

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: P580631

Luminaire Tested: **HCC4S40D010MB-HM43040927-41WWW**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580631  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-16)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/9/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HCC4S40D010MB-HM43040927-41WWW  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
CYLINDER  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

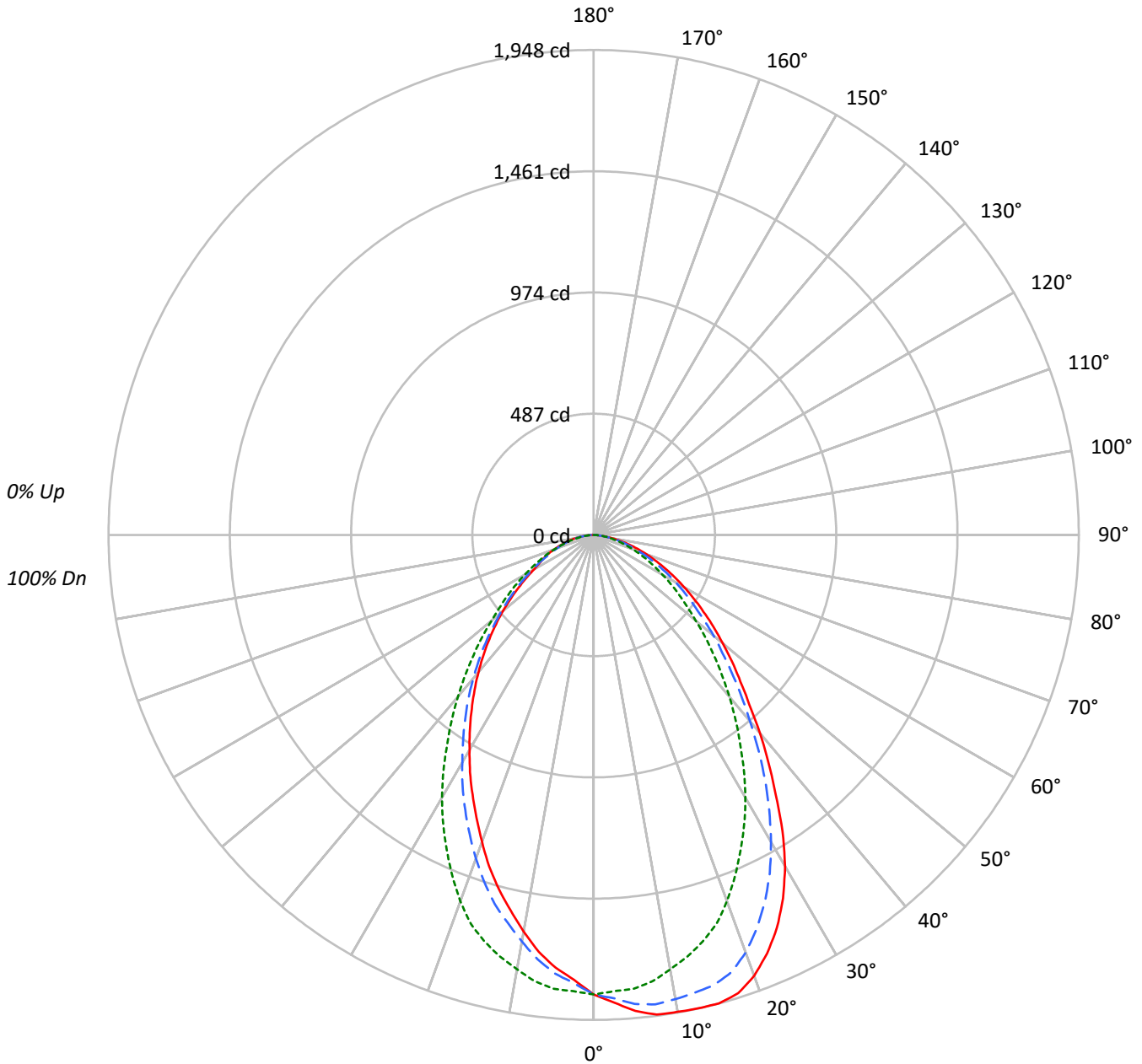
Lumens per Lamp: N/A  
Luminaire Lumens: 3295.8 lumens  
Efficiency: N/A  
Efficacy: 80.4 lumens/watt  
Spacing Criteria (0/90/45): 1.06 / 1.03 / 1.1  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

