

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: P838652

Luminaire Tested: HCSQ645D010-HM64560940-61SQMB

Issue Date: 5/21/2024

**Test Information**

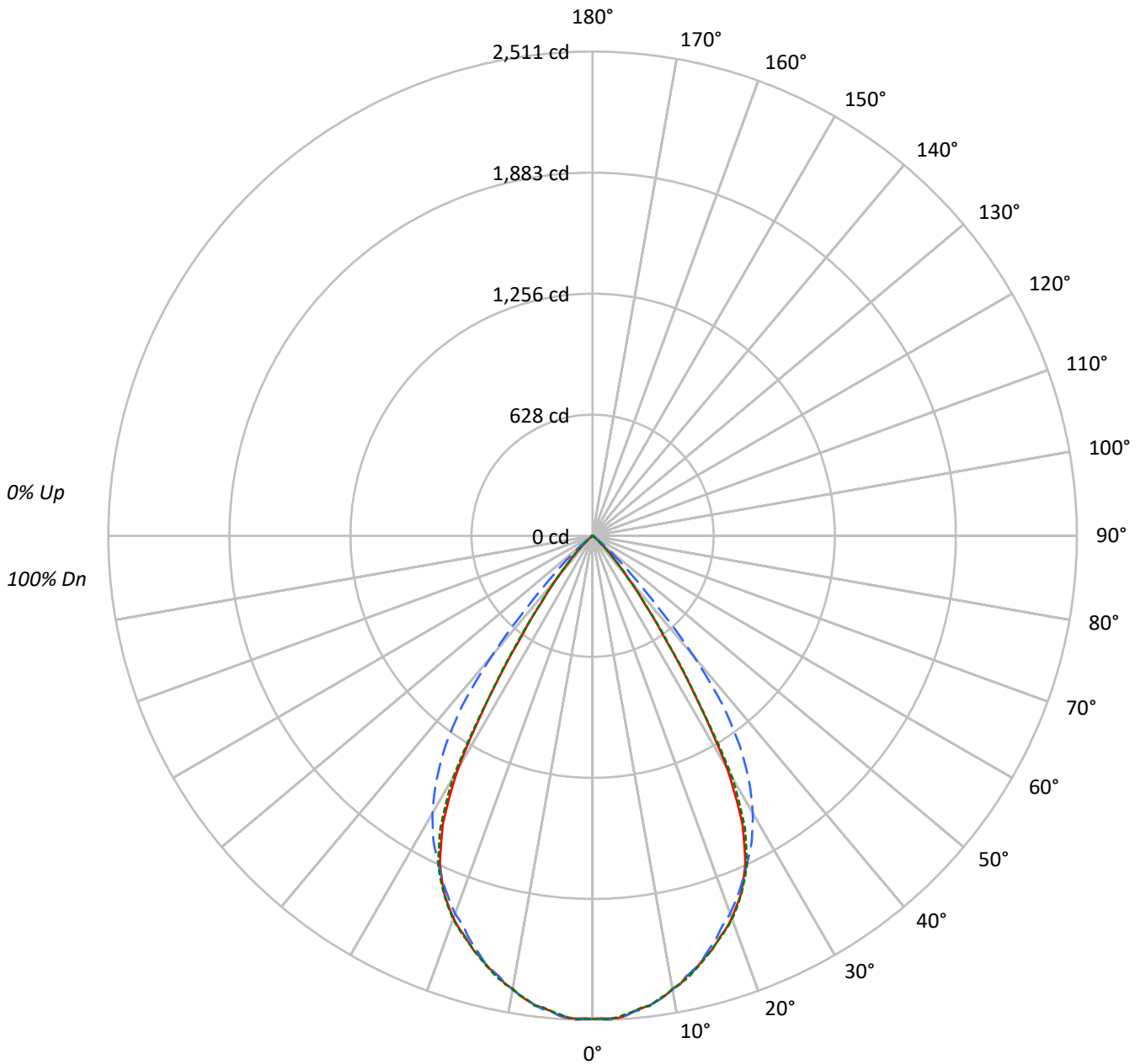
Test Method: LM-79-2019  
Report Number: P838652  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-4)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ645D010-HM64560940-61SQMB  
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2490.1 lumens  
Efficiency: N/A  
Efficacy: 54.3 lumens/watt  
Spacing Criteria (0/90/45): 1 / 1.01 / 1.03  
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									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	114	111	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	93																			
2	108	103	99	96	106	101	98	94	98	95	92	95	93	90	92	90	89	87																			
3	102	96	91	87	100	94	90	86	92	88	85	89	86	83	87	85	82	81																			
4	97	89	84	80	95	88	83	79	86	82	78	84	80	77	82	79	76	75																			
5	92	84	78	73	90	83	77	73	81	76	72	79	75	72	78	74	71	70																			
6	87	78	72	68	86	77	72	68	76	71	67	75	70	67	73	69	66	65																			
7	83	73	67	63	81	73	67	63	71	66	63	70	66	62	69	65	62	60																			
8	79	69	63	59	77	68	63	59	67	62	58	66	62	58	65	61	58	56																			
9	75	65	59	55	74	64	59	55	63	58	55	63	58	54	62	57	54	53																			
10	71	61	55	51	70	61	55	51	60	55	51	59	54	51	58	54	51	50																			

