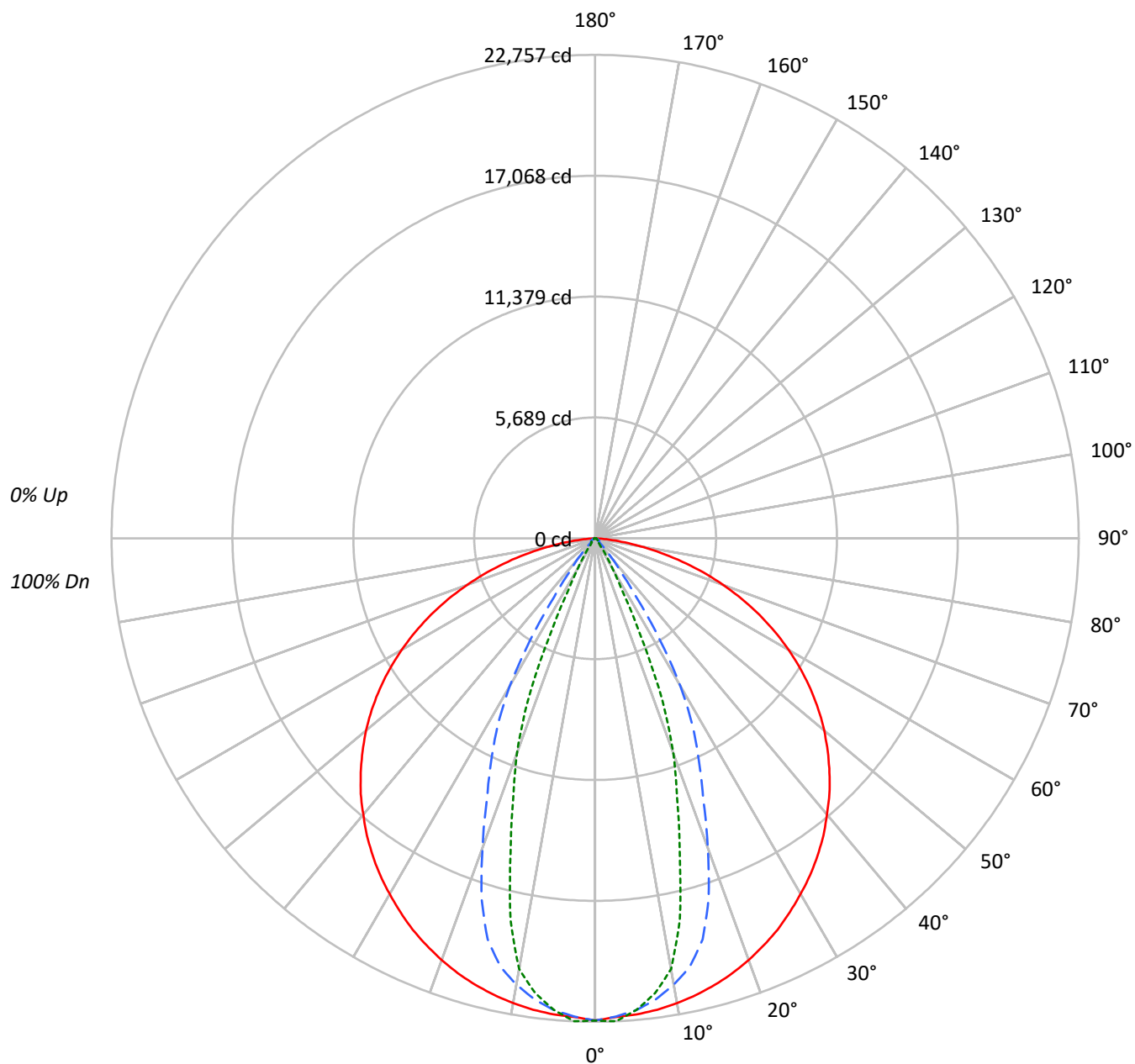
Input Watts (W): 143  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P730681

