

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: P838648

Luminaire Tested: HCSQ645D010-HM64560935-61SQMW

Issue Date: 5/21/2024

**Test Information**

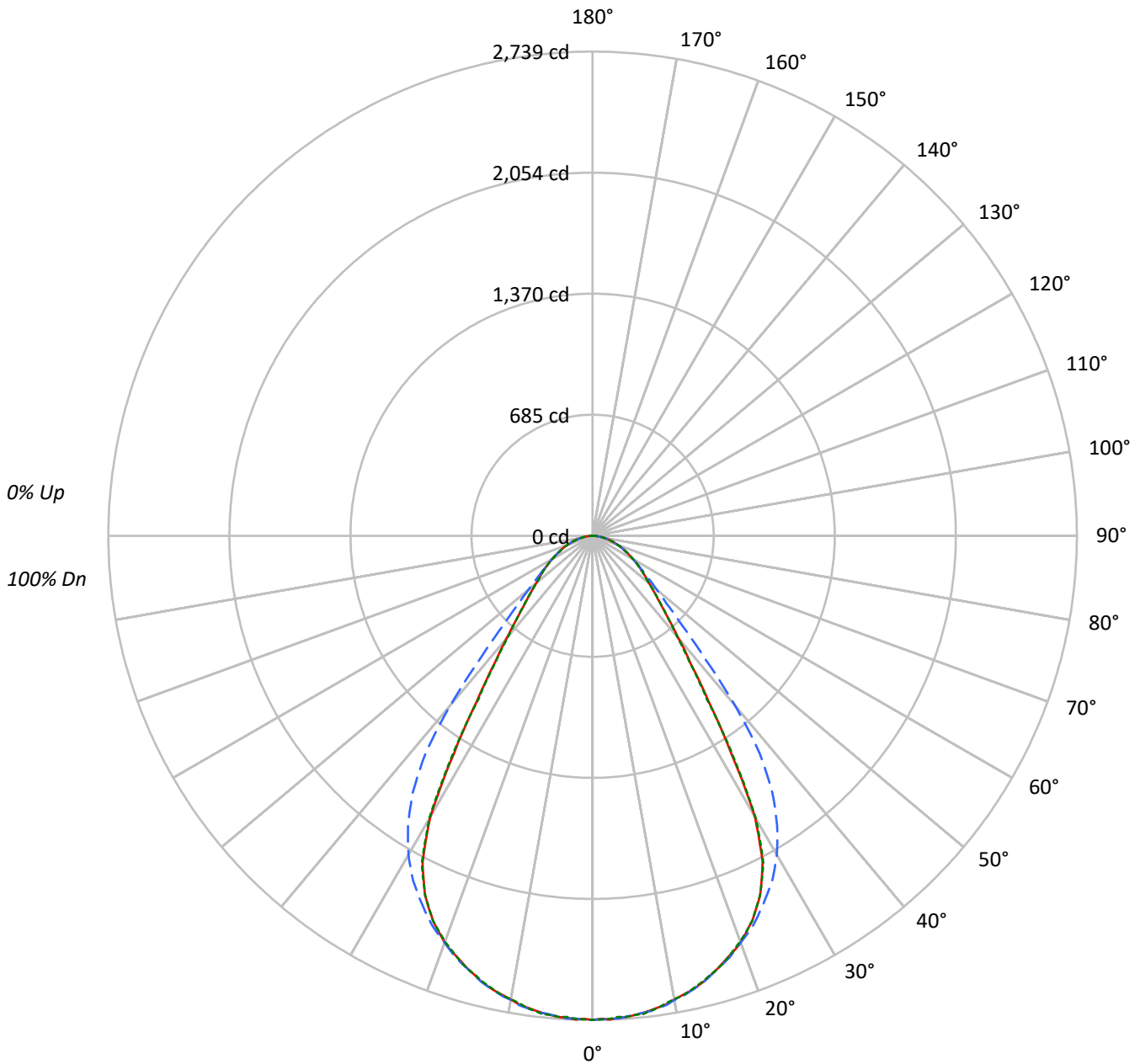
Test Method: LM-79-2019  
Report Number: P838648  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-3)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ645D010-HM64560935-61SQMW  
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4039.7 lumens  
Efficiency: N/A  
Efficacy: 88.0 lumens/watt  
Spacing Criteria (0/90/45): 1.08 / 1.08 / 1.11  
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					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	111	108	105	102	109	106	103	100	101	99	97	98	96	94	94	93	91	89								
2	104	98	92	88	102	96	91	87	92	88	85	89	86	83	86	84	81	79								
3	97	89	82	77	95	87	81	77	84	79	75	82	78	74	79	76	73	71								
4	91	81	74	69	89	80	73	68	77	72	67	75	70	67	73	69	66	64								
5	85	74	67	62	83	73	66	61	71	65	61	70	64	60	68	63	60	58								
6	80	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53								
7	75	63	56	51	73	63	56	51	61	55	51	60	54	50	59	54	50	48								
8	70	59	52	47	69	58	51	47	57	51	46	56	50	46	55	50	46	44								
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	43	41								
10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	40	38								

