

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: P838687

Luminaire Tested: HCSQ650D010-HM64560935-61SQMB

Issue Date: 5/21/2024

**Test Information**

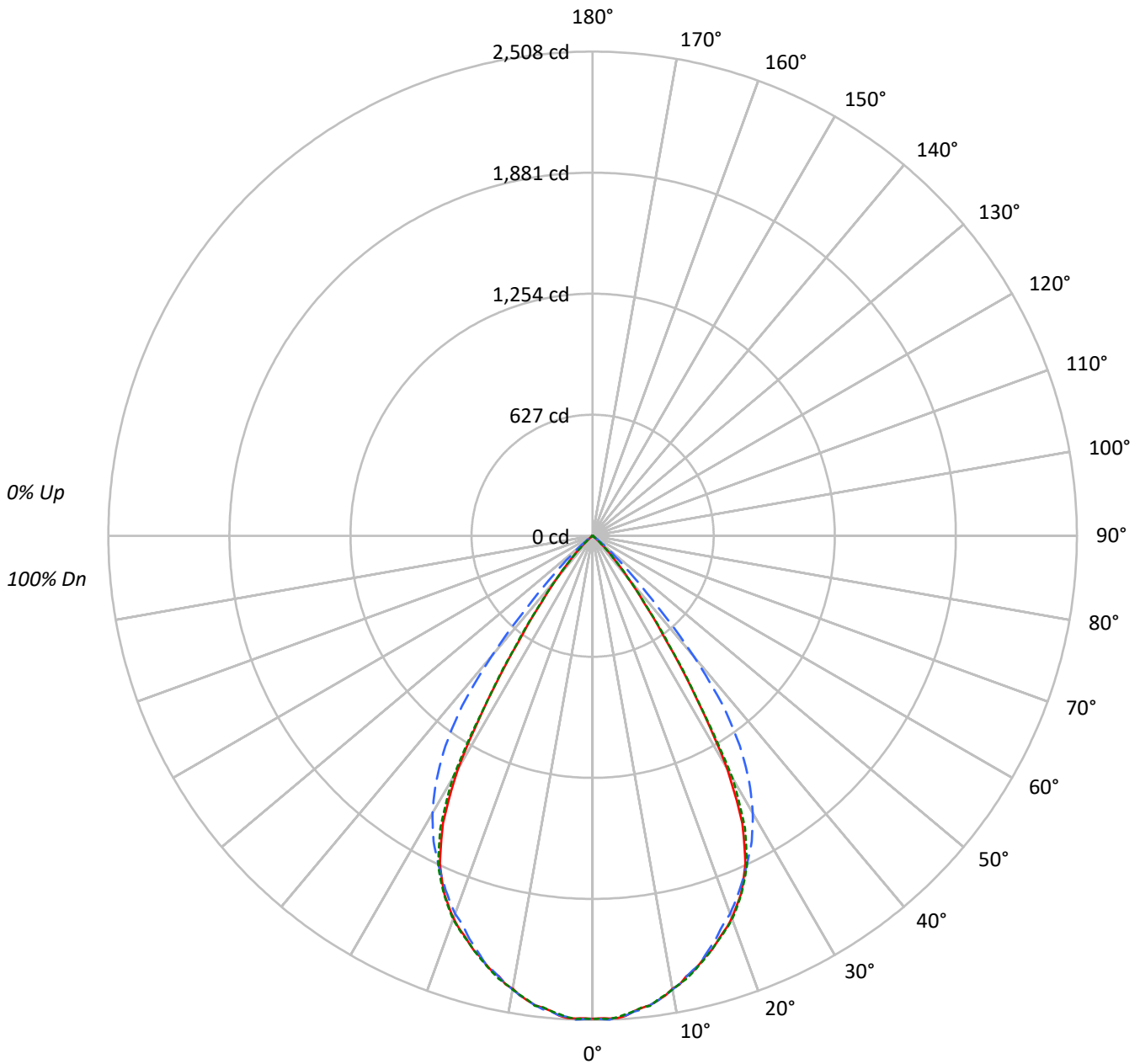
Test Method: LM-79-2019  
Report Number: P838687  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-4)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ650D010-HM64560935-61SQMB  
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2486.9 lumens  
Efficiency: N/A  
Efficacy: 50.0 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): 49.7  
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: 24 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	114	111	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	93					93			
2	108	103	99	96	106	101	98	94	98	95	92	95	93	90	92	90	89	87					87			
3	102	96	91	87	100	94	90	86	92	88	85	89	86	83	87	85	82	81					81			
4	97	89	84	80	95	88	83	79	86	82	78	84	80	77	82	79	76	75					75			
5	92	84	78	73	90	83	77	73	81	76	72	79	75	72	78	74	71	70					70			
6	87	78	72	68	86	77	72	68	76	71	67	75	70	67	73	69	66	65					65			
7	83	73	67	63	81	73	67	63	71	66	63	70	66	62	69	65	62	60					60			
8	79	69	63	59	77	68	63	59	67	62	58	66	62	58	65	61	58	56					56			
9	75	65	59	55	74	64	59	55	63	58	55	63	58	54	62	57	54	53					53			
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51	50					50			

