

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: P838756

Luminaire Tested: HCSQ660D010-HM64560927-61SQLWW

Issue Date: 5/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P838756
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-HM64560927-61SQLWW
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

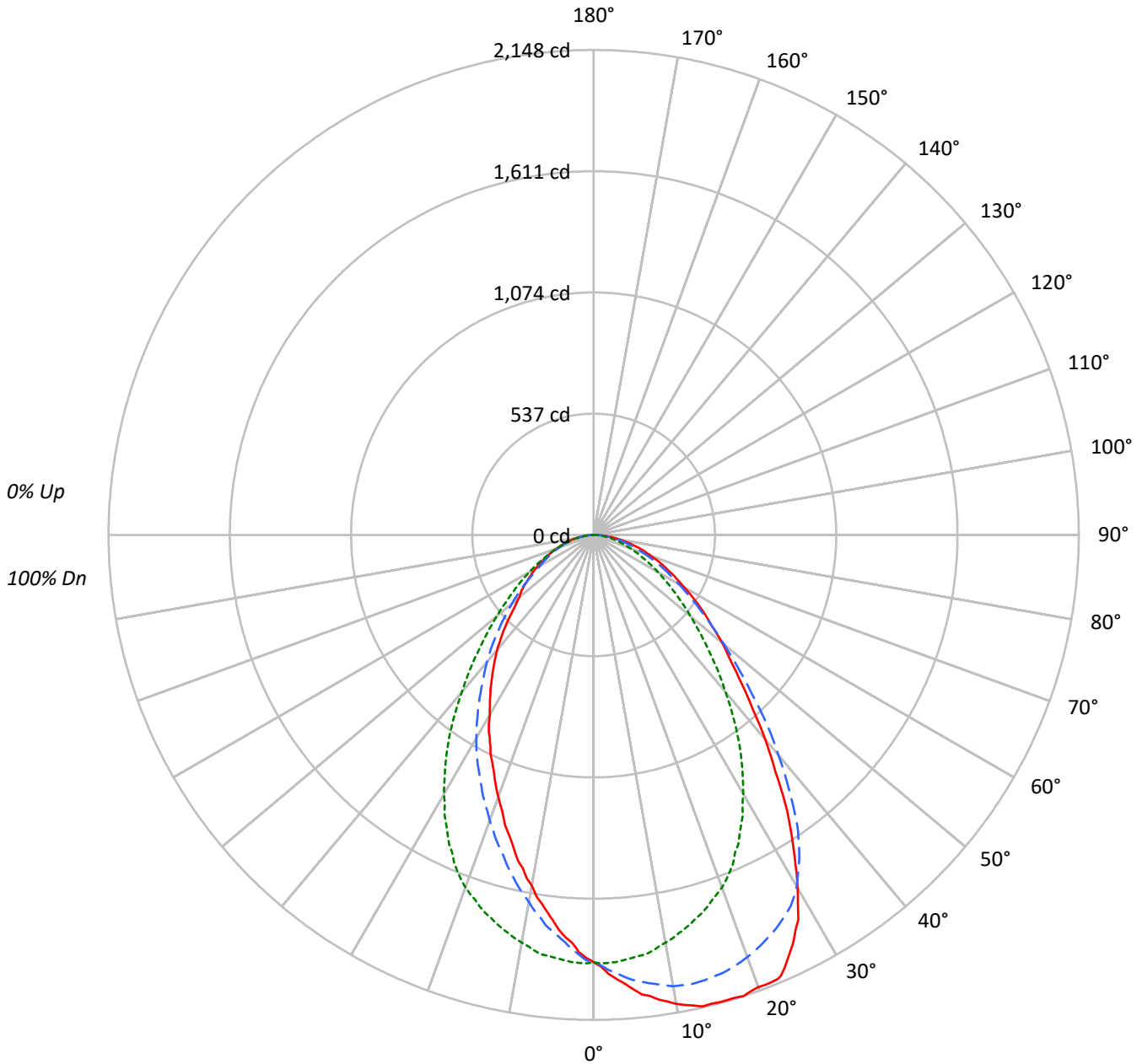
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3578.2 lumens
Efficiency: N/A
Efficacy: 63.9 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°	183308	183308	183308	183308	183308
5°	196426	192381	183026	173564	170812
10°	207462	199686	180361	162419	155051
15°	214968	203389	176164	150560	141012
20°	219721	205098	171268	138680	127196
25°	219146	205074	161768	127114	115206
30°	202146	201128	148217	116258	102891
35°	176815	186046	132738	103989	93203
40°	149364	161024	114777	93000	84034
45°	126289	134893	98258	81599	73557
50°	112054	113124	84278	71136	64731
55°	100257	96829	72879	61242	60904
60°	89494	84388	63589	52991	57312
65°	82201	75003	55267	49215	52470
70°	75740	67143	48775	45914	48775
75°	71266	59906	42483	41697	44729
80°	65551	53696	37322	38438	40670
85°	65357	48407	31567	31567	36013