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

	0°	45°	90°
0°	117917	117917	117917
5°	117624	117541	117624
10°	116474	116557	116308
15°	114739	114828	114570
20°	112155	112243	111894
25°	106557	108833	106467
30°	91249	103619	91821
35°	59957	93149	59047
40°	42384	70245	41631
45°	32862	43232	33094
50°	27945	31535	27691
55°	25139	25860	25139
60°	22742	22742	22742
65°	20865	20671	20671
70°	19034	19034	19273
75°	17833	17184	17517
80°	15670	15670	15670
85°	13239	13239	13239

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 43232 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	258.2	6.4
10°-20°	725.1	17.9
20°-30°	1033.3	25.6
30°-40°	881.0	21.8
40°-50°	487.4	12.1
50°-60°	307.0	7.6
60°-70°	203.8	5.0
70°-80°	112.0	2.8
80°-90°	31.9	0.8
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°	2016.6	49.9
0°-40°	2897.6	71.7
0°-60°	3692.0	91.4
0°-90°	4039.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4039.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2739	2739	2739	2739	2739	
5°	2722	2725	2720	2716	2722	258
15°	2574	2574	2576	2574	2570	725
25°	2243	2270	2291	2268	2241	1013
35°	1141	1345	1772	1347	1123	742
45°	540	591	710	588	544	428
55°	335	341	344	339	335	301
65°	205	207	203	205	203	204
75°	107	105	103	105	105	113
85°	27	27	27	29	27	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2738.7	2738.7	2738.7	2738.7	2738.7
1°	2733.0	2736.8	2736.8	2734.9	2736.8
2°	2738.7	2733.0	2733.0	2733.0	2734.9
3°	2731.1	2734.9	2734.9	2729.2	2725.3
4°	2729.2	2727.3	2727.3	2733.0	2729.2
5°	2721.5	2725.3	2719.6	2715.8	2721.5
6°	2713.9	2715.8	2713.9	2715.8	2721.5
7°	2704.3	2710.0	2708.1	2706.2	2706.2
8°	2692.8	2700.5	2696.6	2696.6	2694.7
9°	2681.3	2683.2	2687.1	2687.1	2675.6
10°	2664.1	2669.8	2666.0	2667.9	2660.3
11°	2648.8	2656.4	2654.5	2650.7	2652.6
12°	2635.4	2639.2	2637.3	2631.6	2633.5
13°	2618.2	2622.0	2620.1	2620.1	2614.3
14°	2599.0	2595.2	2600.9	2597.1	2595.2
15°	2574.1	2574.1	2576.1	2574.1	2570.3
16°	2551.2	2553.1	2553.1	2551.2	2553.1
17°	2524.4	2532.0	2530.1	2526.3	2528.2
18°	2499.5	2505.2	2507.2	2505.2	2499.5
19°	2476.5	2480.4	2478.4	2470.8	2470.8
20°	2447.8	2449.7	2449.7	2445.9	2442.1
22.5°	2357.9	2371.3	2380.8	2373.2	2357.9
25°	2243.0	2269.8	2290.9	2267.9	2241.1
27.5°	2082.3	2135.9	2199.0	2141.6	2091.8
30°	1835.4	1957.9	2084.2	1969.4	1846.9
32.5°	1460.3	1701.4	1942.6	1724.4	1483.2
35°	1140.7	1345.4	1772.2	1347.4	1123.4
37.5°	911.0	1056.5	1554.1	1046.9	901.4
40°	754.1	851.7	1249.8	847.8	740.7
42.5°	629.7	704.3	935.9	696.6	629.7
45°	539.7	591.4	710.0	587.6	543.5
47.5°	472.7	505.3	568.4	503.3	472.7
50°	417.2	436.4	470.8	434.4	413.4
52.5°	373.2	384.7	398.1	380.9	369.4
55°	334.9	340.7	344.5	338.8	334.9
57.5°	298.6	302.4	300.5	298.6	296.6
60°	264.1	266.0	264.1	266.0	264.1
62.5°	233.5	235.4	231.6	233.5	231.6
65°	204.8	206.7	202.9	204.8	202.9
67.5°	178.0	178.0	178.0	178.0	176.1
70°	151.2	153.1	151.2	153.1	153.1
72.5°	128.2	128.2	126.3	128.2	128.2
75°	107.2	105.3	103.3	105.3	105.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
82.5°	45.9	45.9	44.0	45.9	45.9
85°	26.8	26.8	26.8	28.7	26.8
87.5°	13.4	11.5	11.5	13.4	13.4
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°	84.2	84.2	82.3	84.2	84.2
80°	63.2	65.1	63.2	65.1	63.2

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Scaled Data Report



(END OF REPORT)