

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO COMMERCIAL

Report Number: P838622

Luminaire Tested: HCSQ645D010-HM64560830-61SQMB

Issue Date: 5/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P838622
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-4)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 5/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCSQ645D010-HM64560830-61SQMB
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: -

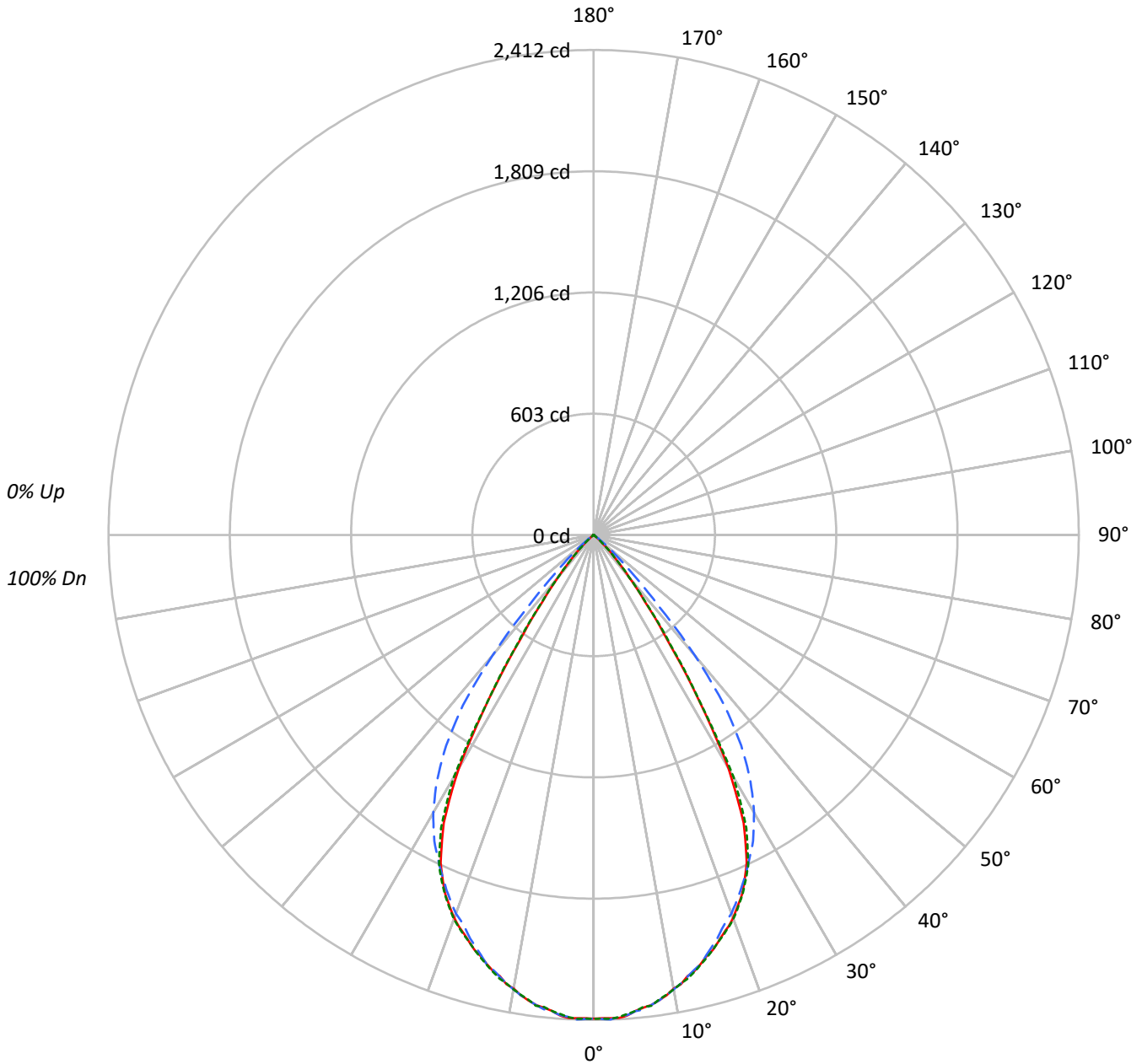
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2391.6 lumens
Efficiency: N/A
Efficacy: 52.1 lumens/watt
Spacing Criteria (0/90/45): 1 / 1.01 / 1.03
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

