

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



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: METALUX

Report Number: P1588769

Luminaire Tested: 24CZSP-A-60VHE-L945

Issue Date: 9/3/2026

**Test Information**

Test Method: LM-79-2019  
Report Number: P1588769  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2605-776-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 9/3/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 24CZSP-A-60VHE-L945  
Description: 2x4 CZSP LED Luminaire, 4500K CCT and 6000 lumens, 90CRI, Ribbed Lens, Air Vented Housing  
Light Source: -  
Ballast/Driver: -

**Summary**

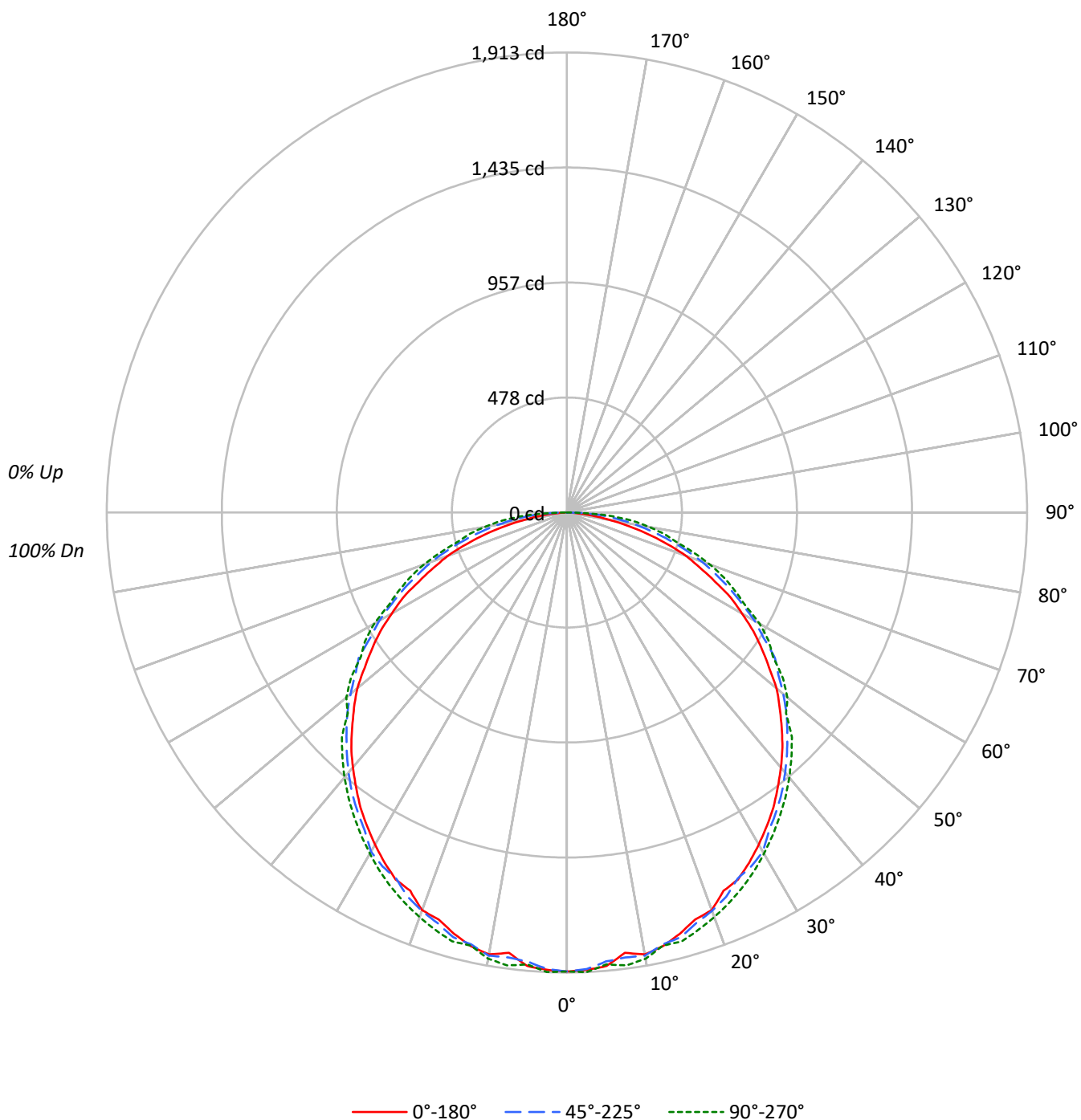
Lumens per Lamp: N/A  
Luminaire Lumens: 5698.0 lumens  
Efficiency: N/A  
Efficacy: 131.0 lumens/watt  
Spacing Criteria (0/90/45): 1.24 / 1.27 / 1.39  
Luminous Opening: Rectangular (W 1.83' x L: 3.83' x H: 0')  
CIE Type: Direct