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 40°
 Vertical Angle: 45°
 Luminance: 136002 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	178.5	5.0
10°-20°	497.4	13.9
20°-30°	709.6	19.8
30°-40°	731.3	20.4
40°-50°	588.7	16.5
50°-60°	416.2	11.6
60°-70°	269.8	7.5
70°-80°	144.9	4.1
80°-90°	41.9	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°	1385.5	38.7
0°-40°	2116.7	59.2
0°-60°	3121.6	87.2
0°-90°	3578.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3578.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1892	1892	1892	1892	1892	
5°	2020	1978	1882	1785	1756	196
15°	2143	2028	1756	1501	1406	606
25°	2050	1919	1513	1189	1078	934
35°	1495	1573	1122	879	788	928
45°	922	985	717	596	537	720
55°	594	573	432	363	361	531
65°	359	327	241	215	229	358
75°	190	160	114	111	120	202
85°	59	44	28	28	32	65
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°	1892.2	1892.2	1892.2	1892.2	1892.2	1892.2	1892.2	1892.2	1892.2	1892.2	1892.2
1°	1912.5	1920.6	1914.5	1914.5	1908.4	1906.4	1910.5	1904.4	1902.3	1898.3	1890.2
2°	1946.9	1940.8	1938.8	1940.8	1928.7	1928.7	1922.6	1910.5	1904.4	1896.3	1874.0
3°	1971.2	1967.2	1963.1	1961.1	1948.9	1938.8	1930.7	1916.5	1904.4	1894.2	1861.8
4°	1993.5	1993.5	1989.5	1981.4	1969.2	1957.0	1940.8	1924.6	1906.4	1888.2	1845.6
5°	2019.9	2021.9	2003.6	2001.6	1987.4	1969.2	1951.0	1928.7	1906.4	1882.1	1835.5
6°	2046.2	2036.1	2032.0	2017.8	1997.6	1981.4	1959.1	1934.8	1904.4	1876.0	1813.2
7°	2058.3	2056.3	2046.2	2032.0	2013.8	1987.4	1965.2	1932.7	1900.3	1872.0	1797.0
8°	2078.6	2078.6	2066.4	2048.2	2021.9	1997.6	1969.2	1930.7	1898.3	1861.8	1774.7
9°	2092.8	2092.8	2076.6	2060.4	2036.1	2003.6	1971.2	1928.7	1888.2	1845.6	1754.5
10°	2109.0	2104.9	2092.8	2068.5	2048.2	2011.7	1971.2	1926.7	1882.1	1833.5	1734.2
11°	2121.1	2115.1	2100.9	2082.7	2050.2	2013.8	1971.2	1926.7	1874.0	1821.3	1713.9
12°	2131.3	2127.2	2109.0	2086.7	2054.3	2017.8	1969.2	1918.6	1859.8	1805.1	1687.6
13°	2143.4	2131.3	2113.0	2092.8	2056.3	2013.8	1961.1	1906.4	1849.7	1790.9	1665.3
14°	2141.4	2139.4	2123.2	2094.8	2054.3	2009.7	1959.1	1894.2	1835.5	1774.7	1639.0
15°	2143.4	2141.4	2123.2	2096.8	2052.3	2003.6	1953.0	1886.1	1821.3	1756.5	1612.6
