

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: P580451

Luminaire Tested: **HCC4W35D010BZ-HM43040835-41WWW**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580451
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: HCC4W35D010BZ-HM43040835-41WWW
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
CYLINDER
Ballast/Driver: ELECTRONIC DRIVER

Summary

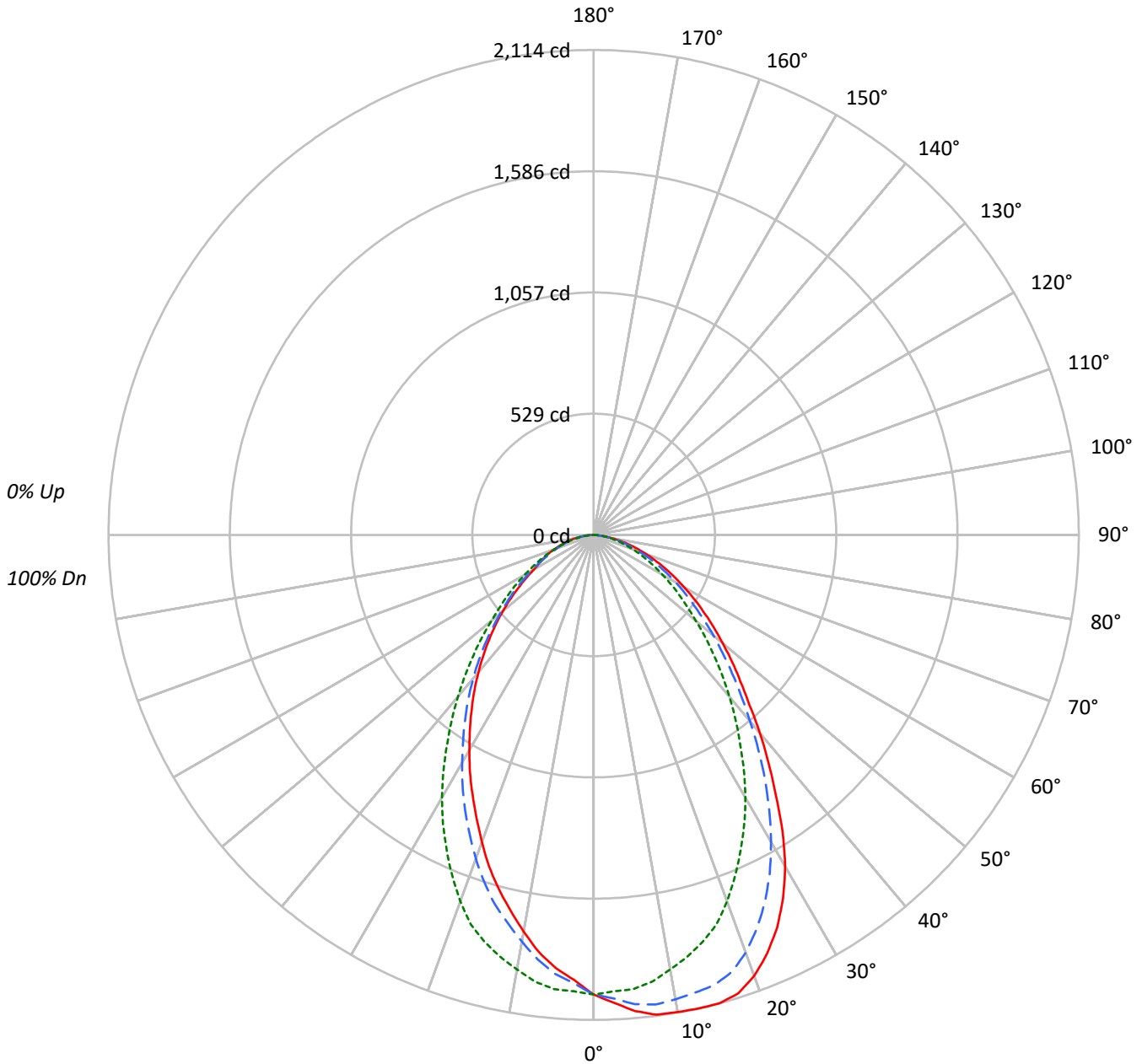
Lumens per Lamp: N/A
Luminaire Lumens: 3577.6 lumens
Efficiency: N/A
Efficacy: 106.2 lumens/watt
Spacing Criteria (0/90/45): 1.06 / 1.03 / 1.1
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 33.7
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 | 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° | 247111 | 247111 | 247111 |
| 5° | 257985 | 246012 | 234633 |
| 10° | 264500 | 240890 | 219924 |
| 15° | 269964 | 234464 | 204059 |
| 20° | 268535 | 223066 | 186851 |
| 25° | 257250 | 206255 | 170012 |
| 30° | 237668 | 188332 | 154092 |
| 35° | 208324 | 167502 | 139480 |
| 40° | 181401 | 148006 | 125625 |
| 45° | 157866 | 129083 | 112250 |
| 50° | 140657 | 111259 | 99035 |
| 55° | 125695 | 97825 | 85653 |
| 60° | 112220 | 85454 | 73835 |
| 65° | 99758 | 74979 | 70163 |
| 70° | 87563 | 64626 | 65456 |
| 75° | 74154 | 54996 | 60620 |
| 80° | 56897 | 46881 | 55263 |
| 85° | 33399 | 36796 | 46703 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 187.8 | 5.2 |
| 10°-20° | 518.0 | 14.5 |
| 20°-30° | 707.7 | 19.8 |
| 30°-40° | 710.6 | 19.9 |
| 40°-50° | 587.9 | 16.4 |
| 50°-60° | 426.0 | 11.9 |
| 60°-70° | 269.8 | 7.5 |
| 70°-80° | 136.4 | 3.8 |
| 80°-90° | 33.4 | 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° | 1413.5 | 39.5 |
| 0°-40° | 2124.1 | 59.4 |
| 0°-60° | 3138.0 | 87.7 |
| 0°-90° | 3577.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3577.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 2003 | 2003 | 2003 | 2003 | 2003 | |
