

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: P838662

Luminaire Tested: HCSQ650D010-HM64560830-61SQMB

Issue Date: 5/21/2024



**Test Information**

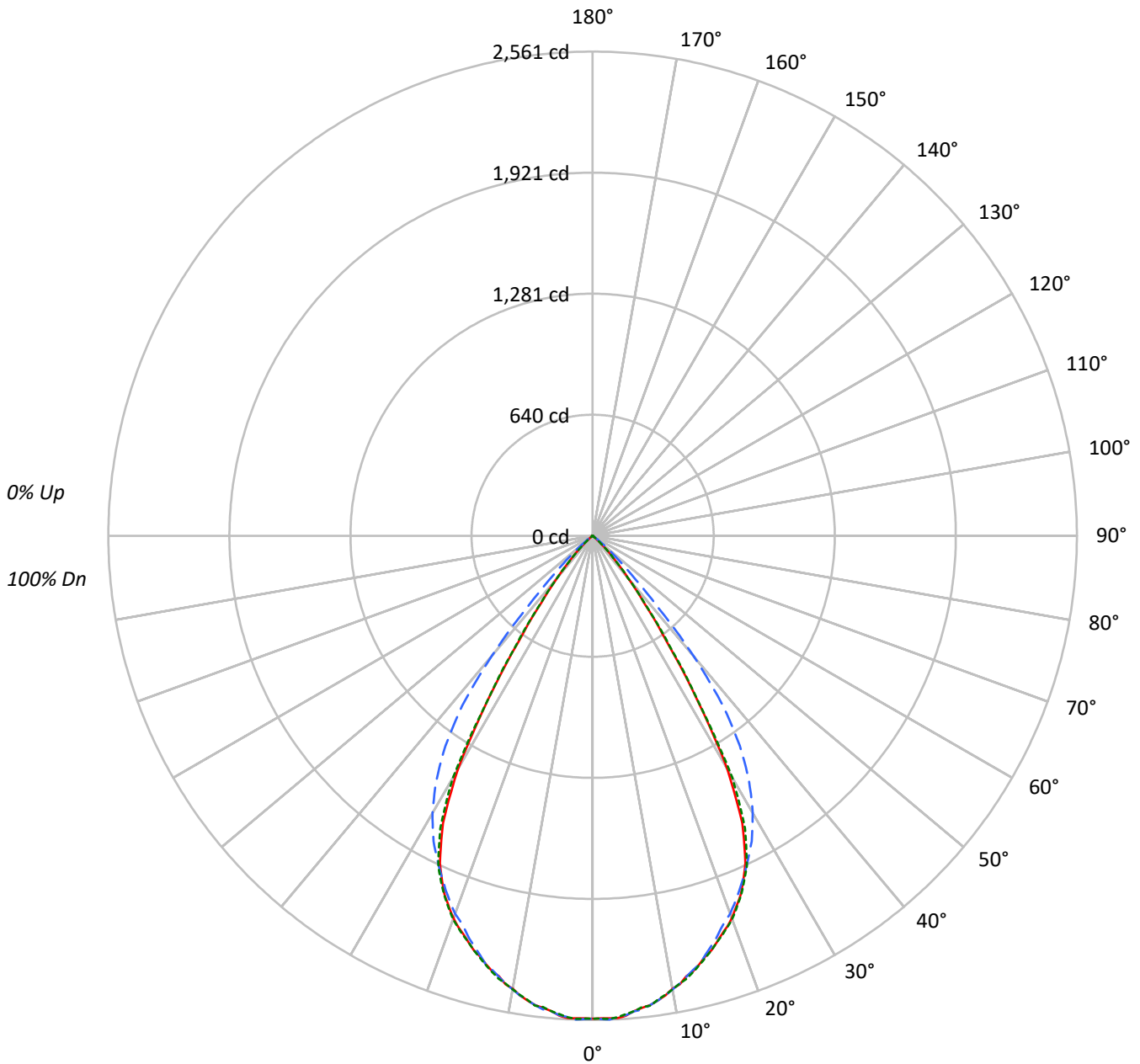
Test Method: LM-79-2019  
Report Number: P838662  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-4)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ650D010-HM64560830-61SQMB  
Description: 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: 2539.3 lumens  
Efficiency: N/A  
Efficacy: 51.1 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): 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										
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	100	100	100	100		
	1	114	111	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	93	93	93	93	93	93		
	2	108	103	99	96	106	101	98	94	98	95	92	95	93	90	92	90	89	87	87	87	87	87	87		
	3	102	96	91	87	100	94	90	86	92	88	85	89	86	83	87	85	82	81	81	81	81	81	81		
	4	97	89	84	80	95	88	83	79	86	82	78	84	80	77	82	79	76	75	75	75	75	75	75		
	5	92	84	78	73	90	83	77	73	81	76	72	79	75	72	78	74	71	70	70	70	70	70	70		
	6	87	78	72	68	86	77	72	68	76	71	67	75	70	67	73	69	66	65	65	65	65	65	65		
	7	83	73	67	63	81	73	67	63	71	66	63	70	66	62	69	65	62	60	60	60	60	60	60		
	8	79	69	63	59	77	68	63	59	67	62	58	66	62	58	65	61	58	56	56	56	56	56	56		
	9	75	65	59	55	74	64	59	55	63	58	55	63	58	54	62	57	54	53	53	53	53	53	53		
	10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51	50	50	50	50	50	50		

