

Classified  
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: HALO COMMERCIAL

Report Number: P580666

Luminaire Tested: **HCC4W40D010BZ-HM43040935-41WWBB**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580666  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-17)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/9/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HCC4W40D010BZ-HM43040935-41WWBB  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
CYLINDER  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

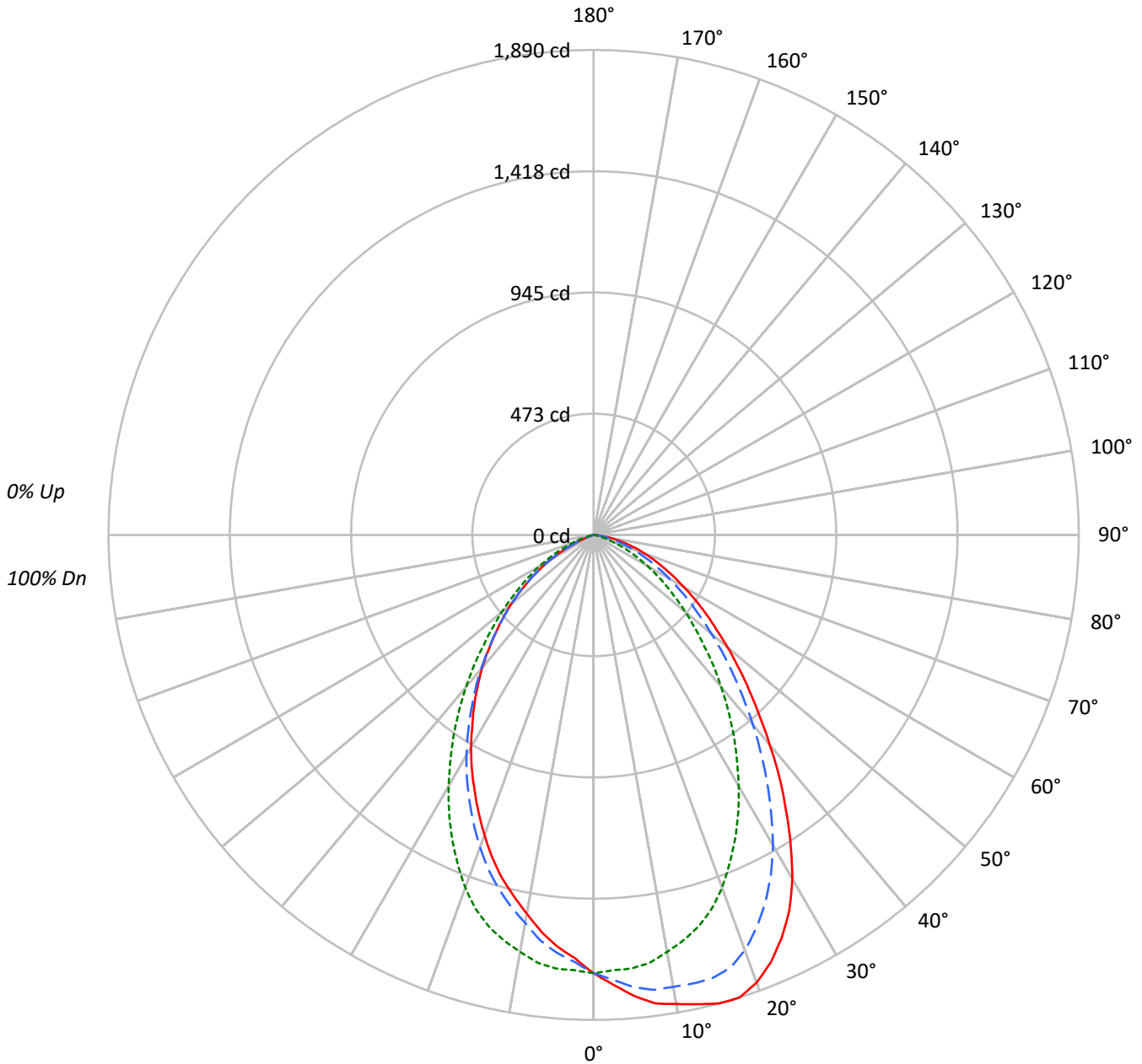
Lumens per Lamp: N/A  
Luminaire Lumens: 2950.6 lumens  
Efficiency: N/A  
Efficacy: 72.0 lumens/watt  
Spacing Criteria (0/90/45): 1.11 / 1.04 / 1.12  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 41  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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  |     |     |     |     |     |     |     |     | 50  |     |     |     |     |     |     |     |     | 30 |    |   |  |  |  |  |  |  | 10 |  |  |  |  |  |  |  |  | 0 |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 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   | 111 | 108 | 104 | 101 | 109 | 105 | 102 | 100 | 101 | 99  | 97  | 97  | 95  | 94  | 94  | 92  | 91  | 89  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 2   | 103 | 97  | 91  | 87  | 101 | 95  | 90  | 86  | 92  | 87  | 84  | 88  | 85  | 82  | 85  | 83  | 80  | 78  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 3   | 96  | 87  | 80  | 75  | 94  | 86  | 79  | 74  | 83  | 78  | 73  | 80  | 76  | 72  | 78  | 74  | 71  | 69  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 4   | 89  | 79  | 72  | 66  | 87  | 78  | 71  | 65  | 75  | 69  | 65  | 73  | 68  | 64  | 71  | 67  | 63  | 61  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 5   | 83  | 72  | 64  | 58  | 81  | 71  | 64  | 58  | 69  | 62  | 58  | 67  | 61  | 57  | 65  | 60  | 56  | 55  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 6   | 77  | 66  | 58  | 52  | 75  | 65  | 57  | 52  | 63  | 57  | 52  | 61  | 56  | 51  | 60  | 55  | 51  | 49  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 7   | 72  | 60  | 53  | 47  | 71  | 59  | 52  | 47  | 58  | 51  | 47  | 57  | 51  | 46  | 55  | 50  | 46  | 44  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 8   | 68  | 56  | 48  | 43  | 66  | 55  | 48  | 43  | 54  | 47  | 42  | 53  | 47  | 42  | 51  | 46  | 42  | 40  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 9   | 64  | 52  | 44  | 39  | 62  | 51  | 44  | 39  | 50  | 43  | 39  | 49  | 43  | 39  | 48  | 43  | 39  | 37  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |
| 10  | 60  | 48  | 41  | 36  | 59  | 47  | 41  | 36  | 46  | 40  | 36  | 46  | 40  | 36  | 45  | 39  | 36  | 34  |    |    |   |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |   |