16°	2143.4	2143.4	2119.1	2092.8	2050.2	1997.6	1940.8	1878.0	1807.1	1742.3	1590.4
17°	2143.4	2143.4	2123.2	2086.7	2044.2	1993.5	1928.7	1861.8	1790.9	1722.0	1557.9
18°	2147.5	2141.4	2115.1	2084.7	2036.1	1983.4	1920.6	1849.7	1776.7	1699.8	1535.7
19°	2137.4	2133.3	2111.0	2072.5	2030.0	1971.2	1908.4	1835.5	1762.6	1681.5	1509.3
20°	2131.3	2137.4	2107.0	2066.4	2017.8	1961.1	1896.3	1821.3	1742.3	1661.3	1483.0
21°	2133.3	2131.3	2098.9	2056.3	2009.7	1946.9	1882.1	1805.1	1720.0	1637.0	1458.7
22.5°	2129.3	2123.2	2088.7	2042.1	1985.4	1928.7	1857.8	1778.8	1687.6	1594.4	1412.1
23°	2121.1	2115.1	2088.7	2038.1	1977.3	1920.6	1845.6	1762.6	1675.4	1580.2	1399.9
24°	2088.7	2086.7	2074.6	2023.9	1967.2	1904.4	1831.4	1736.2	1639.0	1539.7	1369.5
25°	2050.2	2054.3	2048.2	2015.8	1951.0	1886.1	1809.2	1703.8	1604.5	1513.4	1333.1
26°	2013.8	2013.8	2009.7	1997.6	1934.8	1865.9	1776.7	1665.3	1570.1	1474.9	1294.6
27°	1967.2	1975.3	1967.2	1961.1	1918.6	1843.6	1742.3	1639.0	1531.6	1438.4	1262.2
28°	1930.7	1930.7	1926.7	1916.5	1902.3	1817.3	1705.8	1600.5	1495.1	1406.0	1225.7
29°	1865.9	1878.0	1880.1	1882.1	1880.1	1782.8	1671.4	1557.9	1456.6	1359.4	1191.2
30°	1807.1	1819.3	1827.4	1841.6	1843.6	1752.4	1630.9	1523.5	1420.2	1325.0	1160.9
32.5°	1647.1	1669.4	1691.7	1716.0	1728.1	1661.3	1531.6	1414.1	1308.8	1223.7	1067.7
35°	1495.1	1501.2	1525.5	1582.3	1594.4	1551.9	1414.1	1302.7	1203.4	1122.4	980.6
37.5°	1322.9	1335.1	1369.5	1434.4	1438.4	1404.0	1308.8	1179.1	1085.9	1015.0	891.4
40°	1181.1	1187.2	1211.5	1266.2	1284.4	1262.2	1179.1	1061.6	976.5	907.6	806.3
42.5°	1039.3	1047.4	1077.8	1120.3	1146.7	1120.3	1047.4	946.1	863.0	812.4	725.3
45°	921.8	931.9	960.3	984.6	992.7	976.5	911.7	828.6	769.9	717.2	650.3
47.5°	820.5	830.6	850.9	861.0	871.2	854.9	804.3	735.4	676.7	634.1	573.3
50°	743.5	741.5	755.7	759.7	759.7	741.5	698.9	642.2	593.6	559.2	508.5
52.5°	656.4	660.5	670.6	666.5	664.5	648.3	611.8	563.2	522.7	492.3	445.7
55°	593.6	587.5	593.6	589.5	581.4	565.2	532.8	492.3	457.9	431.5	389.0
57.5°	524.7	524.7	526.7	518.6	508.5	490.3	461.9	429.5	399.1	376.8	342.4
60°	461.9	466.0	463.9	455.8	445.7	425.4	403.2	370.7	344.4	328.2	295.8