| 5° | 2084 | 2053 | 1987 | 1921 | 1895 | 200 |
| 15° | 2114 | 2032 | 1836 | 1666 | 1598 | 595 |
| 25° | 1890 | 1765 | 1516 | 1325 | 1249 | 864 |
| 35° | 1384 | 1301 | 1112 | 976 | 926 | 867 |
| 45° | 905 | 853 | 740 | 667 | 644 | 704 |
| 55° | 584 | 533 | 455 | 415 | 398 | 526 |
| 65° | 342 | 304 | 257 | 231 | 240 | 340 |
| 75° | 156 | 134 | 115 | 120 | 127 | 166 |
| 85° | 24 | 24 | 26 | 31 | 33 | 33 |
| 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° | 2003.4 | 2003.4 | 2003.4 | 2003.4 | 2003.4 | 2003.4 | 2003.4 | 2003.4 | 2003.4 |
| 2.5° | 2041.1 | 2034.0 | 2022.3 | 2008.1 | 1991.6 | 1972.7 | 1956.2 | 1946.9 | 1942.2 |
| 5° | 2083.6 | 2074.1 | 2052.9 | 2022.3 | 1986.9 | 1951.5 | 1920.9 | 1902.0 | 1895.0 |
| 7.5° | 2109.4 | 2095.4 | 2064.7 | 2017.6 | 1963.3 | 1911.5 | 1866.7 | 1840.8 | 1833.7 |
| 10° | 2111.8 | 2095.4 | 2055.2 | 1991.6 | 1923.3 | 1854.9 | 1800.6 | 1763.0 | 1755.9 |
| 12.5° | 2114.1 | 2093.0 | 2043.4 | 1968.0 | 1883.1 | 1798.3 | 1732.3 | 1687.6 | 1675.8 |
| 15° | 2114.1 | 2093.0 | 2031.6 | 1942.2 | 1836.1 | 1739.4 | 1666.3 | 1614.5 | 1598.0 |
| 17.5° | 2095.4 | 2071.8 | 1998.7 | 1895.0 | 1779.5 | 1671.1 | 1586.2 | 1532.0 | 1515.5 |
| 20° | 2045.8 | 2019.9 | 1937.4 | 1824.3 | 1699.4 | 1586.2 | 1501.3 | 1444.8 | 1423.5 |
| 22.5° | 1975.1 | 1944.5 | 1857.3 | 1734.7 | 1609.8 | 1494.2 | 1411.9 | 1352.8 | 1334.1 |
| 25° | 1890.2 | 1859.7 | 1765.4 | 1645.2 | 1515.5 | 1407.1 | 1324.6 | 1270.3 | 1249.2 |
| 27.5° | 1786.6 | 1753.6 | 1661.6 | 1541.5 | 1421.2 | 1312.8 | 1237.4 | 1187.8 | 1166.7 |
| 30° | 1668.7 | 1633.4 | 1546.2 | 1430.6 | 1322.3 | 1218.5 | 1145.5 | 1105.5 | 1081.9 |
| 32.5° | 1532.0 | 1501.3 | 1423.5 | 1319.9 | 1218.5 | 1119.5 | 1058.2 | 1023.0 | 1004.1 |