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

	0°	45°	90°
0°	107854	107854	107854
5°	106948	107035	106948
10°	104268	104447	104447
15°	100685	100413	100957
20°	96687	95569	96966
25°	89037	89712	89906
30°	69404	82554	72034
35°	35190	69954	36472
40°	16013	45751	16013
45°	6193	17226	6071
50°	951	5452	951
55°	308	1066	308
60°	172	172	172
65°	204	0	204
70°	0	0	252
75°	0	0	333
80°	0	0	0
85°	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 17226 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	233.9	9.4
10°-20°	634.3	25.5
20°-30°	855.1	34.3
30°-40°	601.2	24.1
40°-50°	153.5	6.2
50°-60°	10.6	0.4
60°-70°	1.3	0.1
70°-80°	0.2	0.0
80°-90°	0.0	0.0
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°	1723.3	69.2
0°-40°	2324.6	93.4
0°-60°	2488.7	99.9
0°-90°	2490.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2490.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2505	2505	2505	2505	2505	
5°	2474	2479	2476	2479	2474	234
15°	2259	2255	2253	2259	2265	636
25°	1874	1880	1888	1894	1892	838
35°	670	887	1331	910	694	451
45°	102	153	283	155	100	89
55°	4	4	14	4	4	5
65°	2	2	0	2	2	2
75°	0	0	0	0	2	0
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2505.0	2505.0	2505.0	2505.0	2505.0
1°	2503.0	2505.0	2507.0	2507.0	2505.0
2°	2505.0	2498.9	2511.1	2505.0	2507.0
3°	2505.0	2492.8	2498.9	2503.0	2500.9
4°	2494.8	2486.7	2492.8	2490.8	2486.7
5°	2474.5	2478.6	2476.5	2478.6	2474.5
6°	2462.3	2466.3	2470.4	2464.3	2458.2
7°	2452.1	2450.1	2452.1	2456.2	2456.2
8°	2433.8	2437.9	2433.8	2435.8	2429.7
9°	2413.4	2413.4	2413.4	2417.5	2411.4
10°	2384.9	2395.1	2389.0	2393.1	2389.0
11°	2370.7	2366.6	2366.6	2368.7	2366.6
12°	2336.1	2340.2	2338.1	2342.2	2348.3
13°	2317.8	2319.8	2311.7	2321.9	2321.9
14°	2289.3	2287.3	2291.3	2289.3	2293.4
15°	2258.8	2254.7	2252.7	2258.8	2264.9
16°	2236.4	2226.2	2220.1	2228.3	2236.4
17°	2203.8	2193.7	2185.5	2201.8	2203.8
18°	2171.3	2167.2	2146.9	2167.2	2177.4
19°	2144.8	2130.6	2112.3	2134.7	2146.9
20°	2110.2	2098.0	2085.8	2098.0	2116.3
22.5°	2010.5	2000.3	1990.2	2004.4	2014.6
25°	1874.2	1880.3	1888.4	1894.5	1892.5
27.5°	1680.9	1735.8	1786.7	1754.1	1711.4
30°	1396.0	1534.3	1660.5	1556.7	1448.9
32.5°	1011.4	1247.4	1509.9	1294.2	1021.5
35°	669.5	887.2	1330.9	909.6	693.9
37.5°	435.5	596.2	1111.1	598.3	455.8
40°	284.9	388.7	814.0	396.8	284.9
42.5°	175.0	246.2	494.5	256.4	175.0
45°	101.7	152.6	282.9	154.7	99.7
47.5°	46.8	83.4	160.8	81.4	48.8
50°	14.2	36.6	81.4	36.6	14.2
52.5°	6.1	10.2	38.7	10.2	6.1
55°	4.1	4.1	14.2	4.1	4.1
57.5°	4.1	2.0	4.1	4.1	4.1
60°	2.0	2.0	2.0	2.0	2.0
62.5°	2.0	2.0	2.0	2.0	2.0
65°	2.0	2.0	0.0	2.0	2.0
67.5°	2.0	0.0	0.0	0.0	2.0
70°	0.0	0.0	0.0	0.0	2.0
72.5°	0.0	0.0	0.0	0.0	2.0
75°	0.0	0.0	0.0	0.0	2.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
82.5°	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0
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



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Scaled Data Report





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

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77.5°	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0

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