

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: P838678

Luminaire Tested: HCSQ650D010-HM64560927-61SQMW

Issue Date: 5/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P838678
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-3)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 5/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCSQ650D010-HM64560927-61SQMW
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

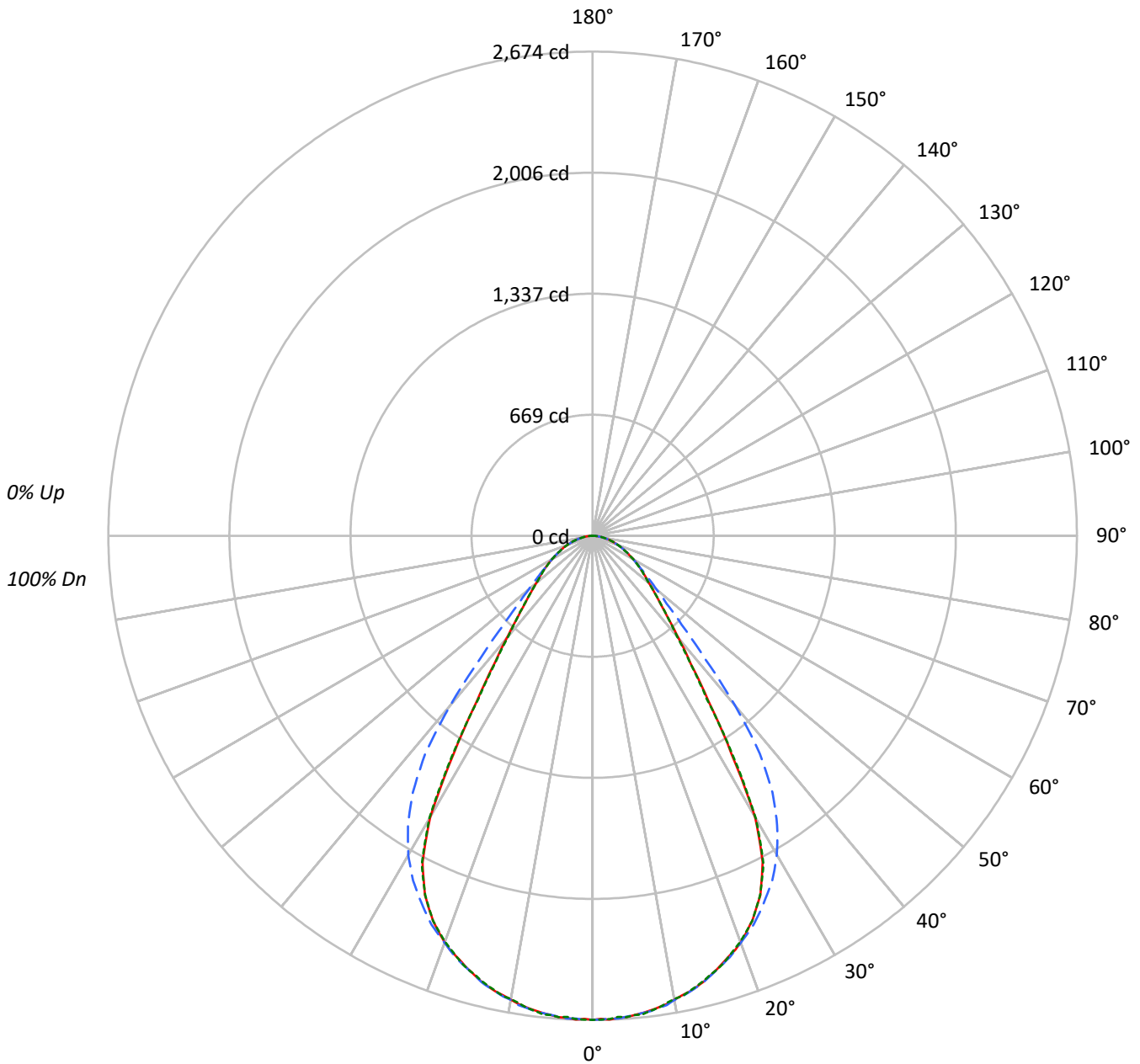
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3944.3 lumens
Efficiency: N/A
Efficacy: 79.4 lumens/watt
Spacing Criteria (0/90/45): 1.08 / 1.08 / 1.11
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

Input Watts (W): 49.7
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: P838678

