

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: P580682

Luminaire Tested: **HCC4W40D010BZ-HM43040940-41RWWC**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580682
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-14)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 9/9/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HCC4W40D010BZ-HM43040940-41RWWC
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, SPECULAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
CYLINDER
Ballast/Driver: ELECTRONIC DRIVER

Summary

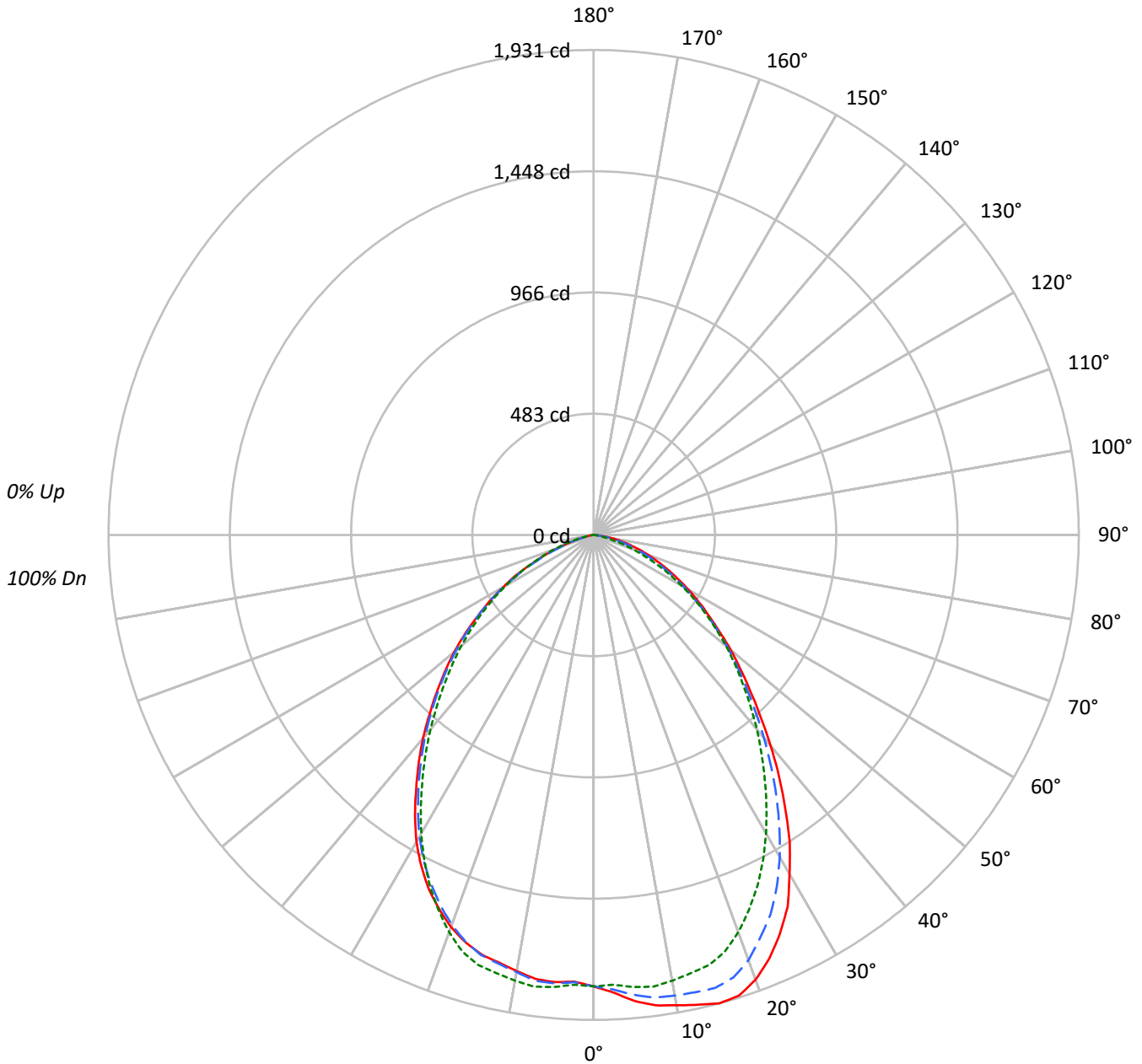
Lumens per Lamp: N/A
Luminaire Lumens: 3745.1 lumens
Efficiency: N/A
Efficacy: 91.3 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.15 / 1.21
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 41
Input Voltage (V): NR
Input Current (A_{in}): 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 | 107 | 103 | 100 | 108 | 105 | 102 | 99 | 101 | 98 | 96 | 97 | 95 | 93 | 93 | 92 | 90 | 88 | | | | | | | | |
| 2 | 102 | 95 | 90 | 85 | 100 | 94 | 88 | 84 | 90 | 86 | 82 | 87 | 83 | 80 | 84 | 81 | 78 | 76 | | | | | | | | |
| 3 | 95 | 85 | 78 | 73 | 92 | 84 | 77 | 72 | 81 | 75 | 71 | 78 | 74 | 70 | 76 | 72 | 69 | 67 | | | | | | | | |
| 4 | 87 | 77 | 69 | 63 | 85 | 76 | 68 | 63 | 73 | 67 | 62 | 71 | 66 | 61 | 69 | 64 | 60 | 58 | | | | | | | | |
| 5 | 81 | 70 | 61 | 56 | 79 | 68 | 61 | 55 | 66 | 60 | 55 | 65 | 59 | 54 | 63 | 58 | 54 | 52 | | | | | | | | |
| 6 | 75 | 63 | 55 | 49 | 74 | 62 | 55 | 49 | 61 | 54 | 49 | 59 | 53 | 48 | 58 | 52 | 48 | 46 | | | | | | | | |
| 7 | 70 | 58 | 50 | 44 | 69 | 57 | 49 | 44 | 56 | 49 | 44 | 54 | 48 | 44 | 53 | 47 | 43 | 41 | | | | | | | | |
| 8 | 66 | 53 | 45 | 40 | 64 | 53 | 45 | 40 | 51 | 44 | 40 | 50 | 44 | 39 | 49 | 43 | 39 | 37 | | | | | | | | |
| 9 | 62 | 49 | 42 | 36 | 60 | 49 | 41 | 36 | 47 | 41 | 36 | 46 | 40 | 36 | 45 | 40 | 36 | 34 | | | | | | | | |
| 10 | 58 | 46 | 38 | 33 | 57 | 45 | 38 | 33 | 44 | 38 | 33 | 43 | 37 | 33 | 42 | 37 | 33 | 31 | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--------|--------|--------|
| 0° | 221677 | 221677 | 221677 |
| 5° | 230646 | 223725 | 221310 |
| 10° | 238172 | 225698 | 220838 |
| 15° | 246544 | 226394 | 220801 |
| 20° | 247376 | 220927 | 218052 |
| 25° | 238646 | 209889 | 211535 |
