

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: P580613

Luminaire Tested: **HCC4S40D010SL-HM43040840-41WWW**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580613  
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: HCC4S40D010SL-HM43040840-41WWW  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
CYLINDER  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

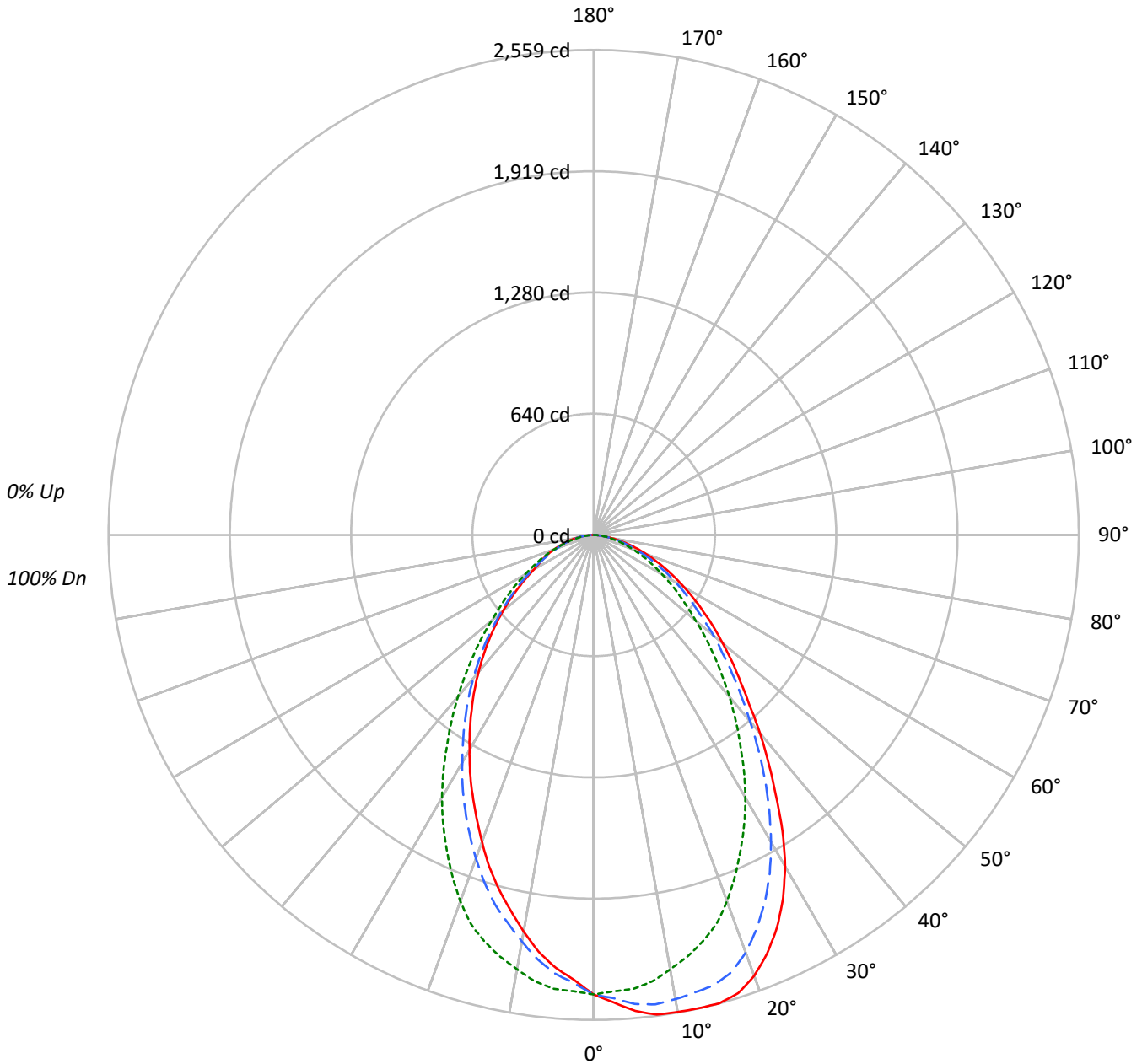
Lumens per Lamp: N/A  
Luminaire Lumens: 4329.6 lumens  
Efficiency: N/A  
Efficacy: 105.6 lumens/watt  
Spacing Criteria (0/90/45): 1.06 / 1.03 / 1.1  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

