

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: P580647

Luminaire Tested: **HCC4S40D010MB-HM43040930-41RWWH**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P580647
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-15)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 9/9/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HCC4S40D010MB-HM43040930-41RWWH
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
CYLINDER
Ballast/Driver: ELECTRONIC DRIVER

Summary

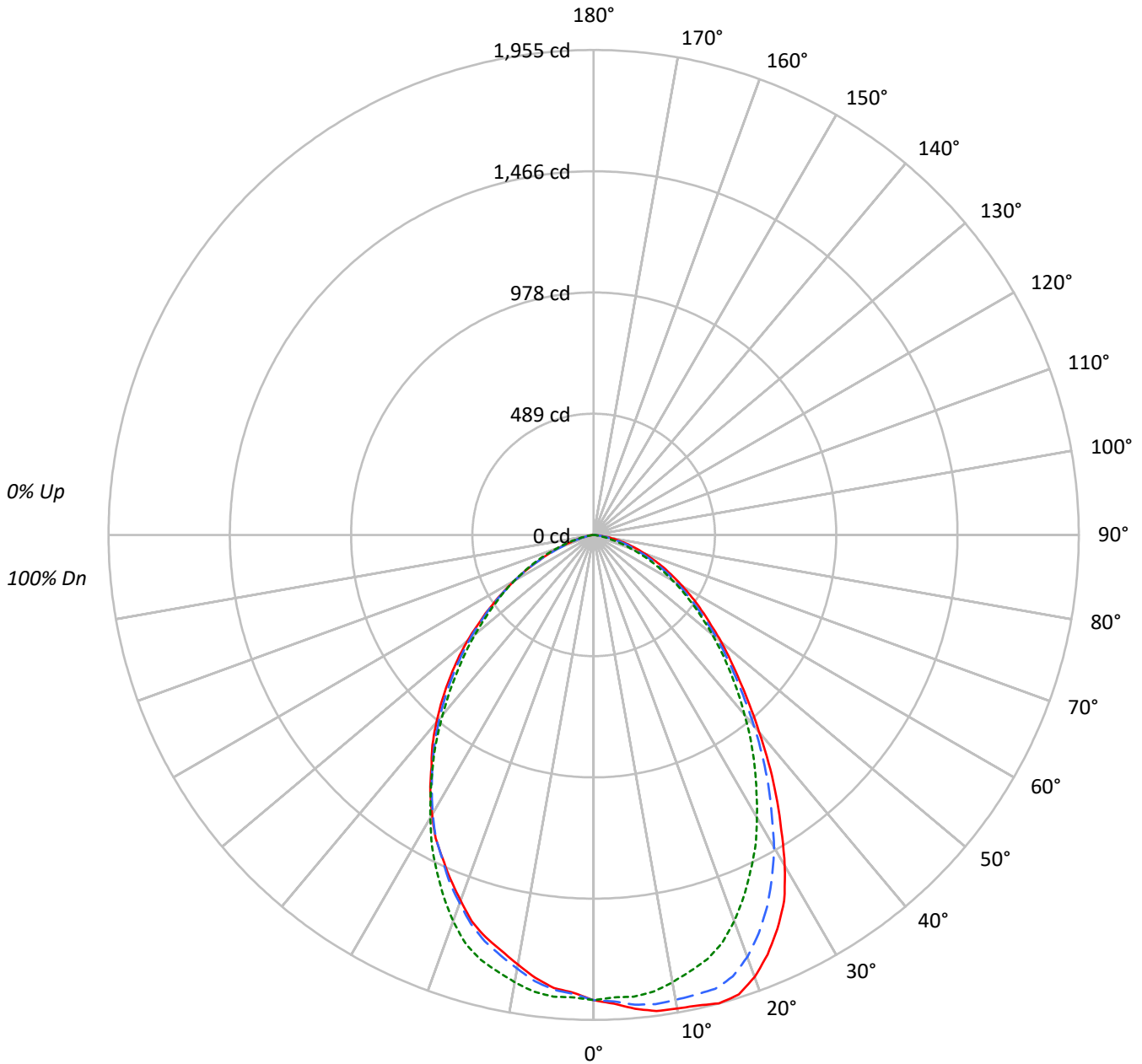
Lumens per Lamp: N/A
Luminaire Lumens: 3574.5 lumens
Efficiency: N/A
Efficacy: 87.2 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.08 / 1.16
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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 | | | | 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 |
| 1 | 111 | 107 | 104 | 100 | 108 | 105 | 102 | 99 | 101 | 98 | 96 | 97 | 95 | 93 | 93 | 92 | 90 | 88 | | | | 88 |
| 2 | 103 | 96 | 90 | 85 | 100 | 94 | 89 | 84 | 90 | 86 | 82 | 87 | 84 | 80 | 84 | 81 | 79 | 77 | | | | 77 |
| 3 | 95 | 86 | 79 | 73 | 92 | 84 | 78 | 73 | 81 | 76 | 71 | 79 | 74 | 70 | 76 | 72 | 69 | 67 | | | | 67 |
| 4 | 88 | 77 | 70 | 64 | 86 | 76 | 69 | 63 | 74 | 67 | 62 | 71 | 66 | 62 | 69 | 65 | 61 | 59 | | | | 59 |
| 5 | 81 | 70 | 62 | 56 | 79 | 69 | 61 | 56 | 67 | 60 | 55 | 65 | 59 | 55 | 63 | 58 | 54 | 52 | | | | 52 |
| 6 | 76 | 64 | 56 | 50 | 74 | 63 | 55 | 50 | 61 | 54 | 49 | 60 | 54 | 49 | 58 | 53 | 49 | 47 | | | | 47 |
| 7 | 71 | 58 | 51 | 45 | 69 | 58 | 50 | 45 | 56 | 49 | 45 | 55 | 49 | 44 | 54 | 48 | 44 | 42 | | | | 42 |
| 8 | 66 | 54 | 46 | 41 | 65 | 53 | 46 | 41 | 52 | 45 | 40 | 51 | 45 | 40 | 50 | 44 | 40 | 38 | | | | 38 |
| 9 | 62 | 50 | 42 | 37 | 61 | 49 | 42 | 37 | 48 | 41 | 37 | 47 | 41 | 37 | 46 | 41 | 37 | 35 | | | | 35 |
| 10 | 58 | 46 | 39 | 34 | 57 | 46 | 39 | 34 | 45 | 38 | 34 | 44 | 38 | 34 | 43 | 38 | 34 | 32 | | | | 32 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--------|--------|--------|
| 0° | 231310 | 231310 | 231310 |
| 5° | 237382 | 231339 | 227006 |
| 10° | 242757 | 229330 | 220287 |
| 15° | 249596 | 226087 | 214492 |
| 20° | 248912 | 217422 | 205792 |
| 25° | 238428 | 203546 | 195939 |
| 30° | 219324 | 187477 | 185483 |
