

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: P580648

Luminaire Tested: **HCC4W40D010SL-HM43040930-41WWBB**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580648  
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: HCC4W40D010SL-HM43040930-41WWBB  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
CYLINDER  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

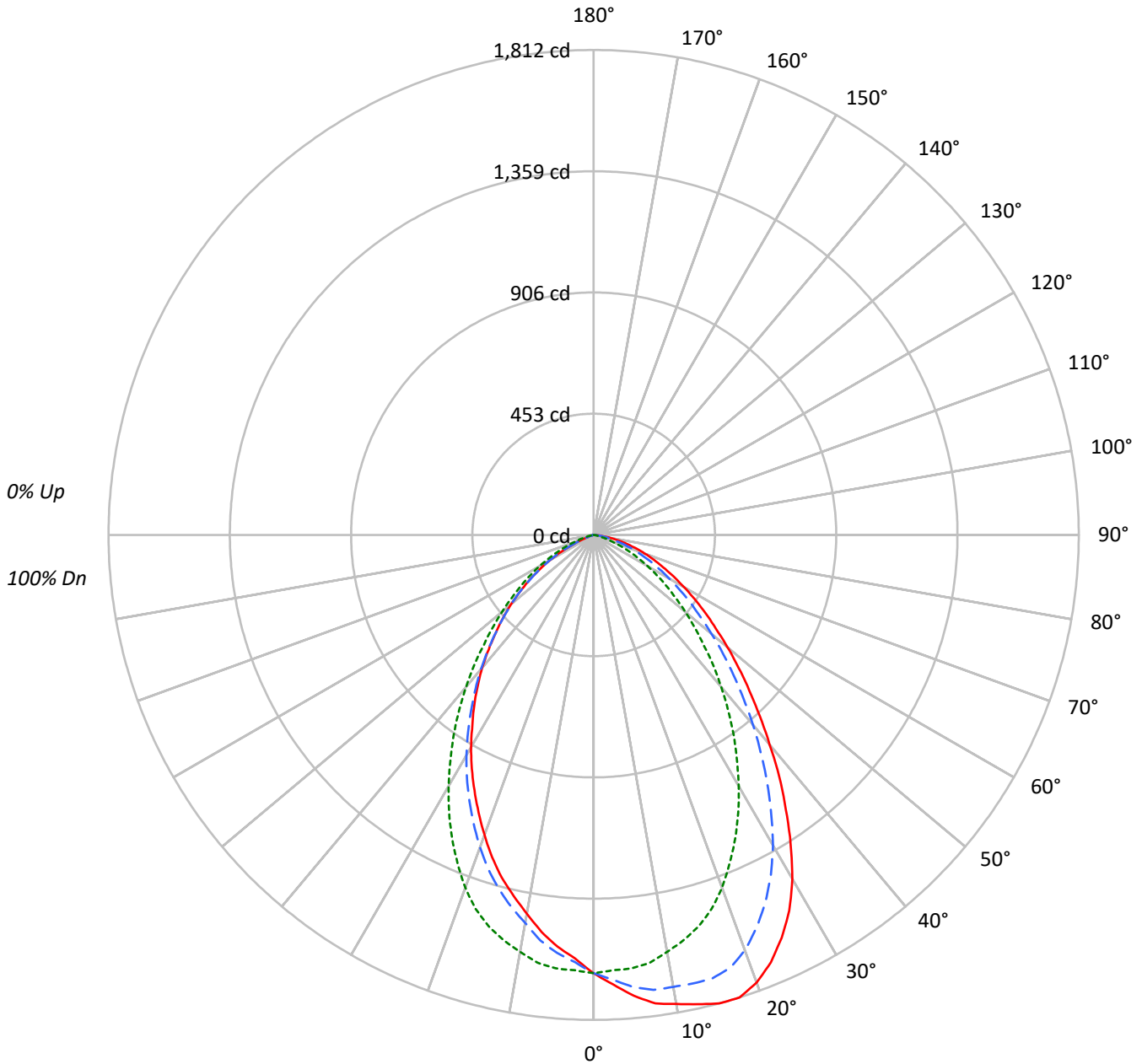
Lumens per Lamp: N/A  
Luminaire Lumens: 2828.9 lumens  
Efficiency: N/A  
Efficacy: 69.0 lumens/watt  
Spacing Criteria (0/90/45): 1.11 / 1.04 / 1.12  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

