

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: P580596

Luminaire Tested: **HCC4S40D010SL-HM43040835-41WWWB**

Issue Date: 9/9/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P580596  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2106-266-18)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 9/9/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HCC4S40D010SL-HM43040835-41WWWB  
Description: HALO COMMERCIAL 4" ROUND, NEW CONSTRUCTION FRAME, WITH 4" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
CYLINDER  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

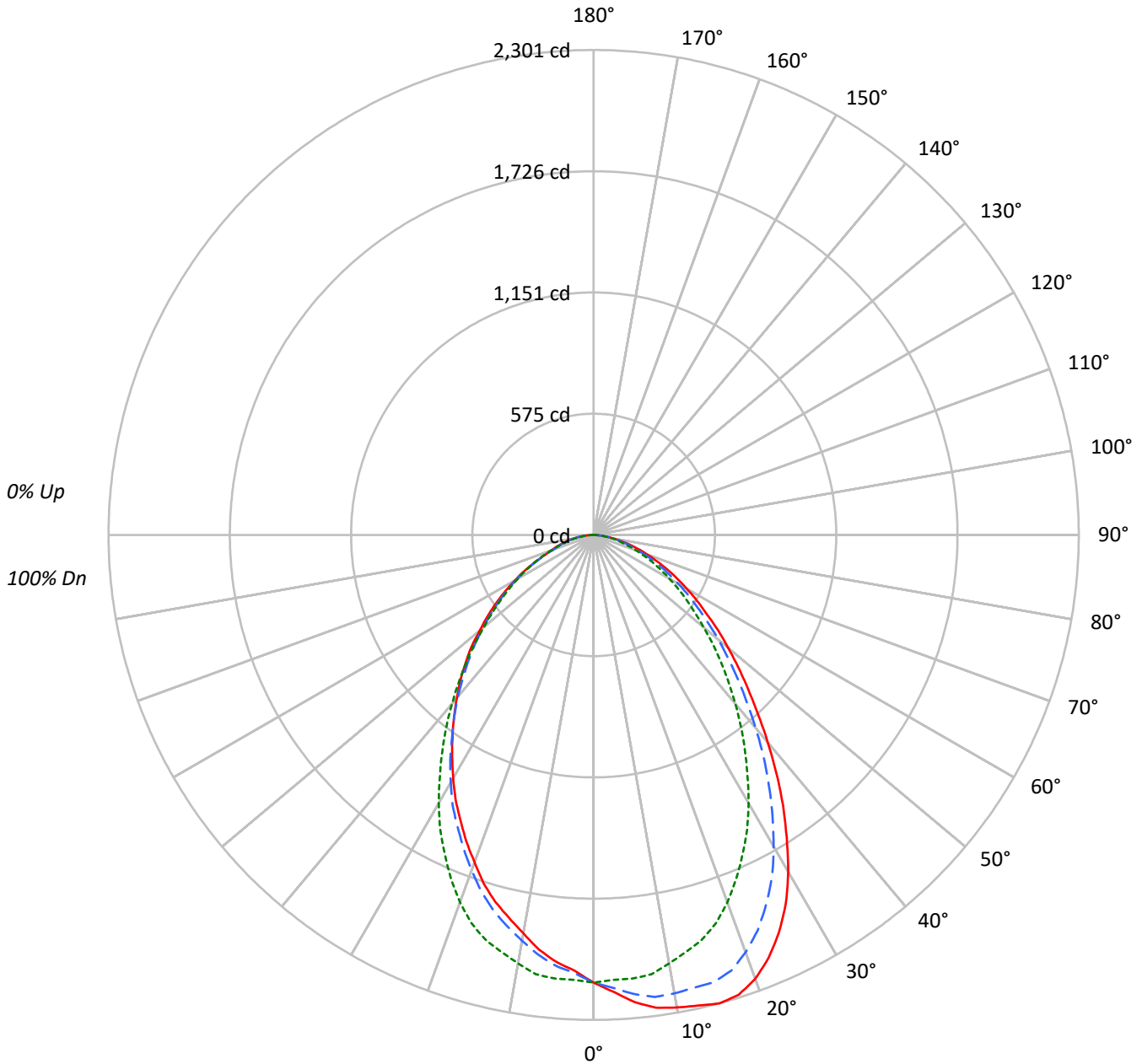
Lumens per Lamp: N/A  
Luminaire Lumens: 4119.0 lumens  
Efficiency: N/A  
Efficacy: 100.5 lumens/watt  
Spacing Criteria (0/90/45): 1.13 / 1.07 / 1.15  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

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 | 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   | 110 | 106 | 103 | 99  | 108 | 104 | 101 | 98  | 100 | 97  | 95  | 96  | 94  | 92  | 92  | 91  | 89  | 87  |    |    |    |    | 87  |   |  |   |
| 2   | 102 | 95  | 89  | 84  | 99  | 93  | 87  | 83  | 89  | 85  | 81  | 86  | 82  | 79  | 83  | 80  | 77  | 75  |    |    |    |    | 75  |   |  |   |
| 3   | 94  | 85  | 77  | 72  | 92  | 83  | 76  | 71  | 80  | 75  | 70  | 78  | 73  | 69  | 75  | 71  | 68  | 66  |    |    |    |    | 66  |   |  |   |
| 4   | 87  | 76  | 68  | 62  | 85  | 75  | 68  | 62  | 72  | 66  | 61  | 70  | 65  | 60  | 68  | 63  | 60  | 58  |    |    |    |    | 58  |   |  |   |
| 5   | 81  | 69  | 61  | 55  | 79  | 68  | 60  | 55  | 66  | 59  | 54  | 64  | 58  | 53  | 62  | 57  | 53  | 51  |    |    |    |    | 51  |   |  |   |
| 6   | 75  | 63  | 55  | 49  | 73  | 62  | 54  | 49  | 60  | 53  | 48  | 59  | 53  | 48  | 57  | 52  | 47  | 46  |    |    |    |    | 46  |   |  |   |
| 7   | 70  | 58  | 50  | 44  | 68  | 57  | 49  | 44  | 55  | 48  | 43  | 54  | 48  | 43  | 53  | 47  | 43  | 41  |    |    |    |    | 41  |   |  |   |
