

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: P838766

Luminaire Tested: HCSQ660D010-HM64560935-61SQLWW

Issue Date: 5/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P838766
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-HM64560935-61SQLWW
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

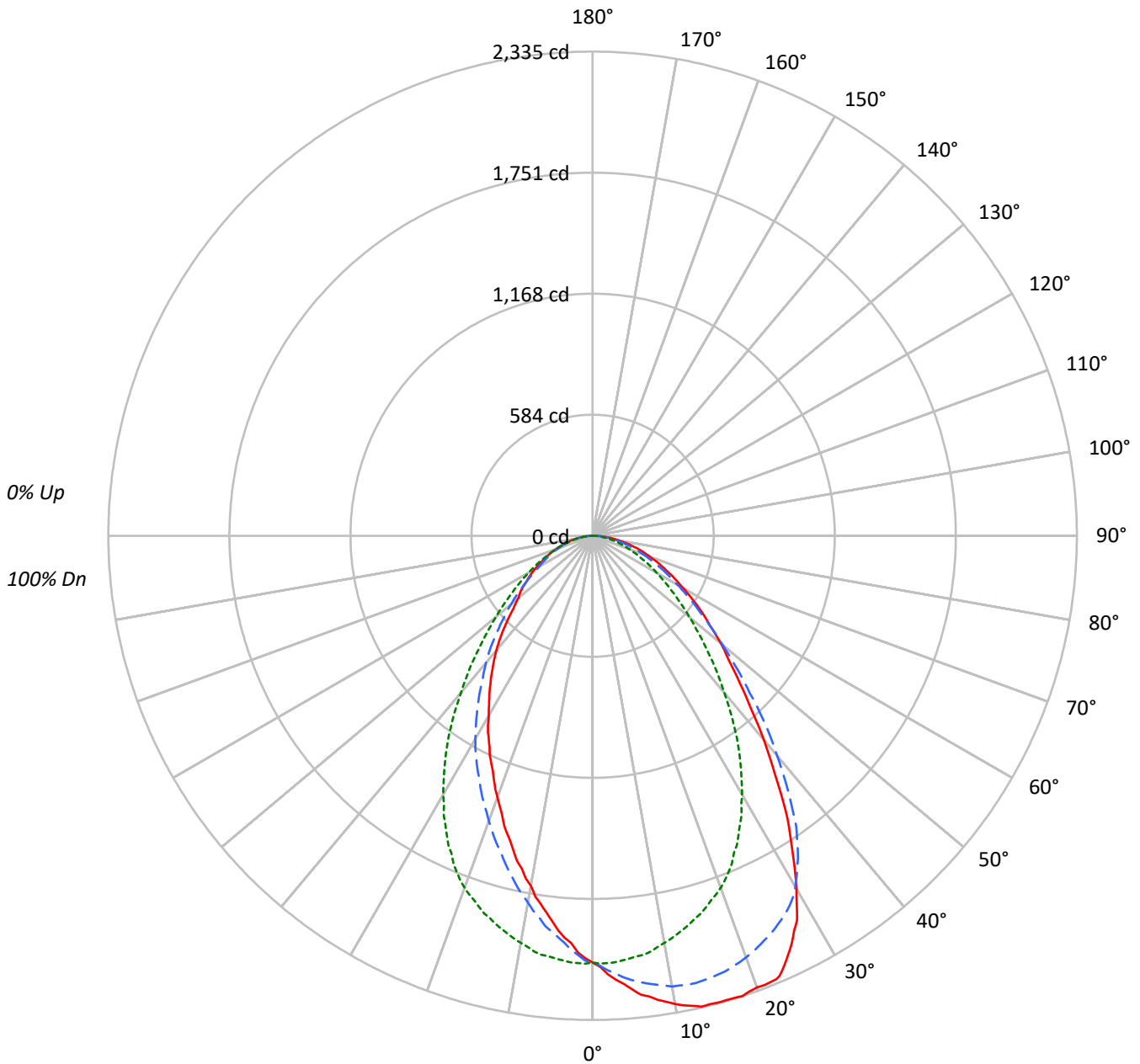
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3891.0 lumens
Efficiency: N/A
Efficacy: 69.5 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): 56
Input Voltage (V): NR
Input Current (A_{in}): 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°	199331	199331	199331	199331	199331
5°	213590	209199	199023	188744	185739
10°	225602	217147	196120	176623	168606
15°	233763	221171	191559	163718	153338
20°	238928	223026	186237	150804	138309
25°	238312	223000	175909	138230	125275
30°	219820	218713	161171	126427	111884
35°	192272	202307	144340	113071	101351
40°	162428	175099	124818	101132	91381
45°	137331	146689	106848	88737	79982
50°	121850	123011	91633	77360	70382
55°	109023	105299	79247	66596	66225
60°	97321	91770	69150	57622	62310
65°	89376	81559	60103	53524	57055
70°	82368	73006	53052	49908	53052
75°	77517	65128	46188	45365	48659
80°	71297	58355	40558	41785	44240
85°	71026	52686	34235	34235	39126