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°  | 299051 | 299051 | 299051 |
| 5°  | 312204 | 297717 | 283937 |
| 10° | 320097 | 291516 | 266153 |
| 15° | 326725 | 283729 | 246940 |
| 20° | 324978 | 269953 | 226151 |
| 25° | 311335 | 249615 | 205751 |
| 30° | 287632 | 227898 | 186466 |
| 35° | 252111 | 202722 | 168797 |
| 40° | 219546 | 179115 | 152015 |
| 45° | 191061 | 156243 | 135817 |
| 50° | 170208 | 134631 | 119856 |
| 55° | 152124 | 118383 | 103652 |
| 60° | 135804 | 103438 | 89352  |
| 65° | 120684 | 90739  | 84902  |
| 70° | 105956 | 78186  | 79196  |
| 75° | 89691  | 66625  | 73392  |
| 80° | 68901  | 56683  | 66912  |
| 85° | 40334  | 44438  | 56468  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 227.3  | 5.2       |
| 10°-20°   | 626.9  | 14.5      |
| 20°-30°   | 856.5  | 19.8      |
| 30°-40°   | 860.0  | 19.9      |
| 40°-50°   | 711.4  | 16.4      |
| 50°-60°   | 515.6  | 11.9      |
| 60°-70°   | 326.6  | 7.5       |
| 70°-80°   | 165.1  | 3.8       |
| 80°-90°   | 40.4   | 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°    | 1710.6 | 39.5      |
| 0°-40°    | 2570.6 | 59.4      |
| 0°-60°    | 3797.6 | 87.7      |
| 0°-90°    | 4329.6 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4329.6 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 2424 | 2424 | 2424 | 2424 | 2424 |      |
| 5°  | 2522 | 2484 | 2404 | 2325 | 2293 | 242  |
| 15° | 2559 | 2459 | 2222 | 2017 | 1934 | 720  |
| 25° | 2288 | 2136 | 1834 | 1603 | 1512 | 1045 |
| 35° | 1674 | 1574 | 1346 | 1181 | 1121 | 1049 |
| 45° | 1095 | 1033 | 896  | 807  | 779  | 852  |
| 55° | 707  | 645  | 550  | 502  | 482  | 636  |
| 65° | 414  | 368  | 311  | 280  | 291  | 412  |
| 75° | 188  | 162  | 140  | 146  | 154  | 201  |
| 85° | 28   | 28   | 31   | 37   | 40   | 40   |
| 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°    | 2424.5 | 2424.5 | 2424.5 | 2424.5 | 2424.5 | 2424.5 | 2424.5 | 2424.5 | 2424.5 |
| 2.5°  | 2470.1 | 2461.6 | 2447.3 | 2430.2 | 2410.3 | 2387.4 | 2367.4 | 2356.0 | 2350.3 |
| 5°    | 2521.5 | 2510.0 | 2484.4 | 2447.3 | 2404.5 | 2361.7 | 2324.6 | 2301.9 | 2293.2 |
| 7.5°  | 2552.9 | 2535.7 | 2498.6 | 2441.7 | 2376.0 | 2313.3 | 2259.0 | 2227.7 | 2219.1 |
| 10°   | 2555.7 | 2535.7 | 2487.3 | 2410.3 | 2327.5 | 2244.8 | 2179.2 | 2133.6 | 2125.0 |
| 12.5° | 2558.6 | 2532.9 | 2472.9 | 2381.7 | 2279.0 | 2176.3 | 2096.5 | 2042.2 | 2028.0 |
| 15°   | 2558.6 | 2532.9 | 2458.7 | 2350.3 | 2221.9 | 2105.0 | 2016.6 | 1953.9 | 1933.8 |
| 17.5° | 2535.7 | 2507.2 | 2418.8 | 2293.2 | 2153.6 | 2022.3 | 1919.6 | 1854.0 | 1834.1 |
| 20°   | 2475.8 | 2444.5 | 2344.6 | 2207.7 | 2056.6 | 1919.6 | 1816.9 | 1748.5 | 1722.9 |