| 8   | 65  | 53  | 45  | 40  | 64  | 52  | 45  | 40  | 51  | 44  | 39  | 50  | 44  | 39  | 49  | 43  | 39  | 37  |    |    |    |    | 37  |   |  |   |
| 9   | 61  | 49  | 41  | 36  | 60  | 48  | 41  | 36  | 47  | 41  | 36  | 46  | 40  | 36  | 45  | 40  | 36  | 34  |    |    |    |    | 34  |   |  |   |
| 10  | 58  | 45  | 38  | 33  | 57  | 45  | 38  | 33  | 44  | 38  | 33  | 43  | 37  | 33  | 42  | 37  | 33  | 31  |    |    |    |    | 31  |   |  |   |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°     | 90°    | 180°   |
|-----|--------|--------|--------|
| 0°  | 261986 | 261986 | 261986 |
| 5°  | 275468 | 261625 | 251831 |
| 10° | 285141 | 258513 | 240402 |
| 15° | 293856 | 253810 | 230135 |
| 20° | 294171 | 243359 | 216871 |
| 25° | 283109 | 227459 | 203342 |
| 30° | 262892 | 209297 | 189884 |
| 35° | 235653 | 188447 | 175724 |
| 40° | 206777 | 168133 | 162433 |
| 45° | 180717 | 148865 | 149807 |
| 50° | 159577 | 130275 | 134977 |
| 55° | 140705 | 115501 | 121372 |
| 60° | 125763 | 102229 | 106275 |
| 65° | 111403 | 89922  | 89922  |
| 70° | 97336  | 76708  | 76708  |
| 75° | 83162  | 64957  | 72772  |
| 80° | 65847  | 58104  | 65847  |
| 85° | 42457  | 50099  | 61704  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 201.2  | 4.9       |
| 10°-20°   | 566.7  | 13.8      |
| 20°-30°   | 793.9  | 19.3      |
| 30°-40°   | 817.9  | 19.9      |
| 40°-50°   | 696.4  | 16.9      |
| 50°-60°   | 516.0  | 12.5      |
| 60°-70°   | 323.8  | 7.9       |
| 70°-80°   | 160.9  | 3.9       |
| 80°-90°   | 42.2   | 1.0       |
| 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°    | 1561.8 | 37.9      |
| 0°-40°    | 2379.8 | 57.8      |
| 0°-60°    | 3592.1 | 87.2      |
| 0°-90°    | 4119.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4119.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 2124 | 2124 | 2124 | 2124 | 2124 |      |