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

|     | 0°     | 90°    | 180°   |
|-----|--------|--------|--------|
| 0°  | 210699 | 210699 | 210699 |
| 5°  | 223229 | 209993 | 199469 |
| 10° | 232511 | 206647 | 187772 |
| 15° | 241411 | 201684 | 176541 |
| 20° | 243674 | 192010 | 163303 |
| 25° | 235788 | 177579 | 149462 |
| 30° | 220449 | 160929 | 136004 |
| 35° | 196473 | 143048 | 122208 |
| 40° | 171756 | 124417 | 108766 |
| 45° | 149615 | 105534 | 94091  |
| 50° | 130544 | 89537  | 80671  |
| 55° | 114426 | 74191  | 65310  |
| 60° | 100107 | 59946  | 47957  |
| 65° | 87237  | 44684  | 26968  |
| 70° | 76239  | 28923  | 8764   |
| 75° | 62526  | 15060  | 2288   |
| 80° | 46597  | 6961   | 1776   |
| 85° | 27456  | 3538   | 3538   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 161.2  | 5.5       |
| 10°-20°   | 451.2  | 15.3      |
| 20°-30°   | 623.8  | 21.1      |
| 30°-40°   | 627.3  | 21.3      |
| 40°-50°   | 506.2  | 17.2      |
| 50°-60°   | 342.3  | 11.6      |
| 60°-70°   | 174.2  | 5.9       |
| 70°-80°   | 55.8   | 1.9       |
| 80°-90°   | 8.6    | 0.3       |
| 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°    | 1236.3 | 41.9      |
| 0°-40°    | 1863.6 | 63.2      |
| 0°-60°    | 2712.0 | 91.9      |
| 0°-90°    | 2950.6 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2950.6 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 1708 | 1708 | 1708 | 1708 | 1708 |      |
| 5°  | 1803 | 1769 | 1696 | 1635 | 1611 | 174  |
| 15° | 1890 | 1788 | 1579 | 1429 | 1382 | 532  |
| 25° | 1732 | 1582 | 1305 | 1144 | 1098 | 793  |
| 35° | 1305 | 1178 | 950  | 831  | 812  | 815  |
| 45° | 858  | 768  | 605  | 539  | 539  | 665  |
| 55° | 532  | 459  | 345  | 301  | 304  | 478  |
| 65° | 299  | 243  | 153  | 100  | 92   | 300  |
| 75° | 131  | 92   | 32   | 7    | 5    | 141  |
| 85° | 19   | 10   | 2    | 2    | 2    | 26   |
| 90° | 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°    | 1708.2 | 1708.2 | 1708.2 | 1708.2 | 1708.2 | 1708.2 | 1708.2 | 1708.2 | 1708.2 |
| 2.5°  | 1754.4 | 1744.6 | 1734.9 | 1717.9 | 1698.4 | 1679.0 | 1666.8 | 1657.2 | 1652.2 |
| 5°    | 1802.9 | 1790.8 | 1768.9 | 1732.5 | 1696.0 | 1662.0 | 1635.3 | 1618.3 | 1611.0 |
| 7.5°  | 1841.8 | 1824.8 | 1788.3 | 1737.3 | 1681.4 | 1628.0 | 1593.9 | 1569.6 | 1560.0 |
| 10°   | 1856.4 | 1837.0 | 1788.3 | 1720.3 | 1649.9 | 1584.2 | 1535.7 | 1511.3 | 1499.2 |
| 12.5° | 1873.4 | 1851.6 | 1790.8 | 1705.7 | 1618.3 | 1540.5 | 1484.7 | 1453.0 | 1440.9 |
| 15°   | 1890.5 | 1861.2 | 1788.3 | 1683.9 | 1579.4 | 1489.5 | 1428.7 | 1397.1 | 1382.5 |
| 17.5° | 1890.5 | 1856.4 | 1768.9 | 1647.4 | 1528.4 | 1433.6 | 1365.6 | 1329.1 | 1317.0 |
| 20°   | 1856.4 | 1817.5 | 1722.8 | 1589.1 | 1462.8 | 1360.7 | 1295.1 | 1258.7 | 1244.1 |