| 30° | 222073 | 195439 | 200965 |
| 35° | 200042 | 178825 | 185406 |
| 40° | 176361 | 162691 | 170098 |
| 45° | 154202 | 146579 | 153784 |
| 50° | 136550 | 131887 | 138872 |
| 55° | 120125 | 116469 | 121157 |
| 60° | 107237 | 99441 | 102451 |
| 65° | 94271 | 80816 | 79386 |
| 70° | 82298 | 59541 | 54312 |
| 75° | 68293 | 35886 | 28976 |
| 80° | 51782 | 13780 | 8595 |
| 85° | 24059 | 3538 | 3538 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 173.3 | 4.6 |
| 10°-20° | 505.9 | 13.5 |
| 20°-30° | 732.6 | 19.6 |
| 30°-40° | 772.9 | 20.6 |
| 40°-50° | 668.9 | 17.9 |
| 50°-60° | 495.5 | 13.2 |
| 60°-70° | 285.6 | 7.6 |
| 70°-80° | 99.8 | 2.7 |
| 80°-90° | 10.5 | 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° | 1411.8 | 37.7 |
| 0°-40° | 2184.7 | 58.3 |
| 0°-60° | 3349.2 | 89.4 |
| 0°-90° | 3745.1 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3745.1 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 1797 | 1797 | 1797 | 1797 | 1797 | |
| 5° | 1863 | 1838 | 1807 | 1792 | 1787 | 179 |
| 15° | 1931 | 1868 | 1773 | 1732 | 1729 | 543 |
| 25° | 1754 | 1666 | 1542 | 1532 | 1554 | 803 |
| 35° | 1328 | 1268 | 1188 | 1214 | 1231 | 830 |
| 45° | 884 | 860 | 840 | 872 | 882 | 686 |
| 55° | 559 | 546 | 542 | 561 | 563 | 504 |
| 65° | 323 | 304 | 277 | 262 | 272 | 323 |
| 75° | 143 | 121 | 75 | 61 | 61 | 154 |
| 85° | 17 | 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° | 1797.2 | 1797.2 | 1797.2 | 1797.2 | 1797.2 | 1797.2 | 1797.2 | 1797.2 | 1797.2 |
| 2.5° | 1823.9 | 1819.0 | 1811.8 | 1802.0 | 1792.4 | 1785.1 | 1782.6 | 1780.1 | 1780.1 |
| 5° | 1862.8 | 1853.0 | 1838.4 | 1819.0 | 1806.9 | 1799.7 | 1792.4 | 1787.4 | 1787.4 |
| 7.5° | 1889.4 | 1879.7 | 1857.8 | 1831.2 | 1814.2 | 1799.7 | 1789.9 | 1782.6 | 1782.6 |
| 10° | 1901.6 | 1889.4 | 1862.8 | 1828.8 | 1802.0 | 1782.6 | 1768.0 | 1763.2 | 1763.2 |
| 12.5° | 1916.1 | 1901.6 | 1865.1 | 1821.5 | 1787.4 | 1763.2 | 1748.6 | 1743.7 | 1743.7 |
| 15° | 1930.7 | 1913.8 | 1867.6 | 1816.6 | 1772.9 | 1743.7 | 1731.6 | 1729.1 | 1729.1 |
| 17.5° | 1923.4 | 1901.6 | 1848.2 | 1787.4 | 1738.9 | 1709.7 | 1697.6 | 1697.6 | 1700.0 |
| 20° | 1884.6 | 1862.8 | 1802.0 | 1734.1 | 1683.1 | 1661.2 | 1651.5 | 1656.3 | 1661.2 |
| 22.5° | 1826.3 | 1799.7 | 1734.1 | 1668.5 | 1615.0 | 1595.6 | 1595.6 | 1602.9 | 1610.2 |