Input Watts (W): 43.5  
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: 24 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 |
| 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   | 108 | 103 | 99  | 95  | 105 | 101 | 97  | 93  | 97  | 93  | 90  | 93  | 90  | 87  | 89  | 87  | 85  | 83  |    |    |
| 2   | 98  | 89  | 82  | 76  | 95  | 88  | 81  | 75  | 84  | 78  | 74  | 81  | 76  | 72  | 78  | 74  | 70  | 68  |    |    |
| 3   | 89  | 78  | 70  | 63  | 87  | 77  | 69  | 62  | 74  | 67  | 61  | 71  | 65  | 60  | 68  | 63  | 59  | 57  |    |    |
| 4   | 81  | 69  | 60  | 53  | 79  | 68  | 59  | 53  | 65  | 58  | 52  | 63  | 56  | 51  | 61  | 55  | 51  | 48  |    |    |
| 5   | 75  | 62  | 52  | 46  | 73  | 60  | 52  | 45  | 58  | 51  | 45  | 56  | 50  | 44  | 54  | 49  | 44  | 42  |    |    |
| 6   | 69  | 55  | 46  | 40  | 67  | 54  | 46  | 39  | 53  | 45  | 39  | 51  | 44  | 39  | 49  | 43  | 38  | 36  |    |    |
| 7   | 64  | 50  | 41  | 35  | 62  | 49  | 41  | 35  | 48  | 40  | 35  | 46  | 39  | 34  | 45  | 39  | 34  | 32  |    |    |
| 8   | 60  | 46  | 37  | 31  | 58  | 45  | 37  | 31  | 44  | 36  | 31  | 42  | 36  | 31  | 41  | 35  | 30  | 28  |    |    |
| 9   | 56  | 42  | 34  | 28  | 54  | 41  | 33  | 28  | 40  | 33  | 28  | 39  | 32  | 28  | 38  | 32  | 27  | 26  |    |    |
| 10  | 52  | 39  | 31  | 25  | 51  | 38  | 30  | 25  | 37  | 30  | 25  | 36  | 30  | 25  | 35  | 29  | 25  | 23  |    |    |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 2923 | 2923 | 2923 |
| 5°  | 2911 | 2881 | 2900 |
| 10° | 2902 | 2909 | 2930 |
| 15° | 2875 | 2899 | 2927 |
| 20° | 2868 | 2873 | 2919 |
| 25° | 2846 | 2838 | 2911 |
| 30° | 2820 | 2880 | 2897 |
| 35° | 2799 | 2838 | 2884 |
| 40° | 2768 | 2822 | 2875 |
| 45° | 2733 | 2807 | 2864 |
| 50° | 2711 | 2796 | 2851 |
| 55° | 2643 | 2821 | 2792 |
| 60° | 2575 | 2761 | 2832 |
| 65° | 2459 | 2701 | 2794 |
| 70° | 2358 | 2678 | 2834 |
| 75° | 2088 | 2598 | 2777 |
| 80° | 1649 | 2538 | 3071 |
| 85° | 1009 | 2712 | 3502 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°

