

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: P1588318

Luminaire Tested: 24CZSP-49HE-L845-S

Issue Date: 9/3/2026

**Test Information**

Test Method: LM-79-2019  
Report Number: P1588318  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2608-884-6)  
Test Lab: INNOVATION CENTER  
Issue Date: 9/3/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 24CZSP-49HE-L845-S  
Description: 2x4 CZSP LED Luminaire, 4500K CCT and 4500 lumens, 80CRI, Smooth Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

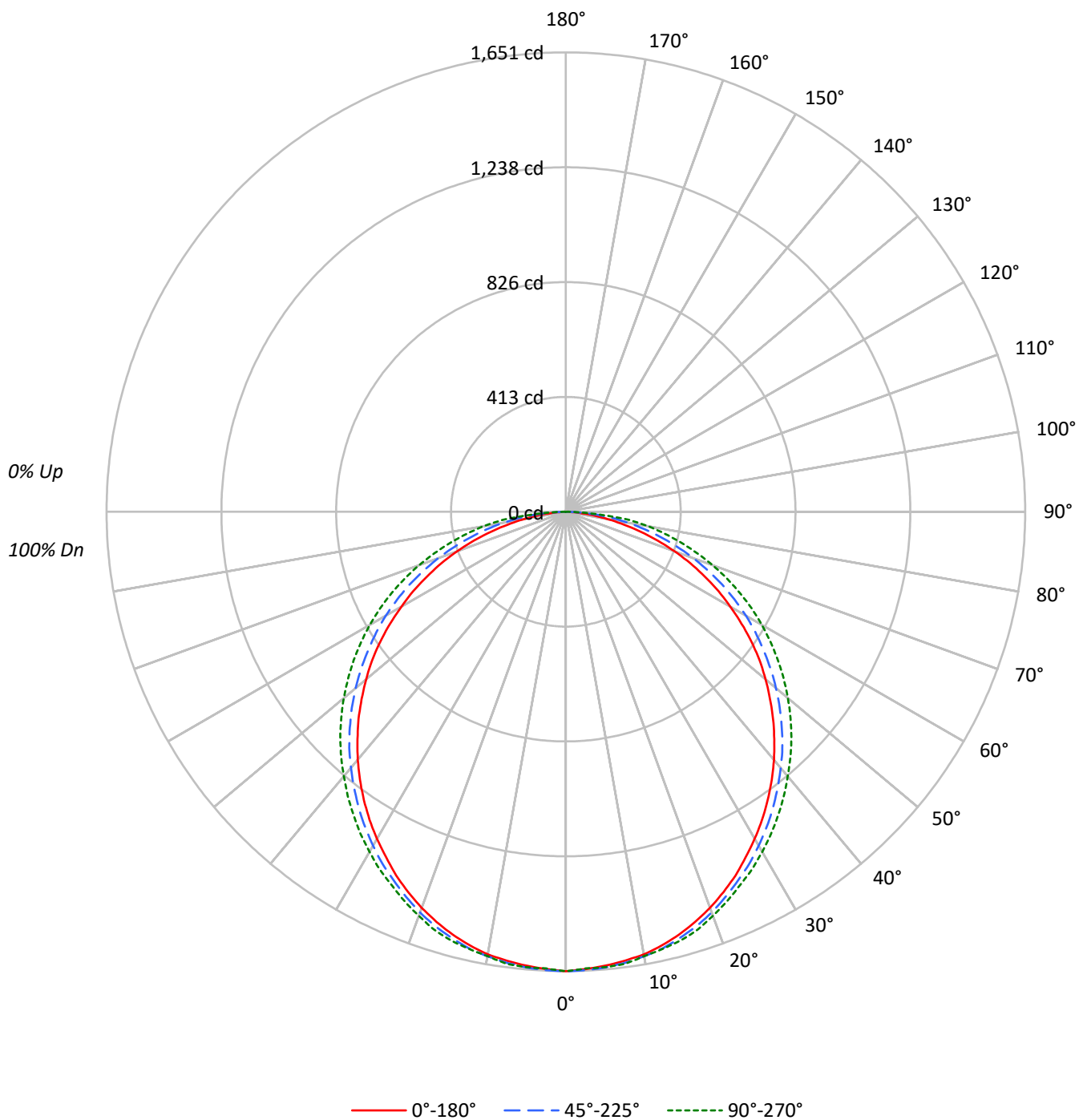
Lumens per Lamp: N/A  
Luminaire Lumens: 4821.0 lumens  
Efficiency: N/A  
Efficacy: 144.8 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.27 / 1.37  
Luminous Opening: Rectangular (W 1.83' x L: 3.83' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
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: 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  |     |     | 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   | 108 | 103 | 99  | 95  | 106 | 101 | 97  | 93  | 97  | 93  | 90  |  | 93  | 90  | 88  |  | 89  | 87  | 85  | 83  |
| 2   | 98  | 90  | 83  | 77  | 96  | 88  | 81  | 76  | 84  | 79  | 74  |  | 81  | 76  | 72  |  | 78  | 74  | 71  | 69  |
| 3   | 89  | 79  | 70  | 64  | 87  | 77  | 69  | 63  | 74  | 67  | 62  |  | 71  | 65  | 61  |  | 69  | 64  | 60  | 57  |