Input Watts (W): 45.9
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: 24 FT

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Luminous Intensity Polar Plot





TEST NUMBER: P838622

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|---|--|---|
| RF | 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 | | | | | | | | |
| 1 | 114 | 111 | 108 | 106 | 111 | 109 | 106 | 104 | 105 | 103 | 101 | 101 | 99 | 98 | 97 | 96 | 95 | 93 | | | | | | | | |
| 2 | 108 | 103 | 99 | 96 | 106 | 101 | 98 | 94 | 98 | 95 | 92 | 95 | 93 | 90 | 92 | 90 | 89 | 87 | | | | | | | | |
| 3 | 102 | 96 | 91 | 87 | 100 | 94 | 90 | 86 | 92 | 88 | 85 | 89 | 86 | 83 | 87 | 85 | 82 | 81 | | | | | | | | |
| 4 | 97 | 89 | 84 | 80 | 95 | 88 | 83 | 79 | 86 | 82 | 78 | 84 | 80 | 77 | 82 | 79 | 76 | 75 | | | | | | | | |
| 5 | 92 | 84 | 78 | 73 | 90 | 83 | 77 | 73 | 81 | 76 | 72 | 79 | 75 | 72 | 78 | 74 | 71 | 70 | | | | | | | | |
| 6 | 87 | 78 | 72 | 68 | 86 | 77 | 72 | 68 | 76 | 71 | 67 | 75 | 70 | 67 | 73 | 69 | 66 | 65 | | | | | | | | |
| 7 | 83 | 73 | 67 | 63 | 81 | 73 | 67 | 63 | 71 | 66 | 63 | 70 | 66 | 62 | 69 | 65 | 62 | 60 | | | | | | | | |
| 8 | 79 | 69 | 63 | 59 | 77 | 68 | 63 | 59 | 67 | 62 | 58 | 66 | 62 | 58 | 65 | 61 | 58 | 56 | | | | | | | | |
| 9 | 75 | 65 | 59 | 55 | 74 | 64 | 59 | 55 | 63 | 58 | 55 | 63 | 58 | 54 | 62 | 57 | 54 | 53 | | | | | | | | |
| 10 | 71 | 61 | 55 | 51 | 70 | 61 | 55 | 51 | 60 | 55 | 51 | 59 | 54 | 51 | 58 | 54 | 51 | 50 | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 103588 | 103588 | 103588 |
| 5° | 102717 | 102799 | 102717 |
| 10° | 100145 | 100315 | 100315 |
| 15° | 96700 | 96437 | 96963 |
| 20° | 92861 | 91789 | 93131 |
| 25° | 85512 | 86163 | 86348 |
| 30° | 66655 | 79288 | 69180 |
| 35° | 33797 | 67184 | 35032 |
| 40° | 15378 | 43941 | 15378 |
| 45° | 5949 | 16544 | 5833 |
| 50° | 918 | 5238 | 918 |
| 55° | 293 | 1028 | 293 |
| 60° | 172 | 172 | 172 |
| 65° | 204 | 0 | 204 |
| 70° | 0 | 0 | 252 |
| 75° | 0 | 0 | 333 |
| 80° | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 16544 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 224.6 | 9.4 |
| 10°-20° | 609.2 | 25.5 |
| 20°-30° | 821.3 | 34.3 |
| 30°-40° | 577.4 | 24.1 |
| 40°-50° | 147.4 | 6.2 |
| 50°-60° | 10.2 | 0.4 |
| 60°-70° | 1.3 | 0.1 |
| 70°-80° | 0.2 | 0.0 |
| 80°-90° | 0.0 | 0.0 |
| 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° | 1655.2 | 69.2 |
| 0°-40° | 2232.6 | 93.3 |
| 0°-60° | 2390.2 | 99.9 |
| 0°-90° | 2391.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 2391.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2406 | 2406 | 2406 | 2406 | 2406 | |
| 5° | 2377 | 2380 | 2378 | 2380 | 2377 | 225 |
| 15° | 2169 | 2166 | 2164 | 2169 | 2175 | 611 |
| 25° | 1800 | 1806 | 1814 | 1820 | 1818 | 804 |
| 35° | 643 | 852 | 1278 | 874 | 666 | 433 |
| 45° | 98 | 147 | 272 | 148 | 96 | 85 |