CATALOG NUMBER: HCSQ650D010-HM64560927-61SQMW

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|---|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | |
| RC | 80 | | | | | | | | | 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 | 108 | 105 | 102 | 109 | 106 | 103 | 100 | 101 | 99 | 97 | 98 | 96 | 94 | 94 | 93 | 91 | 89 | | | | | | | | | | | | | | | | | | | |
| 2 | 104 | 98 | 92 | 88 | 102 | 96 | 91 | 87 | 92 | 88 | 85 | 89 | 86 | 83 | 86 | 84 | 81 | 79 | | | | | | | | | | | | | | | | | | | |
| 3 | 97 | 89 | 82 | 77 | 95 | 87 | 81 | 77 | 84 | 79 | 75 | 82 | 78 | 74 | 79 | 76 | 73 | 71 | | | | | | | | | | | | | | | | | | | |
| 4 | 91 | 81 | 74 | 69 | 89 | 80 | 73 | 68 | 77 | 72 | 67 | 75 | 70 | 67 | 73 | 69 | 66 | 64 | | | | | | | | | | | | | | | | | | | |
| 5 | 85 | 74 | 67 | 62 | 83 | 73 | 66 | 61 | 71 | 65 | 61 | 70 | 64 | 60 | 68 | 63 | 60 | 58 | | | | | | | | | | | | | | | | | | | |
| 6 | 80 | 69 | 61 | 56 | 78 | 68 | 61 | 56 | 66 | 60 | 55 | 64 | 59 | 55 | 63 | 58 | 54 | 53 | | | | | | | | | | | | | | | | | | | |
| 7 | 75 | 63 | 56 | 51 | 73 | 63 | 56 | 51 | 61 | 55 | 51 | 60 | 54 | 50 | 59 | 54 | 50 | 48 | | | | | | | | | | | | | | | | | | | |
| 8 | 70 | 59 | 52 | 47 | 69 | 58 | 51 | 47 | 57 | 51 | 46 | 56 | 50 | 46 | 55 | 50 | 46 | 44 | | | | | | | | | | | | | | | | | | | |
| 9 | 66 | 55 | 48 | 43 | 65 | 54 | 48 | 43 | 53 | 47 | 43 | 52 | 47 | 43 | 51 | 46 | 43 | 41 | | | | | | | | | | | | | | | | | | | |
| 10 | 63 | 51 | 45 | 40 | 62 | 51 | 44 | 40 | 50 | 44 | 40 | 49 | 44 | 40 | 48 | 43 | 40 | 38 | | | | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 115135 | 115135 | 115135 |
| 5° | 114849 | 114767 | 114849 |
| 10° | 113724 | 113807 | 113562 |
| 15° | 112034 | 112114 | 111864 |
| 20° | 109507 | 109594 | 109251 |
| 25° | 104044 | 106263 | 103954 |
| 30° | 89097 | 101173 | 89654 |
| 35° | 58537 | 90952 | 57654 |
| 40° | 41384 | 68582 | 40648 |
| 45° | 32089 | 42215 | 32314 |
| 50° | 27289 | 30792 | 27034 |
| 55° | 24546 | 25252 | 24546 |
| 60° | 22208 | 22208 | 22208 |
| 65° | 20365 | 20182 | 20182 |
| 70° | 18581 | 18581 | 18820 |
| 75° | 17401 | 16785 | 17101 |
| 80° | 15298 | 15298 | 15298 |
| 85° | 12943 | 12943 | 12943 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 42215 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 252.1 | 6.4 |
| 10°-20° | 708.0 | 17.9 |
| 20°-30° | 1008.9 | 25.6 |
| 30°-40° | 860.2 | 21.8 |
| 40°-50° | 475.9 | 12.1 |
| 50°-60° | 299.8 | 7.6 |
| 60°-70° | 199.0 | 5.0 |
| 70°-80° | 109.4 | 2.8 |
| 80°-90° | 31.1 | 0.8 |
| 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° | 1968.9 | 49.9 |
| 0°-40° | 2829.2 | 71.7 |
| 0°-60° | 3604.8 | 91.4 |
| 0°-90° | 3944.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3944.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2674 | 2674 | 2674 | 2674 | 2674 | |
| 5° | 2657 | 2661 | 2655 | 2652 | 2657 | 252 |
| 15° | 2513 | 2513 | 2515 | 2513 | 2510 | 708 |
| 25° | 2190 | 2216 | 2237 | 2214 | 2188 | 989 |
| 35° | 1114 | 1314 | 1730 | 1316 | 1097 | 724 |
| 45° | 527 | 577 | 693 | 574 | 531 | 418 |
| 55° | 327 | 333 | 336 | 331 | 327 | 294 |
| 65° | 200 | 202 | 198 | 200 | 198 | 199 |
| 75° | 105 | 103 | 101 | 103 | 103 | 110 |
| 85° | 26 | 26 | 26 | 28 | 26 | 31 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P838678

