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

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: 167P106

Luminaire Tested: **RWW-1BX50**

Issue Date: 3/3/2020

Report Generated By E9911574 / USPTCWHP6081592

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1121 Highway 74 South
Peachtree City, GA 30269



**Test Information**

| | |
|---|---|
| Test Method: | LM-41-14 |
| Report Number: | 167P106 |
| Test Lab: | |
| Issue Date: | 3/3/2020 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | METALUX |
| Catalog Number: | RWW-1BX50 |
| Description: | Biaxial Wall Wash Luminaire |
| Light Source: | One - PL-L 50W/35/RS - 4300 Lumens - 50 Watts |
| Ballast/Driver: | Valmont E150SB120G01 Electronic |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | 4300 (1 lamp) |
| Luminaire Lumens: | 3074.1 lumens |
| Efficiency: | 71.5% |
| Efficacy: | 58.6 lumens/watt |
| Spacing Criteria (0/90/45): | 4.72 / 1.39 / 3.88 |
| Luminous Opening: | Rectangular (W 1.9' x L: 0.69' x H: 0') |
| CIE Type: | Direct |

| | |
|---|---|
| Input Watts (W): | 52.5 |
| 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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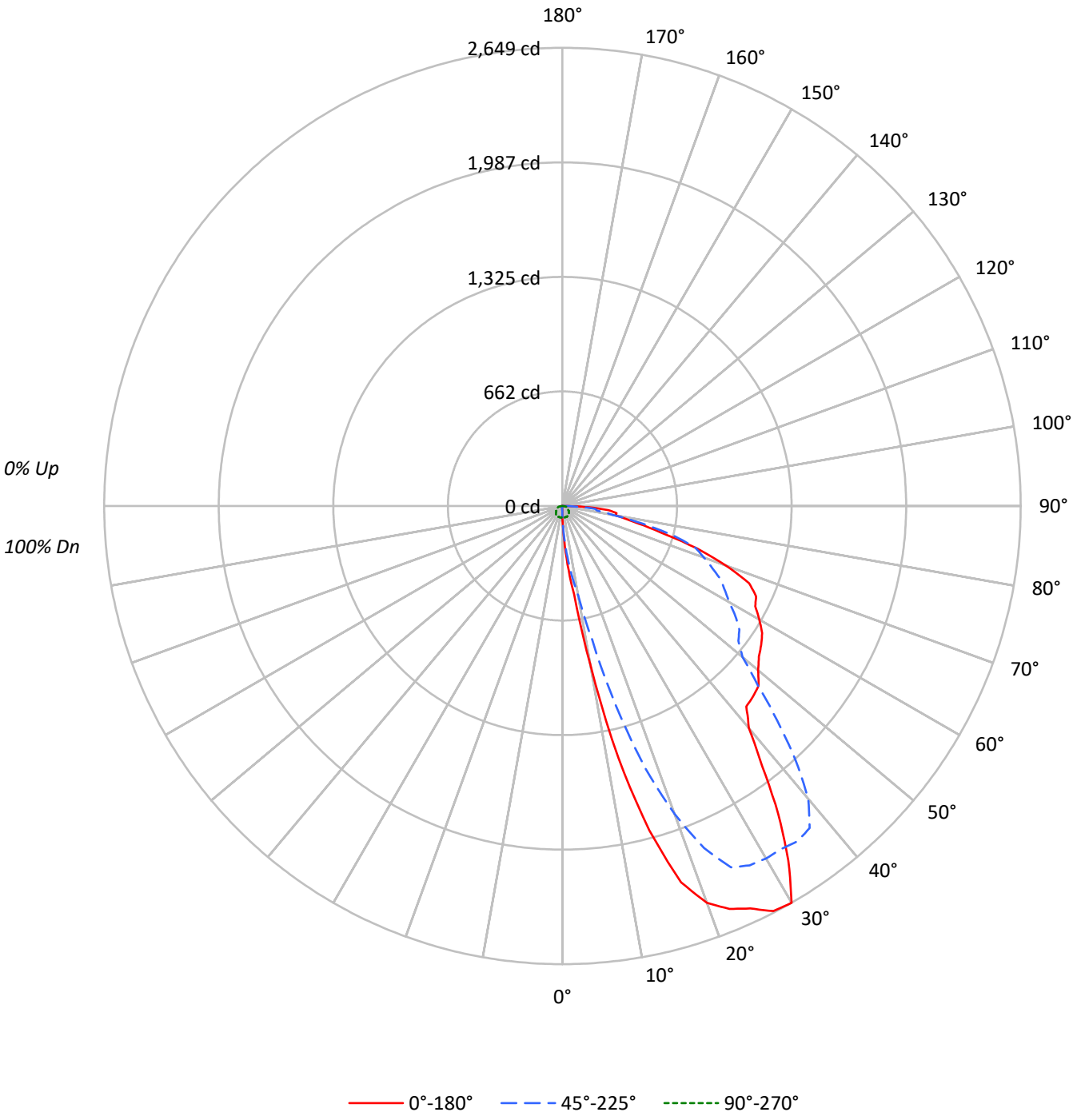
## Luminous Intensity Polar Plot



