

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: P345044

Luminaire Tested: **24CZ-35-L840-HRP-UNV-CD1-U**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P345044  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1905-313-5)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ-35-L840-HRP-UNV-CD1-U  
Description: CRUZE 2X4 WITH HRP LENS INSERT  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3025.2 lumens  
Efficiency: N/A  
Efficacy: 119.6 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.29 / 1.4  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

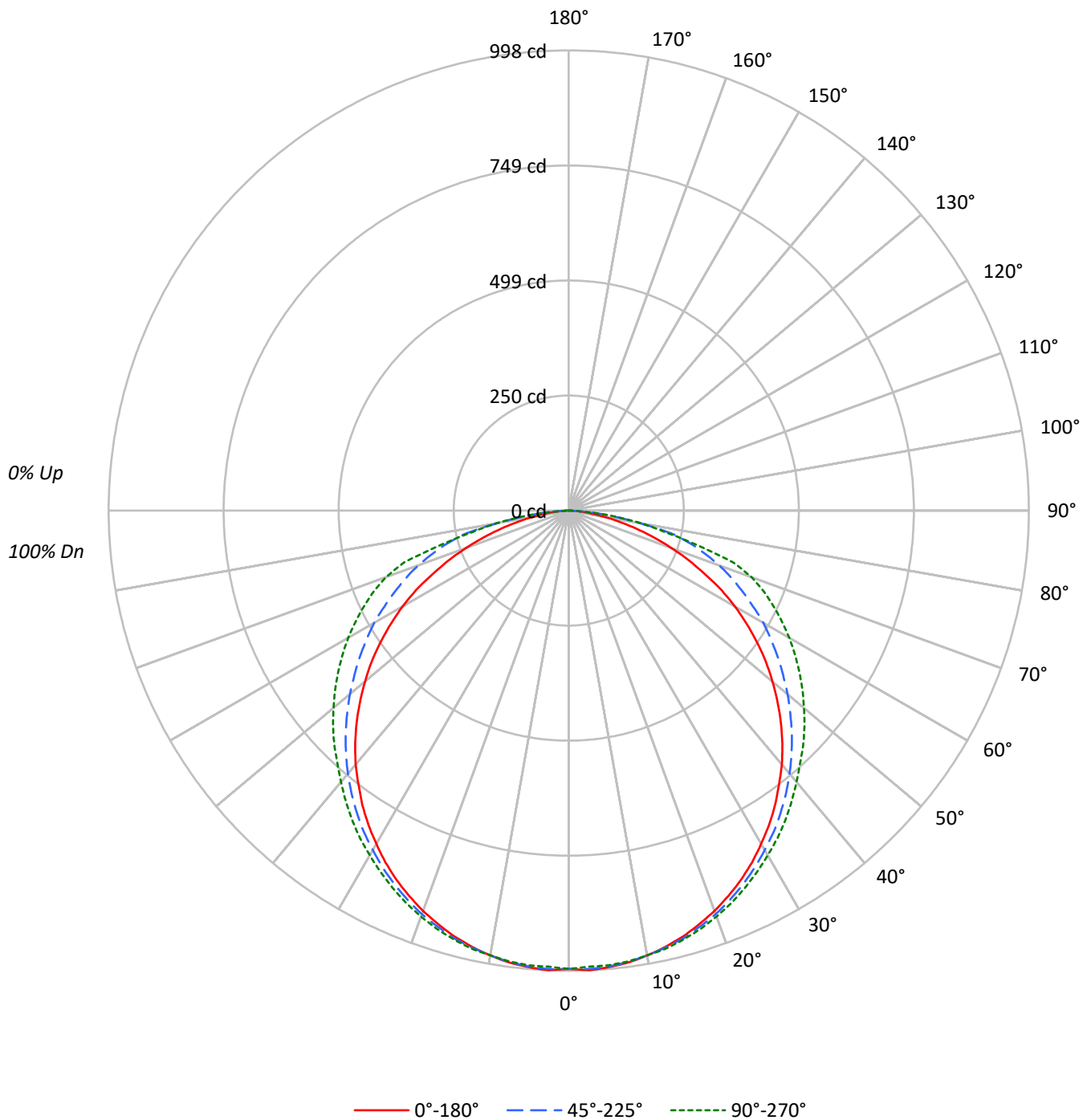
Input Watts (W): 25.3  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|
| RF  | 20  |     |     |     | 20  |     |     |     |     | 20  |     |     |     |     | 20  |     |     |     |   |
| RC  | 80  |     |     |     | 70  |     |     |     |     | 50  |     |     |     |     | 30  |     |     |     | 0 |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 0 |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |   |
| 1   | 108 | 103 | 99  | 95  | 105 | 101 | 97  | 93  | 97  | 93  | 90  | 93  | 90  | 87  | 89  | 87  | 85  | 83  |   |
| 2   | 98  | 89  | 82  | 76  | 95  | 87  | 81  | 75  | 84  | 78  | 74  | 81  | 76  | 72  | 77  | 74  | 70  | 68  |   |
| 3   | 89  | 78  | 70  | 63  | 86  | 76  | 69  | 62  | 73  | 67  | 61  | 71  | 65  | 60  | 68  | 63  | 59  | 57  |   |
| 4   | 81  | 69  | 60  | 53  | 79  | 68  | 59  | 52  | 65  | 58  | 52  | 63  | 56  | 51  | 60  | 55  | 50  | 48  |   |
| 5   | 75  | 61  | 52  | 45  | 72  | 60  | 52  | 45  | 58  | 50  | 44  | 56  | 49  | 44  | 54  | 48  | 43  | 41  |   |
| 6   | 69  | 55  | 46  | 39  | 67  | 54  | 45  | 39  | 52  | 45  | 39  | 51  | 44  | 38  | 49  | 43  | 38  | 36  |   |
| 7   | 64  | 50  | 41  | 35  | 62  | 49  | 41  | 34  | 48  | 40  | 34  | 46  | 39  | 34  | 45  | 38  | 34  | 32  |   |
| 8   | 59  | 45  | 37  | 31  | 58  | 45  | 36  | 31  | 43  | 36  | 31  | 42  | 35  | 30  | 41  | 35  | 30  | 28  |   |
