

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: P838751

Luminaire Tested: HCSQ660D010-HM64560840-61SQLWW

Issue Date: 5/21/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P838751  
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: HCSQ660D010-HM64560840-61SQLWW  
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: -

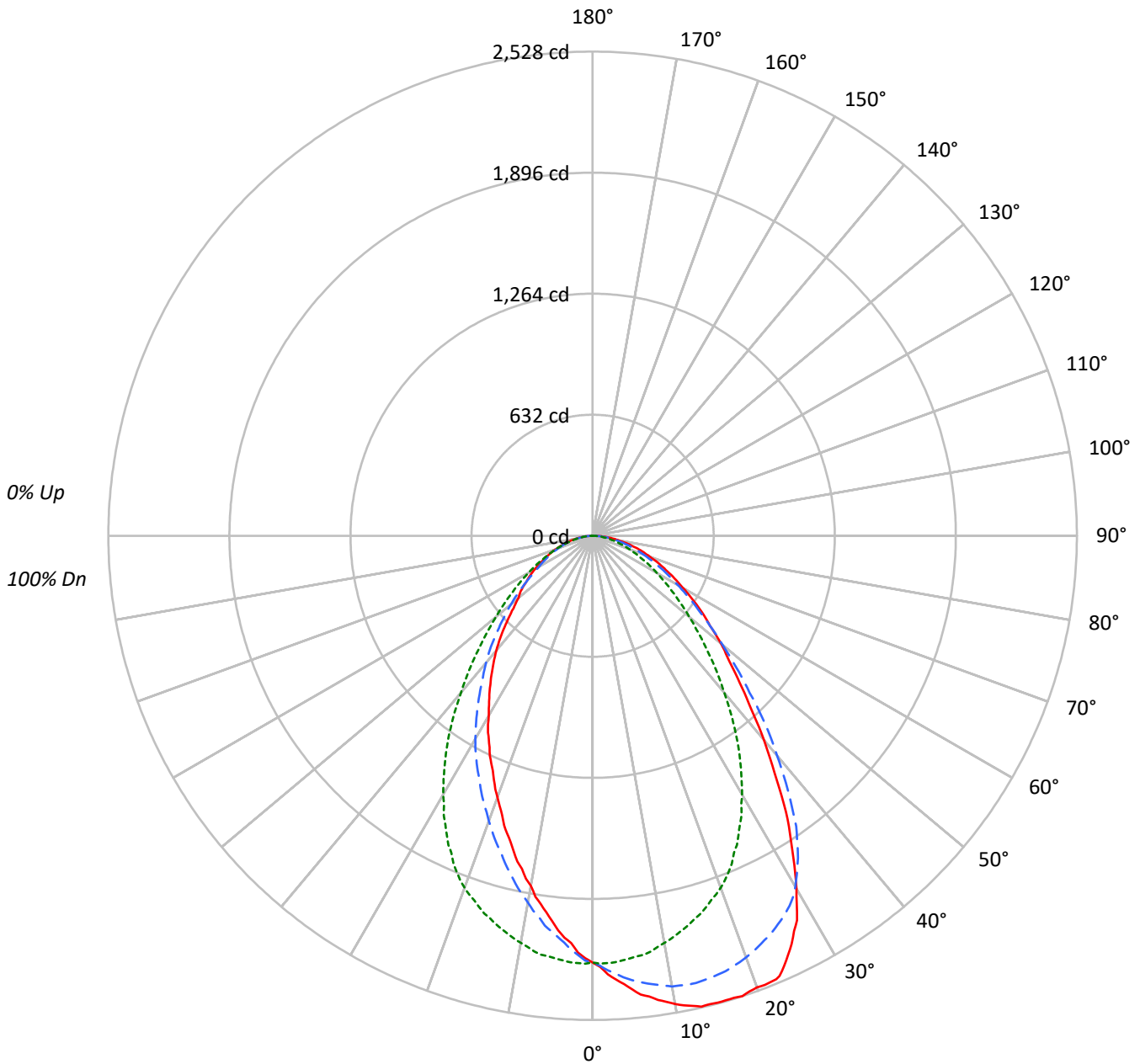
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4212.5 lumens  
Efficiency: N/A  
Efficacy: 75.2 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): 56  
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°	215809	215809	215809	215809	215809
5°	231240	226490	215477	204342	201094
10°	244243	235089	212331	191221	182535
15°	253079	239449	207396	177258	166015
20°	258670	241464	201629	163268	149742
25°	258001	241433	190446	149657	135633
30°	237987	236784	174494	136874	121124
35°	208167	219029	156261	122414	109724
40°	175845	189573	135125	109491	98931
45°	148675	158807	115671	96066	86599
50°	131918	133176	99213	83750	76200
55°	118025	113997	85800	72102	71697
60°	105362	99355	74865	62388	67464
65°	96780	88298	65055	57949	61777
70°	89165	79039	57414	54043	57414
75°	83918	70536	50006	49108	52664
80°	77155	63208	43905	45244	47922
85°	76917	57021	37125	37125	42460