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CANDELA DISTRIBUTION (continued):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
67.5°	<i>314.0</i>	314.0	307.9	301.9	287.7	269.4	253.2	233.0	218.8	204.6	184.4
70°	<i>267.4</i>	271.5	263.4	253.2	243.1	231.0	212.7	196.5	182.3	172.2	156.0
72.5°	<i>231.0</i>	228.9	222.9	212.7	204.6	190.4	174.2	162.1	149.9	141.8	129.7
75°	<i>190.4</i>	190.4	184.4	176.3	166.1	154.0	141.8	131.7	121.6	113.5	107.4
77.5°	<i>151.9</i>	154.0	147.9	141.8	133.7	121.6	111.4	103.3	95.2	89.1	85.1
80°	<i>117.5</i>	119.5	113.5	109.4	99.3	93.2	85.1	77.0	70.9	66.9	64.8
82.5°	<i>89.1</i>	87.1	83.1	81.0	72.9	66.9	58.8	54.7	50.6	46.6	46.6
85°	<i>58.8</i>	56.7	54.7	52.7	46.6	40.5	38.5	34.4	30.4	28.4	28.4
87.5°	<i>30.4</i>	30.4	28.4	26.3	24.3	20.3	18.2	14.2	12.2	12.2	12.2
90°	<i>0.0</i>	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°	1892.2	1892.2	1892.2
1°	1884.1	1876.0	1874.0
2°	1859.8	1847.6	1849.7
3°	1837.5	1823.3	1809.2
4°	1809.2	1786.9	1786.9
5°	1784.8	1762.6	1756.5
6°	1762.6	1726.1	1718.0
7°	1742.3	1697.7	1683.5
8°	1707.9	1663.3	1649.1
9°	1683.5	1634.9	1620.7
10°	1651.1	1602.5	1576.2
11°	1624.8	1570.1	1549.8
12°	1596.4	1529.6	1509.3
13°	1564.0	1495.1	1483.0
14°	1533.6	1466.8	1444.5
15°	1501.2	1432.3	1406.0
16°	1466.8	1397.9	1373.6
17°	1438.4	1361.4	1343.2
18°	1410.0	1329.0	1300.6
19°	1375.6	1298.6	1266.2
20°	1345.2	1260.1	1233.8
21°	1312.8	1231.8	1203.4
22.5°	1268.2	1177.1	1150.7
23°	1254.1	1160.9	1132.5
24°	1221.6	1128.4	1104.1
25°	1189.2	1104.1	1077.8
26°	1160.9	1067.7	1043.4
27°	1132.5	1039.3	1013.0
28°	1102.1	1008.9	988.7
29°	1071.7	976.5	956.2
30°	1039.3	954.2	919.8
32.5°	958.3	881.3	852.9
35°	879.3	812.4	788.1
37.5°	802.3	747.6	725.3
40°	735.4	686.8	664.5
42.5°	666.5	622.0	599.7
45°	595.6	559.2	536.9
47.5°	530.8	500.4	476.1
50°	472.0	441.7	429.5
52.5°	415.3	395.1	401.1
55°	362.6	362.6	360.6
57.5°	312.0	326.2	328.2
60°	273.5	291.7	295.8



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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
67.5°	188.4	198.5	202.6
70°	162.1	170.2	172.2
72.5°	137.8	143.8	147.9
75°	111.4	119.5	119.5
77.5°	91.2	95.2	97.2
80°	68.9	70.9	72.9
82.5°	48.6	50.6	52.7
85°	28.4	30.4	32.4
87.5°	12.2	12.2	12.2
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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Scaled Data Report





62.5°	409.2	413.3	407.2	397.1	387.0	368.7	348.5	320.1	299.8	283.6	255.3
65°	358.6	360.6	356.6	346.4	336.3	318.1	297.8	273.5	257.3	241.1	216.8

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Scaled Data Report



62.5°	245.1	259.3	261.3
65°	214.7	226.9	228.9

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Scaled Data Report



(END OF REPORT)