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 40°
 Vertical Angle: 45°
 Luminance: 147894 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	194.1	5.0
10°-20°	540.9	13.9
20°-30°	771.6	19.8
30°-40°	795.2	20.4
40°-50°	640.1	16.5
50°-60°	452.6	11.6
60°-70°	293.4	7.5
70°-80°	157.6	4.1
80°-90°	45.5	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°	1506.6	38.7
0°-40°	2301.8	59.2
0°-60°	3394.5	87.2
0°-90°	3891.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3891.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2058	2058	2058	2058	2058	
5°	2196	2151	2047	1941	1910	213
15°	2331	2205	1910	1632	1529	659
25°	2230	2086	1646	1293	1172	1015
35°	1626	1711	1220	956	857	1009
45°	1002	1071	780	648	584	783
55°	646	623	469	394	392	577
65°	390	356	262	234	249	389
75°	207	174	123	121	130	220
85°	64	47	31	31	35	70
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°	2057.6	2057.6	2057.6	2057.6	2057.6	2057.6	2057.6	2057.6	2057.6	2057.6	2057.6
1°	2079.7	2088.5	2081.9	2081.9	2075.3	2073.1	2077.5	2070.9	2068.6	2064.2	2055.4
2°	2117.1	2110.5	2108.3	2110.5	2097.3	2097.3	2090.7	2077.5	2070.9	2062.0	2037.8
3°	2143.6	2139.1	2134.7	2132.5	2119.3	2108.3	2099.5	2084.1	2070.9	2059.8	2024.6
4°	2167.8	2167.8	2163.4	2154.6	2141.3	2128.1	2110.5	2092.9	2073.1	2053.2	2007.0
5°	2196.4	2198.6	2178.8	2176.6	2161.2	2141.3	2121.5	2097.3	2073.1	2046.6	1995.9
6°	2225.1	2214.0	2209.6	2194.2	2172.2	2154.6	2130.3	2103.9	2070.9	2040.0	1971.7
7°	2238.3	2236.1	2225.1	2209.6	2189.8	2161.2	2136.9	2101.7	2066.4	2035.6	1954.1
8°	2260.3	2260.3	2247.1	2227.3	2198.6	2172.2	2141.3	2099.5	2064.2	2024.6	1929.9
9°	2275.7	2275.7	2258.1	2240.5	2214.0	2178.8	2143.6	2097.3	2053.2	2007.0	1907.8
10°	2293.4	2289.0	2275.7	2249.3	2227.3	2187.6	2143.6	2095.1	2046.6	1993.7	1885.8
11°	2306.6	2300.0	2284.5	2264.7	2229.5	2189.8	2143.6	2095.1	2037.8	1980.5	1863.8
12°	2317.6	2313.2	2293.4	2269.1	2233.9	2194.2	2141.3	2086.3	2022.4	1962.9	1835.1
13°	2330.8	2317.6	2297.8	2275.7	2236.1	2189.8	2132.5	2073.1	2011.4	1947.5	1810.9
14°	2328.6	2326.4	2308.8	2277.9	2233.9	2185.4	2130.3	2059.8	1995.9	1929.9	1782.3
15°	2330.8	2328.6	2308.8	2280.1	2231.7	2178.8	2123.7	2051.0	1980.5	1910.0	1753.6
