

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: P838620

Luminaire Tested: HCSQ645D010-HM64560830-61SQH

Issue Date: 5/21/2024

**Test Information**

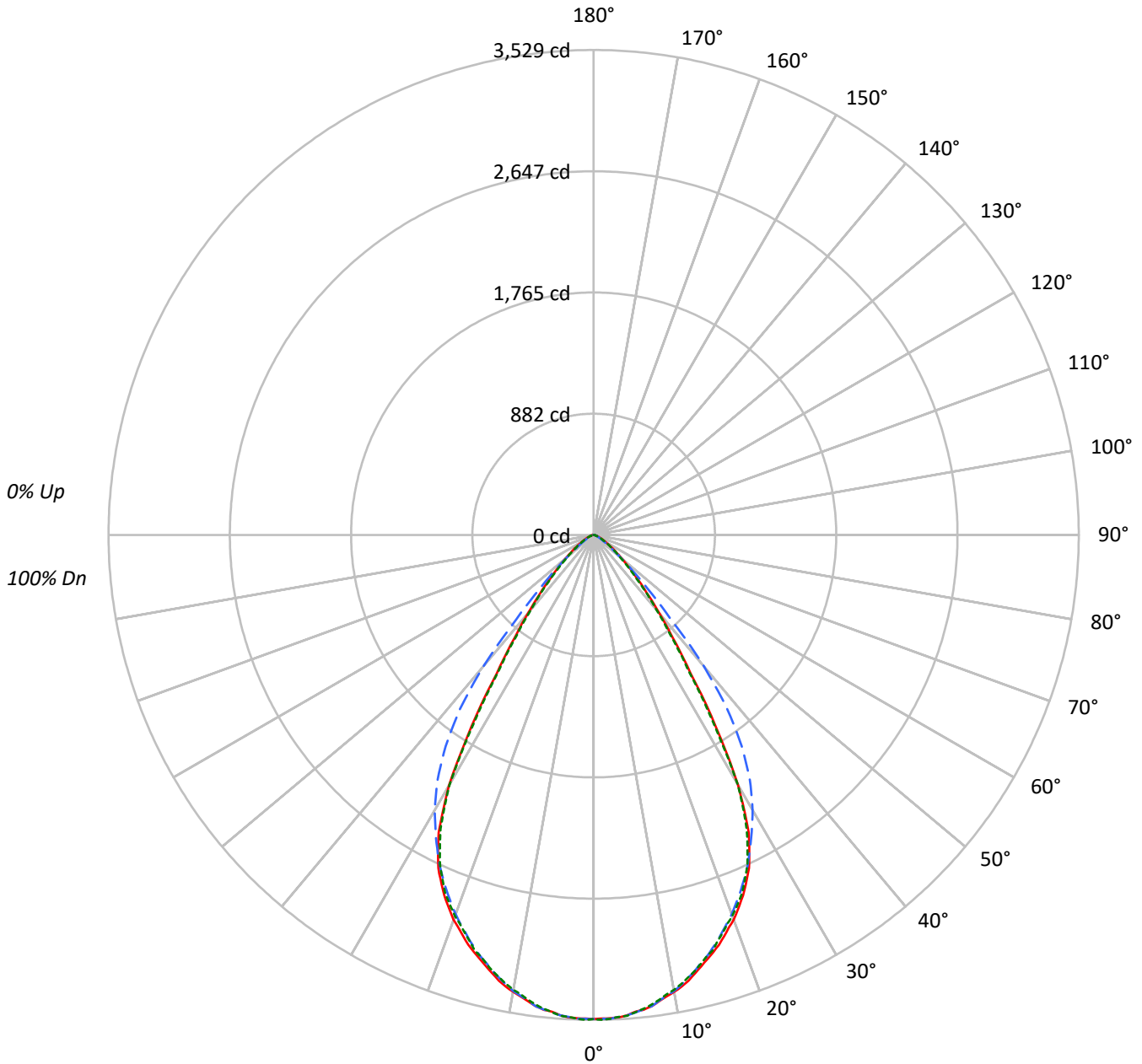
Test Method: LM-79-2019  
Report Number: P838620  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-2)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ645D010-HM64560830-61SQH  
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3962.5 lumens  
Efficiency: N/A  
Efficacy: 86.3 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

TEST NUMBER: P838620  
CATALOG NUMBER: HCSQ645D010-HM64560830-61SQH

### Luminous Intensity Polar Plot





TEST NUMBER: P838620

CATALOG NUMBER: HCSQ645D010-HM64560830-61SQH

**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	98	97	97	95	94	92
	1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	97	95	94	92	92	92	97	95	94	92	92	92
	2	107	101	97	93	104	100	96	92	96	93	90	93	91	88	91	88	86	85	85	85	91	88	86	85	85	85
	3	101	94	88	84	99	92	87	83	90	85	82	87	84	81	85	82	79	78	78	85	82	79	78	78	78	78
	4	95	87	81	76	93	86	80	76	83	78	75	81	77	74	79	76	73	71	71	79	76	73	71	71	71	71
	5	90	80	74	69	88	79	74	69	78	72	68	76	71	68	74	70	67	66	66	74	70	67	66	66	66	66
	6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61	61	70	65	62	61	61	61	61
	7	80	70	63	59	78	69	63	59	68	62	58	67	62	58	65	61	58	56	56	67	62	58	56	56	56	56
	8	76	65	59	54	74	65	59	54	64	58	54	63	57	54	62	57	54	52	52	62	57	54	52	52	52	52
	9	72	61	55	51	70	61	55	50	60	54	50	59	54	50	58	53	50	48	48	58	53	50	48	48	48	48
	10	68	58	51	47	67	57	51	47	56	51	47	55	50	47	55	50	47	45	45	55	50	47	45	45	45	45