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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 | 85 | 85 | 85 | 85 | 83 | 83 | 83 | 83 | 79 | 79 | 79 | 76 | 76 | 76 | 73 | 73 | 73 | 71 |
| 1 | 77 | 73 | 70 | 67 | 75 | 71 | 68 | 66 | 68 | 66 | 63 | 66 | 63 | 62 | 63 | 61 | 60 | 58 |
| 2 | 69 | 63 | 57 | 53 | 67 | 61 | 56 | 52 | 59 | 55 | 51 | 56 | 53 | 50 | 54 | 51 | 49 | 47 |
| 3 | 62 | 54 | 48 | 43 | 61 | 53 | 47 | 42 | 51 | 46 | 42 | 49 | 45 | 41 | 47 | 43 | 40 | 38 |
| 4 | 57 | 47 | 41 | 35 | 55 | 46 | 40 | 35 | 45 | 39 | 35 | 43 | 38 | 34 | 41 | 37 | 34 | 32 |
| 5 | 52 | 42 | 35 | 30 | 50 | 41 | 34 | 30 | 39 | 34 | 29 | 38 | 33 | 29 | 37 | 32 | 29 | 27 |
| 6 | 47 | 37 | 30 | 25 | 46 | 36 | 30 | 25 | 35 | 29 | 25 | 34 | 29 | 25 | 33 | 28 | 25 | 23 |
| 7 | 44 | 33 | 27 | 22 | 42 | 33 | 26 | 22 | 32 | 26 | 22 | 30 | 25 | 21 | 29 | 25 | 21 | 20 |
| 8 | 40 | 30 | 24 | 19 | 39 | 30 | 23 | 19 | 29 | 23 | 19 | 28 | 22 | 19 | 27 | 22 | 19 | 17 |
| 9 | 37 | 27 | 21 | 17 | 36 | 27 | 21 | 17 | 26 | 20 | 17 | 25 | 20 | 17 | 24 | 20 | 16 | 15 |
| 10 | 35 | 25 | 19 | 15 | 34 | 24 | 19 | 15 | 24 | 18 | 15 | 23 | 18 | 15 | 22 | 18 | 15 | 13 |

## AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|---|---|---|---|
| 0° | 578 | 578 | 578 |
| 5° | 2802 | 547 | 133 |
| 10° | 7833 | 562 | 92 |
| 15° | 16604 | 573 | 68 |
| 20° | 21453 | 589 | 44 |
| 25° | 23391 | 601 | 36 |
| 30° | 25261 | 620 | 29 |
| 35° | 21928 | 635 | 30 |
| 40° | 18069 | 625 | 22 |
| 45° | 18196 | 607 | 23 |
| 50° | 18964 | 604 | 26 |
| 55° | 20187 | 590 | 29 |
| 60° | 21704 | 595 | 33 |
| 65° | 24134 | 645 | 39 |
| 70° | 24243 | 700 | 48 |
| 75° | 18603 | 830 | 64 |
| 80° | 14838 | 809 | 48 |
| 85° | 25110 | 379 | 190 |