| 55° | 4 | 4 | 14 | 4 | 4 | 5 |
| 65° | 2 | 2 | 0 | 2 | 2 | 2 |
| 75° | 0 | 0 | 0 | 0 | 2 | 0 |
| 85° | 0 | 0 | 0 | 0 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2405.9 | 2405.9 | 2405.9 | 2405.9 | 2405.9 |
| 1° | 2403.9 | 2405.9 | 2407.8 | 2407.8 | 2405.9 |
| 2° | 2405.9 | 2400.0 | 2411.7 | 2405.9 | 2407.8 |
| 3° | 2405.9 | 2394.1 | 2400.0 | 2403.9 | 2402.0 |
| 4° | 2396.1 | 2388.3 | 2394.1 | 2392.2 | 2388.3 |
| 5° | 2376.6 | 2380.5 | 2378.5 | 2380.5 | 2376.6 |
| 6° | 2364.8 | 2368.7 | 2372.6 | 2366.8 | 2360.9 |
| 7° | 2355.1 | 2353.1 | 2355.1 | 2359.0 | 2359.0 |
| 8° | 2337.5 | 2341.4 | 2337.5 | 2339.4 | 2333.6 |
| 9° | 2317.9 | 2317.9 | 2317.9 | 2321.8 | 2316.0 |
| 10° | 2290.6 | 2300.3 | 2294.5 | 2298.4 | 2294.5 |
| 11° | 2276.9 | 2273.0 | 2273.0 | 2274.9 | 2273.0 |
| 12° | 2243.7 | 2247.6 | 2245.6 | 2249.5 | 2255.4 |
| 13° | 2226.1 | 2228.0 | 2220.2 | 2230.0 | 2230.0 |
| 14° | 2198.7 | 2196.8 | 2200.7 | 2198.7 | 2202.6 |
| 15° | 2169.4 | 2165.5 | 2163.5 | 2169.4 | 2175.3 |
| 16° | 2147.9 | 2138.1 | 2132.3 | 2140.1 | 2147.9 |
| 17° | 2116.6 | 2106.8 | 2099.0 | 2114.7 | 2116.6 |
| 18° | 2085.4 | 2081.4 | 2061.9 | 2081.4 | 2091.2 |
| 19° | 2059.9 | 2046.3 | 2028.7 | 2050.2 | 2061.9 |
| 20° | 2026.7 | 2015.0 | 2003.3 | 2015.0 | 2032.6 |
| 22.5° | 1931.0 | 1921.2 | 1911.4 | 1925.1 | 1934.9 |
| 25° | 1800.0 | 1805.9 | 1813.7 | 1819.6 | 1817.6 |
| 27.5° | 1614.3 | 1667.1 | 1716.0 | 1684.7 | 1643.7 |
| 30° | 1340.7 | 1473.6 | 1594.8 | 1495.1 | 1391.5 |
| 32.5° | 971.3 | 1198.1 | 1450.2 | 1243.0 | 981.1 |
| 35° | 643.0 | 852.1 | 1278.2 | 873.6 | 666.5 |
| 37.5° | 418.2 | 572.6 | 1067.1 | 574.6 | 437.8 |
| 40° | 273.6 | 373.3 | 781.8 | 381.1 | 273.6 |
| 42.5° | 168.1 | 236.5 | 474.9 | 246.3 | 168.1 |
| 45° | 97.7 | 146.6 | 271.7 | 148.5 | 95.8 |
| 47.5° | 45.0 | 80.1 | 154.4 | 78.2 | 46.9 |
| 50° | 13.7 | 35.2 | 78.2 | 35.2 | 13.7 |
| 52.5° | 5.9 | 9.8 | 37.1 | 9.8 | 5.9 |
| 55° | 3.9 | 3.9 | 13.7 | 3.9 | 3.9 |
| 57.5° | 3.9 | 2.0 | 3.9 | 3.9 | 3.9 |
| 60° | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 62.5° | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 65° | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 |
| 67.5° | 2.0 | 0.0 | 0.0 | 0.0 | 2.0 |
| 70° | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 |
| 72.5° | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 |
| 75° | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Report Generated By 670245859 / DESKTOP-T8S5UU9

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Scaled Data Report





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

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Scaled Data Report



| | | | | | |
|-------|-----|-----|-----|-----|-----|
| 77.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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