

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: P592814

Luminaire Tested: **HCC4S40D010BZ-HM43040850-41RWWH**

Issue Date: 9/9/2021

Test Information

Test Method: LM-41-14
Report Number: P592814
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: HCC4S40D010BZ-HM43040850-41RWWH
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT
CYLINDER
Ballast/Driver: ELECTRONIC DRIVER

Summary

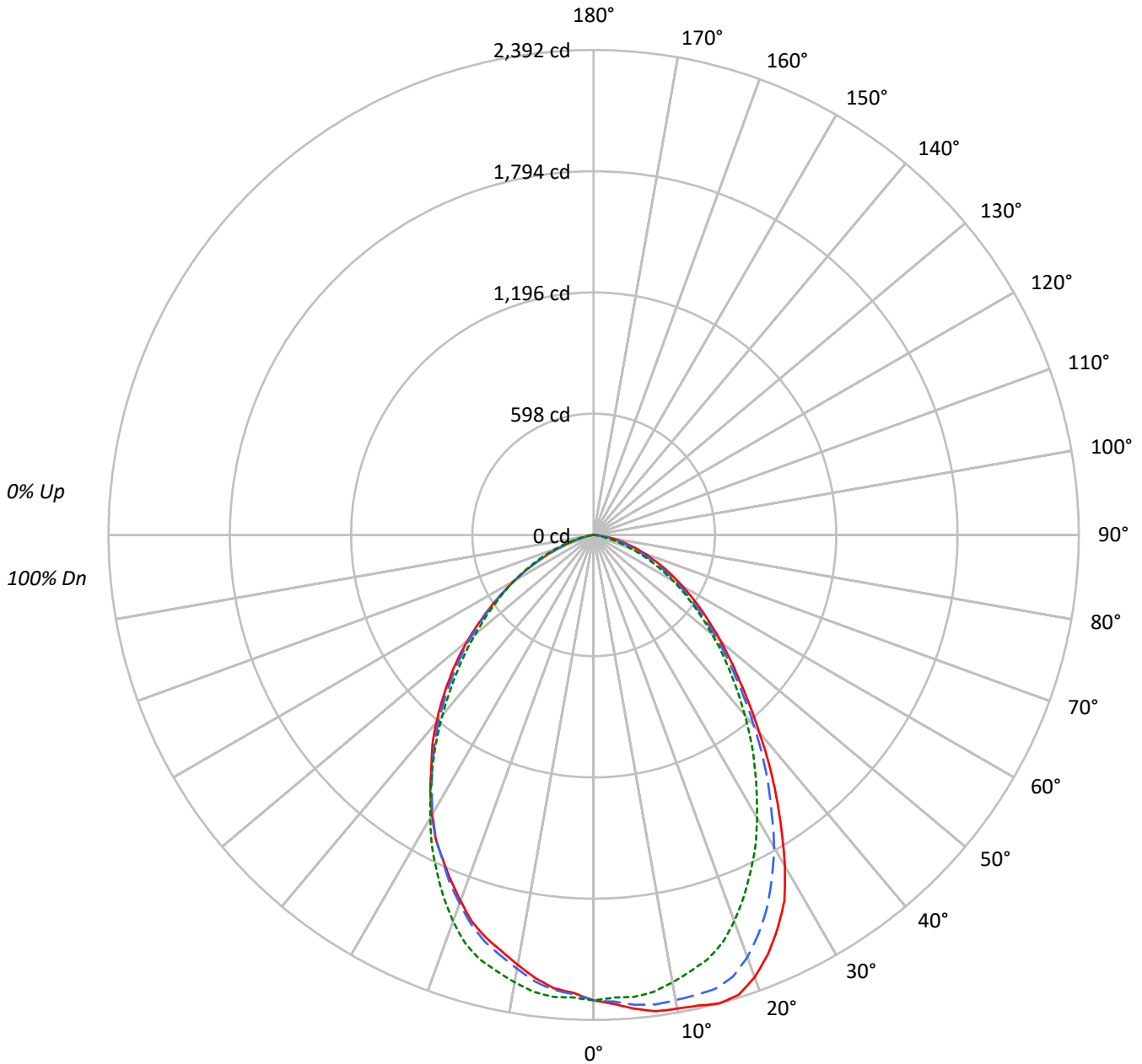
Lumens per Lamp: N/A
Luminaire Lumens: 4375.2 lumens
Efficiency: N/A
Efficacy: 106.7 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.08 / 1.16
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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 | | | | | |
| 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 | 104 | 100 | 108 | 105 | 102 | 99 | 101 | 98 | 96 | 97 | 95 | 93 | 93 | 92 | 90 | 88 | | | | | | | | |
| 2 | 103 | 96 | 90 | 85 | 100 | 94 | 89 | 84 | 90 | 86 | 82 | 87 | 84 | 80 | 84 | 81 | 79 | 77 | | | | | | | | |
| 3 | 95 | 86 | 79 | 73 | 92 | 84 | 78 | 73 | 81 | 76 | 71 | 79 | 74 | 70 | 76 | 72 | 69 | 67 | | | | | | | | |
| 4 | 88 | 77 | 70 | 64 | 86 | 76 | 69 | 63 | 74 | 67 | 62 | 71 | 66 | 62 | 69 | 65 | 61 | 59 | | | | | | | | |
| 5 | 81 | 70 | 62 | 56 | 79 | 69 | 61 | 56 | 67 | 60 | 55 | 65 | 59 | 55 | 63 | 58 | 54 | 52 | | | | | | | | |
| 6 | 76 | 64 | 56 | 50 | 74 | 63 | 55 | 50 | 61 | 54 | 49 | 60 | 54 | 49 | 58 | 53 | 49 | 47 | | | | | | | | |
| 7 | 71 | 58 | 51 | 45 | 69 | 58 | 50 | 45 | 56 | 49 | 45 | 55 | 49 | 44 | 54 | 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 | 41 | 37 | 47 | 41 | 37 | 46 | 41 | 37 | 35 | | | | | | | | |
| 10 | 58 | 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° | 283140 | 283140 | 283140 |
| 5° | 290573 | 283169 | 277857 |
| 10° | 297152 | 280719 | 269647 |
| 15° | 305502 | 276744 | 262545 |
| 20° | 304671 | 266120 | 251917 |
| 25° | 291846 | 249152 | 239830 |
| 30° | 268447 | 229465 | 227043 |
| 35° | 236165 | 208248 | 209965 |
| 40° | 204330 | 186425 | 194218 |
| 45° | 177577 | 165645 | 175571 |
| 50° | 157581 | 146106 | 155950 |
| 55° | 139823 | 128146 | 133673 |
| 60° | 124505 | 111134 | 111134 |
