

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: P838711

Luminaire Tested: HCSQ655D010-HM64560840-61SQLWW

Issue Date: 5/21/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P838711  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-5)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ655D010-HM64560840-61SQLWW  
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: -

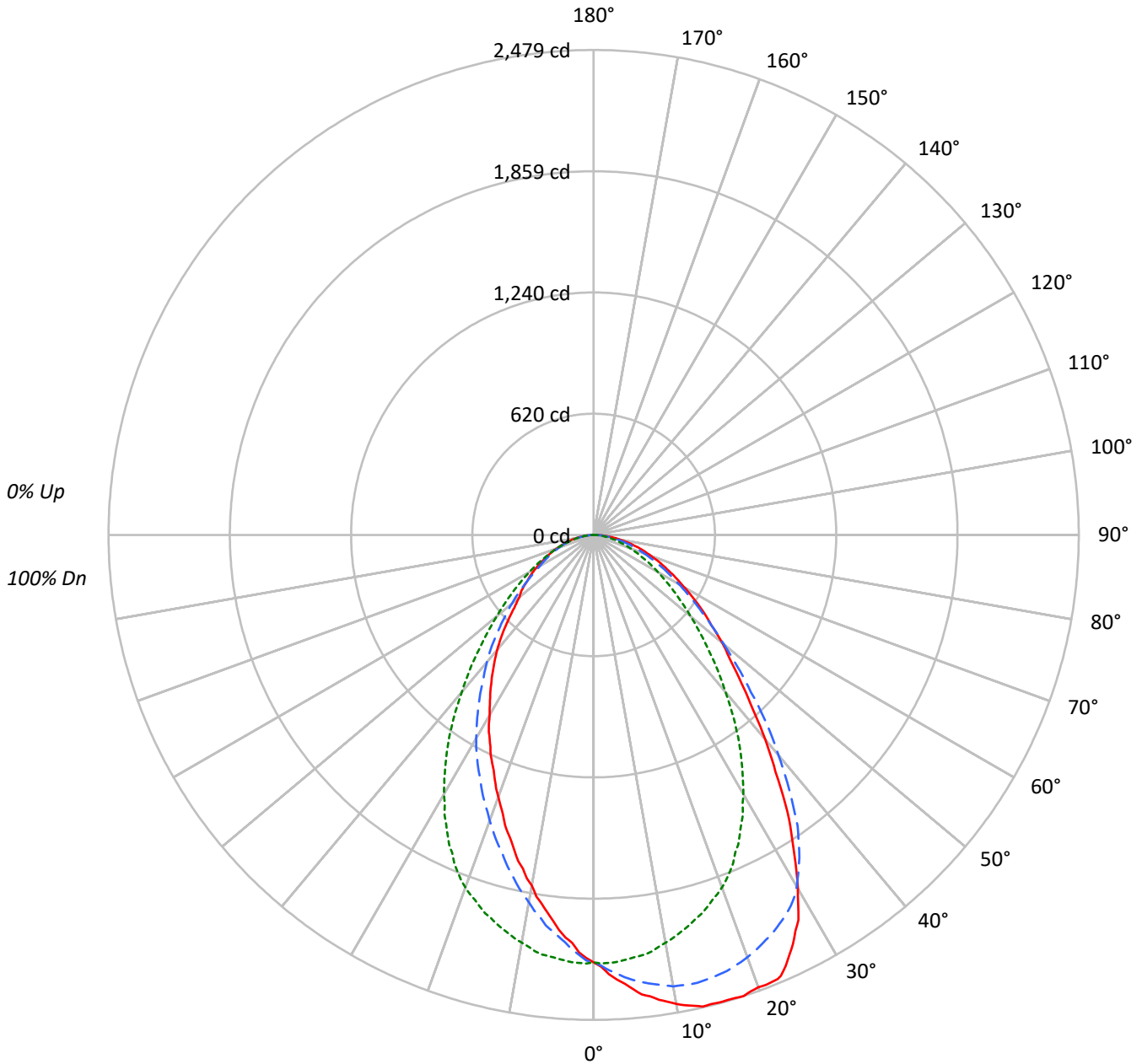
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4131.0 lumens  
Efficiency: N/A  
Efficacy: 76.5 lumens/watt  
Spacing Criteria (0/90/45): 1.11 / 1.08 / 1.17  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 54  
Input Voltage (V): NR  
Input Current (Ain): 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	110	106	103	99	108	104	101	98	100	97	95	96	94	92	92	91	89	87								
2	102	95	89	84	99	93	87	83	89	85	81	86	82	79	83	80	77	75								
3	94	85	78	72	92	83	77	71	80	75	70	78	73	69	75	71	68	66								
4	87	76	69	63	85	75	68	62	73	66	62	71	65	61	68	64	60	58								
5	81	69	61	55	79	68	61	55	66	60	55	64	59	54	63	58	53	51								
6	75	63	55	49	74	62	55	49	61	54	49	59	53	48	58	52	48	46								
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	42								
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38								
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34								
10	58	46	39	34	57	45	38	34	44	38	34	44	38	33	43	37	33	32								

