

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: P838675

Luminaire Tested: HCSQ650D010-HM64560927-61SQH

Issue Date: 5/21/2024



**Test Information**

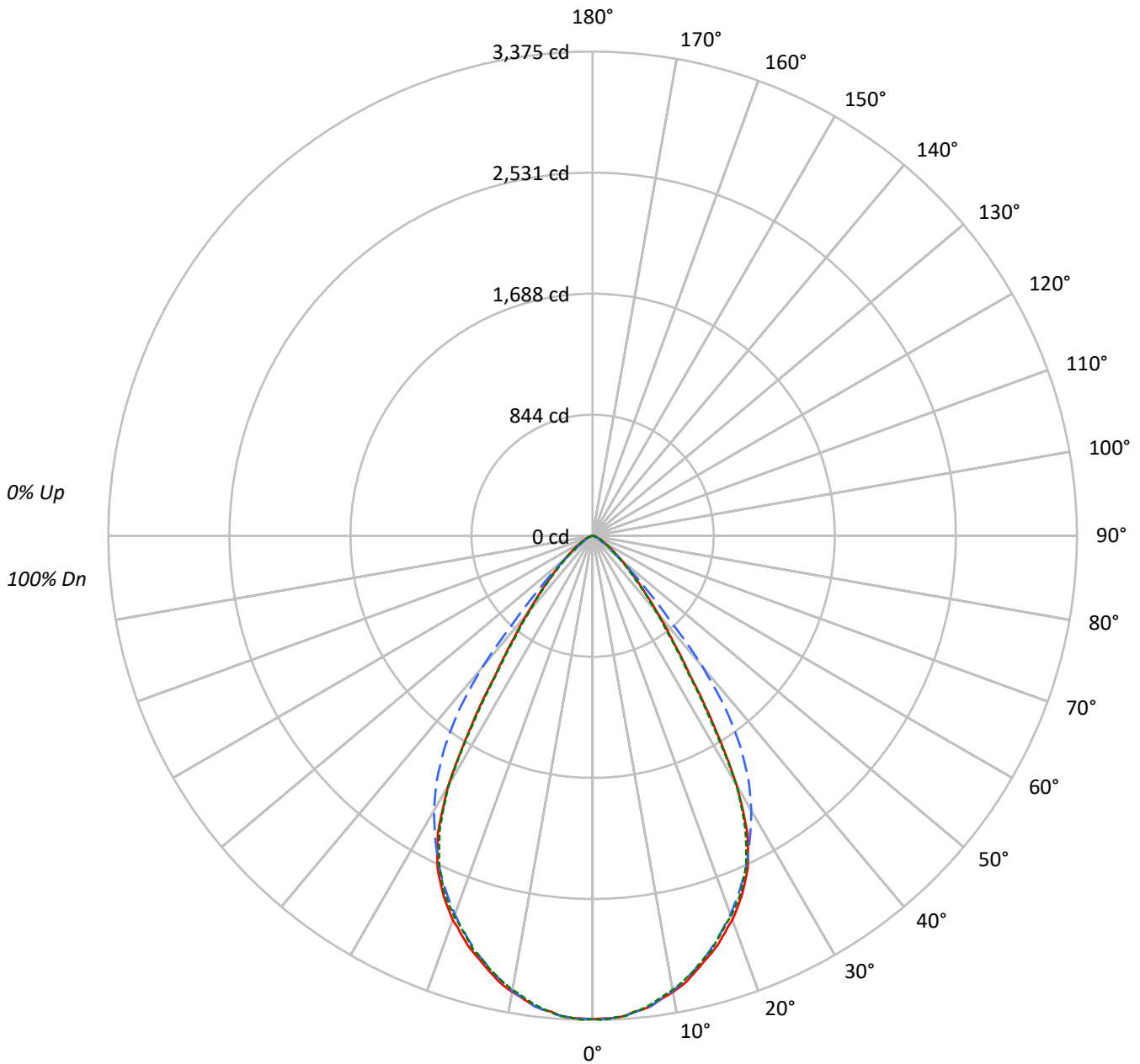
Test Method: LM-79-2019  
Report Number: P838675  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-2)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ650D010-HM64560927-61SQH  
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3789.2 lumens  
Efficiency: N/A  
Efficacy: 76.2 lumens/watt  
Spacing Criteria (0/90/45): 1.02 / 1.01 / 1.04  
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									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				100															
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	97	95	94	92				92															
2	107	101	97	93	104	100	96	92	96	93	90	93	91	88	91	88	86	85				85															
3	101	94	88	84	99	92	87	83	90	85	82	87	84	81	85	82	79	78				78															
4	95	87	81	76	93	86	80	76	83	78	75	81	77	74	79	76	73	71				71															
5	90	80	74	69	88	79	74	69	78	72	68	76	71	68	74	70	67	66				66															
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61				61															
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	65	61	58	56				56															
8	76	65	59	54	74	65	59	54	64	58	54	63	57	54	62	57	54	52				52															
9	72	61	55	51	70	61	55	50	60	54	50	59	54	50	58	53	50	48				48															
10	68	58	51	47	67	57	51	47	56	51	47	55	50	47	55	50	47	45				45															