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

	0°	45°	90°
0°	109981	109981	109981
5°	109057	109148	109057
10°	106327	106506	106506
15°	102668	102392	102949
20°	98598	97457	98882
25°	90790	91484	91678
30°	70771	84185	73456
35°	35884	71331	37192
40°	16328	46650	16328
45°	6320	17561	6193
50°	971	5560	971
55°	315	1088	315
60°	181	181	181
65°	214	0	214
70°	0	0	264
75°	0	0	349
80°	0	0	0
85°	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 17561 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	238.5	9.4
10°-20°	646.9	25.5
20°-30°	872.0	34.3
30°-40°	613.1	24.1
40°-50°	156.5	6.2
50°-60°	10.8	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°	1757.3	69.2
0°-40°	2370.4	93.3
0°-60°	2537.8	99.9
0°-90°	2539.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2539.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2554	2554	2554	2554	2554	
5°	2523	2527	2525	2527	2523	238
15°	2303	2299	2297	2303	2310	648
25°	1911	1917	1926	1932	1930	854
35°	683	905	1357	928	708	459
45°	104	156	288	158	102	91
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°	2554.4	2554.4	2554.4	2554.4	2554.4
1°	2552.3	2554.4	2556.5	2556.5	2554.4
2°	2554.4	2548.2	2560.7	2554.4	2556.5
3°	2554.4	2542.0	2548.2	2552.3	2550.3
4°	2544.0	2535.7	2542.0	2539.9	2535.7
5°	2523.3	2527.4	2525.4	2527.4	2523.3
6°	2510.8	2515.0	2519.1	2512.9	2506.7
7°	2500.5	2498.4	2500.5	2504.6	2504.6
8°	2481.8	2485.9	2481.8	2483.9	2477.6
9°	2461.0	2461.0	2461.0	2465.2	2459.0
10°	2432.0	2442.4	2436.1	2440.3	2436.1
11°	2417.5	2413.3	2413.3	2415.4	2413.3
12°	2382.2	2386.3	2384.3	2388.4	2394.6
13°	2363.5	2365.6	2357.3	2367.7	2367.7
14°	2334.5	2332.4	2336.5	2334.5	2338.6
15°	2303.3	2299.2	2297.1	2303.3	2309.6
16°	2280.5	2270.1	2263.9	2272.2	2280.5
17°	2247.3	2236.9	2228.6	2245.2	2247.3
18°	2214.1	2210.0	2189.2	2210.0	2220.3
19°	2187.1	2172.6	2153.9	2176.8	2189.2
20°	2151.9	2139.4	2127.0	2139.4	2158.1
22.5°	2050.2	2039.8	2029.4	2044.0	2054.3
25°	1911.1	1917.4	1925.7	1931.9	1929.8
27.5°	1714.0	1770.0	1821.9	1788.7	1745.1
30°	1423.5	1564.6	1693.3	1587.4	1477.5
32.5°	1031.3	1272.0	1539.7	1319.8	1041.7
35°	682.7	904.7	1357.1	927.6	707.6
37.5°	444.1	608.0	1133.0	610.1	464.8
40°	290.5	396.3	830.0	404.6	290.5
42.5°	178.5	251.1	504.2	261.5	178.5
45°	103.8	155.6	288.4	157.7	101.7
47.5°	47.7	85.1	163.9	83.0	49.8
50°	14.5	37.4	83.0	37.4	14.5
52.5°	6.2	10.4	39.4	10.4	6.2
55°	4.2	4.2	14.5	4.2	4.2
57.5°	4.2	2.1	4.2	4.2	4.2
60°	2.1	2.1	2.1	2.1	2.1
62.5°	2.1	2.1	2.1	2.1	2.1
65°	2.1	2.1	0.0	2.1	2.1
67.5°	2.1	0.0	0.0	0.0	2.1
70°	0.0	0.0	0.0	0.0	2.1
72.5°	0.0	0.0	0.0	0.0	2.1
75°	0.0	0.0	0.0	0.0	2.1



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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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