Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

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: P#

Luminaire Tested: **HBLED-LD5-24SE-N-UNV-L850-ED2-U**

Issue Date: 3/3/2020

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

Report Generated By E9911574 / USPTCWHP6081592

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Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-08 |
| Report Number: | P# |
| | TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P23767) |
| Test Lab: | INNOVATION CENTER P2 |
| Issue Date: | 3/3/2020 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | METALUX |
| Catalog Number: | HBLED-LD5-24SE-N-UNV-L850-ED2-U |
| Description: | METALUX HIGH BAY LINEAR LED |
| Light Source: | - |
| Ballast/Driver: | - |

| Luminaire Equipment: | Sample No. | Condition | Description |
|---|---|---|---|

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 23224.0 lumens |
| Efficiency: | N/A |
| Efficacy: | 150.8 lumens/watt |
| Spacing Criteria (0/90/45): | 1.27 / 0.62 / 0.77 |
| Luminous Opening: | Rectangular (W 2' x L: 4' x H: 0') |
| CIE Type: | Direct |

| | |
|---|---|
| Input Watts (W): | 154 |
| 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 |

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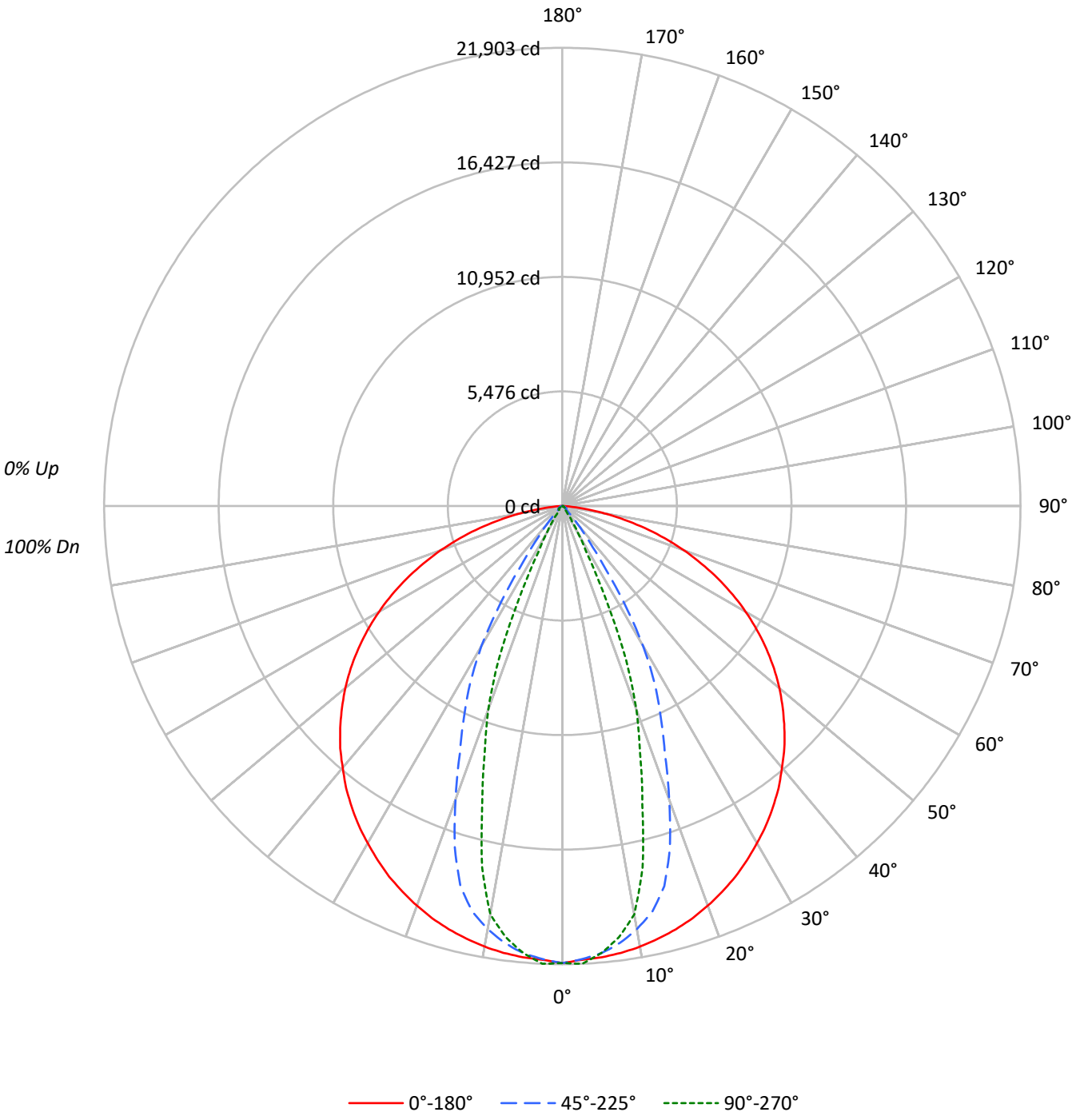
## Luminous Intensity Polar Plot



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## COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| RF | 20 | | | | 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 | 0 |
| 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° | 29399 | 29399 | 29399 |
| 5° | 29242 | 28984 | 28971 |
| 10° | 29224 | 28055 | 27071 |
| 15° | 29182 | 26210 | 20602 |
| 20° | 29114 | 21366 | 14830 |
| 25° | 29040 | 16521 | 7305 |
| 30° | 28912 | 12007 | 2369 |
| 35° | 28844 | 5327 | 610 |
| 40° | 28693 | 2163 | 411 |
| 45° | 28564 | 607 | 437 |
| 50° | 28342 | 431 | 485 |
| 55° | 27933 | 512 | 207 |
| 60° | 27244 | 570 | 126 |
| 65° | 26124 | 364 | 149 |
| 70° | 24269 | 323 | 184 |
| 75° | 21231 | 243 | 254 |
| 80° | 15874 | 298 | 363 |
| 85° | 7862 | 384 | 482 |