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  |     |     |     | 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  | 50  | 30  | 10  | 0   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | 100 | 100 | 100 |
| 1   | 111 | 108 | 104 | 101 | 109 | 105 | 102 | 100 | 101 | 99  | 97  | 97  | 95  | 94  | 94  | 92  | 91  | 89  | 89  | 89  | 89  |
| 2   | 103 | 97  | 91  | 87  | 101 | 95  | 90  | 86  | 92  | 87  | 84  | 88  | 85  | 82  | 85  | 83  | 80  | 78  | 78  | 78  | 78  |
| 3   | 96  | 87  | 80  | 75  | 94  | 86  | 79  | 74  | 83  | 78  | 73  | 80  | 76  | 72  | 78  | 74  | 71  | 69  | 69  | 69  | 69  |
| 4   | 89  | 79  | 72  | 66  | 87  | 78  | 71  | 65  | 75  | 69  | 65  | 73  | 68  | 64  | 71  | 67  | 63  | 61  | 61  | 61  | 61  |
| 5   | 83  | 72  | 64  | 58  | 81  | 71  | 64  | 58  | 69  | 62  | 58  | 67  | 61  | 57  | 65  | 60  | 56  | 55  | 55  | 55  | 55  |
| 6   | 77  | 66  | 58  | 52  | 75  | 65  | 57  | 52  | 63  | 57  | 52  | 61  | 56  | 51  | 60  | 55  | 51  | 49  | 49  | 49  | 49  |
| 7   | 72  | 60  | 53  | 47  | 71  | 59  | 52  | 47  | 58  | 51  | 47  | 57  | 51  | 46  | 55  | 50  | 46  | 44  | 44  | 44  | 44  |
| 8   | 68  | 56  | 48  | 43  | 66  | 55  | 48  | 43  | 54  | 47  | 42  | 53  | 47  | 42  | 51  | 46  | 42  | 40  | 40  | 40  | 40  |
| 9   | 64  | 52  | 44  | 39  | 62  | 51  | 44  | 39  | 50  | 43  | 39  | 49  | 43  | 39  | 48  | 43  | 39  | 37  | 37  | 37  | 37  |
| 10  | 60  | 48  | 41  | 36  | 59  | 47  | 41  | 36  | 46  | 40  | 36  | 46  | 40  | 36  | 45  | 39  | 36  | 34  | 34  | 34  | 34  |

