

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: P838682

Luminaire Tested: HCSQ650D010-HM64560930-61SQMB

Issue Date: 5/21/2024



**Test Information**

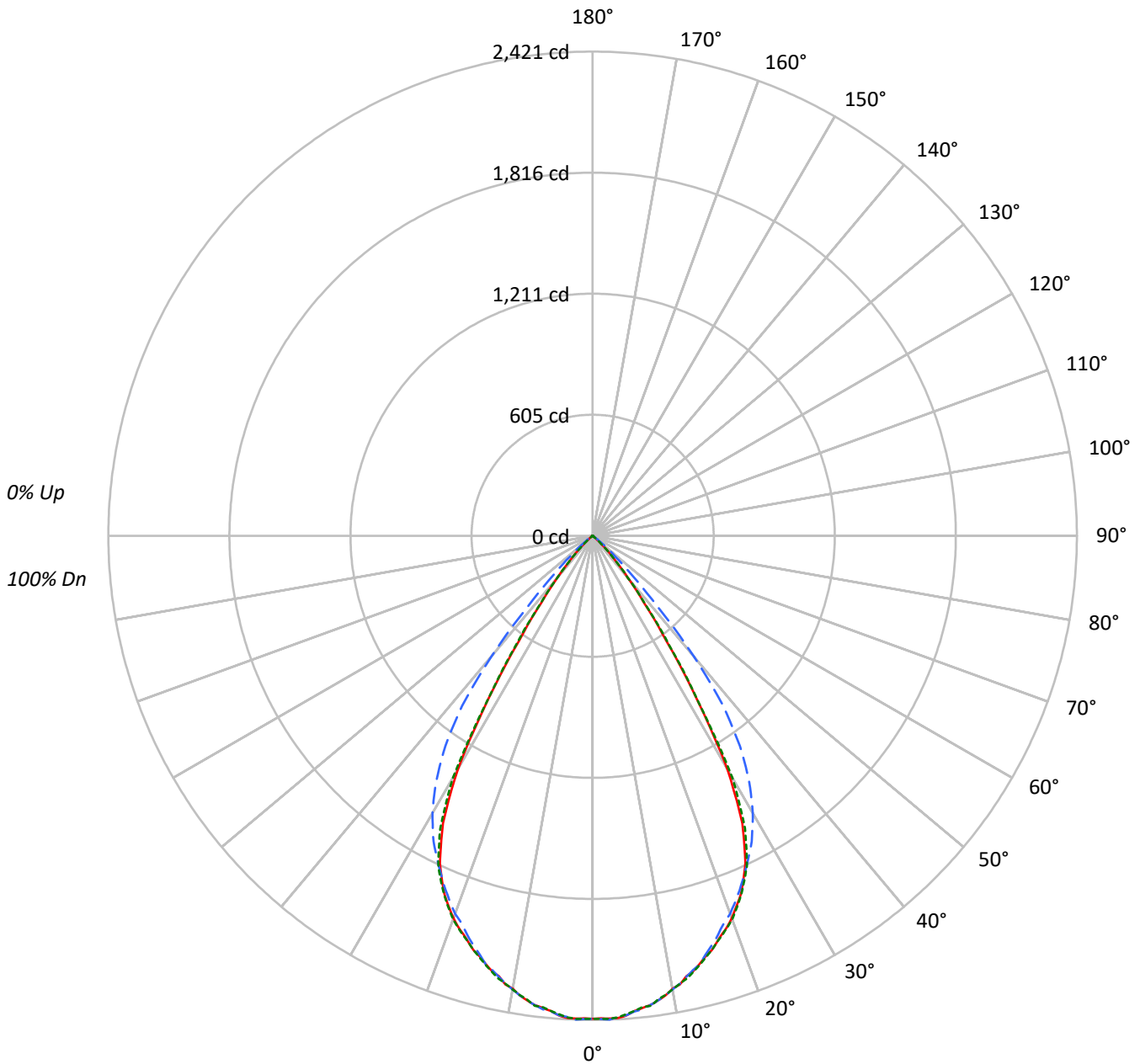
Test Method: LM-79-2019  
Report Number: P838682  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-4)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ650D010-HM64560930-61SQMB  
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2401.0 lumens  
Efficiency: N/A  
Efficacy: 48.3 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 (Ain): 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°	103992	103992	103992
5°	103119	103205	103119
10°	100538	100709	100709
15°	97079	96816	97342
20°	93228	92146	93498
25°	85849	86500	86685
30°	66918	79601	69454
35°	33928	67447	35169
40°	15440	44110	15440
45°	5973	16605	5852
50°	918	5258	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: 16605 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	225.5	9.4
10°-20°	611.6	25.5
20°-30°	824.5	34.3
30°-40°	579.7	24.1
40°-50°	148.0	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°	1661.6	69.2
0°-40°	2241.3	93.4
0°-60°	2399.6	99.9
0°-90°	2401.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2401.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2415	2415	2415	2415	2415	
5°	2386	2390	2388	2390	2386	225
15°	2178	2174	2172	2178	2184	613
25°	1807	1813	1821	1827	1825	808
35°	646	856	1283	877	669	434
45°	98	147	273	149	96	86
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°	2415.3	2415.3	2415.3	2415.3	2415.3
1°	2413.4	2415.3	2417.3	2417.3	2415.3
2°	2415.3	2409.4	2421.2	2415.3	2417.3
3°	2415.3	2403.6	2409.4	2413.4	2411.4
4°	2405.5	2397.7	2403.6	2401.6	2397.7
5°	2385.9	2389.8	2387.9	2389.8	2385.9
6°	2374.1	2378.1	2382.0	2376.1	2370.2
7°	2364.3	2362.4	2364.3	2368.2	2368.2
8°	2346.7	2350.6	2346.7	2348.6	2342.7
9°	2327.0	2327.0	2327.0	2331.0	2325.1
10°	2299.6	2309.4	2303.5	2307.4	2303.5
11°	2285.8	2281.9	2281.9	2283.9	2281.9
12°	2252.5	2256.4	2254.4	2258.4	2264.3
13°	2234.8	2236.8	2228.9	2238.7	2238.7
14°	2207.4	2205.4	2209.3	2207.4	2211.3
15°	2177.9	2174.0	2172.0	2177.9	2183.8
16°	2156.3	2146.5	2140.6	2148.5	2156.3
17°	2124.9	2115.1	2107.3	2123.0	2124.9
18°	2093.5	2089.6	2070.0	2089.6	2099.4
19°	2068.0	2054.3	2036.6	2058.2	2070.0
20°	2034.7	2022.9	2011.1	2022.9	2040.6
22.5°	1938.5	1928.7	1918.9	1932.7	1942.5
25°	1807.1	1813.0	1820.8	1826.7	1824.7
27.5°	1620.7	1673.7	1722.7	1691.3	1650.1
30°	1346.0	1479.4	1601.1	1501.0	1397.0
32.5°	975.2	1202.8	1455.9	1247.9	985.0
35°	645.5	855.5	1283.2	877.1	669.1
37.5°	419.9	574.9	1071.3	576.9	439.5
40°	274.7	374.8	784.8	382.6	274.7
42.5°	168.7	237.4	476.8	247.2	168.7
45°	98.1	147.2	272.7	149.1	96.1
47.5°	45.1	80.4	155.0	78.5	47.1
50°	13.7	35.3	78.5	35.3	13.7
52.5°	5.9	9.8	37.3	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



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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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