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

	0°	45°	90°	135°	180°
0°	211634	211634	211634	211634	211634
5°	226767	222104	211305	200384	197204
10°	239511	230545	208220	187513	179004
15°	248185	234811	203384	173828	162795
20°	253670	236788	197721	160113	146845
25°	253009	236762	186759	146760	133003
30°	233378	232203	171115	134223	118786
35°	204134	214783	153245	120049	107596
40°	172443	185905	132507	107366	97022
45°	145798	155738	113438	94203	84914
50°	129371	130607	97284	82138	74738
55°	115745	111801	84145	70717	70312
60°	103327	97437	73412	61187	66166
65°	94900	86590	63794	56825	60585
70°	87438	77510	56309	52995	56309
75°	82308	69170	49033	48135	51653
80°	75705	61981	43069	44352	46974
85°	75361	55910	36347	36347	41571

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 40°  
 Vertical Angle: 45°  
 Luminance: 157019 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	206.0	5.0
10°-20°	574.3	13.9
20°-30°	819.2	19.8
30°-40°	844.2	20.4
40°-50°	679.6	16.5
50°-60°	480.6	11.6
60°-70°	311.5	7.5
70°-80°	167.3	4.1
80°-90°	48.3	1.2
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°	1599.5	38.7
0°-40°	2443.7	59.2
0°-60°	3603.9	87.2
0°-90°	4131.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4131.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2185	2185	2185	2185	2185	
5°	2332	2284	2173	2061	2028	226
15°	2475	2341	2028	1733	1623	700
25°	2367	2215	1747	1373	1244	1078
35°	1726	1816	1296	1015	910	1072
45°	1064	1137	828	688	620	832
55°	685	662	498	419	416	613
65°	414	378	278	248	264	413
75°	220	185	131	129	138	233
85°	68	50	33	33	37	74
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
0°	2184.6	2184.6	2184.6	2184.6	2184.6	2184.6	2184.6	2184.6	2184.6	2184.6	2184.6
1°	2208.0	2217.3	2210.3	2210.3	2203.3	2200.9	2205.6	2198.6	2196.3	2191.6	2182.2
2°	2247.7	2240.7	2238.4	2240.7	2226.7	2226.7	2219.7	2205.6	2198.6	2189.2	2163.5
3°	2275.8	2271.1	2266.4	2264.1	2250.1	2238.4	2229.0	2212.6	2198.6	2186.9	2149.5
4°	2301.5	2301.5	2296.8	2287.5	2273.4	2259.4	2240.7	2222.0	2200.9	2179.9	2130.8
5°	2331.9	2334.3	2313.2	2310.9	2294.5	2273.4	2252.4	2226.7	2200.9	2172.9	2119.1
6°	2362.3	2350.6	2346.0	2329.6	2306.2	2287.5	2261.8	2233.7	2198.6	2165.9	2093.4
7°	2376.4	2374.0	2362.3	2346.0	2324.9	2294.5	2268.8	2231.3	2193.9	2161.2	2074.6
8°	2399.8	2399.8	2385.7	2364.7	2334.3	2306.2	2273.4	2229.0	2191.6	2149.5	2048.9
9°	2416.1	2416.1	2397.4	2378.7	2350.6	2313.2	2275.8	2226.7	2179.9	2130.8	2025.5
10°	2434.8	2430.2	2416.1	2388.1	2364.7	2322.6	2275.8	2224.3	2172.9	2116.7	2002.1