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

	0°	45°	90°
0°	107717	107717	107717
5°	106810	106896	106810
10°	104136	104316	104316
15°	100556	100284	100828
20°	96563	95445	96843
25°	88923	89598	89792
30°	69315	82450	71940
35°	35142	69859	36425
40°	15990	45689	15990
45°	6186	17201	6065
50°	951	5446	951
55°	308	1066	308
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: 17201 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	233.6	9.4
10°-20°	633.5	25.5
20°-30°	854.0	34.3
30°-40°	600.4	24.1
40°-50°	153.3	6.2
50°-60°	10.6	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°	1721.1	69.2
0°-40°	2321.6	93.4
0°-60°	2485.5	99.9
0°-90°	2486.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2486.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2502	2502	2502	2502	2502	
5°	2471	2475	2473	2475	2471	234
15°	2256	2252	2250	2256	2262	635
25°	1872	1878	1886	1892	1890	836
35°	669	886	1329	908	693	450
45°	102	152	282	154	100	89
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°	2501.8	2501.8	2501.8	2501.8	2501.8
1°	2499.8	2501.8	2503.8	2503.8	2501.8
2°	2501.8	2495.7	2507.9	2501.8	2503.8
3°	2501.8	2489.6	2495.7	2499.8	2497.7
4°	2491.6	2483.5	2489.6	2487.6	2483.5
5°	2471.3	2475.4	2473.3	2475.4	2471.3
6°	2459.1	2463.2	2467.2	2461.1	2455.1
7°	2449.0	2446.9	2449.0	2453.0	2453.0
8°	2430.7	2434.7	2430.7	2432.7	2426.6
9°	2410.3	2410.3	2410.3	2414.4	2408.3
10°	2381.9	2392.0	2386.0	2390.0	2386.0
11°	2367.7	2363.6	2363.6	2365.6	2363.6
12°	2333.1	2337.2	2335.1	2339.2	2345.3
13°	2314.8	2316.9	2308.7	2318.9	2318.9
14°	2286.4	2284.3	2288.4	2286.4	2290.4
15°	2255.9	2251.8	2249.8	2255.9	2262.0
16°	2233.5	2223.4	2217.3	2225.4	2233.5
17°	2201.0	2190.8	2182.7	2199.0	2201.0
18°	2168.5	2164.4	2144.1	2164.4	2174.6
19°	2142.1	2127.8	2109.6	2131.9	2144.1
20°	2107.5	2095.3	2083.1	2095.3	2113.6
22.5°	2007.9	1997.8	1987.6	2001.8	2012.0
25°	1871.8	1877.9	1886.0	1892.1	1890.1
27.5°	1678.7	1733.6	1784.4	1751.9	1709.2
30°	1394.2	1532.4	1658.4	1554.7	1447.0
32.5°	1010.1	1245.8	1508.0	1292.6	1020.2
35°	668.6	886.1	1329.1	908.5	693.0
37.5°	434.9	595.5	1109.7	597.5	455.2
40°	284.5	388.2	812.9	396.3	284.5
42.5°	174.8	245.9	493.9	256.1	174.8
45°	101.6	152.4	282.5	154.5	99.6
47.5°	46.7	83.3	160.6	81.3	48.8
50°	14.2	36.6	81.3	36.6	14.2
52.5°	6.1	10.2	38.6	10.2	6.1
55°	4.1	4.1	14.2	4.1	4.1
57.5°	4.1	2.0	4.1	4.1	4.1
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



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Scaled Data Report





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

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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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Scaled Data Report



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