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**ZONAL LUMENS:**

| Zone | Lumens | % Fixture | % Lamp |
|---|---|---|---|
| 0°-10° | 17.2 | 0.6 | 0.4 |
| 10°-20° | 164.5 | 5.3 | 3.8 |
| 20°-30° | 413.3 | 13.4 | 9.6 |
| 30°-40° | 577.0 | 18.8 | 13.4 |
| 40°-50° | 565.6 | 18.4 | 13.2 |
| 50°-60° | 532.8 | 17.3 | 12.4 |
| 60°-70° | 450.6 | 14.7 | 10.5 |
| 70°-80° | 272.8 | 8.9 | 6.3 |
| 80°-90° | 80.4 | 2.6 | 1.9 |
| 90°-100° | 0.0 | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 | 0.0 |
| 0°-30° | 595.0 | 19.4 | 13.8 |
| 0°-40° | 1172.0 | 38.1 | 27.3 |
| 0°-60° | 2270.3 | 73.9 | 52.8 |
| 0°-90° | 3074.1 | 100.0 | 71.5 |
| 90°-120° | 0.0 | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 | 0.0 |
| 0°-180° | 3074.1 | 100.0 | 71.5 |

**CANDELA DISTRIBUTION:**

| | 0° | 45° | 90° | 135° | 180° | Flux |
|---|---|---|---|---|---|---|
| 0° | 70 | 70 | 70 | 70 | 70 | |
| 5° | 338 | 270 | 66 | 18 | 16 | 48 |
| 15° | 1942 | 1198 | 67 | 9 | 8 | 547 |
| 25° | 2567 | 2305 | 66 | 4 | 4 | 1192 |
| 35° | 2175 | 2367 | 63 | 1 | 3 | 1348 |
| 45° | 1558 | 1756 | 52 | 0 | 2 | 1208 |
| 55° | 1402 | 1248 | 41 | 1 | 2 | 1254 |
| 65° | 1235 | 1009 | 33 | 0 | 2 | 1194 |
| 75° | 583 | 665 | 26 | 0 | 2 | 651 |
| 85° | 265 | 188 | 4 | 0 | 2 | 218 |
| 90° | 0 | 0 | 0 | 0 | 0 | 17 |
| 95° | 0 | 0 | 0 | 0 | 0 | 0 |
| 105° | 0 | 0 | 0 | 0 | 0 | 0 |
| 115° | 0 | 0 | 0 | 0 | 0 | 0 |
| 125° | 0 | 0 | 0 | 0 | 0 | 0 |
| 135° | 0 | 0 | 0 | 0 | 0 | 0 |
| 145° | 0 | 0 | 0 | 0 | 0 | 0 |
| 155° | 0 | 0 | 0 | 0 | 0 | 0 |
| 165° | 0 | 0 | 0 | 0 | 0 | 0 |
| 175° | 0 | 0 | 0 | 0 | 0 | 0 |
| 180° | 0 | 0 | 0 | 0 | 0 | |