| 22.5° | 2390.3 | 2353.2 | 2247.6 | 2099.3 | 1948.2 | 1808.4 | 1708.5 | 1637.2 | 1614.5 |
| 25°   | 2287.6 | 2250.5 | 2136.4 | 1990.9 | 1834.1 | 1702.8 | 1603.0 | 1537.5 | 1511.8 |
| 27.5° | 2162.1 | 2122.2 | 2010.8 | 1865.5 | 1720.0 | 1588.8 | 1497.4 | 1437.6 | 1411.9 |
| 30°   | 2019.5 | 1976.7 | 1871.2 | 1731.4 | 1600.1 | 1474.7 | 1386.2 | 1337.8 | 1309.2 |
| 32.5° | 1854.0 | 1816.9 | 1722.9 | 1597.3 | 1474.7 | 1354.8 | 1280.7 | 1237.9 | 1215.1 |
| 35°   | 1674.3 | 1654.4 | 1574.4 | 1466.2 | 1346.3 | 1246.4 | 1180.9 | 1141.0 | 1121.0 |
| 37.5° | 1514.6 | 1494.6 | 1426.1 | 1334.9 | 1229.4 | 1138.0 | 1083.9 | 1049.7 | 1032.6 |
| 40°   | 1363.5 | 1346.3 | 1280.7 | 1203.7 | 1112.4 | 1032.6 | 986.9  | 961.3  | 944.1  |
| 42.5° | 1215.1 | 1206.5 | 1152.4 | 1081.0 | 1001.2 | 932.7  | 895.7  | 875.6  | 861.4  |
| 45°   | 1095.3 | 1083.9 | 1032.6 | 964.1  | 895.7  | 838.6  | 807.2  | 793.0  | 778.6  |
| 47.5° | 989.7  | 975.5  | 921.3  | 861.4  | 798.6  | 747.3  | 718.8  | 704.5  | 698.8  |
| 50°   | 887.0  | 872.8  | 824.3  | 764.4  | 701.6  | 664.6  | 641.8  | 627.5  | 624.6  |
| 52.5° | 795.8  | 781.6  | 727.3  | 670.2  | 621.8  | 590.4  | 570.5  | 556.2  | 550.5  |
| 55°   | 707.4  | 690.3  | 644.6  | 590.4  | 550.5  | 521.9  | 502.0  | 487.7  | 482.0  |
| 57.5° | 627.5  | 610.4  | 570.5  | 519.1  | 482.0  | 456.4  | 439.2  | 425.0  | 419.3  |
| 60°   | 550.5  | 536.3  | 499.2  | 450.6  | 419.3  | 396.5  | 379.3  | 367.9  | 362.2  |
| 62.5° | 479.2  | 467.8  | 430.7  | 387.9  | 362.2  | 342.2  | 328.0  | 316.6  | 322.3  |
| 65°   | 413.5  | 402.2  | 367.9  | 330.9  | 310.9  | 290.9  | 279.6  | 279.6  | 290.9  |
| 67.5° | 350.9  | 339.4  | 310.9  | 279.6  | 262.4  | 248.2  | 239.6  | 248.2  | 256.7  |
| 70°   | 293.8  | 282.4  | 256.7  | 231.0  | 216.8  | 205.4  | 205.4  | 213.9  | 219.6  |
| 72.5° | 239.6  | 228.2  | 208.2  | 188.2  | 176.9  | 168.3  | 176.9  | 182.5  | 188.2  |
| 75°   | 188.2  | 179.7  | 162.5  | 148.3  | 139.8  | 136.9  | 145.5  | 151.2  | 154.0  |
| 77.5° | 139.8  | 134.1  | 122.6  | 111.2  | 105.5  | 108.4  | 116.9  | 119.8  | 122.6  |
| 80°   | 97.0   | 94.2   | 85.5   | 79.8   | 79.8   | 82.7   | 88.4   | 91.2   | 94.2   |
| 82.5° | 59.9   | 59.9   | 54.1   | 51.3   | 54.1   | 59.9   | 62.8   | 65.6   | 65.6   |
| 85°   | 28.5   | 31.4   | 28.5   | 28.5   | 31.4   | 37.1   | 37.1   | 39.9   | 39.9   |
| 87.5° | 8.5    | 8.5    | 11.4   | 11.4   | 14.2   | 14.2   | 14.2   | 14.2   | 17.2   |
| 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





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Scaled Data Report



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

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