| 35° | 192935 | 170137 | 171538 |
| 40° | 166926 | 152289 | 158682 |
| 45° | 145079 | 135311 | 143457 |
| 50° | 128740 | 119357 | 127416 |
| 55° | 114211 | 104706 | 109201 |
| 60° | 101711 | 90807 | 90807 |
| 65° | 90418 | 75475 | 70689 |
| 70° | 78150 | 57125 | 50417 |
| 75° | 65481 | 37792 | 31072 |
| 80° | 49580 | 18255 | 16550 |
| 85° | 26323 | 6652 | 6652 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 177.6 | 5.0 |
| 10°-20° | 503.5 | 14.1 |
| 20°-30° | 710.1 | 19.9 |
| 30°-40° | 733.6 | 20.5 |
| 40°-50° | 621.8 | 17.4 |
| 50°-60° | 452.4 | 12.7 |
| 60°-70° | 264.4 | 7.4 |
| 70°-80° | 98.2 | 2.7 |
| 80°-90° | 12.9 | 0.4 |
| 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° | 1391.2 | 38.9 |
| 0°-40° | 2124.7 | 59.4 |
| 0°-60° | 3199.0 | 89.5 |
| 0°-90° | 3574.5 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3574.5 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 1875 | 1875 | 1875 | 1875 | 1875 | |
| 5° | 1917 | 1901 | 1868 | 1840 | 1833 | 184 |
| 15° | 1955 | 1894 | 1770 | 1696 | 1680 | 549 |
| 25° | 1752 | 1654 | 1496 | 1442 | 1440 | 801 |
| 35° | 1281 | 1225 | 1130 | 1132 | 1139 | 800 |
| 45° | 832 | 808 | 776 | 804 | 822 | 647 |
| 55° | 531 | 506 | 487 | 503 | 508 | 478 |
| 65° | 310 | 284 | 259 | 242 | 242 | 307 |
| 75° | 137 | 114 | 79 | 63 | 65 | 148 |
| 85° | 19 | 12 | 5 | 5 | 5 | 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° | 1875.3 | 1875.3 | 1875.3 | 1875.3 | 1875.3 | 1875.3 | 1875.3 | 1875.3 | 1875.3 |
| 2.5° | 1891.7 | 1887.0 | 1882.4 | 1875.3 | 1866.0 | 1859.1 | 1852.1 | 1847.4 | 1847.4 |
| 5° | 1917.2 | 1910.3 | 1901.0 | 1884.6 | 1868.4 | 1854.4 | 1840.5 | 1833.4 | 1833.4 |
| 7.5° | 1936.0 | 1926.7 | 1907.9 | 1884.6 | 1856.7 | 1835.7 | 1814.8 | 1805.5 | 1800.8 |
| 10° | 1938.2 | 1928.9 | 1903.3 | 1868.4 | 1831.0 | 1798.5 | 1775.2 | 1761.2 | 1758.8 |
| 12.5° | 1942.9 | 1931.3 | 1898.6 | 1849.8 | 1800.8 | 1761.2 | 1735.5 | 1721.6 | 1716.9 |
| 15° | 1954.6 | 1938.2 | 1894.0 | 1831.0 | 1770.5 | 1724.0 | 1696.0 | 1684.3 | 1679.7 |
| 17.5° | 1942.9 | 1919.6 | 1866.0 | 1791.5 | 1724.0 | 1672.6 | 1644.7 | 1633.1 | 1633.1 |
| 20° | 1896.3 | 1873.1 | 1810.1 | 1728.6 | 1656.4 | 1607.4 | 1579.5 | 1572.5 | 1567.8 |
| 22.5° | 1831.0 | 1805.5 | 1737.9 | 1651.7 | 1579.5 | 1535.2 | 1516.6 | 1507.3 | 1504.9 |