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**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 2027.7 | 8.7 |
| 10°-20° | 5070.3 | 21.8 |
| 20°-30° | 5491.9 | 23.6 |
| 30°-40° | 4067.0 | 17.5 |
| 40°-50° | 2929.3 | 12.6 |
| 50°-60° | 1813.8 | 7.8 |
| 60°-70° | 1115.5 | 4.8 |
| 70°-80° | 588.0 | 2.5 |
| 80°-90° | 120.3 | 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° | 12590.0 | 54.2 |
| 0°-40° | 16657.0 | 71.7 |
| 0°-60° | 21400.1 | 92.1 |
| 0°-90° | 23224.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 23224.0 | 100.0 |

**CANDELA DISTRIBUTION:**

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|---|---|---|---|---|---|---|
| 0° | 21850 | 21850 | 21850 | 21850 | 21850 | |
| 5° | 21651 | 21731 | 21459 | 21475 | 21450 | ### |
| 15° | 20950 | 20464 | 18816 | 16001 | 14790 | 5914 |
| 25° | 19561 | 17918 | 11128 | 7001 | 4921 | 9013 |
| 35° | 17560 | 12380 | 3243 | 763 | 371 | 10986 |
| 45° | 15012 | 6975 | 319 | 231 | 230 | 11577 |
| 55° | 11908 | 1436 | 218 | 198 | 88 | 10630 |
| 65° | 8205 | 152 | 114 | 73 | 47 | 8096 |
| 75° | 4084 | 35 | 47 | 61 | 49 | 4314 |
| 85° | 509 | 14 | 25 | 37 | 31 | 770 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 22.5° | 45° | 67.5° | 90° |
|---|---|---|---|---|---|
| 0° | 21850.2 | 21850.2 | 21850.2 | 21850.2 | *21850.2* |
| 2.5° | *21709.9* | *21848.1* | *21684.9* | *21806.5* | *21903.2* |
| 5° | 21650.6 | 21730.7 | 21459.4 | 21475.0 | *21450.0* |
| 7.5° | 21546.7 | 21528.0 | 21071.6 | 20872.1 | *20784.8* |
| 10° | 21389.7 | 21266.0 | 20534.3 | 20117.4 | *19813.9* |
| 12.5° | 21187.0 | 20910.5 | 19863.8 | 18538.5 | *17715.3* |
| 15° | 20950.0 | 20463.6 | 18816.1 | 16001.2 | *14790.3* |
| 17.5° | 20667.3 | 19978.2 | 17103.0 | 13410.9 | *12329.9* |
| 20° | 20333.6 | 19436.6 | 14922.3 | 11410.0 | *10357.0* |
| 22.5° | 19961.5 | 18777.6 | 12803.9 | 9482.9 | *7980.9* |
| 25° | 19561.3 | 17918.0 | 11128.3 | 7000.7 | *4920.7* |
| 27.5° | 19098.8 | 16813.0 | 9556.7 | 4123.5 | *2511.3* |
| 30° | 18609.2 | 15482.5 | 7728.3 | 2218.2 | *1524.9* |
| 32.5° | 18115.5 | 13974.3 | 5468.5 | 1385.6 | *864.8* |
| 35° | 17560.4 | 12379.8 | 3243.1 | 763.0 | *371.1* |
| 37.5° | 16981.4 | 10918.3 | 1916.7 | 347.2 | *238.0* |
| 40° | 16335.9 | 9582.7 | 1231.7 | 230.8 | *233.9* |
| 42.5° | 15712.3 | 8337.4 | 693.3 | 227.6 | *231.8* |
| 45° | 15011.7 | 6974.7 | 319.1 | 230.8 | *229.7* |
| 47.5° | 14287.2 | 5562.1 | 206.8 | 232.8 | *232.8* |
| 50° | 13539.8 | 3976.9 | 205.8 | 238.0 | *231.8* |
| 52.5° | 12750.9 | 2481.2 | 214.1 | 237.0 | *190.2* |
| 55° | 11907.9 | 1436.5 | 218.3 | 197.5 | *88.4* |
| 57.5° | 11034.8 | 847.1 | 220.4 | 113.3 | *49.9* |
| 60° | 10124.2 | 468.8 | 212.0 | 84.2 | *46.8* |
| 62.5° | 9185.6 | 223.5 | 167.4 | 79.0 | *45.7* |
| 65° | 8205.4 | 151.8 | 114.3 | 72.8 | *46.8* |
| 67.5° | 7187.8 | 117.5 | 90.4 | 68.6 | *47.8* |
| 70° | 6169.1 | 87.3 | 82.1 | 68.6 | *46.8* |
| 72.5° | 5133.8 | 59.2 | 68.6 | 69.6 | *46.8* |
| 75° | 4084.0 | 35.3 | 46.8 | 61.3 | *48.9* |
| 77.5° | 3043.5 | 21.8 | 36.4 | 63.4 | *59.2* |
| 80° | 2048.7 | 18.7 | 38.5 | 59.2 | *46.8* |
| 82.5° | 1202.6 | 16.6 | 37.4 | 45.7 | *37.4* |
| 85° | 509.3 | 13.5 | 24.9 | 37.4 | *31.2* |
| 87.5° | 95.6 | 11.4 | 19.7 | 30.1 | *27.0* |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* |

(END OF REPORT)