CATALOG NUMBER: HBLED-LD5-24HE-N-UNV-L850

### Luminous Intensity Polar Plot





TEST NUMBER: P730681

CATALOG NUMBER: HBLED-LD5-24HE-N-UNV-L850

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|
| RF  | 20  |     |     |     | 20  |     |     |     |     | 20  |     |     |     |     | 20  |     |     |     |    | 20 |
| RC  | 80  |     |     |     | 70  |     |     |     |     | 50  |     |     |     |     | 30  |     |     |     |    | 10 |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30 | 10 |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |    |    |
| 1   | 112 | 108 | 105 | 102 | 109 | 106 | 103 | 101 | 102 | 100 | 98  | 98  | 96  | 95  | 95  | 93  | 92  | 90  |    |    |
| 2   | 105 | 98  | 93  | 89  | 102 | 97  | 92  | 88  | 93  | 89  | 86  | 90  | 87  | 84  | 87  | 85  | 82  | 81  |    |    |
| 3   | 98  | 90  | 84  | 79  | 96  | 88  | 83  | 78  | 86  | 81  | 77  | 83  | 79  | 76  | 81  | 77  | 74  | 73  |    |    |
| 4   | 92  | 82  | 76  | 70  | 90  | 81  | 75  | 70  | 79  | 73  | 69  | 77  | 72  | 68  | 75  | 71  | 67  | 66  |    |    |
| 5   | 86  | 76  | 69  | 64  | 84  | 75  | 68  | 63  | 73  | 67  | 63  | 71  | 66  | 62  | 70  | 65  | 62  | 60  |    |    |
| 6   | 81  | 70  | 63  | 58  | 79  | 70  | 63  | 58  | 68  | 62  | 58  | 66  | 61  | 57  | 65  | 60  | 57  | 55  |    |    |
| 7   | 76  | 66  | 58  | 54  | 75  | 65  | 58  | 53  | 63  | 57  | 53  | 62  | 57  | 53  | 61  | 56  | 52  | 51  |    |    |
| 8   | 72  | 61  | 54  | 49  | 71  | 61  | 54  | 49  | 59  | 53  | 49  | 58  | 53  | 49  | 57  | 52  | 49  | 47  |    |    |
| 9   | 68  | 57  | 51  | 46  | 67  | 57  | 50  | 46  | 56  | 50  | 46  | 55  | 49  | 46  | 54  | 49  | 45  | 44  |    |    |
| 10  | 65  | 54  | 47  | 43  | 64  | 53  | 47  | 43  | 53  | 47  | 43  | 52  | 46  | 43  | 51  | 46  | 42  | 41  |    |    |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 36654 | 36654 | 36654 |
| 5°  | 36458 | 36136 | 36120 |
| 10° | 36435 | 34978 | 33751 |
| 15° | 36383 | 32678 | 25686 |
| 20° | 36299 | 26639 | 18489 |
| 25° | 36206 | 20598 | 9108  |
| 30° | 36046 | 14970 | 2954  |
| 35° | 35961 | 6641  | 760   |
| 40° | 35773 | 2697  | 512   |
| 45° | 35613 | 757   | 545   |
| 50° | 35335 | 537   | 605   |
| 55° | 34826 | 638   | 258   |
| 60° | 33967 | 711   | 157   |
| 65° | 32570 | 454   | 186   |
| 70° | 30258 | 403   | 229   |
| 75° | 26470 | 303   | 316   |
| 80° | 19791 | 372   | 452   |
| 85° | 9804  | 480   | 600   |



TEST NUMBER: P730681

CATALOG NUMBER: HBLED-LD5-24HE-N-UNV-L850

**ZONAL LUMENS:**

| Zone      | Lumens  | % Fixture |
|-----------|---------|-----------|
| 0°-10°    | 2106.7  | 8.7       |
| 10°-20°   | 5267.9  | 21.8      |
| 20°-30°   | 5706.0  | 23.6      |
| 30°-40°   | 4225.5  | 17.5      |
| 40°-50°   | 3043.5  | 12.6      |
| 50°-60°   | 1884.5  | 7.8       |
| 60°-70°   | 1158.9  | 4.8       |
| 70°-80°   | 610.9   | 2.5       |
| 80°-90°   | 125.1   | 0.5       |
| 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°    | 13080.6 | 54.2      |
| 0°-40°    | 17306.1 | 71.7      |
| 0°-60°    | 22234.1 | 92.1      |
| 0°-90°    | 24129.0 | 100.0     |
| 90°-120°  | 0.0     | 0.0       |
| 90°-150°  | 0.0     | 0.0       |
| 90°-180°  | 0.0     | 0.0       |
| 0°-180°   | 24129.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°    | 22.5° | 45°   | 67.5° | 90°   | Flux  |
|-----|-------|-------|-------|-------|-------|-------|
| 0°  | 22702 | 22702 | 22702 | 22702 | 22702 |       |
| 5°  | 22494 | 22578 | 22296 | 22312 | 22286 | ###   |
| 15° | 21766 | 21261 | 19549 | 16625 | 15367 | 6144  |
| 25° | 20324 | 18616 | 11562 | 7274  | 5112  | 9365  |
| 35° | 18245 | 12862 | 3369  | 793   | 386   | 11414 |
| 45° | 15597 | 7246  | 332   | 240   | 239   | 12028 |
| 55° | 12372 | 1492  | 227   | 205   | 92    | 11044 |
| 65° | 8525  | 158   | 119   | 76    | 49    | 8411  |
| 75° | 4243  | 37    | 49    | 64    | 51    | 4482  |
| 85° | 529   | 14    | 26    | 39    | 32    | 800   |
| 90° | 0     | 0     | 0     | 0     | 0     |       |