16°	2330.8	2330.8	2304.4	2275.7	2229.5	2172.2	2110.5	2042.2	1965.1	1894.6	1729.4
17°	2330.8	2330.8	2308.8	2269.1	2222.9	2167.8	2097.3	2024.6	1947.5	1872.6	1694.1
18°	2335.2	2328.6	2300.0	2266.9	2214.0	2156.8	2088.5	2011.4	1932.1	1848.3	1669.9
19°	2324.2	2319.8	2295.6	2253.7	2207.4	2143.6	2075.3	1995.9	1916.6	1828.5	1641.3
20°	2317.6	2324.2	2291.2	2247.1	2194.2	2132.5	2062.0	1980.5	1894.6	1806.5	1612.6
21°	2319.8	2317.6	2282.3	2236.1	2185.4	2117.1	2046.6	1962.9	1870.4	1780.1	1586.2
22.5°	2315.4	2308.8	2271.3	2220.7	2159.0	2097.3	2020.2	1934.3	1835.1	1733.8	1535.5
23°	2306.6	2300.0	2271.3	2216.3	2150.2	2088.5	2007.0	1916.6	1821.9	1718.4	1522.3
24°	2271.3	2269.1	2255.9	2200.8	2139.1	2070.9	1991.5	1888.0	1782.3	1674.3	1489.3
25°	2229.5	2233.9	2227.3	2192.0	2121.5	2051.0	1967.3	1852.8	1744.8	1645.7	1449.6
26°	2189.8	2189.8	2185.4	2172.2	2103.9	2029.0	1932.1	1810.9	1707.4	1603.8	1407.7
27°	2139.1	2148.0	2139.1	2132.5	2086.3	2004.8	1894.6	1782.3	1665.5	1564.2	1372.5
28°	2099.5	2099.5	2095.1	2084.1	2068.6	1976.1	1855.0	1740.4	1625.8	1528.9	1332.8
29°	2029.0	2042.2	2044.4	2046.6	2044.4	1938.7	1817.5	1694.1	1584.0	1478.2	1295.4
30°	1965.1	1978.3	1987.1	2002.6	2004.8	1905.6	1773.4	1656.7	1544.3	1440.8	1262.3
32.5°	1791.1	1815.3	1839.5	1866.0	1879.2	1806.5	1665.5	1537.7	1423.2	1330.6	1161.0
35°	1625.8	1632.4	1658.9	1720.6	1733.8	1687.5	1537.7	1416.6	1308.6	1220.5	1066.3
37.5°	1438.6	1451.8	1489.3	1559.7	1564.2	1526.7	1423.2	1282.2	1180.8	1103.7	969.3
40°	1284.4	1291.0	1317.4	1376.9	1396.7	1372.5	1282.2	1154.4	1061.9	987.0	876.8
42.5°	1130.2	1139.0	1172.0	1218.3	1246.9	1218.3	1139.0	1028.8	938.5	883.4	788.7
45°	1002.4	1013.4	1044.2	1070.7	1079.5	1061.9	991.4	901.0	837.2	779.9	707.2
47.5°	892.2	903.2	925.3	936.3	947.3	929.7	874.6	799.7	735.8	689.5	623.5
50°	808.5	806.3	821.7	826.1	826.1	806.3	760.0	698.4	645.5	608.0	553.0
52.5°	713.8	718.2	729.2	724.8	722.6	705.0	665.3	612.4	568.4	535.3	484.7
55°	645.5	638.9	645.5	641.1	632.3	614.6	579.4	535.3	497.9	469.2	423.0
57.5°	570.6	570.6	572.8	564.0	553.0	533.1	502.3	467.0	434.0	409.8	372.3
60°	502.3	506.7	504.5	495.7	484.7	462.6	438.4	403.2	374.5	356.9	321.6