| 4   | 82  | 69  | 60  | 54  | 79  | 68  | 60  | 53  | 66  | 58  | 52  |  | 63  | 57  | 52  |  | 61  | 56  | 51  | 49  |
| 5   | 75  | 62  | 53  | 46  | 73  | 61  | 52  | 46  | 59  | 51  | 45  |  | 57  | 50  | 45  |  | 55  | 49  | 44  | 42  |
| 6   | 69  | 56  | 47  | 40  | 67  | 55  | 46  | 40  | 53  | 45  | 40  |  | 51  | 44  | 39  |  | 50  | 44  | 39  | 37  |
| 7   | 64  | 50  | 42  | 35  | 62  | 50  | 41  | 35  | 48  | 40  | 35  |  | 47  | 40  | 35  |  | 45  | 39  | 34  | 32  |
| 8   | 60  | 46  | 37  | 32  | 58  | 45  | 37  | 31  | 44  | 37  | 31  |  | 43  | 36  | 31  |  | 42  | 35  | 31  | 29  |
| 9   | 56  | 42  | 34  | 28  | 54  | 42  | 34  | 28  | 40  | 33  | 28  |  | 39  | 33  | 28  |  | 38  | 32  | 28  | 26  |
| 10  | 52  | 39  | 31  | 26  | 51  | 38  | 31  | 26  | 37  | 30  | 25  |  | 37  | 30  | 25  |  | 36  | 30  | 25  | 23  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 2529 | 2529 | 2529 |
| 5°  | 2518 | 2527 | 2526 |
| 10° | 2512 | 2524 | 2522 |
| 15° | 2494 | 2514 | 2530 |
| 20° | 2469 | 2498 | 2519 |
| 25° | 2438 | 2472 | 2503 |
| 30° | 2400 | 2451 | 2496 |
| 35° | 2366 | 2427 | 2488 |
| 40° | 2326 | 2403 | 2481 |
| 45° | 2282 | 2379 | 2484 |
| 50° | 2233 | 2349 | 2483 |
| 55° | 2175 | 2316 | 2486 |
| 60° | 2093 | 2291 | 2492 |
| 65° | 1997 | 2247 | 2500 |
| 70° | 1862 | 2184 | 2511 |
| 75° | 1659 | 2097 | 2535 |
| 80° | 1372 | 1997 | 2659 |
| 85° | 893  | 1803 | 2323 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°