TEST NUMBER: P730681

CATALOG NUMBER: HBLED-LD5-24HE-N-UNV-L850

**CANDELA DISTRIBUTION (FULL):**

|       | 0°      | 22.5°   | 45°     | 67.5°   | 90°     |
|-------|---------|---------|---------|---------|---------|
| 0°    | 22701.6 | 22701.6 | 22701.6 | 22701.6 | 22701.6 |
| 2.5°  | 22555.9 | 22699.6 | 22530.0 | 22656.4 | 22756.7 |
| 5°    | 22494.3 | 22577.5 | 22295.6 | 22311.8 | 22285.9 |
| 7.5°  | 22386.3 | 22366.9 | 21892.8 | 21685.4 | 21594.8 |
| 10°   | 22223.3 | 22094.7 | 21334.5 | 20901.4 | 20586.1 |
| 12.5° | 22012.7 | 21725.4 | 20637.9 | 19261.0 | 18405.7 |
| 15°   | 21766.4 | 21261.0 | 19549.3 | 16624.8 | 15366.6 |
| 17.5° | 21472.7 | 20756.7 | 17769.5 | 13933.5 | 12810.4 |
| 20°   | 21126.0 | 20194.0 | 15503.7 | 11854.7 | 10760.7 |
| 22.5° | 20739.4 | 19509.3 | 13302.9 | 9852.4  | 8291.9  |
| 25°   | 20323.6 | 18616.2 | 11561.9 | 7273.5  | 5112.5  |
| 27.5° | 19843.0 | 17468.2 | 9929.1  | 4284.2  | 2609.2  |
| 30°   | 19334.4 | 16085.8 | 8029.4  | 2304.6  | 1584.3  |
| 32.5° | 18821.4 | 14518.8 | 5681.6  | 1439.6  | 898.5   |
| 35°   | 18244.7 | 12862.2 | 3369.4  | 792.7   | 385.6   |
| 37.5° | 17643.1 | 11343.8 | 1991.4  | 360.8   | 247.3   |
| 40°   | 16972.5 | 9956.1  | 1279.7  | 239.7   | 242.9   |
| 42.5° | 16324.6 | 8662.3  | 720.4   | 236.5   | 240.9   |
| 45°   | 15596.6 | 7246.4  | 331.5   | 239.7   | 238.7   |
| 47.5° | 14843.9 | 5778.8  | 214.9   | 241.9   | 241.9   |
| 50°   | 14067.5 | 4131.9  | 213.8   | 247.3   | 240.9   |
| 52.5° | 13247.8 | 2577.9  | 222.5   | 246.3   | 197.6   |
| 55°   | 12371.9 | 1492.5  | 226.8   | 205.2   | 91.8    |
| 57.5° | 11464.8 | 880.1   | 229.0   | 117.7   | 51.9    |
| 60°   | 10518.7 | 487.0   | 220.3   | 87.4    | 48.6    |
| 62.5° | 9543.5  | 232.2   | 173.9   | 82.1    | 47.5    |
| 65°   | 8525.1  | 157.7   | 118.8   | 75.6    | 48.6    |
| 67.5° | 7467.9  | 122.0   | 93.9    | 71.3    | 49.7    |
| 70°   | 6409.5  | 90.7    | 85.4    | 71.3    | 48.6    |
| 72.5° | 5333.9  | 61.6    | 71.3    | 72.3    | 48.6    |
| 75°   | 4243.1  | 36.7    | 48.6    | 63.8    | 50.7    |
| 77.5° | 3162.1  | 22.6    | 37.8    | 65.8    | 61.6    |
| 80°   | 2128.5  | 19.4    | 40.0    | 61.6    | 48.6    |
| 82.5° | 1249.5  | 17.3    | 38.9    | 47.5    | 38.9    |
| 85°   | 529.2   | 14.1    | 25.9    | 38.9    | 32.4    |
| 87.5° | 99.3    | 11.9    | 20.6    | 31.3    | 28.1    |
| 90°   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |



Report Generated By 670246072 / DESKTOP-MV3F9LC





— 0°-180°    - - 45°-225°    - - - 90°-270°







(END OF REPORT)