| 65° | 110674 | 92403 | 86566 |
| 70° | 95641 | 69928 | 61705 |
| 75° | 80207 | 46227 | 38030 |
| 80° | 60732 | 22304 | 20244 |
| 85° | 32409 | 8067 | 8067 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 217.4 | 5.0 |
| 10°-20° | 616.3 | 14.1 |
| 20°-30° | 869.2 | 19.9 |
| 30°-40° | 897.9 | 20.5 |
| 40°-50° | 761.1 | 17.4 |
| 50°-60° | 553.8 | 12.7 |
| 60°-70° | 323.6 | 7.4 |
| 70°-80° | 120.2 | 2.7 |
| 80°-90° | 15.7 | 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° | 1702.9 | 38.9 |
| 0°-40° | 2600.7 | 59.4 |
| 0°-60° | 3915.7 | 89.5 |
| 0°-90° | 4375.2 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4375.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 2296 | 2296 | 2296 | 2296 | 2296 | |
| 5° | 2347 | 2327 | 2287 | 2253 | 2244 | 225 |
| 15° | 2392 | 2318 | 2167 | 2076 | 2056 | 672 |
| 25° | 2144 | 2025 | 1831 | 1765 | 1762 | 981 |
| 35° | 1568 | 1500 | 1383 | 1386 | 1394 | 980 |
| 45° | 1018 | 990 | 950 | 984 | 1006 | 792 |
| 55° | 650 | 619 | 596 | 616 | 622 | 585 |
| 65° | 379 | 348 | 317 | 297 | 297 | 376 |
| 75° | 168 | 140 | 97 | 77 | 80 | 181 |
| 85° | 23 | 14 | 6 | 6 | 6 | 32 |
| 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° | 2295.5 | 2295.5 | 2295.5 | 2295.5 | 2295.5 | 2295.5 | 2295.5 | 2295.5 | 2295.5 |
| 2.5° | 2315.4 | 2309.7 | 2304.1 | 2295.5 | 2284.1 | 2275.5 | 2267.0 | 2261.3 | 2261.3 |
| 5° | 2346.8 | 2338.3 | 2326.9 | 2306.9 | 2287.0 | 2269.8 | 2252.8 | 2244.1 | 2244.1 |
| 7.5° | 2369.7 | 2358.2 | 2335.4 | 2306.9 | 2272.7 | 2247.0 | 2221.4 | 2209.9 | 2204.2 |
| 10° | 2372.5 | 2361.1 | 2329.8 | 2287.0 | 2241.3 | 2201.4 | 2172.8 | 2155.8 | 2152.9 |
| 12.5° | 2378.2 | 2364.0 | 2324.1 | 2264.1 | 2204.2 | 2155.8 | 2124.4 | 2107.3 | 2101.7 |
| 15° | 2392.4 | 2372.5 | 2318.3 | 2241.3 | 2167.2 | 2110.2 | 2076.0 | 2061.6 | 2056.0 |
| 17.5° | 2378.2 | 2349.7 | 2284.1 | 2192.9 | 2110.2 | 2047.4 | 2013.2 | 1999.0 | 1999.0 |
| 20° | 2321.1 | 2292.7 | 2215.7 | 2115.9 | 2027.4 | 1967.6 | 1933.4 | 1924.8 | 1919.2 |
| 22.5° | 2241.3 | 2209.9 | 2127.2 | 2021.7 | 1933.4 | 1879.1 | 1856.4 | 1844.9 | 1842.1 |
| 25° | 2144.4 | 2113.0 | 2024.6 | 1916.2 | 1830.7 | 1785.1 | 1765.1 | 1765.1 | 1762.2 |
