

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: P1588317

Luminaire Tested: 24CZSP-49HE-L840

Issue Date: 9/3/2026

**Test Information**

Test Method: LM-79-2019  
Report Number: P1588317  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2603-711-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 9/3/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 24CZSP-49HE-L840  
Description: 2x4 CZSP LED Luminaire, 4000K CCT and 4500 lumens, 80CRI, Ribbed Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

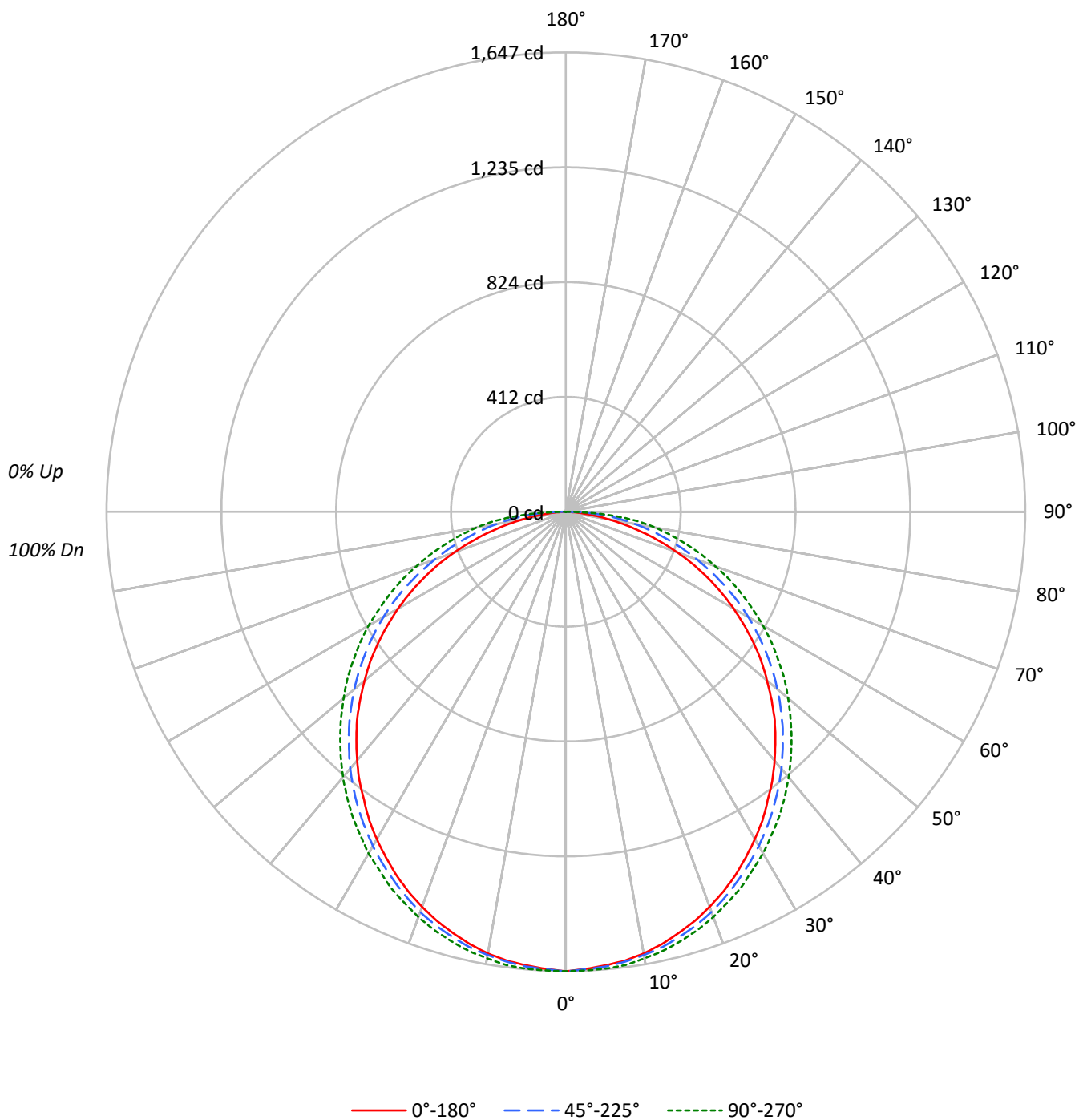
Lumens per Lamp: N/A  
Luminaire Lumens: 4887.0 lumens  
Efficiency: N/A  
Efficacy: 146.8 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.27 / 1.38  
Luminous Opening: Rectangular (W 1.83' x L: 3.83' x H: 0')  
CIE Type: Direct