CATALOG NUMBER: HCSQ650D010-HM64560927-61SQMW

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2674.1 | 2674.1 | 2674.1 | 2674.1 | 2674.1 |
| 1° | 2668.5 | 2672.2 | 2672.2 | 2670.3 | 2672.2 |
| 2° | 2674.1 | 2668.5 | 2668.5 | 2668.5 | 2670.3 |
| 3° | 2666.6 | 2670.3 | 2670.3 | 2664.7 | 2661.0 |
| 4° | 2664.7 | 2662.9 | 2662.9 | 2668.5 | 2664.7 |
| 5° | 2657.3 | 2661.0 | 2655.4 | 2651.7 | 2657.3 |
| 6° | 2649.8 | 2651.7 | 2649.8 | 2651.7 | 2657.3 |
| 7° | 2640.4 | 2646.0 | 2644.2 | 2642.3 | 2642.3 |
| 8° | 2629.2 | 2636.7 | 2633.0 | 2633.0 | 2631.1 |
| 9° | 2618.0 | 2619.9 | 2623.6 | 2623.6 | 2612.4 |
| 10° | 2601.2 | 2606.8 | 2603.1 | 2604.9 | 2597.5 |
| 11° | 2586.2 | 2593.7 | 2591.9 | 2588.1 | 2590.0 |
| 12° | 2573.2 | 2576.9 | 2575.0 | 2569.4 | 2571.3 |
| 13° | 2556.3 | 2560.1 | 2558.2 | 2558.2 | 2552.6 |
| 14° | 2537.7 | 2533.9 | 2539.5 | 2535.8 | 2533.9 |
| 15° | 2513.4 | 2513.4 | 2515.2 | 2513.4 | 2509.6 |
| 16° | 2490.9 | 2492.8 | 2492.8 | 2490.9 | 2492.8 |
| 17° | 2464.8 | 2472.3 | 2470.4 | 2466.7 | 2468.5 |
| 18° | 2440.5 | 2446.1 | 2448.0 | 2446.1 | 2440.5 |
| 19° | 2418.1 | 2421.8 | 2419.9 | 2412.5 | 2412.5 |
| 20° | 2390.0 | 2391.9 | 2391.9 | 2388.2 | 2384.4 |
| 22.5° | 2302.2 | 2315.3 | 2324.6 | 2317.2 | 2302.2 |
| 25° | 2190.1 | 2216.3 | 2236.8 | 2214.4 | 2188.2 |
| 27.5° | 2033.1 | 2085.4 | 2147.1 | 2091.0 | 2042.5 |
| 30° | 1792.1 | 1911.7 | 2035.0 | 1922.9 | 1803.3 |
| 32.5° | 1425.8 | 1661.3 | 1896.7 | 1683.7 | 1448.2 |
| 35° | 1113.7 | 1313.7 | 1730.4 | 1315.5 | 1096.9 |
| 37.5° | 889.5 | 1031.5 | 1517.4 | 1022.2 | 880.1 |
| 40° | 736.3 | 831.6 | 1220.2 | 827.8 | 723.2 |
| 42.5° | 614.8 | 687.7 | 913.8 | 680.2 | 614.8 |
| 45° | 527.0 | 577.4 | 693.3 | 573.7 | 530.7 |
| 47.5° | 461.6 | 493.3 | 555.0 | 491.5 | 461.6 |
| 50° | 407.4 | 426.1 | 459.7 | 424.2 | 403.6 |
| 52.5° | 364.4 | 375.6 | 388.7 | 371.9 | 360.7 |
| 55° | 327.0 | 332.6 | 336.4 | 330.8 | 327.0 |
| 57.5° | 291.5 | 295.3 | 293.4 | 291.5 | 289.6 |
| 60° | 257.9 | 259.7 | 257.9 | 259.7 | 257.9 |
| 62.5° | 228.0 | 229.8 | 226.1 | 228.0 | 226.1 |
| 65° | 199.9 | 201.8 | 198.1 | 199.9 | 198.1 |
| 67.5° | 173.8 | 173.8 | 173.8 | 173.8 | 171.9 |
| 70° | 147.6 | 149.5 | 147.6 | 149.5 | 149.5 |
| 72.5° | 125.2 | 125.2 | 123.3 | 125.2 | 125.2 |
| 75° | 104.6 | 102.8 | 100.9 | 102.8 | 102.8 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|------|-------|------|-------|------|
| 82.5° | 44.8 | 44.8 | 43.0 | 44.8 | 44.8 |
| 85° | 26.2 | 26.2 | 26.2 | 28.0 | 26.2 |
| 87.5° | 13.1 | 11.2 | 11.2 | 13.1 | 13.1 |
| 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

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

Scaled Data Report





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

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Scaled Data Report



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

Scaled Data Report





| | | | | | |
|-------|------|------|------|------|------|
| 77.5° | 82.2 | 82.2 | 80.4 | 82.2 | 82.2 |
| 80° | 61.7 | 63.5 | 61.7 | 63.5 | 61.7 |

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
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Scaled Data Report



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