| 22.5° | 1802.9 | 1759.2 | 1657.2 | 1518.6 | 1385.0 | 1285.3 | 1219.8 | 1185.8 | 1171.2 |
| 25°   | 1732.5 | 1688.7 | 1581.8 | 1438.5 | 1304.8 | 1205.2 | 1144.4 | 1112.8 | 1098.2 |
| 27.5° | 1649.9 | 1601.2 | 1494.3 | 1351.0 | 1219.8 | 1125.0 | 1069.1 | 1040.0 | 1027.8 |
| 30°   | 1547.8 | 1501.6 | 1397.1 | 1256.2 | 1129.9 | 1042.4 | 991.4  | 964.6  | 954.9  |
| 32.5° | 1428.7 | 1389.8 | 1287.8 | 1156.6 | 1037.5 | 957.3  | 911.1  | 889.3  | 879.6  |
| 35°   | 1304.8 | 1268.4 | 1178.5 | 1057.0 | 950.0  | 874.7  | 831.0  | 816.4  | 811.6  |
| 37.5° | 1188.1 | 1156.6 | 1069.1 | 957.3  | 860.1  | 794.6  | 755.7  | 745.9  | 741.1  |
| 40°   | 1066.7 | 1044.8 | 964.6  | 862.6  | 772.7  | 714.4  | 682.8  | 675.5  | 675.5  |
| 42.5° | 957.3  | 933.0  | 862.6  | 770.2  | 690.1  | 631.8  | 609.9  | 602.6  | 605.0  |
| 45°   | 857.7  | 833.5  | 767.8  | 682.8  | 605.0  | 556.5  | 539.4  | 539.4  | 539.4  |
| 47.5° | 765.4  | 743.6  | 682.8  | 595.3  | 532.1  | 493.2  | 476.2  | 476.2  | 478.7  |
| 50°   | 680.3  | 665.8  | 597.7  | 522.4  | 466.6  | 430.1  | 417.9  | 415.6  | 420.4  |
| 52.5° | 600.2  | 583.1  | 522.4  | 454.3  | 400.9  | 371.7  | 359.6  | 357.2  | 359.6  |
| 55°   | 532.1  | 512.7  | 459.3  | 393.6  | 345.0  | 315.9  | 301.3  | 298.9  | 303.7  |
| 57.5° | 466.6  | 452.0  | 396.0  | 337.8  | 291.6  | 262.4  | 250.3  | 245.4  | 247.9  |
| 60°   | 405.8  | 391.2  | 340.2  | 284.3  | 243.0  | 213.8  | 196.8  | 191.9  | 194.4  |
| 62.5° | 349.9  | 337.8  | 289.1  | 235.7  | 194.4  | 167.7  | 150.7  | 138.6  | 143.4  |
| 65°   | 298.9  | 286.8  | 243.0  | 189.6  | 153.1  | 123.9  | 99.7   | 89.9   | 92.4   |
| 67.5° | 255.1  | 240.6  | 199.2  | 150.7  | 114.2  | 82.6   | 55.9   | 51.0   | 51.0   |
| 70°   | 211.4  | 196.8  | 160.4  | 116.6  | 80.2   | 43.7   | 24.3   | 24.3   | 24.3   |
| 72.5° | 170.1  | 157.9  | 123.9  | 87.4   | 51.0   | 19.4   | 9.8    | 9.8    | 9.8    |
| 75°   | 131.2  | 121.5  | 92.4   | 60.8   | 31.6   | 9.8    | 7.3    | 4.8    | 4.8    |
| 77.5° | 97.2   | 87.4   | 65.6   | 41.3   | 19.4   | 4.8    | 4.8    | 4.8    | 4.8    |
| 80°   | 65.6   | 58.3   | 43.7   | 24.3   | 9.8    | 2.5    | 2.5    | 2.5    | 2.5    |
| 82.5° | 38.9   | 34.0   | 24.3   | 12.1   | 4.8    | 2.5    | 2.5    | 2.5    | 2.5    |
| 85°   | 19.4   | 14.6   | 9.8    | 4.8    | 2.5    | 2.5    | 2.5    | 2.5    | 2.5    |
| 87.5° | 4.8    | 2.5    | 2.5    | 2.5    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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Scaled Data Report



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Scaled Data Report



— 0°-180°    - - 45°-225°    - - - - 90°-270°

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