

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: P838665

Luminaire Tested: HCSQ650D010-HM64560835-61SQH

Issue Date: 5/21/2024

**Test Information**

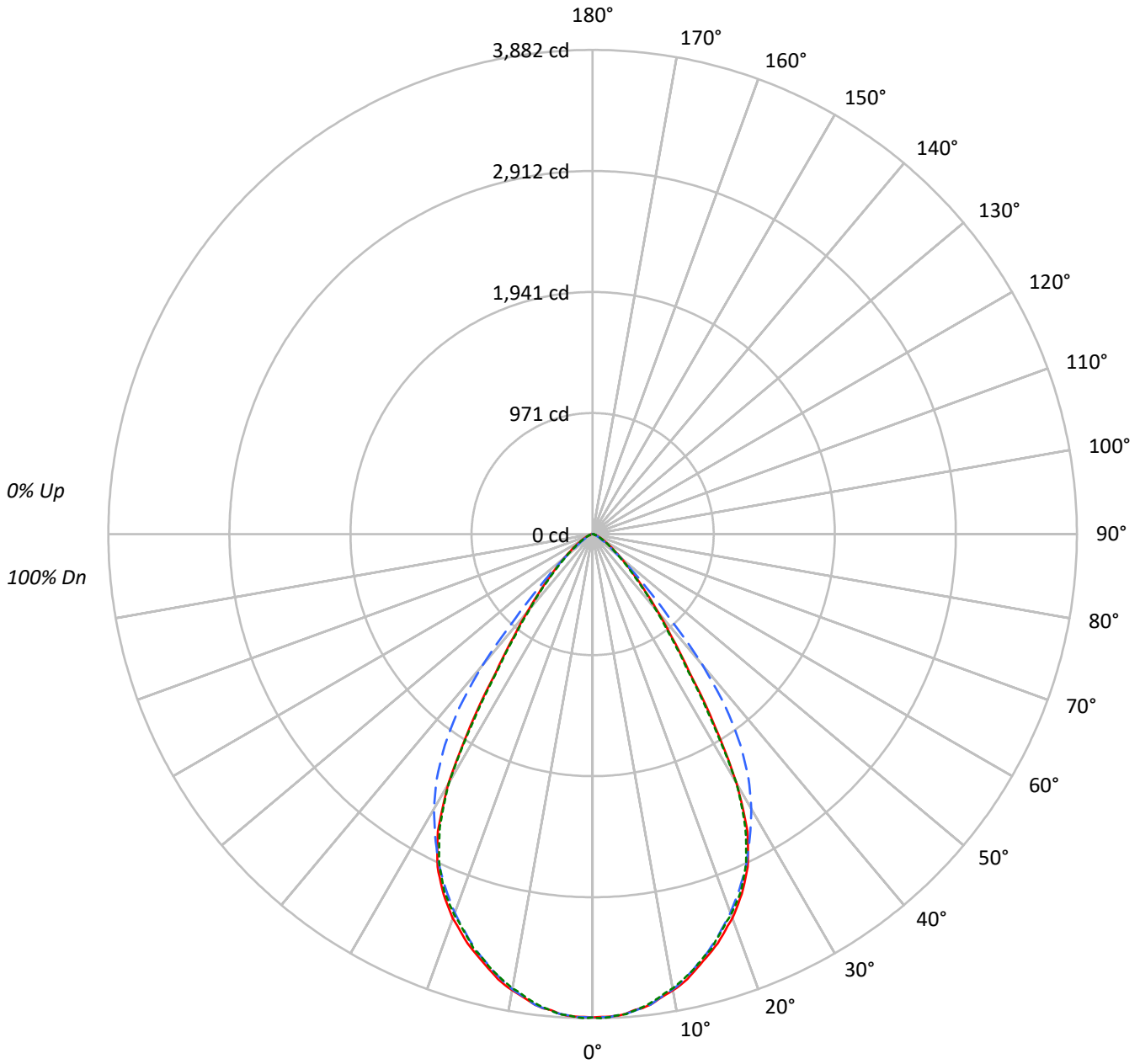
Test Method: LM-79-2019  
Report Number: P838665  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-2)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ650D010-HM64560835-61SQH  
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4358.8 lumens  
Efficiency: N/A  
Efficacy: 87.7 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					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°	166867	166867	166867
5°	165555	165836	165741
10°	162393	162017	161641
15°	156657	155797	155699
20°	150199	148032	148719
25°	139798	138572	138268
30°	114885	126424	114561
35°	70952	108576	69260
40°	45549	76962	43975
45°	29708	37301	28271
50°	19726	18574	18427
55°	13392	9683	12423
60°	9068	5924	8327
65°	6347	4381	5695
70°	4054	3248	3789
75°	2861	2495	2495
80°	2132	1587	1587
85°	1037	2124	1037