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CANDELA DISTRIBUTION (continued):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
67.5°	341.5	341.5	334.9	328.3	312.8	293.0	275.4	253.3	237.9	222.5	200.5
70°	290.8	295.2	286.4	275.4	264.4	251.1	231.3	213.7	198.3	187.3	169.6
72.5°	251.1	248.9	242.3	231.3	222.5	207.1	189.5	176.2	163.0	154.2	141.0
75°	207.1	207.1	200.5	191.7	180.6	167.4	154.2	143.2	132.2	123.4	116.8
77.5°	165.2	167.4	160.8	154.2	145.4	132.2	121.2	112.4	103.5	96.9	92.5
80°	127.8	130.0	123.4	119.0	107.9	101.3	92.5	83.7	77.1	72.7	70.5
82.5°	96.9	94.7	90.3	88.1	79.3	72.7	63.9	59.5	55.1	50.7	50.7
85°	63.9	61.7	59.5	57.3	50.7	44.1	41.9	37.5	33.0	30.8	30.8
87.5°	33.0	33.0	30.8	28.6	26.4	22.0	19.8	15.4	13.2	13.2	13.2
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°	2057.6	2057.6	2057.6
1°	2048.8	2040.0	2037.8
2°	2022.4	2009.2	2011.4
3°	1998.2	1982.7	1967.3
4°	1967.3	1943.1	1943.1
5°	1940.9	1916.6	1910.0
6°	1916.6	1877.0	1868.2
7°	1894.6	1846.1	1830.7
8°	1857.2	1808.7	1793.3
9°	1830.7	1777.8	1762.4
10°	1795.5	1742.6	1714.0
11°	1766.8	1707.4	1685.3
12°	1736.0	1663.3	1641.3
13°	1700.7	1625.8	1612.6
14°	1667.7	1595.0	1570.8
15°	1632.4	1557.5	1528.9
16°	1595.0	1520.1	1493.7
17°	1564.2	1480.4	1460.6
18°	1533.3	1445.2	1414.3
19°	1495.9	1412.1	1376.9
20°	1462.8	1370.3	1341.6
21°	1427.6	1339.4	1308.6
22.5°	1379.1	1280.0	1251.3
23°	1363.7	1262.3	1231.5
24°	1328.4	1227.1	1200.7
25°	1293.2	1200.7	1172.0
26°	1262.3	1161.0	1134.6
27°	1231.5	1130.2	1101.5
28°	1198.5	1097.1	1075.1
29°	1165.4	1061.9	1039.8
30°	1130.2	1037.6	1000.2
32.5°	1042.0	958.3	927.5
35°	956.1	883.4	857.0
37.5°	872.4	812.9	788.7
40°	799.7	746.8	722.6
42.5°	724.8	676.3	652.1
45°	647.7	608.0	583.8
47.5°	577.2	544.1	517.7
50°	513.3	480.3	467.0
52.5°	451.6	429.6	436.2
55°	394.3	394.3	392.1
57.5°	339.3	354.7	356.9
60°	297.4	317.2	321.6



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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
67.5°	204.9	215.9	220.3
70°	176.2	185.1	187.3
72.5°	149.8	156.4	160.8
75°	121.2	130.0	130.0
77.5°	99.1	103.5	105.7
80°	74.9	77.1	79.3
82.5°	52.9	55.1	57.3
85°	30.8	33.0	35.2
87.5°	13.2	13.2	13.2
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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62.5°	445.0	449.4	442.8	431.8	420.8	401.0	378.9	348.1	326.0	308.4	277.6
65°	389.9	392.1	387.7	376.7	365.7	345.9	323.8	297.4	279.8	262.2	235.7

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62.5°	266.6	282.0	284.2
65°	233.5	246.7	248.9

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Scaled Data Report



(END OF REPORT)