

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: P838635

Luminaire Tested: HCSQ645D010-HM64560927-61SQH

Issue Date: 5/21/2024

**Test Information**

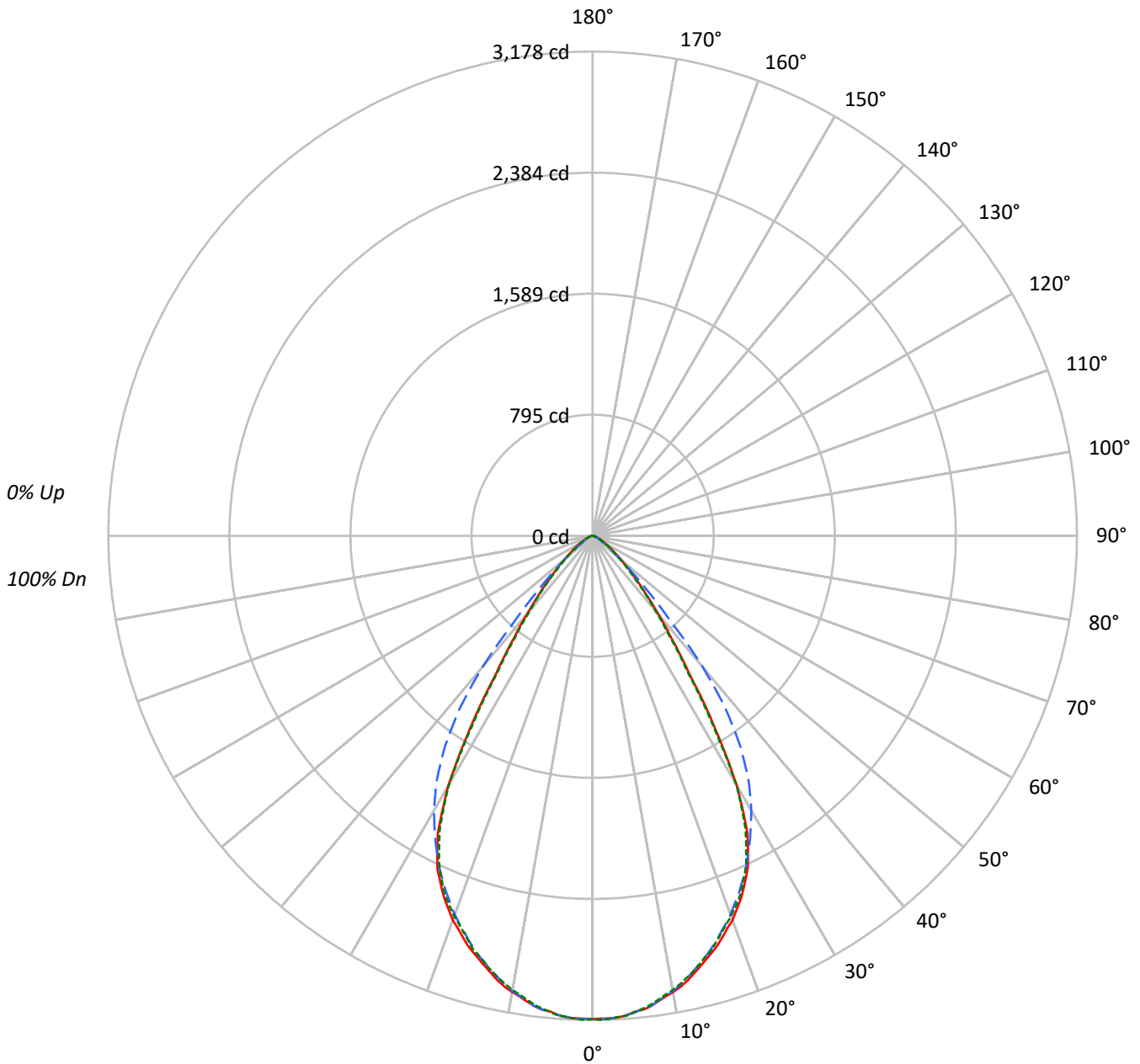
Test Method: LM-79-2019  
Report Number: P838635  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-2)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ645D010-HM64560927-61SQH  
Description: 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: 3568.9 lumens  
Efficiency: N/A  
Efficacy: 77.8 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): 45.9  
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	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	97	95	94	92								
2	107	101	97	93	104	100	96	92	96	93	90	93	91	88	91	88	86	85								
3	101	94	88	84	99	92	87	83	90	85	82	87	84	81	85	82	79	78								
4	95	87	81	76	93	86	80	76	83	78	75	81	77	74	79	76	73	71								
5	90	80	74	69	88	79	74	69	78	72	68	76	71	68	74	70	67	66								
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61								
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	65	61	58	56								
8	76	65	59	54	74	65	59	54	64	58	54	63	57	54	62	57	54	52								
9	72	61	55	51	70	61	55	50	60	54	50	59	54	50	58	53	50	48								
10	68	58	51	47	67	57	51	47	56	51	47	55	50	47	55	50	47	45								