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 |    |    |    |  |  |  |  |   |
| 1   | 111 | 106 | 103 | 100 | 108 | 104 | 101 | 98  | 100 | 97  | 95  | 96  | 94  | 92  | 93  | 91  | 89  | 87  |    |    |    |  |  |  |  |   |
| 2   | 102 | 95  | 89  | 84  | 100 | 93  | 88  | 83  | 90  | 85  | 81  | 87  | 83  | 80  | 84  | 81  | 78  | 76  |    |    |    |  |  |  |  |   |
| 3   | 94  | 85  | 78  | 72  | 92  | 84  | 77  | 72  | 81  | 75  | 71  | 78  | 73  | 69  | 76  | 72  | 68  | 66  |    |    |    |  |  |  |  |   |
| 4   | 87  | 77  | 69  | 63  | 85  | 76  | 68  | 63  | 73  | 67  | 62  | 71  | 66  | 61  | 69  | 64  | 60  | 58  |    |    |    |  |  |  |  |   |
| 5   | 81  | 70  | 62  | 56  | 79  | 69  | 61  | 56  | 67  | 60  | 55  | 65  | 59  | 54  | 63  | 58  | 54  | 52  |    |    |    |  |  |  |  |   |
| 6   | 76  | 64  | 56  | 50  | 74  | 63  | 55  | 50  | 61  | 54  | 49  | 59  | 53  | 49  | 58  | 53  | 48  | 47  |    |    |    |  |  |  |  |   |
| 7   | 71  | 58  | 50  | 45  | 69  | 58  | 50  | 45  | 56  | 49  | 44  | 55  | 49  | 44  | 53  | 48  | 44  | 42  |    |    |    |  |  |  |  |   |
| 8   | 66  | 54  | 46  | 41  | 65  | 53  | 46  | 41  | 52  | 45  | 40  | 51  | 45  | 40  | 50  | 44  | 40  | 38  |    |    |    |  |  |  |  |   |
| 9   | 62  | 50  | 42  | 37  | 61  | 49  | 42  | 37  | 48  | 42  | 37  | 47  | 41  | 37  | 46  | 41  | 37  | 35  |    |    |    |  |  |  |  |   |
| 10  | 59  | 46  | 39  | 34  | 57  | 46  | 39  | 34  | 45  | 38  | 34  | 44  | 38  | 34  | 43  | 38  | 34  | 32  |    |    |    |  |  |  |  |   |