Vertical Angle: 85°

Luminance: 3502 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 180.3  | 3.2       |
| 10°-20°   | 514.9  | 9.0       |
| 20°-30°   | 784.5  | 13.8      |
| 30°-40°   | 954.9  | 16.8      |
| 40°-50°   | 1001.3 | 17.6      |
| 50°-60°   | 927.5  | 16.3      |
| 60°-70°   | 731.4  | 12.8      |
| 70°-80°   | 452.5  | 7.9       |
| 80°-90°   | 150.7  | 2.6       |
| 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°    | 1479.7 | 26.0      |
| 0°-40°    | 2434.6 | 42.7      |
| 0°-60°    | 4363.4 | 76.6      |
| 0°-90°    | 5698.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 5698.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1909 | 1909  | 1909 | 1909  | 1909 |      |
| 5°  | 1893 | 1892  | 1874 | 1915  | 1886 | 179  |
| 15° | 1813 | 1823  | 1828 | 1815  | 1846 | 512  |
| 25° | 1684 | 1693  | 1679 | 1726  | 1723 | 774  |
| 35° | 1497 | 1511  | 1518 | 1546  | 1543 | 935  |
| 45° | 1262 | 1285  | 1296 | 1311  | 1322 | 975  |
| 55° | 990  | 1019  | 1056 | 1066  | 1046 | 885  |
| 65° | 679  | 705   | 745  | 773   | 771  | 675  |
| 75° | 353  | 381   | 439  | 472   | 469  | 373  |
| 85° | 57   | 98    | 154  | 188   | 199  | 77   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1908.7 | 1908.7 | 1908.7 | 1908.7 | 1908.7 |
| 2.5°  | 1903.3 | 1914.9 | 1900.2 | 1912.6 | 1912.6 |
| 5°    | 1893.2 | 1892.4 | 1873.8 | 1914.9 | 1886.2 |
| 7.5°  | 1846.7 | 1879.3 | 1866.1 | 1916.5 | 1899.4 |
| 10°   | 1866.1 | 1857.5 | 1870.7 | 1904.9 | 1883.9 |
| 12.5° | 1846.7 | 1860.7 | 1839.7 | 1822.6 | 1844.4 |
| 15°   | 1813.3 | 1822.6 | 1828.1 | 1814.9 | 1845.9 |
| 17.5° | 1773.8 | 1808.7 | 1790.1 | 1783.9 | 1819.5 |
| 20°   | 1759.8 | 1761.4 | 1762.9 | 1794.7 | 1790.8 |
| 22.5° | 1702.4 | 1733.5 | 1729.6 | 1755.2 | 1758.3 |
| 25°   | 1683.8 | 1693.1 | 1679.2 | 1725.7 | 1722.6 |
| 27.5° | 1641.2 | 1661.3 | 1659.0 | 1674.5 | 1683.0 |
| 30°   | 1594.6 | 1614.8 | 1628.7 | 1611.7 | 1638.1 |
| 32.5° | 1546.5 | 1580.7 | 1565.1 | 1596.9 | 1591.5 |
| 35°   | 1496.9 | 1510.9 | 1517.8 | 1546.5 | 1542.7 |
| 37.5° | 1439.5 | 1463.5 | 1467.4 | 1510.9 | 1492.2 |
| 40°   | 1384.4 | 1408.5 | 1411.6 | 1437.2 | 1438.0 |
| 42.5° | 1326.3 | 1337.9 | 1354.2 | 1383.7 | 1381.3 |
| 45°   | 1261.9 | 1285.2 | 1296.0 | 1310.8 | 1322.4 |
| 47.5° | 1199.8 | 1224.7 | 1238.6 | 1262.7 | 1235.5 |
| 50°   | 1137.8 | 1155.6 | 1173.5 | 1199.1 | 1196.7 |
| 52.5° | 1059.5 | 1099.8 | 1108.3 | 1122.3 | 1131.6 |
| 55°   | 989.7  | 1019.1 | 1056.4 | 1065.7 | 1045.5 |
| 57.5° | 919.1  | 941.6  | 968.7  | 997.4  | 995.1  |
| 60°   | 840.7  | 867.9  | 901.2  | 923.0  | 924.5  |
| 62.5° | 769.4  | 788.0  | 819.8  | 851.6  | 835.3  |
| 65°   | 678.6  | 705.0  | 745.3  | 773.3  | 770.9  |
| 67.5° | 598.0  | 626.7  | 667.8  | 704.2  | 705.8  |
| 70°   | 526.6  | 542.1  | 598.0  | 625.9  | 632.9  |
| 72.5° | 439.0  | 466.1  | 515.8  | 546.8  | 549.9  |
| 75°   | 352.9  | 380.8  | 439.0  | 472.3  | 469.2  |
| 77.5° | 265.3  | 305.6  | 362.2  | 401.8  | 414.9  |
| 80°   | 186.9  | 223.4  | 287.7  | 326.5  | 348.2  |
| 82.5° | 117.9  | 155.9  | 218.7  | 266.8  | 280.0  |
| 85°   | 57.4   | 97.7   | 154.3  | 187.7  | 199.3  |
| 87.5° | 14.7   | 40.3   | 71.4   | 87.6   | 94.6   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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**CIE UGR TABLE:**