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

	0°	45°	90°
0°	136624	136624	136624
5°	135551	135780	135703
10°	132961	132655	132349
15°	128268	127559	127483
20°	122978	121200	121768
25°	114463	113460	113208
30°	94063	103515	93800
35°	58096	88897	56708
40°	37292	63012	36005
45°	24326	30542	23150
50°	16150	15205	15091
55°	10967	7927	10171
60°	7423	4848	6820
65°	5196	3586	4666
70°	3323	2656	3097
75°	2346	2046	2046
80°	1736	1314	1314
85°	889	1729	889

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 30542 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	296.4	8.3
10°-20°	804.3	22.5
20°-30°	1085.8	30.4
30°-40°	847.4	23.7
40°-50°	355.0	9.9
50°-60°	120.3	3.4
60°-70°	42.9	1.2
70°-80°	13.9	0.4
80°-90°	2.9	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°	2186.5	61.3
0°-40°	3033.8	85.0
0°-60°	3509.2	98.3
0°-90°	3568.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3568.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3173	3173	3173	3173	3173	
5°	3136	3140	3142	3136	3140	297
15°	2878	2870	2862	2858	2860	809
25°	2409	2399	2388	2388	2383	1084
35°	1105	1297	1691	1295	1079	727
45°	400	428	502	408	380	321
55°	146	134	106	127	136	135
65°	51	42	35	40	46	52
75°	14	12	12	12	12	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°	3173.2	3173.2	3173.2	3173.2	<i>3173.2</i>
1°	<i>3169.7</i>	<i>3175.0</i>	<i>3171.5</i>	<i>3173.2</i>	<i>3178.5</i>
2°	3169.7	3169.7	3173.2	3171.5	<i>3173.2</i>
3°	3166.2	3166.2	3162.7	3162.7	<i>3162.7</i>
4°	3155.6	3155.6	3155.6	3152.1	<i>3159.2</i>
5°	3136.3	3139.8	3141.6	3136.3	<i>3139.8</i>
6°	3129.2	3131.0	3127.5	3125.7	<i>3122.2</i>
7°	3113.4	3108.1	3113.4	3101.1	<i>3102.8</i>
8°	3087.0	3087.0	3083.5	3080.0	<i>3076.4</i>
9°	3062.4	3062.4	3058.8	3053.6	<i>3050.0</i>
10°	3041.2	3036.0	3034.2	3028.9	<i>3027.2</i>
11°	3016.6	3006.0	3004.3	2999.0	<i>2999.0</i>
12°	2986.7	2981.4	2969.1	2967.3	<i>2967.3</i>
13°	2949.7	2944.4	2935.6	2928.6	<i>2935.6</i>
14°	2914.5	2911.0	2895.2	2900.4	<i>2898.7</i>
15°	2877.6	2870.5	2861.7	2858.2	<i>2860.0</i>
16°	2844.1	2831.8	2819.5	2821.2	<i>2831.8</i>
17°	2808.9	2791.3	2779.0	2777.2	<i>2782.5</i>
18°	2764.9	2750.8	2731.5	2738.5	<i>2738.5</i>
19°	2720.9	2701.6	2689.2	2687.5	<i>2694.5</i>
20°	2684.0	2654.0	2645.2	2643.5	<i>2657.6</i>
22.5°	2557.2	2527.3	2520.3	2527.3	<i>2541.4</i>
25°	2409.4	2398.8	2388.3	2388.3	<i>2383.0</i>
27.5°	2200.0	2224.6	2236.9	2212.3	<i>2171.8</i>
30°	1892.0	1995.8	2082.1	1983.5	<i>1886.7</i>
32.5°	1490.7	1705.4	1904.3	1700.1	<i>1455.5</i>
35°	1105.3	1297.1	1691.3	1295.3	<i>1078.9</i>
37.5°	851.8	975.0	1437.9	959.2	<i>827.2</i>
40°	663.5	735.7	1121.1	726.9	<i>640.6</i>
42.5°	515.7	561.4	746.2	550.9	<i>498.1</i>
45°	399.5	427.7	501.6	408.3	<i>380.2</i>
47.5°	311.5	323.8	343.2	309.8	<i>293.9</i>
50°	241.1	241.1	227.0	232.3	<i>225.3</i>
52.5°	186.6	179.5	153.1	169.0	<i>172.5</i>
55°	146.1	133.8	105.6	126.7	<i>135.5</i>
57.5°	110.9	98.6	75.7	93.3	<i>102.1</i>
60°	86.2	73.9	56.3	70.4	<i>79.2</i>
62.5°	66.9	56.3	44.0	52.8	<i>59.8</i>
65°	51.0	42.2	35.2	40.5	<i>45.8</i>
67.5°	38.7	31.7	26.4	29.9	<i>35.2</i>
70°	26.4	24.6	21.1	22.9	<i>24.6</i>
72.5°	19.4	17.6	15.8	15.8	<i>17.6</i>
75°	14.1	12.3	12.3	12.3	<i>12.3</i>



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
82.5°	3.5	3.5	3.5	3.5	3.5
85°	1.8	1.8	3.5	1.8	1.8
87.5°	1.8	1.8	1.8	1.8	1.8
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°	8.8	8.8	8.8	8.8	8.8
80°	7.0	7.0	5.3	5.3	5.3

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Scaled Data Report



(END OF REPORT)