11°	2448.9	2441.9	2425.5	2404.4	2367.0	2324.9	2275.8	2224.3	2163.5	2102.7	1978.7
12°	2460.6	2455.9	2434.8	2409.1	2371.7	2329.6	2273.4	2215.0	2147.1	2084.0	1948.3
13°	2474.6	2460.6	2439.5	2416.1	2374.0	2324.9	2264.1	2200.9	2135.5	2067.6	1922.6
14°	2472.3	2469.9	2451.2	2418.5	2371.7	2320.2	2261.8	2186.9	2119.1	2048.9	1892.2
15°	2474.6	2472.3	2451.2	2420.8	2369.3	2313.2	2254.7	2177.6	2102.7	2027.9	1861.8
16°	2474.6	2474.6	2446.5	2416.1	2367.0	2306.2	2240.7	2168.2	2086.3	2011.5	1836.1
17°	2474.6	2474.6	2451.2	2409.1	2360.0	2301.5	2226.7	2149.5	2067.6	1988.1	1798.6
18°	2479.3	2472.3	2441.9	2406.8	2350.6	2289.8	2217.3	2135.5	2051.2	1962.4	1772.9
19°	2467.6	2462.9	2437.2	2392.7	2343.6	2275.8	2203.3	2119.1	2034.9	1941.3	1742.5
20°	2460.6	2467.6	2432.5	2385.7	2329.6	2264.1	2189.2	2102.7	2011.5	1917.9	1712.1
21°	2462.9	2460.6	2423.1	2374.0	2320.2	2247.7	2172.9	2084.0	1985.8	1889.9	1684.0
22.5°	2458.2	2451.2	2411.4	2357.7	2292.2	2226.7	2144.8	2053.6	1948.3	1840.7	1630.2
23°	2448.9	2441.9	2411.4	2353.0	2282.8	2217.3	2130.8	2034.9	1934.3	1824.4	1616.2
24°	2411.4	2409.1	2395.1	2336.6	2271.1	2198.6	2114.4	2004.5	1892.2	1777.6	1581.1
25°	2367.0	2371.7	2364.7	2327.2	2252.4	2177.6	2088.7	1967.0	1852.4	1747.2	1539.0
26°	2324.9	2324.9	2320.2	2306.2	2233.7	2154.2	2051.2	1922.6	1812.7	1702.7	1494.6
27°	2271.1	2280.5	2271.1	2264.1	2215.0	2128.4	2011.5	1892.2	1768.2	1660.6	1457.2
28°	2229.0	2229.0	2224.3	2212.6	2196.3	2098.0	1969.4	1847.8	1726.1	1623.2	1415.1
29°	2154.2	2168.2	2170.5	2172.9	2170.5	2058.3	1929.6	1798.6	1681.7	1569.4	1375.3
30°	2086.3	2100.4	2109.7	2126.1	2128.4	2023.2	1882.8	1758.9	1639.6	1529.7	1340.2
32.5°	1901.6	1927.3	1953.0	1981.1	1995.1	1917.9	1768.2	1632.6	1511.0	1412.7	1232.6
35°	1726.1	1733.2	1761.2	1826.7	1840.7	1791.6	1632.6	1503.9	1389.3	1295.8	1132.0
37.5°	1527.3	1541.4	1581.1	1656.0	1660.6	1620.9	1511.0	1361.3	1253.7	1171.8	1029.1
40°	1363.6	1370.6	1398.7	1461.8	1482.9	1457.2	1361.3	1225.6	1127.4	1047.8	930.9
42.5°	1199.9	1209.2	1244.3	1293.4	1323.8	1293.4	1209.2	1092.3	996.4	937.9	837.3
45°	1064.2	1075.9	1108.7	1136.7	1146.1	1127.4	1052.5	956.6	888.8	828.0	750.8
47.5°	947.3	959.0	982.4	994.0	1005.7	987.0	928.6	849.0	781.2	732.1	661.9
50°	858.4	856.1	872.4	877.1	877.1	856.1	806.9	741.4	685.3	645.5	587.1
52.5°	757.8	762.5	774.2	769.5	767.2	748.5	706.4	650.2	603.4	568.4	514.6
55°	685.3	678.3	685.3	680.6	671.3	652.6	615.1	568.4	528.6	498.2	449.1
57.5°	605.8	605.8	608.1	598.8	587.1	566.0	533.3	495.9	460.8	435.0	395.3
60°	533.3	538.0	535.6	526.3	514.6	491.2	465.4	428.0	397.6	378.9	341.5