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 | 98  | 94  | 105 | 101 | 97  | 93  | 96  | 93  | 90  |  | 92  | 90  | 87  |  | 89  | 87  | 85  | 82  |
| 2   | 98  | 89  | 82  | 76  | 95  | 87  | 81  | 75  | 84  | 78  | 73  |  | 81  | 76  | 72  |  | 77  | 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  | 29  |
| 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°  | 2523 | 2523 | 2523 |
| 5°  | 2510 | 2516 | 2529 |
| 10° | 2501 | 2510 | 2529 |
| 15° | 2479 | 2501 | 2526 |
| 20° | 2456 | 2489 | 2520 |
| 25° | 2430 | 2466 | 2512 |
| 30° | 2397 | 2447 | 2502 |
| 35° | 2359 | 2425 | 2494 |
| 40° | 2328 | 2404 | 2485 |
| 45° | 2294 | 2382 | 2479 |
| 50° | 2243 | 2359 | 2478 |
| 55° | 2196 | 2337 | 2485 |
| 60° | 2130 | 2316 | 2502 |
| 65° | 2039 | 2279 | 2519 |
| 70° | 1908 | 2241 | 2550 |
| 75° | 1697 | 2209 | 2633 |
| 80° | 1396 | 2219 | 2863 |
| 85° | 951  | 2473 | 3161 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°

Vertical Angle: 85°

Luminance: 3161 cd/sqm

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 155.9  | 3.2       |
| 10°-20°   | 446.4  | 9.1       |
| 20°-30°   | 675.0  | 13.8      |
| 30°-40°   | 814.6  | 16.7      |
| 40°-50°   | 851.7  | 17.4      |
| 50°-60°   | 785.8  | 16.1      |
| 60°-70°   | 624.9  | 12.8      |
| 70°-80°   | 394.4  | 8.1       |
| 80°-90°   | 138.3  | 2.8       |
| 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°    | 1277.4 | 26.1      |
| 0°-40°    | 2091.9 | 42.8      |
| 0°-60°    | 3729.5 | 76.3      |
| 0°-90°    | 4887.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4887.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1647 | 1647  | 1647 | 1647  | 1647 |      |
| 5°  | 1632 | 1645  | 1637 | 1641  | 1645 | 155  |
| 15° | 1564 | 1581  | 1577 | 1589  | 1593 | 441  |
| 25° | 1438 | 1459  | 1459 | 1478  | 1486 | 662  |
| 35° | 1262 | 1289  | 1297 | 1323  | 1334 | 791  |
| 45° | 1059 | 1082  | 1100 | 1132  | 1144 | 816  |
| 55° | 822  | 847   | 875  | 917   | 931  | 734  |
| 65° | 563  | 588   | 629  | 682   | 695  | 556  |
| 75° | 287  | 319   | 373  | 429   | 445  | 304  |
| 85° | 54   | 89    | 141  | 174   | 180  | 69   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |