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

|     | 0°     | 90°    | 180°   |
|-----|--------|--------|--------|
| 0°  | 227634 | 227634 | 227634 |
| 5°  | 237654 | 226634 | 216135 |
| 10° | 243658 | 221903 | 202602 |
| 15° | 248702 | 215986 | 187982 |
| 20° | 247376 | 205490 | 172150 |
| 25° | 236999 | 190005 | 156607 |
| 30° | 218939 | 173491 | 141943 |
| 35° | 191911 | 154312 | 128488 |
| 40° | 167103 | 136349 | 115722 |
| 45° | 145446 | 118931 | 103406 |
| 50° | 129584 | 102509 | 91245  |
| 55° | 115781 | 90104  | 78901  |
| 60° | 103364 | 78719  | 68037  |
| 65° | 91878  | 69054  | 64647  |
| 70° | 80639  | 59505  | 60263  |
| 75° | 68293  | 50707  | 55902  |
| 80° | 52493  | 43187  | 50859  |
| 85° | 30711  | 33824  | 43023  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 173.0  | 5.2       |
| 10°-20°   | 477.2  | 14.5      |
| 20°-30°   | 651.9  | 19.8      |
| 30°-40°   | 654.6  | 19.9      |
| 40°-50°   | 541.6  | 16.4      |
| 50°-60°   | 392.5  | 11.9      |
| 60°-70°   | 248.6  | 7.5       |
| 70°-80°   | 125.7  | 3.8       |
| 80°-90°   | 30.8   | 0.9       |
| 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°    | 1302.1 | 39.5      |
| 0°-40°    | 1956.7 | 59.4      |
| 0°-60°    | 2890.8 | 87.7      |
| 0°-90°    | 3295.8 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3295.8 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 1846 | 1846 | 1846 | 1846 | 1846 |      |
| 5°  | 1919 | 1891 | 1830 | 1770 | 1746 | 184  |
| 15° | 1948 | 1872 | 1691 | 1535 | 1472 | 548  |
| 25° | 1741 | 1626 | 1396 | 1220 | 1151 | 796  |
| 35° | 1274 | 1199 | 1025 | 899  | 853  | 799  |
| 45° | 834  | 786  | 682  | 614  | 593  | 648  |
| 55° | 538  | 491  | 419  | 382  | 367  | 484  |
| 65° | 315  | 280  | 237  | 213  | 222  | 313  |
| 75° | 143  | 124  | 106  | 111  | 117  | 153  |
| 85° | 22   | 22   | 24   | 28   | 30   | 30   |
| 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°    | 1845.5 | 1845.5 | 1845.5 | 1845.5 | 1845.5 | 1845.5 | 1845.5 | 1845.5 | 1845.5 |
| 2.5°  | 1880.3 | 1873.8 | 1862.9 | 1849.9 | 1834.7 | 1817.4 | 1802.1 | 1793.5 | 1789.1 |
| 5°    | 1919.4 | 1910.6 | 1891.1 | 1862.9 | 1830.4 | 1797.7 | 1769.6 | 1752.2 | 1745.6 |
| 7.5°  | 1943.3 | 1930.2 | 1902.0 | 1858.6 | 1808.6 | 1760.9 | 1719.6 | 1695.7 | 1689.2 |
| 10°   | 1945.4 | 1930.2 | 1893.4 | 1834.7 | 1771.7 | 1708.7 | 1658.9 | 1624.1 | 1617.6 |
| 12.5° | 1947.6 | 1928.0 | 1882.5 | 1813.0 | 1734.9 | 1656.6 | 1595.9 | 1554.6 | 1543.7 |
| 15°   | 1947.6 | 1928.0 | 1871.6 | 1789.1 | 1691.4 | 1602.4 | 1535.1 | 1487.3 | 1472.1 |
| 17.5° | 1930.2 | 1908.5 | 1841.2 | 1745.6 | 1639.2 | 1539.4 | 1461.2 | 1411.3 | 1396.1 |
| 20°   | 1884.6 | 1860.7 | 1784.7 | 1680.5 | 1565.5 | 1461.2 | 1383.1 | 1331.0 | 1311.5 |
| 22.5° | 1819.5 | 1791.2 | 1711.0 | 1598.0 | 1483.0 | 1376.6 | 1300.6 | 1246.3 | 1229.0 |
| 25°   | 1741.4 | 1713.1 | 1626.2 | 1515.5 | 1396.1 | 1296.2 | 1220.2 | 1170.3 | 1150.7 |
| 27.5° | 1645.7 | 1615.4 | 1530.7 | 1420.0 | 1309.2 | 1209.3 | 1139.9 | 1094.3 | 1074.8 |
| 30°   | 1537.2 | 1504.7 | 1424.3 | 1318.0 | 1218.1 | 1122.6 | 1055.2 | 1018.3 | 996.6  |
| 32.5° | 1411.3 | 1383.1 | 1311.5 | 1215.8 | 1122.6 | 1031.3 | 974.9  | 942.3  | 924.9  |
| 35°   | 1274.5 | 1259.3 | 1198.6 | 1116.1 | 1024.8 | 948.8  | 898.9  | 868.4  | 853.3  |
| 37.5° | 1152.9 | 1137.7 | 1085.6 | 1016.2 | 935.8  | 866.3  | 825.1  | 799.0  | 785.9  |
| 40°   | 1037.8 | 1024.8 | 974.9  | 916.3  | 846.8  | 785.9  | 751.3  | 731.7  | 718.7  |
| 42.5° | 924.9  | 918.4  | 877.2  | 822.9  | 762.1  | 710.0  | 681.8  | 666.5  | 655.7  |
| 45°   | 833.8  | 825.1  | 785.9  | 733.9  | 681.8  | 638.3  | 614.4  | 603.7  | 592.8  |
| 47.5° | 753.4  | 742.6  | 701.3  | 655.7  | 607.9  | 568.9  | 547.2  | 536.3  | 531.9  |
| 50°   | 675.3  | 664.4  | 627.5  | 581.9  | 534.2  | 505.9  | 488.5  | 477.7  | 475.5  |
| 52.5° | 605.8  | 594.9  | 553.7  | 510.3  | 473.3  | 449.4  | 434.3  | 423.4  | 419.0  |
| 55°   | 538.4  | 525.4  | 490.7  | 449.4  | 419.0  | 397.3  | 382.1  | 371.3  | 366.9  |
| 57.5° | 477.7  | 464.7  | 434.3  | 395.2  | 366.9  | 347.4  | 334.4  | 323.5  | 319.1  |
| 60°   | 419.0  | 408.2  | 380.0  | 343.0  | 319.1  | 301.8  | 288.8  | 280.1  | 275.8  |
| 62.5° | 364.8  | 356.0  | 327.9  | 295.3  | 275.8  | 260.5  | 249.6  | 241.0  | 245.4  |
| 65°   | 314.8  | 306.1  | 280.1  | 251.9  | 236.6  | 221.5  | 212.8  | 212.8  | 221.5  |
| 67.5° | 267.0  | 258.4  | 236.6  | 212.8  | 199.8  | 188.9  | 182.4  | 188.9  | 195.4  |
| 70°   | 223.6  | 215.0  | 195.4  | 175.9  | 165.0  | 156.4  | 156.4  | 162.9  | 167.1  |
| 72.5° | 182.4  | 173.6  | 158.5  | 143.3  | 134.6  | 128.1  | 134.6  | 139.0  | 143.3  |
| 75°   | 143.3  | 136.8  | 123.8  | 112.9  | 106.4  | 104.3  | 110.8  | 115.1  | 117.3  |
| 77.5° | 106.4  | 102.0  | 93.4   | 84.6   | 80.4   | 82.5   | 89.0   | 91.1   | 93.4   |
| 80°   | 73.9   | 71.6   | 65.1   | 60.8   | 60.8   | 63.0   | 67.3   | 69.5   | 71.6   |
| 82.5° | 45.6   | 45.6   | 41.3   | 39.1   | 41.3   | 45.6   | 47.8   | 49.9   | 49.9   |
| 85°   | 21.7   | 23.9   | 21.7   | 21.7   | 23.9   | 28.2   | 28.2   | 30.4   | 30.4   |
| 87.5° | 6.5    | 6.5    | 8.6    | 8.6    | 10.9   | 10.9   | 10.9   | 10.9   | 13.0   |
| 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





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Scaled Data Report



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

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