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

|     | 0°     | 90°    | 180°   |
|-----|--------|--------|--------|
| 0°  | 202003 | 202003 | 202003 |
| 5°  | 214030 | 201326 | 191235 |
| 10° | 222917 | 198118 | 180020 |
| 15° | 231438 | 193358 | 169275 |
| 20° | 233620 | 184081 | 156556 |
| 25° | 226057 | 170257 | 143310 |
| 30° | 211362 | 154277 | 130392 |
| 35° | 188372 | 137146 | 117164 |
| 40° | 164671 | 119281 | 104274 |
| 45° | 143457 | 101191 | 90201  |
| 50° | 125171 | 85833  | 77332  |
| 55° | 109717 | 71137  | 62622  |
| 60° | 95963  | 57454  | 45983  |
| 65° | 83618  | 42816  | 25859  |
| 70° | 73101  | 27733  | 8403   |
| 75° | 59953  | 14440  | 2240   |
| 80° | 44679  | 6606   | 1705   |
| 85° | 26323  | 3397   | 3397   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 154.6  | 5.5       |
| 10°-20°   | 432.6  | 15.3      |
| 20°-30°   | 598.1  | 21.1      |
| 30°-40°   | 601.4  | 21.3      |
| 40°-50°   | 485.3  | 17.2      |
| 50°-60°   | 328.2  | 11.6      |
| 60°-70°   | 167.0  | 5.9       |
| 70°-80°   | 53.5   | 1.9       |
| 80°-90°   | 8.2    | 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°    | 1185.3 | 41.9      |
| 0°-40°    | 1786.7 | 63.2      |
| 0°-60°    | 2600.2 | 91.9      |
| 0°-90°    | 2828.9 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 2828.9 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 1638 | 1638 | 1638 | 1638 | 1638 |      |
| 5°  | 1729 | 1696 | 1626 | 1568 | 1544 | 167  |
| 15° | 1812 | 1715 | 1514 | 1370 | 1326 | 510  |
| 25° | 1661 | 1517 | 1251 | 1097 | 1053 | 760  |
| 35° | 1251 | 1130 | 911  | 797  | 778  | 782  |
| 45° | 822  | 736  | 580  | 517  | 517  | 637  |
| 55° | 510  | 440  | 331  | 289  | 291  | 458  |
| 65° | 286  | 233  | 147  | 96   | 89   | 287  |
| 75° | 126  | 89   | 30   | 7    | 5    | 136  |
| 85° | 19   | 9    | 2    | 2    | 2    | 25   |
| 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°    | 1637.7 | 1637.7 | 1637.7 | 1637.7 | 1637.7 | 1637.7 | 1637.7 | 1637.7 | 1637.7 |
| 2.5°  | 1681.9 | 1672.6 | 1663.3 | 1647.0 | 1628.4 | 1609.8 | 1598.1 | 1588.8 | 1584.1 |
| 5°    | 1728.6 | 1716.9 | 1696.0 | 1661.0 | 1626.0 | 1593.4 | 1567.8 | 1551.5 | 1544.5 |
| 7.5°  | 1765.8 | 1749.5 | 1714.6 | 1665.7 | 1612.1 | 1560.8 | 1528.3 | 1504.9 | 1495.6 |
| 10°   | 1779.8 | 1761.2 | 1714.6 | 1649.3 | 1581.8 | 1518.8 | 1472.3 | 1449.0 | 1437.3 |
| 12.5° | 1796.1 | 1775.1 | 1716.9 | 1635.3 | 1551.5 | 1476.9 | 1423.3 | 1393.1 | 1381.4 |
| 15°   | 1812.4 | 1784.4 | 1714.6 | 1614.4 | 1514.2 | 1428.0 | 1369.7 | 1339.5 | 1325.6 |
| 17.5° | 1812.4 | 1779.8 | 1696.0 | 1579.5 | 1465.3 | 1374.5 | 1309.2 | 1274.2 | 1262.6 |
| 20°   | 1779.8 | 1742.5 | 1651.7 | 1523.6 | 1402.4 | 1304.6 | 1241.6 | 1206.8 | 1192.7 |
| 22.5° | 1728.6 | 1686.7 | 1588.8 | 1456.0 | 1327.8 | 1232.3 | 1169.4 | 1136.8 | 1122.9 |
| 25°   | 1661.0 | 1619.1 | 1516.6 | 1379.2 | 1251.0 | 1155.5 | 1097.2 | 1067.0 | 1053.0 |
| 27.5° | 1581.8 | 1535.2 | 1432.8 | 1295.2 | 1169.4 | 1078.6 | 1025.0 | 997.0  | 985.4  |
| 30°   | 1484.0 | 1439.7 | 1339.5 | 1204.4 | 1083.2 | 999.4  | 950.5  | 924.8  | 915.5  |
| 32.5° | 1369.7 | 1332.5 | 1234.7 | 1108.9 | 994.8  | 917.9  | 873.6  | 852.6  | 843.3  |
| 35°   | 1251.0 | 1216.1 | 1129.9 | 1013.4 | 910.8  | 838.6  | 796.7  | 782.8  | 778.1  |
| 37.5° | 1139.2 | 1108.9 | 1025.0 | 917.9  | 824.7  | 761.7  | 724.5  | 715.2  | 710.5  |
| 40°   | 1022.7 | 1001.7 | 924.8  | 827.0  | 740.8  | 684.9  | 654.7  | 647.6  | 647.6  |
| 42.5° | 917.9  | 894.6  | 827.0  | 738.5  | 661.6  | 605.7  | 584.7  | 577.8  | 580.1  |
| 45°   | 822.4  | 799.0  | 736.2  | 654.7  | 580.1  | 533.5  | 517.1  | 517.1  | 517.1  |
| 47.5° | 733.8  | 712.8  | 654.7  | 570.7  | 510.2  | 472.9  | 456.6  | 456.6  | 458.9  |
| 50°   | 652.3  | 638.3  | 573.1  | 500.9  | 447.3  | 412.3  | 400.6  | 398.4  | 403.0  |
| 52.5° | 575.4  | 559.2  | 500.9  | 435.6  | 384.4  | 356.5  | 344.8  | 342.5  | 344.8  |
| 55°   | 510.2  | 491.6  | 440.3  | 377.4  | 330.8  | 302.9  | 288.9  | 286.5  | 291.2  |
| 57.5° | 447.3  | 433.3  | 379.7  | 323.9  | 279.6  | 251.6  | 239.9  | 235.3  | 237.7  |
| 60°   | 389.0  | 375.1  | 326.1  | 272.5  | 232.9  | 205.0  | 188.7  | 184.1  | 186.4  |
| 62.5° | 335.5  | 323.9  | 277.2  | 226.0  | 186.4  | 160.8  | 144.4  | 132.8  | 137.4  |
| 65°   | 286.5  | 274.9  | 232.9  | 181.7  | 146.7  | 118.8  | 95.5   | 86.2   | 88.6   |
| 67.5° | 244.6  | 230.6  | 191.0  | 144.4  | 109.5  | 79.3   | 53.6   | 48.9   | 48.9   |
| 70°   | 202.7  | 188.7  | 153.8  | 111.9  | 76.9   | 41.9   | 23.3   | 23.3   | 23.3   |
| 72.5° | 163.1  | 151.4  | 118.8  | 83.9   | 48.9   | 18.6   | 9.3    | 9.3    | 9.3    |
| 75°   | 125.8  | 116.5  | 88.6   | 58.3   | 30.3   | 9.3    | 7.0    | 4.7    | 4.7    |
| 77.5° | 93.2   | 83.9   | 62.9   | 39.6   | 18.6   | 4.7    | 4.7    | 4.7    | 4.7    |
| 80°   | 62.9   | 55.9   | 41.9   | 23.3   | 9.3    | 2.4    | 2.4    | 2.4    | 2.4    |
| 82.5° | 37.3   | 32.6   | 23.3   | 11.7   | 4.7    | 2.4    | 2.4    | 2.4    | 2.4    |
| 85°   | 18.6   | 14.0   | 9.3    | 4.7    | 2.4    | 2.4    | 2.4    | 2.4    | 2.4    |
| 87.5° | 4.7    | 2.4    | 2.4    | 2.4    | 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



Report Generated By 670245859 / DESKTOP-T8S5UU9

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Scaled Data Report





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Scaled Data Report



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

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