Vertical Angle: 82.5°

Luminance: 2743 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 156.2  | 3.2       |
| 10°-20°   | 447.2  | 9.3       |
| 20°-30°   | 674.4  | 14.0      |
| 30°-40°   | 812.3  | 16.8      |
| 40°-50°   | 848.4  | 17.6      |
| 50°-60°   | 779.1  | 16.2      |
| 60°-70°   | 613.6  | 12.7      |
| 70°-80°   | 376.5  | 7.8       |
| 80°-90°   | 113.3  | 2.3       |
| 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°    | 1277.8 | 26.5      |
| 0°-40°    | 2090.1 | 43.4      |
| 0°-60°    | 3717.6 | 77.1      |
| 0°-90°    | 4821.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4821.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1651 | 1651  | 1651 | 1651  | 1651 |      |
| 5°  | 1638 | 1640  | 1644 | 1649  | 1643 | 156  |
| 15° | 1573 | 1576  | 1586 | 1595  | 1595 | 444  |
| 25° | 1443 | 1446  | 1463 | 1481  | 1481 | 664  |
| 35° | 1265 | 1272  | 1298 | 1324  | 1331 | 791  |
| 45° | 1054 | 1065  | 1098 | 1136  | 1147 | 812  |
| 55° | 815  | 829   | 867  | 916   | 931  | 727  |
| 65° | 551  | 570   | 620  | 672   | 690  | 545  |
| 75° | 280  | 302   | 354  | 410   | 428  | 297  |
| 85° | 51   | 70    | 103  | 130   | 132  | 66   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1651.3 | 1651.3 | 1651.3 | 1651.3 | 1651.3 |
| 2.5°  | 1645.0 | 1648.1 | 1649.2 | 1650.3 | 1642.9 |
| 5°    | 1637.6 | 1639.7 | 1643.9 | 1649.2 | 1642.9 |
| 7.5°  | 1627.0 | 1629.1 | 1634.4 | 1641.8 | 1638.6 |
| 10°   | 1615.4 | 1616.4 | 1622.8 | 1628.0 | 1621.7 |
| 12.5° | 1596.3 | 1599.5 | 1606.9 | 1611.1 | 1609.0 |
| 15°   | 1573.0 | 1576.2 | 1585.7 | 1595.3 | 1595.3 |
| 17.5° | 1545.5 | 1549.8 | 1561.4 | 1574.1 | 1575.2 |
| 20°   | 1514.9 | 1518.0 | 1532.8 | 1545.5 | 1545.5 |
| 22.5° | 1479.9 | 1484.2 | 1499.0 | 1512.7 | 1514.9 |
| 25°   | 1442.9 | 1446.1 | 1463.0 | 1481.0 | 1481.0 |
| 27.5° | 1399.6 | 1405.9 | 1427.1 | 1445.0 | 1449.3 |
| 30°   | 1357.2 | 1362.5 | 1385.8 | 1408.0 | 1411.2 |
| 32.5° | 1312.8 | 1319.2 | 1343.5 | 1367.8 | 1373.1 |
| 35°   | 1265.2 | 1271.5 | 1298.0 | 1324.4 | 1330.8 |
| 37.5° | 1215.5 | 1222.9 | 1250.4 | 1281.1 | 1287.4 |
| 40°   | 1163.6 | 1172.1 | 1201.7 | 1234.5 | 1240.9 |
| 42.5° | 1108.6 | 1120.3 | 1152.0 | 1185.9 | 1195.4 |
| 45°   | 1053.6 | 1065.3 | 1098.1 | 1136.1 | 1146.7 |
| 47.5° | 995.4  | 1009.2 | 1043.1 | 1083.2 | 1094.9 |
| 50°   | 937.3  | 951.0  | 985.9  | 1029.3 | 1042.0 |
| 52.5° | 878.0  | 891.8  | 927.7  | 973.2  | 987.0  |
| 55°   | 814.6  | 829.4  | 867.4  | 916.1  | 930.9  |
| 57.5° | 749.0  | 768.0  | 808.2  | 857.9  | 872.7  |
| 60°   | 683.4  | 702.4  | 747.9  | 796.6  | 813.5  |
| 62.5° | 618.8  | 636.8  | 683.4  | 735.2  | 753.2  |
| 65°   | 551.1  | 570.2  | 619.9  | 671.7  | 689.7  |
| 67.5° | 484.5  | 503.5  | 553.3  | 607.2  | 626.3  |
| 70°   | 415.7  | 436.9  | 487.7  | 541.6  | 560.7  |