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 40°  
 Vertical Angle: 45°  
 Luminance: 160115 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	210.1	5.0
10°-20°	585.6	13.9
20°-30°	835.4	19.8
30°-40°	860.9	20.4
40°-50°	693.0	16.5
50°-60°	490.0	11.6
60°-70°	317.6	7.5
70°-80°	170.6	4.1
80°-90°	49.3	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°	1631.1	38.7
0°-40°	2492.0	59.2
0°-60°	3675.0	87.2
0°-90°	4212.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4212.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2228	2228	2228	2228	2228	
5°	2378	2329	2216	2101	2068	230
15°	2523	2388	2068	1767	1655	714
25°	2414	2259	1782	1400	1269	1099
35°	1760	1852	1321	1035	928	1093
45°	1085	1159	844	701	632	848
55°	699	675	508	427	424	625
65°	422	385	284	253	270	421
75°	224	188	134	131	141	238
85°	69	51	33	33	38	76
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°	2227.7	2227.7	2227.7	2227.7	2227.7	2227.7	2227.7	2227.7	2227.7	2227.7	2227.7
1°	2251.5	2261.1	2253.9	2253.9	2246.8	2244.4	2249.2	2242.0	2239.6	2234.8	2225.3
2°	2292.1	2284.9	2282.5	2284.9	2270.6	2270.6	2263.5	2249.2	2242.0	2232.5	2206.2
3°	2320.7	2315.9	2311.2	2308.8	2294.5	2282.5	2273.0	2256.3	2242.0	2230.1	2191.9
4°	2346.9	2346.9	2342.2	2332.6	2318.3	2304.0	2284.9	2265.8	2244.4	2222.9	2172.8
5°	2377.9	2380.3	2358.9	2356.5	2339.8	2318.3	2296.9	2270.6	2244.4	2215.8	2160.9
6°	2409.0	2397.0	2392.3	2375.6	2351.7	2332.6	2306.4	2277.8	2242.0	2208.6	2134.7
7°	2423.3	2420.9	2409.0	2392.3	2370.8	2339.8	2313.5	2275.4	2237.2	2203.8	2115.6
8°	2447.1	2447.1	2432.8	2411.3	2380.3	2351.7	2318.3	2273.0	2234.8	2191.9	2089.3
9°	2463.8	2463.8	2444.7	2425.6	2397.0	2358.9	2320.7	2270.6	2222.9	2172.8	2065.5
10°	2482.9	2478.1	2463.8	2435.2	2411.3	2368.4	2320.7	2268.2	2215.8	2158.5	2041.6
11°	2497.2	2490.0	2473.4	2451.9	2413.7	2370.8	2320.7	2268.2	2206.2	2144.2	2017.8
12°	2509.1	2504.4	2482.9	2456.7	2418.5	2375.6	2318.3	2258.7	2189.5	2125.1	1986.8
13°	2523.4	2509.1	2487.7	2463.8	2420.9	2370.8	2308.8	2244.4	2177.6	2108.4	1960.6
14°	2521.1	2518.7	2499.6	2466.2	2418.5	2366.0	2306.4	2230.1	2160.9	2089.3	1929.5
15°	2523.4	2521.1	2499.6	2468.6	2416.1	2358.9	2299.2	2220.5	2144.2	2067.9	1898.5
