

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: P838618

Luminaire Tested: HCSQ645D010-HM64560827-61SQMW

Issue Date: 5/21/2024

**Test Information**

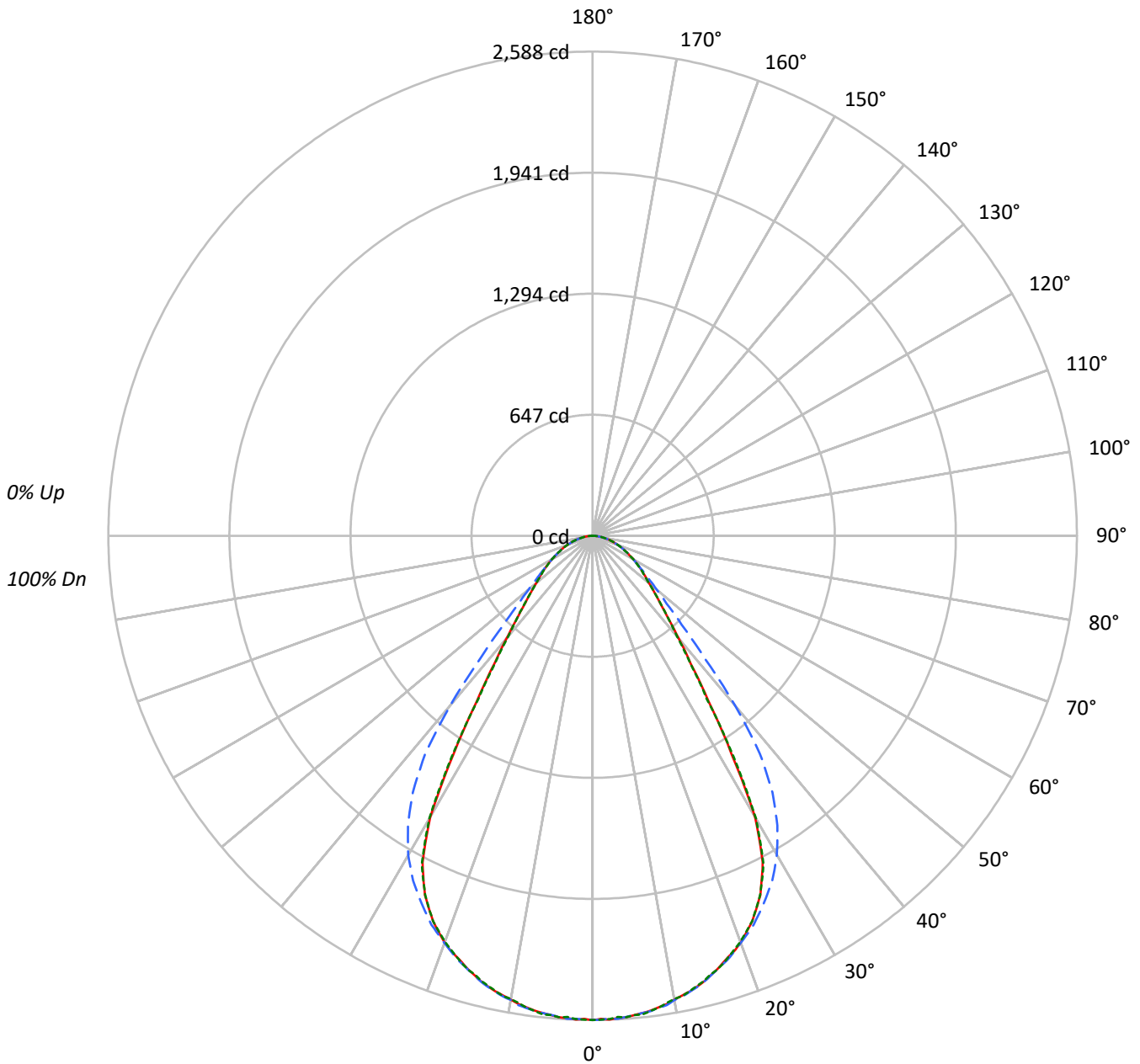
Test Method: LM-79-2019  
Report Number: P838618  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-3)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ645D010-HM64560827-61SQMW  
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3818.1 lumens  
Efficiency: N/A  
Efficacy: 83.2 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										
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°	111450	111450	111450
5°	111171	111093	111171
10°	110087	110165	109929
15°	108450	108530	108285
20°	106007	106089	105755
25°	100714	102861	100629
30°	86243	97936	86785
35°	56666	88040	55810
40°	40057	66390	39344
45°	31060	40863	31279
50°	26411	29807	26170
55°	23766	24441	23766
60°	21493	21493	21493
65°	19724	19530	19530
70°	17989	17989	18216
75°	16852	16253	16552
80°	14802	14802	14802
85°	12498	12498	12498