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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|---|---|---|---|---|---|---|---|---|---|
| 0° | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| 2.5° | 169 | 194 | 156 | 110 | 66 | 39 | 27 | 24 | 21 |
| 5° | 338 | 352 | 270 | 160 | 66 | 22 | 18 | 17 | 16 |
| 7.5° | 515 | 521 | 395 | 220 | 67 | 18 | 14 | 14 | 13 |
| 10° | 934 | 889 | 526 | 287 | 67 | 16 | 12 | 11 | 11 |
| 12.5° | 1491 | 1415 | 793 | 353 | 67 | 14 | 10 | 9 | 9 |
| 15° | 1942 | 1868 | 1198 | 421 | 67 | 13 | 9 | 8 | 8 |
| 17.5° | 2281 | 2205 | 1586 | 492 | 67 | 12 | 7 | 7 | 7 |
| 20° | 2441 | 2424 | 1895 | 590 | 67 | 10 | 5 | 5 | 5 |
| 22.5° | 2521 | 2494 | 2141 | 758 | 66 | 9 | 5 | 4 | 4 |
| 25° | 2567 | 2529 | 2305 | 980 | 66 | 8 | 4 | 3 | 4 |
| 27.5° | 2640 | 2584 | 2342 | 1168 | 66 | 7 | 3 | 2 | 4 |
| 30° | 2649 | 2626 | 2353 | 1366 | 65 | 6 | 2 | 2 | 3 |
| 32.5° | 2429 | 2514 | 2352 | 1525 | 64 | 5 | 1 | 2 | 3 |
| 35° | 2175 | 2295 | 2367 | 1650 | 63 | 5 | 1 | 2 | 3 |
| 37.5° | 1896 | 2027 | 2347 | 1733 | 61 | 4 | 1 | 2 | 3 |
| 40° | 1676 | 1775 | 2211 | 1769 | 58 | 4 | 1 | 1 | 2 |
| 42.5° | 1573 | 1595 | 1996 | 1754 | 55 | 4 | 1 | 1 | 2 |
| 45° | 1558 | 1526 | 1756 | 1703 | 52 | 3 | 0 | 1 | 2 |
| 47.5° | 1538 | 1508 | 1530 | 1644 | 49 | 2 | 1 | 1 | 2 |
| 50° | 1476 | 1465 | 1358 | 1587 | 47 | 1 | 1 | 1 | 2 |
| 52.5° | 1431 | 1401 | 1281 | 1531 | 44 | 1 | 0 | 1 | 2 |
| 55° | 1402 | 1357 | 1248 | 1444 | 41 | 1 | 1 | 1 | 2 |
| 57.5° | 1369 | 1322 | 1185 | 1323 | 38 | 1 | 0 | 1 | 2 |
| 60° | 1314 | 1278 | 1112 | 1139 | 36 | 0 | 0 | 1 | 2 |
| 62.5° | 1256 | 1210 | 1059 | 957 | 34 | 0 | 0 | 1 | 2 |
| 65° | 1235 | 1170 | 1009 | 803 | 33 | 0 | 0 | 1 | 2 |
| 67.5° | 1168 | 1127 | 938 | 713 | 31 | 0 | 0 | 1 | 2 |
| 70° | 1004 | 996 | 869 | 646 | 29 | 0 | 0 | 1 | 2 |
| 72.5° | 813 | 812 | 807 | 562 | 28 | 0 | 0 | 1 | 2 |
| 75° | 583 | 587 | 665 | 490 | 26 | 0 | 0 | 0 | 2 |
| 77.5° | 419 | 409 | 475 | 414 | 24 | 0 | 0 | 1 | 2 |
| 80° | 312 | 299 | 295 | 327 | 17 | 0 | 0 | 1 | 1 |
| 82.5° | 315 | 290 | 202 | 201 | 10 | 0 | 0 | 1 | 2 |
| 85° | 265 | 237 | 188 | 88 | 4 | 0 | 0 | 1 | 2 |
| 87.5° | 127 | 101 | 87 | 49 | 0 | 0 | 0 | 1 | 2 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 92.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 95° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 97.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 100° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 102.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 105° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 107.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 110° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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**CANDELA DISTRIBUTION (continued):**

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|---|---|---|---|---|---|---|---|---|---|
| 112.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 115° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 117.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 120° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 122.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 125° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 127.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 130° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 132.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 135° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 137.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 140° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 142.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 145° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 147.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 150° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 152.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 155° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 157.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 160° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 162.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 165° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 167.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 170° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 172.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 175° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 177.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 180° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

(END OF REPORT)