| 5°  | 2225 | 2187 | 2113 | 2053 | 2034 | 214  |
| 15° | 2301 | 2198 | 1988 | 1843 | 1802 | 647  |
| 25° | 2080 | 1936 | 1671 | 1527 | 1494 | 951  |
| 35° | 1565 | 1448 | 1252 | 1170 | 1167 | 976  |
| 45° | 1036 | 965  | 853  | 837  | 859  | 804  |
| 55° | 654  | 602  | 537  | 548  | 564  | 592  |
| 65° | 382  | 344  | 308  | 303  | 308  | 381  |
| 75° | 174  | 155  | 136  | 147  | 153  | 186  |
| 85° | 30   | 30   | 35   | 41   | 44   | 39   |
| 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°    | 2124.0 | 2124.0 | 2124.0 | 2124.0 | 2124.0 | 2124.0 | 2124.0 | 2124.0 | 2124.0 |
| 2.5°  | 2170.3 | 2162.1 | 2151.2 | 2132.1 | 2113.0 | 2096.6 | 2080.2 | 2072.2 | 2069.4 |
| 5°    | 2224.8 | 2208.5 | 2186.6 | 2151.2 | 2113.0 | 2080.2 | 2053.0 | 2039.4 | 2033.9 |
| 7.5°  | 2263.0 | 2246.6 | 2211.2 | 2156.6 | 2102.1 | 2053.0 | 2009.4 | 1990.3 | 1984.8 |
| 10°   | 2276.6 | 2257.5 | 2208.5 | 2134.8 | 2064.0 | 2003.9 | 1954.9 | 1930.4 | 1919.4 |
| 12.5° | 2287.5 | 2263.0 | 2200.3 | 2113.0 | 2025.8 | 1952.1 | 1900.3 | 1867.6 | 1859.4 |
| 15°   | 2301.2 | 2273.8 | 2197.5 | 2091.2 | 1987.6 | 1900.3 | 1843.0 | 1813.1 | 1802.2 |
| 17.5° | 2287.5 | 2257.5 | 2167.6 | 2047.6 | 1930.4 | 1835.0 | 1772.2 | 1744.9 | 1734.1 |
| 20°   | 2241.1 | 2208.5 | 2107.6 | 1979.5 | 1854.0 | 1755.8 | 1693.2 | 1665.9 | 1652.2 |
| 22.5° | 2170.3 | 2134.8 | 2031.3 | 1894.9 | 1766.7 | 1671.3 | 1611.3 | 1584.1 | 1575.9 |
| 25°   | 2080.2 | 2044.8 | 1935.7 | 1796.7 | 1671.3 | 1578.6 | 1526.8 | 1502.3 | 1494.1 |
| 27.5° | 1974.0 | 1938.5 | 1832.2 | 1695.8 | 1575.9 | 1488.7 | 1447.8 | 1423.2 | 1417.7 |
| 30°   | 1845.8 | 1810.4 | 1706.7 | 1581.4 | 1469.5 | 1387.8 | 1355.1 | 1336.0 | 1333.2 |
| 32.5° | 1704.0 | 1674.1 | 1578.6 | 1464.1 | 1357.8 | 1289.6 | 1265.0 | 1251.5 | 1248.7 |
| 35°   | 1565.0 | 1532.3 | 1447.8 | 1344.2 | 1251.5 | 1191.5 | 1169.7 | 1167.0 | 1167.0 |
| 37.5° | 1423.2 | 1390.5 | 1322.3 | 1226.9 | 1147.8 | 1093.3 | 1085.1 | 1087.8 | 1087.8 |