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**CANDELA DISTRIBUTION (continued):**

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
67.5°	362.5	362.5	355.5	348.5	332.1	311.1	292.4	269.0	252.6	236.2	212.8
70°	308.7	313.4	304.1	292.4	280.7	266.6	245.6	226.9	210.5	198.8	180.1
72.5°	266.6	264.3	257.3	245.6	236.2	219.9	201.1	187.1	173.1	163.7	149.7
75°	219.9	219.9	212.8	203.5	191.8	177.8	163.7	152.0	140.3	131.0	124.0
77.5°	175.4	177.8	170.7	163.7	154.4	140.3	128.6	119.3	109.9	102.9	98.2
80°	135.7	138.0	131.0	126.3	114.6	107.6	98.2	88.9	81.9	77.2	74.8
82.5°	102.9	100.6	95.9	93.6	84.2	77.2	67.8	63.2	58.5	53.8	53.8
85°	67.8	65.5	63.2	60.8	53.8	46.8	44.4	39.8	35.1	32.7	32.7
87.5°	35.1	35.1	32.7	30.4	28.1	23.4	21.1	16.4	14.0	14.0	14.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	135°	157.5°	180°
0°	2184.6	2184.6	2184.6
1°	2175.2	2165.9	2163.5
2°	2147.1	2133.1	2135.5
3°	2121.4	2105.0	2088.7
4°	2088.7	2062.9	2062.9
5°	2060.6	2034.9	2027.9
6°	2034.9	1992.8	1983.4
7°	2011.5	1960.0	1943.7
8°	1971.7	1920.3	1903.9
9°	1943.7	1887.5	1871.2
10°	1906.2	1850.1	1819.7
11°	1875.8	1812.7	1789.3
12°	1843.1	1765.9	1742.5
13°	1805.7	1726.1	1712.1
14°	1770.6	1693.4	1667.7
15°	1733.2	1653.6	1623.2
16°	1693.4	1613.9	1585.8
17°	1660.6	1571.8	1550.7
18°	1627.9	1534.3	1501.6
19°	1588.1	1499.3	1461.8
20°	1553.1	1454.8	1424.4
21°	1515.6	1422.1	1389.3
22.5°	1464.2	1358.9	1328.5
23°	1447.8	1340.2	1307.5
24°	1410.4	1302.8	1274.7
25°	1373.0	1274.7	1244.3
26°	1340.2	1232.6	1204.6
27°	1307.5	1199.9	1169.5
28°	1272.4	1164.8	1141.4
29°	1237.3	1127.4	1104.0
30°	1199.9	1101.6	1061.9
32.5°	1106.3	1017.4	984.7
35°	1015.1	937.9	909.8
37.5°	926.2	863.1	837.3
40°	849.0	792.9	767.2
42.5°	769.5	718.1	692.3
45°	687.6	645.5	619.8
47.5°	612.8	577.7	549.7
50°	545.0	509.9	495.9
52.5°	479.5	456.1	463.1
55°	418.7	418.7	416.3
57.5°	360.2	376.6	378.9
60°	315.8	336.8	341.5





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**CANDELA DISTRIBUTION (continued):**

	135°	157.5°	180°
67.5°	217.5	229.2	233.9
70°	187.1	196.5	198.8
72.5°	159.0	166.1	170.7
75°	128.6	138.0	138.0
77.5°	105.3	109.9	112.3
80°	79.5	81.9	84.2
82.5°	56.1	58.5	60.8
85°	32.7	35.1	37.4
87.5°	14.0	14.0	14.0
90°	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





62.5°	472.5	477.1	470.1	458.4	446.7	425.7	402.3	369.6	346.2	327.5	294.7
65°	414.0	416.3	411.7	400.0	388.3	367.2	343.8	315.8	297.0	278.3	250.3

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62.5°	283.0	299.4	301.7
65°	247.9	262.0	264.3

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Scaled Data Report



(END OF REPORT)