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

	0°	45°	90°
0°	151694	151694	151694
5°	150501	150756	150670
10°	147629	147288	146942
15°	142411	141631	141542
20°	136540	134570	135198
25°	127090	125973	125693
30°	104434	114929	104146
35°	64503	98705	62963
40°	41406	69964	39979
45°	27011	33910	25702
50°	17931	16886	16752
55°	12176	8798	11297
60°	8249	5382	7569
65°	5777	3983	5175
70°	3688	2946	3449
75°	2595	2279	2279
80°	1934	1463	1463
85°	988	1927	988

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 33910 cd/sqm



TEST NUMBER: P838620

CATALOG NUMBER: HCSQ645D010-HM64560830-61SQH

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	329.0	8.3
10°-20°	893.0	22.5
20°-30°	1205.5	30.4
30°-40°	940.9	23.7
40°-50°	394.1	9.9
50°-60°	133.6	3.4
60°-70°	47.6	1.2
70°-80°	15.5	0.4
80°-90°	3.2	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°	2427.6	61.3
0°-40°	3368.5	85.0
0°-60°	3896.2	98.3
0°-90°	3962.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3962.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3523	3523	3523	3523	3523	
5°	3482	3486	3488	3482	3486	329
15°	3195	3187	3177	3173	3175	899
25°	2675	2663	2652	2652	2646	1203
35°	1227	1440	1878	1438	1198	807
45°	444	475	557	453	422	356
55°	162	148	117	141	150	150
65°	57	47	39	45	51	58
75°	16	14	14	14	14	17
85°	2	2	4	2	2	3
90°	0	0	0	0	0	



TEST NUMBER: P838620

CATALOG NUMBER: HCSQ645D010-HM64560830-61SQH

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3523.2	3523.2	3523.2	3523.2	3523.2
1°	3519.3	3525.2	3521.3	3523.2	3529.1
2°	3519.3	3519.3	3523.2	3521.3	3523.2
3°	3515.4	3515.4	3511.5	3511.5	3511.5
4°	3503.7	3503.7	3503.7	3499.8	3507.6
5°	3482.2	3486.1	3488.1	3482.2	3486.1
6°	3474.4	3476.3	3472.4	3470.5	3466.6
7°	3456.8	3450.9	3456.8	3443.1	3445.1
8°	3427.5	3427.5	3423.6	3419.7	3415.8
9°	3400.1	3400.1	3396.2	3390.3	3386.4
10°	3376.7	3370.8	3368.9	3363.0	3361.0
11°	3349.3	3337.6	3335.6	3329.8	3329.8
12°	3316.1	3310.2	3296.6	3294.6	3294.6
13°	3275.1	3269.2	3259.4	3251.6	3259.4
14°	3236.0	3232.1	3214.5	3220.3	3218.4
15°	3194.9	3187.1	3177.4	3173.4	3175.4
16°	3157.8	3144.1	3130.5	3132.4	3144.1
17°	3118.7	3099.2	3085.5	3083.6	3089.4
18°	3069.9	3054.2	3032.7	3040.6	3040.6
19°	3021.0	2999.5	2985.9	2983.9	2991.7
20°	2980.0	2946.8	2937.0	2935.0	2950.7
22.5°	2839.3	2806.1	2798.3	2806.1	2821.7
25°	2675.2	2663.4	2651.7	2651.7	2645.8
27.5°	2442.6	2470.0	2483.6	2456.3	2411.3
30°	2100.6	2215.9	2311.7	2202.3	2094.8
32.5°	1655.1	1893.5	2114.3	1887.7	1616.0
35°	1227.2	1440.2	1877.9	1438.2	1197.9
37.5°	945.8	1082.6	1596.5	1065.0	918.4
40°	736.7	816.8	1244.8	807.0	711.3
42.5°	572.5	623.4	828.5	611.6	553.0
45°	443.6	474.8	556.9	453.3	422.1
47.5°	345.9	359.6	381.0	343.9	326.3
50°	267.7	267.7	252.1	257.9	250.1
52.5°	207.1	199.3	170.0	187.6	191.5
55°	162.2	148.5	117.2	140.7	150.5
57.5°	123.1	109.4	84.0	103.6	113.3
60°	95.8	82.1	62.5	78.2	87.9
62.5°	74.3	62.5	48.9	58.6	66.4
65°	56.7	46.9	39.1	44.9	50.8
67.5°	43.0	35.2	29.3	33.2	39.1
70°	29.3	27.4	23.4	25.4	27.4
72.5°	21.5	19.5	17.6	17.6	19.5
75°	15.6	13.7	13.7	13.7	13.7



TEST NUMBER: P838620

CATALOG NUMBER: HCSQ645D010-HM64560830-61SQH

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
82.5°	3.9	3.9	3.9	3.9	3.9
85°	2.0	2.0	3.9	2.0	2.0
87.5°	2.0	2.0	2.0	2.0	2.0
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



Report Generated By 670245859 / DESKTOP-T8S5UU9



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





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

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





77.5°	9.8	9.8	9.8	9.8	9.8
80°	7.8	7.8	5.9	5.9	5.9

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)