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

	0°	45°	90°
0°	145063	145063	145063
5°	143919	144161	144083
10°	141171	140844	140520
15°	136184	135435	135355
20°	130570	128687	129287
25°	121532	120467	120197
30°	99870	109903	99592
35°	61681	94390	60209
40°	39597	66901	38231
45°	25829	32430	24575
50°	17148	16150	16022
55°	11643	8415	10802
60°	7888	5149	7242
65°	5522	3810	4951
70°	3525	2820	3298
75°	2479	2179	2179
80°	1860	1389	1389
85°	939	1828	939

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°

Vertical Angle: 45°

Luminance: 32430 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	314.7	8.3
10°-20°	854.0	22.5
20°-30°	1152.8	30.4
30°-40°	899.7	23.7
40°-50°	376.9	9.9
50°-60°	127.8	3.4
60°-70°	45.6	1.2
70°-80°	14.8	0.4
80°-90°	3.0	0.1
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°	2321.5	61.3
0°-40°	3221.2	85.0
0°-60°	3725.9	98.3
0°-90°	3789.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3789.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3369	3369	3369	3369	3369	
5°	3330	3334	3336	3330	3334	315
15°	3055	3048	3038	3035	3037	859
25°	2558	2547	2536	2536	2530	1151
35°	1174	1377	1796	1375	1146	772
45°	424	454	533	434	404	340
55°	155	142	112	134	144	143
65°	54	45	37	43	49	56
75°	15	13	13	13	13	16
85°	2	2	4	2	2	3
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3369.2	3369.2	3369.2	3369.2	<i>3369.2</i>
1°	<i>3365.4</i>	<i>3371.0</i>	<i>3367.3</i>	<i>3369.2</i>	<i>3374.8</i>
2°	3365.4	3365.4	3369.2	3367.3	<i>3369.2</i>
3°	3361.7	3361.7	3358.0	3358.0	<i>3358.0</i>
4°	3350.5	3350.5	3350.5	3346.7	<i>3354.2</i>
5°	3329.9	3333.7	3335.5	3329.9	<i>3333.7</i>
6°	3322.5	3324.3	3320.6	3318.7	<i>3315.0</i>
7°	3305.6	3300.0	3305.6	3292.6	<i>3294.4</i>
8°	3277.6	3277.6	3273.9	3270.1	<i>3266.4</i>
9°	3251.4	3251.4	3247.7	3242.1	<i>3238.4</i>
10°	3229.0	3223.4	3221.5	3215.9	<i>3214.1</i>
11°	3202.9	3191.6	3189.8	3184.2	<i>3184.2</i>
12°	3171.1	3165.5	3152.4	3150.5	<i>3150.5</i>
13°	3131.9	3126.2	3116.9	3109.4	<i>3116.9</i>
14°	3094.5	3090.7	3073.9	3079.5	<i>3077.7</i>
15°	3055.2	3047.8	3038.4	3034.7	<i>3036.6</i>
16°	3019.7	3006.7	2993.6	2995.4	<i>3006.7</i>
17°	2982.4	2963.7	2950.6	2948.7	<i>2954.3</i>
18°	2935.6	2920.7	2900.1	2907.6	<i>2907.6</i>
19°	2888.9	2868.4	2855.3	2853.4	<i>2860.9</i>
20°	2849.7	2817.9	2808.6	2806.7	<i>2821.7</i>
22.5°	2715.1	2683.4	2675.9	2683.4	<i>2698.3</i>
25°	2558.2	2547.0	2535.8	2535.8	<i>2530.1</i>
27.5°	2335.8	2362.0	2375.0	2348.9	<i>2305.9</i>
30°	2008.8	2119.0	2210.6	2106.0	<i>2003.2</i>
32.5°	1582.7	1810.7	2021.9	1805.1	<i>1545.4</i>
35°	1173.5	1377.2	1795.8	1375.3	<i>1145.5</i>
37.5°	904.4	1035.2	1526.7	1018.4	<i>878.3</i>
40°	704.5	781.1	1190.3	771.8	<i>680.2</i>
42.5°	547.5	596.1	792.3	584.9	<i>528.8</i>
45°	424.2	454.1	532.6	433.5	<i>403.6</i>
47.5°	330.8	343.8	364.4	328.9	<i>312.1</i>
50°	256.0	256.0	241.1	246.7	<i>239.2</i>
52.5°	198.1	190.6	162.6	179.4	<i>183.1</i>
55°	155.1	142.0	112.1	134.5	<i>143.9</i>
57.5°	117.7	104.6	80.4	99.0	<i>108.4</i>
60°	91.6	78.5	59.8	74.7	<i>84.1</i>
62.5°	71.0	59.8	46.7	56.1	<i>63.5</i>
65°	54.2	44.8	37.4	43.0	<i>48.6</i>
67.5°	41.1	33.6	28.0	31.8	<i>37.4</i>
70°	28.0	26.2	22.4	24.3	<i>26.2</i>
72.5°	20.6	18.7	16.8	16.8	<i>18.7</i>
75°	14.9	13.1	13.1	13.1	<i>13.1</i>



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
82.5°	3.7	3.7	3.7	3.7	3.7
85°	1.9	1.9	3.7	1.9	1.9
87.5°	1.9	1.9	1.9	1.9	1.9
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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Scaled Data Report





77.5°	9.3	9.3	9.3	9.3	9.3
80°	7.5	7.5	5.6	5.6	5.6

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Scaled Data Report



(END OF REPORT)