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 40863 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	244.0	6.4
10°-20°	685.3	17.9
20°-30°	976.6	25.6
30°-40°	832.7	21.8
40°-50°	460.7	12.1
50°-60°	290.2	7.6
60°-70°	192.7	5.0
70°-80°	105.9	2.8
80°-90°	30.1	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°	1906.0	49.9
0°-40°	2738.6	71.7
0°-60°	3489.5	91.4
0°-90°	3818.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3818.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2588	2588	2588	2588	2588	
5°	2572	2576	2570	2567	2572	244
15°	2433	2433	2435	2433	2429	685
25°	2120	2145	2165	2144	2118	958
35°	1078	1272	1675	1274	1062	701
45°	510	559	671	555	514	404
55°	317	322	326	320	317	284
65°	194	195	192	194	192	193
75°	101	100	98	100	100	106
85°	25	25	25	27	25	30
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2588.5	2588.5	2588.5	2588.5	2588.5
1°	2583.1	2586.7	2586.7	2584.9	2586.7
2°	2588.5	2583.1	2583.1	2583.1	2584.9
3°	2581.3	2584.9	2584.9	2579.5	2575.9
4°	2579.5	2577.7	2577.7	2583.1	2579.5
5°	2572.2	2575.9	2570.4	2566.8	2572.2
6°	2565.0	2566.8	2565.0	2566.8	2572.2
7°	2556.0	2561.4	2559.6	2557.8	2557.8
8°	2545.1	2552.3	2548.7	2548.7	2546.9
9°	2534.3	2536.1	2539.7	2539.7	2528.8
10°	2518.0	2523.4	2519.8	2521.6	2514.4
11°	2503.5	2510.7	2508.9	2505.3	2507.1
12°	2490.8	2494.5	2492.7	2487.2	2489.0
13°	2474.6	2478.2	2476.4	2476.4	2470.9
14°	2456.5	2452.9	2458.3	2454.7	2452.9
15°	2433.0	2433.0	2434.8	2433.0	2429.3
16°	2411.3	2413.1	2413.1	2411.3	2413.1
17°	2385.9	2393.2	2391.4	2387.7	2389.5
18°	2362.4	2367.8	2369.6	2367.8	2362.4
19°	2340.7	2344.3	2342.5	2335.3	2335.3
20°	2313.6	2315.4	2315.4	2311.8	2308.1
22.5°	2228.6	2241.2	2250.3	2243.0	2228.6
25°	2120.0	2145.3	2165.2	2143.5	2118.2
27.5°	1968.1	2018.7	2078.4	2024.2	1977.1
30°	1734.7	1850.5	1969.9	1861.4	1745.6
32.5°	1380.2	1608.1	1836.0	1629.8	1401.9
35°	1078.1	1271.7	1675.0	1273.5	1061.8
37.5°	861.0	998.5	1468.8	989.5	852.0
40°	712.7	805.0	1181.2	801.3	700.0
42.5°	595.1	665.7	884.5	658.4	595.1
45°	510.1	558.9	671.1	555.3	513.7
47.5°	446.8	477.5	537.2	475.7	446.8
50°	394.3	412.4	445.0	410.6	390.7
52.5°	352.7	363.6	376.2	360.0	349.1
55°	316.6	322.0	325.6	320.2	316.6
57.5°	282.2	285.8	284.0	282.2	280.4
60°	249.6	251.4	249.6	251.4	249.6
62.5°	220.7	222.5	218.9	220.7	218.9
65°	193.6	195.4	191.7	193.6	191.7
67.5°	168.2	168.2	168.2	168.2	166.4
70°	142.9	144.7	142.9	144.7	144.7
72.5°	121.2	121.2	119.4	121.2	121.2
75°	101.3	99.5	97.7	99.5	99.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
82.5°	43.4	43.4	41.6	43.4	43.4
85°	25.3	25.3	25.3	27.1	25.3
87.5°	12.7	10.9	10.9	12.7	12.7
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°	79.6	79.6	77.8	79.6	79.6
80°	59.7	61.5	59.7	61.5	59.7

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Scaled Data Report



(END OF REPORT)