| 40°   | 1284.2 | 1254.2 | 1194.2 | 1115.2 | 1044.2 | 1003.3 | 1000.6 | 1006.1 | 1008.8 |
| 42.5° | 1153.3 | 1128.7 | 1074.3 | 1006.1 | 946.1  | 913.4  | 916.1  | 927.0  | 935.1  |
| 45°   | 1036.0 | 1014.3 | 965.2  | 905.2  | 853.4  | 828.9  | 837.1  | 850.6  | 858.8  |
| 47.5° | 929.8  | 910.6  | 864.3  | 809.8  | 766.1  | 749.7  | 760.7  | 777.1  | 788.0  |
| 50°   | 831.6  | 815.2  | 771.6  | 714.3  | 678.9  | 668.0  | 681.6  | 697.9  | 703.4  |
| 52.5° | 744.3  | 728.0  | 681.6  | 632.6  | 605.2  | 599.8  | 613.4  | 627.1  | 635.3  |
| 55°   | 654.3  | 640.8  | 602.5  | 558.9  | 537.1  | 534.4  | 548.1  | 558.9  | 564.4  |
| 57.5° | 580.8  | 567.1  | 531.7  | 493.5  | 474.4  | 471.7  | 485.3  | 493.5  | 496.3  |
| 60°   | 509.8  | 496.3  | 463.5  | 428.1  | 414.4  | 414.4  | 422.6  | 428.1  | 430.8  |
| 62.5° | 444.4  | 430.8  | 400.8  | 370.8  | 359.8  | 359.8  | 359.8  | 362.6  | 370.8  |
| 65°   | 381.7  | 370.8  | 343.6  | 316.2  | 308.1  | 302.7  | 302.7  | 302.7  | 308.1  |
| 67.5° | 324.4  | 313.5  | 291.7  | 267.2  | 259.1  | 250.9  | 248.1  | 253.6  | 253.6  |
| 70°   | 269.9  | 261.8  | 239.9  | 220.8  | 212.7  | 204.5  | 201.8  | 212.7  | 212.7  |
| 72.5° | 220.8  | 212.7  | 199.0  | 179.9  | 171.7  | 169.0  | 174.5  | 179.9  | 182.7  |
| 75°   | 174.5  | 166.4  | 155.4  | 144.5  | 136.3  | 139.0  | 147.2  | 150.0  | 152.7  |
| 77.5° | 130.8  | 128.1  | 117.3  | 109.1  | 109.1  | 111.8  | 117.3  | 122.6  | 125.4  |
| 80°   | 92.7   | 90.0   | 84.5   | 79.0   | 81.8   | 87.2   | 90.0   | 95.4   | 92.7   |
| 82.5° | 57.3   | 57.3   | 54.5   | 54.5   | 57.3   | 62.7   | 65.5   | 68.2   | 70.8   |
| 85°   | 30.0   | 30.0   | 30.0   | 32.7   | 35.4   | 38.2   | 40.9   | 43.6   | 43.6   |
| 87.5° | 8.2    | 10.9   | 10.9   | 13.7   | 16.4   | 16.4   | 19.1   | 19.1   | 19.1   |
| 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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