| Reflectances:   |      |                  |       |       |       |       |                |       |       |       |       |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling         |      | 0.7              | 0.7   | 0.5   | 0.5   | 0.3   | 0.7            | 0.7   | 0.5   | 0.5   | 0.3   |
| Wall            |      | 0.5              | 0.3   | 0.5   | 0.3   | 0.3   | 0.5            | 0.3   | 0.5   | 0.3   | 0.3   |
| Reference plane |      | 0.2              | 0.2   | 0.2   | 0.2   | 0.2   | 0.2            | 0.2   | 0.2   | 0.2   | 0.2   |
| Room dimensions |      | Viewed crosswise |       |       |       |       | Viewed endwise |       |       |       |       |
| X=2H            | Y=2H | 15.53            | 17.20 | 15.90 | 17.52 | 17.83 | 15.96          | 17.63 | 16.33 | 17.95 | 18.26 |
|                 | 3H   | 17.33            | 18.85 | 17.71 | 19.17 | 19.53 | 18.03          | 19.55 | 18.41 | 19.88 | 20.23 |
|                 | 4H   | 17.97            | 19.41 | 18.37 | 19.75 | 20.13 | 18.88          | 20.31 | 19.27 | 20.65 | 21.03 |
|                 | 6H   | 18.38            | 19.71 | 18.79 | 20.08 | 20.47 | 19.66          | 20.99 | 20.07 | 21.36 | 21.75 |
|                 | 8H   | 18.49            | 19.76 | 18.91 | 20.15 | 20.54 | 20.01          | 21.28 | 20.43 | 21.67 | 22.07 |
|                 | 12H  | 18.53            | 19.75 | 18.96 | 20.13 | 20.56 | 20.31          | 21.53 | 20.74 | 21.91 | 22.34 |
| 4H              | 2H   | 16.27            | 17.70 | 16.67 | 18.05 | 18.42 | 16.60          | 18.03 | 17.00 | 18.38 | 18.76 |
|                 | 3H   | 18.30            | 19.51 | 18.71 | 19.91 | 20.31 | 18.92          | 20.12 | 19.32 | 20.52 | 20.92 |
|                 | 4H   | 19.07            | 20.17 | 19.51 | 20.58 | 21.02 | 19.92          | 21.02 | 20.35 | 21.43 | 21.86 |
|                 | 6H   | 19.61            | 20.57 | 20.06 | 21.01 | 21.46 | 20.87          | 21.83 | 21.33 | 22.27 | 22.73 |
|                 | 8H   | 19.75            | 20.66 | 20.21 | 21.10 | 21.56 | 21.30          | 22.20 | 21.76 | 22.64 | 23.10 |
|                 | 12H  | 19.84            | 20.65 | 20.31 | 21.12 | 21.59 | 21.68          | 22.49 | 22.16 | 22.96 | 23.43 |
| 8H              | 4H   | 19.52            | 20.43 | 19.98 | 20.87 | 21.33 | 20.26          | 21.16 | 20.72 | 21.60 | 22.07 |
|                 | 6H   | 20.20            | 20.96 | 20.70 | 21.44 | 21.92 | 21.38          | 22.13 | 21.87 | 22.62 | 23.09 |
|                 | 8H   | 20.42            | 21.10 | 20.93 | 21.60 | 22.09 | 21.92          | 22.60 | 22.43 | 23.10 | 23.59 |
|                 | 12H  | 20.57            | 21.17 | 21.07 | 21.66 | 22.22 | 22.44          | 23.04 | 22.95 | 23.53 | 24.09 |
| 12H             | 4H   | 19.61            | 20.42 | 20.09 | 20.89 | 21.36 | 20.29          | 21.11 | 20.77 | 21.58 | 22.05 |
|                 | 6H   | 20.34            | 21.02 | 20.84 | 21.52 | 22.00 | 21.44          | 22.12 | 21.95 | 22.62 | 23.11 |
|                 | 8H   | 20.63            | 21.23 | 21.14 | 21.72 | 22.28 | 22.07          | 22.67 | 22.57 | 23.16 | 23.71 |