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°

Vertical Angle: 45°

Luminance: 37301 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	362.0	8.3
10°-20°	982.4	22.5
20°-30°	1326.1	30.4
30°-40°	1035.0	23.7
40°-50°	433.6	9.9
50°-60°	147.0	3.4
60°-70°	52.4	1.2
70°-80°	17.0	0.4
80°-90°	3.4	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°	2670.4	61.3
0°-40°	3705.4	85.0
0°-60°	4285.9	98.3
0°-90°	4358.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4358.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3876	3876	3876	3876	3876	
5°	3830	3835	3837	3830	3835	362
15°	3514	3506	3495	3491	3493	988
25°	2943	2930	2917	2917	2910	1324
35°	1350	1584	2066	1582	1318	888
45°	488	522	613	499	464	392
55°	178	163	129	155	166	165
65°	62	52	43	49	56	64
75°	17	15	15	15	15	19
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°	3875.6	3875.6	3875.6	3875.6	3875.6
1°	3871.3	3877.8	3873.5	3875.6	3882.1
2°	3871.3	3871.3	3875.6	3873.5	3875.6
3°	3867.0	3867.0	3862.7	3862.7	3862.7
4°	3854.2	3854.2	3854.2	3849.9	3858.4
5°	3830.5	3834.8	3837.0	3830.5	3834.8
6°	3821.9	3824.1	3819.8	3817.6	3813.3
7°	3802.6	3796.1	3802.6	3787.5	3789.7
8°	3770.3	3770.3	3766.0	3761.7	3757.4
9°	3740.2	3740.2	3735.9	3729.5	3725.2
10°	3714.4	3708.0	3705.8	3699.4	3697.2
11°	3684.3	3671.4	3669.3	3662.8	3662.8
12°	3647.8	3641.3	3626.3	3624.1	3624.1
13°	3602.7	3596.2	3585.5	3576.9	3585.5
14°	3559.7	3555.4	3536.0	3542.5	3540.3
15°	3514.5	3505.9	3495.2	3490.9	3493.0
16°	3473.7	3458.6	3443.6	3445.7	3458.6
17°	3430.7	3409.2	3394.1	3392.0	3398.4
18°	3376.9	3359.8	3336.1	3344.7	3344.7
19°	3323.2	3299.6	3284.5	3282.4	3291.0
20°	3278.1	3241.5	3230.8	3228.6	3245.8
22.5°	3123.3	3086.8	3078.2	3086.8	3104.0
25°	2942.7	2929.8	2916.9	2916.9	2910.5
27.5°	2686.9	2717.0	2732.1	2702.0	2652.5
30°	2310.8	2437.6	2542.9	2422.5	2304.3
32.5°	1820.7	2082.9	2325.8	2076.5	1777.7
35°	1349.9	1584.2	2065.7	1582.1	1317.7
37.5°	1040.4	1190.9	1756.2	1171.5	1010.3
40°	810.4	898.5	1369.3	887.8	782.4
42.5°	629.8	685.7	911.4	672.8	608.3
45°	487.9	522.3	612.6	498.7	464.3
47.5°	380.5	395.5	419.2	378.3	359.0
50°	294.5	294.5	277.3	283.7	275.1
52.5°	227.9	219.3	187.0	206.4	210.7
55°	178.4	163.4	129.0	154.8	165.5
57.5°	135.4	120.4	92.4	113.9	124.7
60°	105.3	90.3	68.8	86.0	96.7
62.5°	81.7	68.8	53.7	64.5	73.1
65°	62.3	51.6	43.0	49.4	55.9
67.5°	47.3	38.7	32.2	36.5	43.0
70°	32.2	30.1	25.8	27.9	30.1
72.5°	23.6	21.5	19.3	19.3	21.5
75°	17.2	15.0	15.0	15.0	15.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
82.5°	4.3	4.3	4.3	4.3	4.3
85°	2.1	2.1	4.3	2.1	2.1
87.5°	2.1	2.1	2.1	2.1	2.1
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°	10.7	10.7	10.7	10.7	10.7
80°	8.6	8.6	6.4	6.4	6.4

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Scaled Data Report



(END OF REPORT)