| 9   | 55  | 42  | 33  | 28  | 54  | 41  | 33  | 28  | 40  | 33  | 27  | 39  | 32  | 27  | 38  | 32  | 27  | 25  |   |
| 10  | 52  | 38  | 30  | 25  | 51  | 38  | 30  | 25  | 37  | 30  | 25  | 36  | 29  | 25  | 35  | 29  | 25  | 23  |   |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 1337 | 1337 | 1337 |
| 5°  | 1343 | 1341 | 1337 |
| 10° | 1339 | 1339 | 1339 |
| 15° | 1332 | 1338 | 1341 |
| 20° | 1323 | 1334 | 1341 |
| 25° | 1312 | 1328 | 1341 |
| 30° | 1297 | 1321 | 1341 |
| 35° | 1281 | 1316 | 1345 |
| 40° | 1263 | 1309 | 1350 |
| 45° | 1238 | 1302 | 1369 |
| 50° | 1207 | 1297 | 1394 |
| 55° | 1170 | 1298 | 1432 |
| 60° | 1119 | 1311 | 1486 |
| 65° | 1036 | 1324 | 1560 |
| 70° | 933  | 1366 | 1657 |
| 75° | 788  | 1408 | 1482 |
| 80° | 613  | 1205 | 1245 |
| 85° | 440  | 820  | 721  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 94.2   | 3.1       |
| 10°-20°   | 270.5  | 8.9       |
| 20°-30°   | 411.4  | 13.6      |
| 30°-40°   | 499.8  | 16.5      |
| 40°-50°   | 527.6  | 17.4      |
| 50°-60°   | 495.7  | 16.4      |
| 60°-70°   | 408.1  | 13.5      |
| 70°-80°   | 257.1  | 8.5       |
| 80°-90°   | 60.7   | 2.0       |
| 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°    | 776.2  | 25.7      |
| 0°-40°    | 1276.0 | 42.2      |
| 0°-60°    | 2299.3 | 76.0      |
| 0°-90°    | 3025.2 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3025.2 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0°  | 994 | 994   | 994 | 994   | 994 |      |
| 5°  | 994 | 989   | 993 | 991   | 990 | 94   |
| 15° | 956 | 952   | 960 | 963   | 963 | 270  |
| 25° | 884 | 882   | 894 | 899   | 903 | 407  |
| 35° | 780 | 784   | 801 | 811   | 819 | 488  |
| 45° | 650 | 661   | 684 | 704   | 719 | 502  |
| 55° | 499 | 517   | 553 | 592   | 610 | 445  |
| 65° | 325 | 356   | 416 | 469   | 490 | 323  |
| 75° | 152 | 198   | 271 | 296   | 285 | 162  |
| 85° | 28  | 48    | 53  | 49    | 47  | 36   |