| 72.5° | 347.0  | 369.2  | 421.0  | 476.0  | 494.0  |
| 75°   | 280.3  | 302.5  | 354.4  | 410.5  | 428.4  |
| 77.5° | 214.7  | 239.1  | 289.9  | 347.0  | 363.9  |
| 80°   | 155.5  | 178.8  | 226.4  | 282.4  | 301.5  |
| 82.5° | 99.4   | 119.5  | 167.1  | 220.0  | 233.8  |
| 85°   | 50.8   | 69.8   | 102.6  | 130.1  | 132.2  |
| 87.5° | 15.9   | 22.2   | 33.9   | 50.8   | 51.8   |
| 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 | 14.70            | 16.36 | 15.07 | 16.68 | 16.99 | 15.53          | 17.19 | 15.90 | 17.51 | 17.82 |
|                 | 3H   | 16.46            | 17.96 | 16.83 | 18.29 | 18.65 | 17.65          | 19.16 | 18.03 | 19.48 | 19.84 |
|                 | 4H   | 17.08            | 18.50 | 17.47 | 18.85 | 19.22 | 18.54          | 19.96 | 18.94 | 20.31 | 20.68 |
|                 | 6H   | 17.49            | 18.81 | 17.90 | 19.17 | 19.56 | 19.32          | 20.64 | 19.73 | 21.00 | 21.39 |
|                 | 8H   | 17.59            | 18.86 | 18.02 | 19.25 | 19.64 | 19.64          | 20.90 | 20.06 | 21.29 | 21.69 |
|                 | 12H  | 17.65            | 18.86 | 18.08 | 19.24 | 19.67 | 19.85          | 21.06 | 20.28 | 21.44 | 21.87 |
| 4H              | 2H   | 15.47            | 16.90 | 15.87 | 17.24 | 17.62 | 16.12          | 17.54 | 16.52 | 17.89 | 18.26 |
|                 | 3H   | 17.45            | 18.65 | 17.86 | 19.05 | 19.44 | 18.47          | 19.67 | 18.88 | 20.07 | 20.47 |
|                 | 4H   | 18.19            | 19.27 | 18.62 | 19.69 | 20.12 | 19.53          | 20.61 | 19.96 | 21.03 | 21.46 |
|                 | 6H   | 18.72            | 19.67 | 19.17 | 20.11 | 20.56 | 20.48          | 21.43 | 20.93 | 21.87 | 22.33 |
|                 | 8H   | 18.86            | 19.75 | 19.32 | 20.20 | 20.66 | 20.88          | 21.77 | 21.34 | 22.21 | 22.67 |
|                 | 12H  | 18.95            | 19.75 | 19.43 | 20.22 | 20.69 | 21.15          | 21.96 | 21.63 | 22.43 | 22.90 |
| 8H              | 4H   | 18.65            | 19.54 | 19.11 | 19.98 | 20.44 | 19.82          | 20.71 | 20.28 | 21.15 | 21.61 |
|                 | 6H   | 19.31            | 20.05 | 19.80 | 20.54 | 21.01 | 20.93          | 21.67 | 21.42 | 22.16 | 22.63 |
|                 | 8H   | 19.52            | 20.19 | 20.03 | 20.69 | 21.18 | 21.44          | 22.11 | 21.95 | 22.61 | 23.10 |
|                 | 12H  | 19.66            | 20.25 | 20.16 | 20.74 | 21.30 | 21.83          | 22.42 | 22.33 | 22.91 | 23.47 |
| 12H             | 4H   | 18.74            | 19.54 | 19.22 | 20.01 | 20.48 | 19.84          | 20.64 | 20.32 | 21.12 | 21.59 |
|                 | 6H   | 19.44            | 20.11 | 19.95 | 20.61 | 21.10 | 20.97          | 21.64 | 21.48 | 22.15 | 22.63 |
|                 | 8H   | 19.72            | 20.31 | 20.22 | 20.80 | 21.36 | 21.55          | 22.15 | 22.06 | 22.63 | 23.19 |