| 35° | 1383.5 | 1367.0 | 1301.0 | 1211.4 | 1112.4 | 1030.0 | 975.7 | 942.8 | 926.3 |
| 37.5° | 1251.6 | 1235.1 | 1178.5 | 1103.1 | 1015.9 | 940.5 | 895.6 | 867.4 | 853.2 |
| 40° | 1126.6 | 1112.4 | 1058.2 | 994.6 | 919.2 | 853.2 | 815.5 | 794.3 | 780.2 |
| 42.5° | 1004.1 | 997.0 | 952.3 | 893.2 | 827.3 | 770.7 | 740.0 | 723.6 | 711.8 |
| 45° | 905.0 | 895.6 | 853.2 | 796.7 | 740.0 | 692.9 | 667.0 | 655.2 | 643.5 |
| 47.5° | 817.8 | 806.0 | 761.3 | 711.8 | 659.9 | 617.5 | 593.9 | 582.1 | 577.4 |
| 50° | 733.0 | 721.3 | 681.1 | 631.7 | 579.8 | 549.2 | 530.3 | 518.5 | 516.1 |
| 52.5° | 657.5 | 645.9 | 601.0 | 553.9 | 513.8 | 487.9 | 471.4 | 459.6 | 454.9 |
| 55° | 584.5 | 570.4 | 532.7 | 487.9 | 454.9 | 431.3 | 414.9 | 403.1 | 398.3 |
| 57.5° | 518.5 | 504.3 | 471.4 | 428.9 | 398.3 | 377.1 | 362.9 | 351.1 | 346.4 |
| 60° | 454.9 | 443.1 | 412.5 | 372.4 | 346.4 | 327.6 | 313.5 | 304.0 | 299.3 |
| 62.5° | 396.0 | 386.5 | 355.9 | 320.6 | 299.3 | 282.8 | 271.0 | 261.7 | 266.4 |
| 65° | 341.8 | 332.4 | 304.0 | 273.4 | 256.9 | 240.4 | 231.0 | 231.0 | 240.4 |
| 67.5° | 289.9 | 280.4 | 256.9 | 231.0 | 216.8 | 205.0 | 197.9 | 205.0 | 212.1 |
| 70° | 242.8 | 233.3 | 212.1 | 191.0 | 179.2 | 169.7 | 169.7 | 176.8 | 181.5 |
| 72.5° | 197.9 | 188.6 | 172.1 | 155.6 | 146.1 | 139.0 | 146.1 | 150.8 | 155.6 |
| 75° | 155.6 | 148.5 | 134.3 | 122.5 | 115.4 | 113.2 | 120.2 | 124.9 | 127.2 |
| 77.5° | 115.4 | 110.8 | 101.4 | 91.9 | 87.2 | 89.6 | 96.7 | 99.0 | 101.4 |
| 80° | 80.1 | 77.8 | 70.7 | 66.0 | 66.0 | 68.3 | 73.1 | 75.4 | 77.8 |
| 82.5° | 49.5 | 49.5 | 44.7 | 42.4 | 44.7 | 49.5 | 51.8 | 54.2 | 54.2 |
| 85° | 23.6 | 26.0 | 23.6 | 23.6 | 26.0 | 30.7 | 30.7 | 33.0 | 33.0 |
| 87.5° | 7.1 | 7.1 | 9.4 | 9.4 | 11.8 | 11.8 | 11.8 | 11.8 | 14.2 |
| 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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