| 25° | 1753.5 | 1729.1 | 1666.0 | 1593.2 | 1542.2 | 1527.6 | 1532.4 | 1544.6 | 1554.3 |
| 27.5° | 1670.9 | 1644.2 | 1578.6 | 1510.5 | 1459.5 | 1452.3 | 1464.5 | 1481.4 | 1486.3 |
| 30° | 1559.2 | 1537.3 | 1481.4 | 1415.9 | 1372.2 | 1369.7 | 1386.8 | 1398.9 | 1411.0 |
| 32.5° | 1452.3 | 1428.0 | 1374.6 | 1311.5 | 1279.8 | 1282.3 | 1301.7 | 1316.3 | 1323.6 |
| 35° | 1328.5 | 1306.6 | 1267.7 | 1216.7 | 1187.6 | 1192.4 | 1214.3 | 1228.8 | 1231.3 |
| 37.5° | 1211.9 | 1197.3 | 1158.4 | 1119.5 | 1097.7 | 1107.4 | 1126.8 | 1143.9 | 1143.9 |
| 40° | 1095.3 | 1083.1 | 1054.0 | 1022.5 | 1010.4 | 1022.5 | 1041.9 | 1056.4 | 1056.4 |
| 42.5° | 983.6 | 976.3 | 952.1 | 930.2 | 922.9 | 939.8 | 956.9 | 969.0 | 966.6 |
| 45° | 884.0 | 876.7 | 859.7 | 842.8 | 840.3 | 857.3 | 871.9 | 879.2 | 881.6 |
| 47.5° | 794.1 | 789.3 | 774.7 | 762.6 | 762.6 | 779.5 | 791.8 | 799.0 | 801.4 |
| 50° | 711.6 | 706.7 | 694.6 | 684.8 | 687.3 | 704.3 | 714.0 | 721.3 | 723.7 |
| 52.5° | 629.0 | 626.5 | 616.9 | 604.8 | 612.0 | 624.2 | 636.3 | 641.1 | 643.6 |
| 55° | 558.6 | 558.6 | 546.5 | 536.7 | 541.6 | 553.8 | 561.1 | 563.4 | 563.4 |
| 57.5° | 495.5 | 493.0 | 478.4 | 468.7 | 471.2 | 483.3 | 488.2 | 490.5 | 490.5 |
| 60° | 434.7 | 432.3 | 417.7 | 403.1 | 403.1 | 410.4 | 412.9 | 415.3 | 415.3 |
| 62.5° | 376.4 | 374.0 | 357.0 | 344.8 | 340.0 | 337.5 | 337.5 | 342.5 | 352.1 |
| 65° | 323.0 | 320.6 | 303.6 | 284.2 | 276.9 | 269.6 | 262.3 | 267.1 | 272.0 |
| 67.5° | 274.4 | 269.6 | 252.6 | 235.5 | 218.6 | 206.4 | 194.3 | 201.6 | 211.3 |
| 70° | 228.2 | 223.4 | 204.0 | 184.6 | 165.1 | 145.7 | 136.0 | 145.7 | 150.6 |
| 72.5° | 184.6 | 179.7 | 160.3 | 140.9 | 116.6 | 97.2 | 94.7 | 97.2 | 99.5 |
| 75° | 143.3 | 140.9 | 121.4 | 99.5 | 75.3 | 60.8 | 60.8 | 60.8 | 60.8 |
| 77.5° | 106.8 | 102.0 | 82.6 | 63.1 | 43.7 | 34.0 | 31.6 | 31.6 | 31.6 |
| 80° | 72.9 | 68.0 | 51.0 | 36.4 | 19.4 | 14.6 | 14.6 | 12.1 | 12.1 |
| 82.5° | 41.3 | 38.9 | 26.7 | 14.6 | 7.3 | 4.8 | 4.8 | 4.8 | 4.8 |
| 85° | 17.0 | 14.6 | 9.8 | 4.8 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| 87.5° | 2.5 | 2.5 | 2.5 | 0.0 | 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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— 0°-180° - - 45°-225° - - - - 90°-270°

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