| 25° | 1751.9 | 1726.2 | 1654.0 | 1565.5 | 1495.6 | 1458.3 | 1442.1 | 1442.1 | 1439.7 |
| 27.5° | 1663.3 | 1630.7 | 1556.2 | 1479.3 | 1411.8 | 1383.8 | 1376.8 | 1376.8 | 1379.2 |
| 30° | 1539.9 | 1516.6 | 1453.7 | 1379.2 | 1316.3 | 1297.6 | 1297.6 | 1302.3 | 1302.3 |
| 32.5° | 1407.1 | 1390.8 | 1334.9 | 1269.6 | 1220.8 | 1209.1 | 1213.7 | 1223.0 | 1225.4 |
| 35° | 1281.3 | 1262.7 | 1225.4 | 1167.2 | 1129.9 | 1125.3 | 1132.2 | 1139.2 | 1139.2 |
| 37.5° | 1157.9 | 1139.2 | 1113.6 | 1067.0 | 1039.1 | 1041.3 | 1050.7 | 1060.0 | 1067.0 |
| 40° | 1036.7 | 1022.7 | 1004.1 | 966.8 | 945.8 | 955.2 | 966.8 | 976.2 | 985.5 |
| 42.5° | 929.5 | 915.5 | 901.6 | 873.6 | 859.6 | 871.2 | 885.3 | 894.6 | 903.9 |
| 45° | 831.7 | 822.4 | 808.4 | 785.0 | 775.7 | 787.4 | 803.8 | 813.1 | 822.4 |
| 47.5° | 747.8 | 743.1 | 724.5 | 703.5 | 698.9 | 710.5 | 724.5 | 736.2 | 743.1 |
| 50° | 670.9 | 664.0 | 647.6 | 626.6 | 622.0 | 640.7 | 650.0 | 656.9 | 664.0 |
| 52.5° | 596.4 | 589.4 | 570.8 | 552.1 | 552.1 | 566.1 | 573.1 | 575.4 | 582.4 |
| 55° | 531.1 | 524.2 | 505.6 | 491.6 | 486.9 | 498.5 | 503.2 | 503.2 | 507.8 |
| 57.5° | 470.6 | 463.6 | 444.9 | 428.7 | 426.3 | 433.3 | 433.3 | 433.3 | 435.6 |
| 60° | 412.3 | 405.4 | 386.7 | 372.7 | 368.1 | 370.4 | 368.1 | 365.8 | 368.1 |
| 62.5° | 358.7 | 351.8 | 333.2 | 316.8 | 312.2 | 312.2 | 305.1 | 302.9 | 305.1 |
| 65° | 309.8 | 298.2 | 284.2 | 267.9 | 258.6 | 251.6 | 242.2 | 242.2 | 242.2 |
| 67.5° | 261.0 | 251.6 | 235.3 | 218.9 | 207.4 | 195.7 | 181.7 | 186.4 | 188.7 |
| 70° | 216.7 | 209.6 | 191.0 | 174.8 | 158.4 | 144.4 | 132.8 | 137.4 | 139.8 |
| 72.5° | 177.0 | 167.7 | 151.4 | 132.8 | 118.8 | 100.2 | 93.2 | 97.9 | 97.9 |
| 75° | 137.4 | 128.1 | 114.1 | 95.5 | 79.3 | 62.9 | 62.9 | 65.2 | 65.2 |
| 77.5° | 102.5 | 93.2 | 79.3 | 62.9 | 48.9 | 37.3 | 39.6 | 39.6 | 39.6 |
| 80° | 69.8 | 62.9 | 51.2 | 37.3 | 25.7 | 21.0 | 21.0 | 21.0 | 23.3 |
| 82.5° | 39.6 | 35.0 | 27.9 | 18.6 | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 |
| 85° | 18.6 | 14.0 | 11.7 | 7.0 | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 |
| 87.5° | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| 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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