16°	2523.4	2523.4	2494.8	2463.8	2413.7	2351.7	2284.9	2211.0	2127.5	2051.2	1872.3
17°	2523.4	2523.4	2499.6	2456.7	2406.6	2346.9	2270.6	2191.9	2108.4	2027.3	1834.1
18°	2528.2	2521.1	2490.0	2454.3	2397.0	2335.0	2261.1	2177.6	2091.7	2001.1	1807.9
19°	2516.3	2511.5	2485.3	2440.0	2389.9	2320.7	2246.8	2160.9	2075.0	1979.6	1776.9
20°	2509.1	2516.3	2480.5	2432.8	2375.6	2308.8	2232.5	2144.2	2051.2	1955.8	1745.9
21°	2511.5	2509.1	2471.0	2420.9	2366.0	2292.1	2215.8	2125.1	2025.0	1927.2	1717.3
22.5°	2506.7	2499.6	2459.0	2404.2	2337.4	2270.6	2187.1	2094.1	1986.8	1877.1	1662.4
23°	2497.2	2490.0	2459.0	2399.4	2327.9	2261.1	2172.8	2075.0	1972.5	1860.4	1648.1
24°	2459.0	2456.7	2442.3	2382.7	2315.9	2242.0	2156.1	2044.0	1929.5	1812.7	1612.3
25°	2413.7	2418.5	2411.3	2373.2	2296.9	2220.5	2129.9	2005.9	1889.0	1781.7	1569.4
26°	2370.8	2370.8	2366.0	2351.7	2277.8	2196.7	2091.7	1960.6	1848.5	1736.4	1524.1
27°	2315.9	2325.5	2315.9	2308.8	2258.7	2170.4	2051.2	1929.5	1803.1	1693.4	1485.9
28°	2273.0	2273.0	2268.2	2256.3	2239.6	2139.4	2008.3	1884.2	1760.2	1655.3	1443.0
29°	2196.7	2211.0	2213.4	2215.8	2213.4	2098.9	1967.7	1834.1	1714.9	1600.4	1402.4
30°	2127.5	2141.8	2151.4	2168.1	2170.4	2063.1	1920.0	1793.6	1672.0	1559.9	1366.7
32.5°	1939.1	1965.3	1991.6	2020.2	2034.5	1955.8	1803.1	1664.8	1540.8	1440.6	1256.9
35°	1760.2	1767.4	1796.0	1862.8	1877.1	1827.0	1664.8	1533.6	1416.8	1321.3	1154.4
37.5°	1557.5	1571.8	1612.3	1688.7	1693.4	1652.9	1540.8	1388.1	1278.4	1194.9	1049.4
40°	1390.5	1397.7	1426.3	1490.7	1512.2	1485.9	1388.1	1249.8	1149.6	1068.5	949.3
42.5°	1223.6	1233.1	1268.9	1319.0	1350.0	1319.0	1233.1	1113.8	1016.1	956.4	853.9
45°	1085.2	1097.1	1130.5	1159.2	1168.7	1149.6	1073.3	975.5	906.3	844.3	765.6
47.5°	966.0	977.9	1001.7	1013.7	1025.6	1006.5	946.9	865.8	796.6	746.5	675.0
50°	875.3	872.9	889.6	894.4	894.4	872.9	822.9	756.1	698.8	658.3	598.7
52.5°	772.8	777.5	789.5	784.7	782.3	763.2	720.3	663.1	615.4	579.6	524.7
55°	698.8	691.7	698.8	694.1	684.5	665.4	627.3	579.6	539.0	508.0	457.9
57.5°	617.7	617.7	620.1	610.6	598.7	577.2	543.8	505.6	469.9	443.6	403.1
60°	543.8	548.6	546.2	536.6	524.7	500.9	474.6	436.5	405.5	386.4	348.2