| 27.5° | 2036.0 | 1996.1 | 1904.8 | 1810.8 | 1728.0 | 1693.8 | 1685.3 | 1685.3 | 1688.1 |
| 30° | 1884.8 | 1856.4 | 1779.4 | 1688.1 | 1611.1 | 1588.3 | 1588.3 | 1594.1 | 1594.1 |
| 32.5° | 1722.3 | 1702.4 | 1634.0 | 1554.2 | 1494.2 | 1479.9 | 1485.7 | 1497.1 | 1499.9 |
| 35° | 1568.4 | 1545.5 | 1499.9 | 1428.6 | 1383.0 | 1377.3 | 1385.9 | 1394.4 | 1394.4 |
| 37.5° | 1417.2 | 1394.4 | 1363.0 | 1306.0 | 1271.8 | 1274.7 | 1286.0 | 1297.4 | 1306.0 |
| 40° | 1269.0 | 1251.8 | 1229.1 | 1183.4 | 1157.8 | 1169.1 | 1183.4 | 1194.8 | 1206.2 |
| 42.5° | 1137.8 | 1120.7 | 1103.5 | 1069.3 | 1052.2 | 1066.5 | 1083.6 | 1095.0 | 1106.4 |
| 45° | 1018.0 | 1006.5 | 989.5 | 960.9 | 949.6 | 963.8 | 983.8 | 995.2 | 1006.5 |
| 47.5° | 915.3 | 909.7 | 886.8 | 861.2 | 855.4 | 869.7 | 886.8 | 901.1 | 909.7 |
| 50° | 821.2 | 812.7 | 792.8 | 767.1 | 761.4 | 784.1 | 795.6 | 804.1 | 812.7 |
| 52.5° | 730.0 | 721.5 | 698.6 | 675.9 | 675.9 | 692.9 | 701.5 | 704.3 | 712.8 |
| 55° | 650.2 | 641.5 | 618.8 | 601.6 | 595.9 | 610.3 | 616.0 | 616.0 | 621.6 |
| 57.5° | 576.0 | 567.5 | 544.7 | 524.7 | 521.8 | 530.3 | 530.3 | 530.3 | 533.3 |
| 60° | 504.7 | 496.2 | 473.4 | 456.2 | 450.5 | 453.4 | 450.5 | 447.7 | 450.5 |
| 62.5° | 439.1 | 430.6 | 407.8 | 387.9 | 382.1 | 382.1 | 373.5 | 370.7 | 373.5 |
| 65° | 379.2 | 365.0 | 347.8 | 327.9 | 316.6 | 307.9 | 296.6 | 296.6 | 296.6 |
| 67.5° | 319.4 | 307.9 | 288.0 | 268.0 | 253.8 | 239.6 | 222.4 | 228.1 | 230.9 |
| 70° | 265.2 | 256.6 | 233.8 | 213.9 | 193.9 | 176.8 | 162.5 | 168.3 | 171.1 |
| 72.5° | 216.7 | 205.4 | 185.3 | 162.5 | 145.4 | 122.6 | 114.1 | 119.7 | 119.7 |
| 75° | 168.3 | 156.8 | 139.7 | 116.9 | 97.0 | 77.0 | 77.0 | 79.8 | 79.8 |
| 77.5° | 125.4 | 114.1 | 97.0 | 77.0 | 59.9 | 45.6 | 48.4 | 48.4 | 48.4 |
| 80° | 85.5 | 77.0 | 62.8 | 45.6 | 31.4 | 25.7 | 25.7 | 25.7 | 28.5 |
| 82.5° | 48.4 | 42.8 | 34.2 | 22.9 | 14.2 | 14.2 | 14.2 | 14.2 | 14.2 |
| 85° | 22.9 | 17.2 | 14.2 | 8.5 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| 87.5° | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| 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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