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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1647.4 | 1647.4 | 1647.4 | 1647.4 | 1647.4 |
| 2.5°  | 1640.7 | 1651.5 | 1642.0 | 1647.4 | 1646.1 |
| 5°    | 1632.5 | 1644.7 | 1636.6 | 1640.7 | 1644.7 |
| 7.5°  | 1623.1 | 1636.6 | 1627.1 | 1633.9 | 1639.3 |
| 10°   | 1608.2 | 1621.7 | 1613.6 | 1621.7 | 1625.8 |
| 12.5° | 1587.9 | 1604.1 | 1598.7 | 1608.2 | 1612.3 |
| 15°   | 1563.6 | 1581.1 | 1577.1 | 1589.3 | 1593.3 |
| 17.5° | 1537.9 | 1556.8 | 1554.1 | 1567.6 | 1571.7 |
| 20°   | 1506.8 | 1528.4 | 1527.0 | 1540.6 | 1546.0 |
| 22.5° | 1474.3 | 1495.9 | 1494.6 | 1509.5 | 1516.2 |
| 25°   | 1437.8 | 1459.4 | 1459.4 | 1478.4 | 1486.5 |
| 27.5° | 1397.2 | 1421.5 | 1422.9 | 1441.8 | 1448.6 |
| 30°   | 1355.3 | 1379.6 | 1383.7 | 1404.0 | 1414.8 |
| 32.5° | 1312.0 | 1335.0 | 1341.7 | 1364.7 | 1372.9 |
| 35°   | 1261.9 | 1289.0 | 1297.1 | 1322.8 | 1333.6 |
| 37.5° | 1216.0 | 1240.3 | 1251.1 | 1278.2 | 1289.0 |
| 40°   | 1164.6 | 1190.3 | 1202.4 | 1232.2 | 1243.0 |
| 42.5° | 1111.8 | 1137.5 | 1151.0 | 1183.5 | 1194.3 |
| 45°   | 1059.1 | 1082.1 | 1099.6 | 1132.1 | 1144.3 |
| 47.5° | 1000.9 | 1026.6 | 1045.5 | 1080.7 | 1092.9 |
| 50°   | 941.4  | 968.4  | 990.1  | 1027.9 | 1040.1 |
| 52.5° | 884.6  | 908.9  | 933.3  | 975.2  | 988.7  |
| 55°   | 822.4  | 846.7  | 875.1  | 917.0  | 930.6  |
| 57.5° | 758.8  | 783.1  | 815.6  | 860.2  | 875.1  |
| 60°   | 695.2  | 719.6  | 756.1  | 802.1  | 816.9  |
| 62.5° | 628.9  | 653.3  | 693.9  | 741.2  | 754.7  |
| 65°   | 562.7  | 588.4  | 628.9  | 681.7  | 695.2  |
| 67.5° | 495.0  | 520.7  | 564.0  | 619.5  | 634.4  |
| 70°   | 426.1  | 454.5  | 500.4  | 555.9  | 569.4  |
| 72.5° | 354.4  | 386.8  | 438.2  | 492.3  | 508.6  |
| 75°   | 286.7  | 319.2  | 373.3  | 428.8  | 445.0  |
| 77.5° | 220.5  | 257.0  | 311.1  | 369.3  | 386.8  |
| 80°   | 158.3  | 194.8  | 251.6  | 308.4  | 324.6  |
| 82.5° | 101.4  | 139.3  | 196.1  | 250.2  | 263.8  |
| 85°   | 54.1   | 89.3   | 140.7  | 174.5  | 179.9  |
| 87.5° | 17.6   | 46.0   | 63.6   | 83.9   | 85.2   |
| 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 | 14.77            | 16.44 | 15.14 | 16.76 | 17.07 | 15.49          | 17.16 | 15.86 | 17.48 | 17.79 |
|                 | 3H   | 16.56            | 18.08 | 16.94 | 18.40 | 18.76 | 17.66          | 19.18 | 18.04 | 19.50 | 19.86 |
|                 | 4H   | 17.19            | 18.62 | 17.59 | 18.97 | 19.34 | 18.59          | 20.03 | 18.99 | 20.37 | 20.75 |
|                 | 6H   | 17.61            | 18.94 | 18.02 | 19.31 | 19.70 | 19.45          | 20.78 | 19.86 | 21.15 | 21.54 |
|                 | 8H   | 17.73            | 19.00 | 18.15 | 19.39 | 19.78 | 19.83          | 21.10 | 20.25 | 21.49 | 21.89 |
|                 | 12H  | 17.78            | 19.01 | 18.21 | 19.39 | 19.81 | 20.14          | 21.36 | 20.57 | 21.74 | 22.17 |
| 4H              | 2H   | 15.54            | 16.97 | 15.93 | 17.32 | 17.69 | 16.10          | 17.53 | 16.49 | 17.88 | 18.25 |
|                 | 3H   | 17.56            | 18.77 | 17.97 | 19.16 | 19.56 | 18.51          | 19.72 | 18.92 | 20.11 | 20.51 |
|                 | 4H   | 18.32            | 19.42 | 18.75 | 19.83 | 20.27 | 19.61          | 20.71 | 20.04 | 21.12 | 21.56 |
|                 | 6H   | 18.88            | 19.84 | 19.33 | 20.28 | 20.73 | 20.65          | 21.62 | 21.11 | 22.06 | 22.51 |
|                 | 8H   | 19.03            | 19.94 | 19.49 | 20.38 | 20.84 | 21.12          | 22.02 | 21.58 | 22.46 | 22.93 |
|                 | 12H  | 19.13            | 19.95 | 19.61 | 20.42 | 20.89 | 21.51          | 22.33 | 21.99 | 22.80 | 23.27 |
| 8H              | 4H   | 18.81            | 19.71 | 19.27 | 20.15 | 20.62 | 19.93          | 20.83 | 20.39 | 21.27 | 21.74 |
|                 | 6H   | 19.52            | 20.27 | 20.01 | 20.76 | 21.23 | 21.15          | 21.90 | 21.64 | 22.39 | 22.86 |
|                 | 8H   | 19.76            | 20.44 | 20.27 | 20.94 | 21.43 | 21.74          | 22.42 | 22.25 | 22.93 | 23.41 |
|                 | 12H  | 19.93            | 20.53 | 20.44 | 21.02 | 21.58 | 22.29          | 22.89 | 22.79 | 23.38 | 23.94 |
| 12H             | 4H   | 18.91            | 19.73 | 19.39 | 20.20 | 20.67 | 19.96          | 20.78 | 20.44 | 21.25 | 21.72 |
|                 | 6H   | 19.68            | 20.36 | 20.19 | 20.86 | 21.35 | 21.21          | 21.89 | 21.72 | 22.40 | 22.88 |
|                 | 8H   | 20.00            | 20.61 | 20.51 | 21.10 | 21.65 | 21.89          | 22.49 | 22.39 | 22.98 | 23.54 |