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**CANDELA DISTRIBUTION (continued):**

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
67.5°	369.7	369.7	362.5	355.4	338.7	317.2	298.1	274.3	257.6	240.9	217.0
70°	314.8	319.6	310.1	298.1	286.2	271.9	250.4	231.4	214.7	202.7	183.7
72.5°	271.9	269.5	262.4	250.4	240.9	224.2	205.1	190.8	176.5	167.0	152.6
75°	224.2	224.2	217.0	207.5	195.6	181.3	167.0	155.0	143.1	133.6	126.4
77.5°	178.9	181.3	174.1	167.0	157.4	143.1	131.2	121.6	112.1	104.9	100.2
80°	138.3	140.7	133.6	128.8	116.9	109.7	100.2	90.6	83.5	78.7	76.3
82.5°	104.9	102.6	97.8	95.4	85.9	78.7	69.2	64.4	59.6	54.9	54.9
85°	69.2	66.8	64.4	62.0	54.9	47.7	45.3	40.5	35.8	33.4	33.4
87.5°	35.8	35.8	33.4	31.0	28.6	23.9	21.5	16.7	14.3	14.3	14.3
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°	2227.7	2227.7	2227.7
1°	2218.1	2208.6	2206.2
2°	2189.5	2175.2	2177.6
3°	2163.3	2146.6	2129.9
4°	2129.9	2103.7	2103.7
5°	2101.3	2075.0	2067.9
6°	2075.0	2032.1	2022.6
7°	2051.2	1998.7	1982.0
8°	2010.6	1958.2	1941.5
9°	1982.0	1924.8	1908.1
10°	1943.9	1886.6	1855.6
11°	1912.9	1848.5	1824.6
12°	1879.5	1800.8	1776.9
13°	1841.3	1760.2	1745.9
14°	1805.5	1726.8	1700.6
15°	1767.4	1686.3	1655.3
16°	1726.8	1645.7	1617.1
17°	1693.4	1602.8	1581.3
18°	1660.0	1564.6	1531.2
19°	1619.5	1528.9	1490.7
20°	1583.7	1483.5	1452.5
21°	1545.5	1450.1	1416.8
22.5°	1493.1	1385.7	1354.7
23°	1476.4	1366.7	1333.3
24°	1438.2	1328.5	1299.9
25°	1400.1	1299.9	1268.9
26°	1366.7	1256.9	1228.3
27°	1333.3	1223.6	1192.6
28°	1297.5	1187.8	1163.9
29°	1261.7	1149.6	1125.8
30°	1223.6	1123.4	1082.8
32.5°	1128.2	1037.5	1004.1
35°	1035.1	956.4	927.8
37.5°	944.5	880.1	853.9
40°	865.8	808.5	782.3
42.5°	784.7	732.2	706.0
45°	701.2	658.3	632.1
47.5°	624.9	589.1	560.5
50°	555.7	520.0	505.6
52.5°	488.9	465.1	472.3
55°	426.9	426.9	424.5
57.5°	367.3	384.0	386.4
60°	322.0	343.5	348.2





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**CANDELA DISTRIBUTION (continued):**

	135°	157.5°	180°
67.5°	221.8	233.7	238.5
70°	190.8	200.3	202.7
72.5°	162.2	169.3	174.1
75°	131.2	140.7	140.7
77.5°	107.3	112.1	114.5
80°	81.1	83.5	85.9
82.5°	57.2	59.6	62.0
85°	33.4	35.8	38.2
87.5°	14.3	14.3	14.3
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°	481.8	486.6	479.4	467.5	455.6	434.1	410.2	376.8	353.0	333.9	300.5
65°	422.2	424.5	419.8	407.9	395.9	374.5	350.6	322.0	302.9	283.8	255.2

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62.5°	288.6	305.3	307.7
65°	252.8	267.1	269.5

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Scaled Data Report



(END OF REPORT)