| 90° | 0   | 0     | 0   | 0     | 0   |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|-------|-------|-------|-------|-------|-------|
| 0°    | 994.0 | 994.0 | 994.0 | 994.0 | 994.0 |
| 2.5°  | 997.9 | 991.4 | 995.3 | 994.0 | 990.1 |
| 5°    | 994.0 | 988.8 | 992.7 | 991.4 | 990.1 |
| 7.5°  | 988.8 | 983.6 | 987.5 | 986.2 | 986.2 |
| 10°   | 979.7 | 975.8 | 979.7 | 979.7 | 979.7 |
| 12.5° | 969.3 | 965.5 | 970.6 | 971.9 | 973.2 |
| 15°   | 956.4 | 952.5 | 960.3 | 962.9 | 962.9 |
| 17.5° | 940.8 | 938.2 | 946.0 | 948.6 | 951.2 |
| 20°   | 924.0 | 922.7 | 931.8 | 934.4 | 936.9 |
| 22.5° | 904.5 | 904.5 | 913.6 | 916.2 | 921.4 |
| 25°   | 883.8 | 882.5 | 894.2 | 899.4 | 903.3 |
| 27.5° | 860.5 | 860.5 | 873.4 | 879.9 | 883.8 |
| 30°   | 834.6 | 837.2 | 850.1 | 857.9 | 863.1 |
| 32.5° | 808.6 | 811.2 | 826.8 | 835.9 | 842.3 |
| 35°   | 780.1 | 784.0 | 800.9 | 811.2 | 819.0 |
| 37.5° | 749.0 | 755.5 | 773.7 | 785.3 | 794.4 |
| 40°   | 719.2 | 724.4 | 745.1 | 758.1 | 768.5 |
| 42.5° | 685.5 | 694.6 | 715.3 | 730.9 | 742.6 |
| 45°   | 650.5 | 660.9 | 684.2 | 703.7 | 719.2 |
| 47.5° | 614.3 | 627.2 | 651.8 | 677.8 | 693.3 |
| 50°   | 576.7 | 590.9 | 619.4 | 650.5 | 666.1 |
| 52.5° | 539.1 | 554.7 | 585.8 | 622.0 | 638.9 |
| 55°   | 498.9 | 517.1 | 553.4 | 592.2 | 610.4 |
| 57.5° | 457.5 | 478.2 | 519.7 | 563.7 | 581.9 |
| 60°   | 416.0 | 438.0 | 487.3 | 531.3 | 552.1 |
| 62.5° | 373.2 | 397.8 | 451.0 | 501.5 | 521.0 |
| 65°   | 325.3 | 356.4 | 416.0 | 469.1 | 489.9 |
| 67.5° | 281.2 | 313.6 | 382.3 | 435.4 | 457.5 |
| 70°   | 237.2 | 274.7 | 347.3 | 400.4 | 421.2 |
| 72.5° | 193.1 | 237.2 | 308.4 | 362.9 | 374.5 |
| 75°   | 151.6 | 198.3 | 270.8 | 295.5 | 285.1 |
| 77.5° | 111.4 | 163.3 | 228.1 | 215.1 | 212.5 |
| 80°   | 79.1  | 129.6 | 155.5 | 156.8 | 160.7 |
| 82.5° | 50.5  | 95.9  | 101.1 | 102.4 | 103.7 |
| 85°   | 28.5  | 47.9  | 53.1  | 49.2  | 46.7  |
| 87.5° | 13.0  | 15.6  | 13.0  | 9.1   | 7.8   |
| 90°   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)