

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: P838676

Luminaire Tested: HCSQ650D010-HM64560927-61SQLWW

Issue Date: 5/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P838676
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: HCSQ650D010-HM64560927-61SQLWW
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

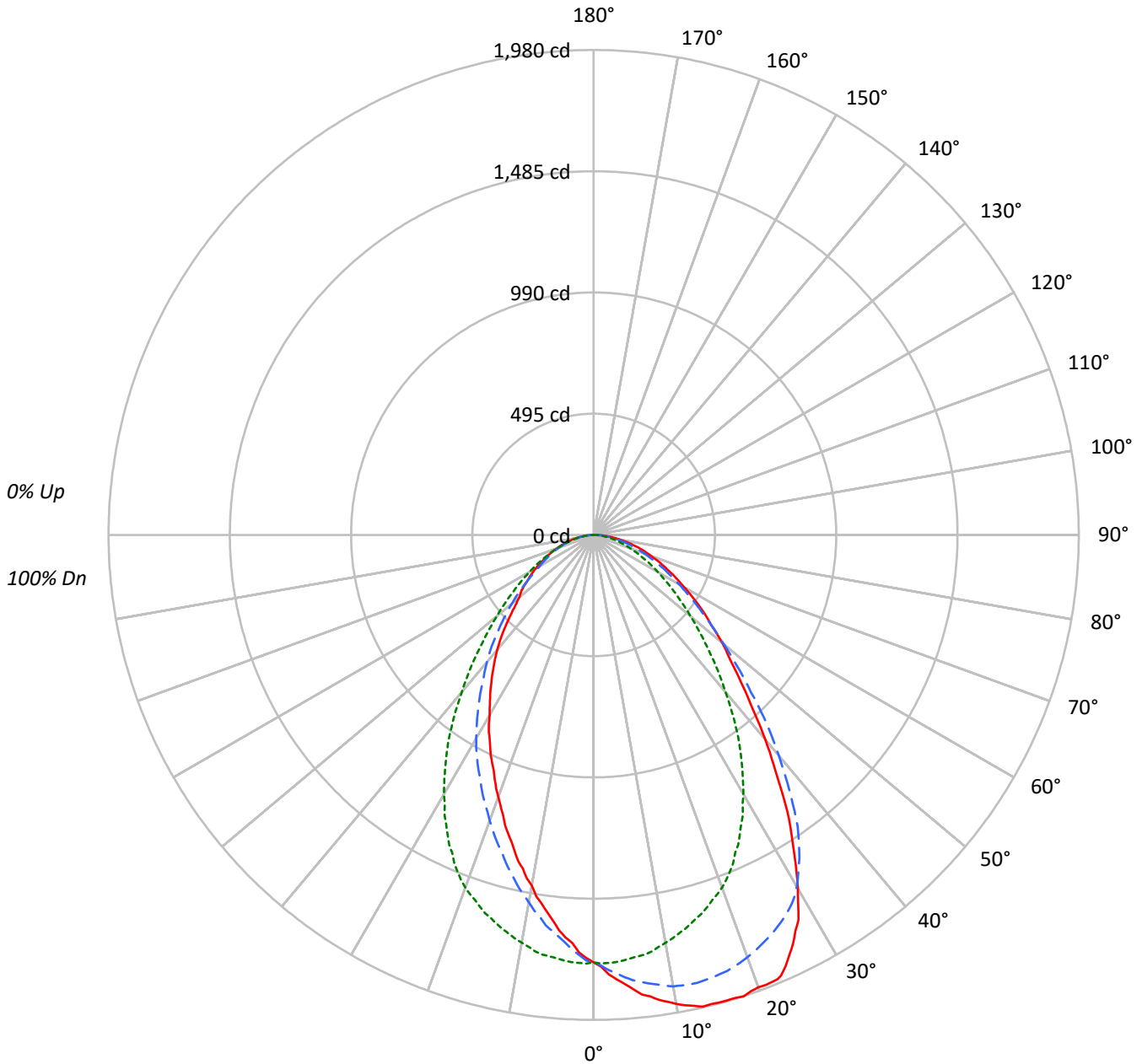
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3299.7 lumens
Efficiency: N/A
Efficacy: 66.4 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): 49.7
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									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°	169048	169048	169048	169048	169048
5°	181139	177415	168779	160056	157518
10°	191320	184148	166324	149778	142981
15°	198239	187563	162454	138845	130040
20°	202618	189139	157938	127886	117299
25°	202097	189116	149176	117226	106238
30°	186418	185479	136673	107209	94881
35°	163061	171564	122402	95888	85954
40°	137742	148492	105849	85766	77496
45°	116466	124398	90613	75255	67830
50°	103343	104322	77707	65605	59697
55°	92454	89296	67204	56479	56175
60°	82538	77820	58648	48864	52855
65°	75805	69158	50957	45387	48390
70°	69848	61917	44979	42345	44979
75°	65727	55246	39152	38478	41248
80°	60475	49484	34421	35426	37546
85°	60244	44683	29122	29122	33234

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 40°
 Vertical Angle: 45°
 Luminance: 125426 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	164.6	5.0
10°-20°	458.7	13.9
20°-30°	654.3	19.8
30°-40°	674.3	20.4
40°-50°	542.9	16.5
50°-60°	383.9	11.6
60°-70°	248.8	7.5
70°-80°	133.6	4.1
80°-90°	38.6	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°	1277.6	38.7
0°-40°	1952.0	59.2
0°-60°	2878.7	87.2
0°-90°	3299.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3299.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1745	1745	1745	1745	1745	
5°	1863	1824	1736	1646	1620	180
15°	1977	1870	1620	1384	1297	559
25°	1891	1769	1396	1097	994	861
35°	1379	1451	1035	811	727	856
45°	850	908	661	549	495	664
55°	547	529	398	334	333	490
65°	331	302	222	198	211	330
75°	176	148	105	103	110	186
85°	54	40	26	26	30	59
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°	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0
1°	1763.6	1771.1	1765.5	1765.5	1759.9	1758.0	1761.8	1756.2	1754.3	1750.6	1743.1
2°	1795.4	1789.8	1787.9	1789.8	1778.6	1778.6	1773.0	1761.8	1756.2	1748.7	1728.1
3°	1817.8	1814.1	1810.4	1808.5	1797.3	1787.9	1780.5	1767.4	1756.2	1746.8	1716.9
4°	1838.4	1838.4	1834.6	1827.2	1816.0	1804.7	1789.8	1774.9	1758.0	1741.2	1702.0
5°	1862.7	1864.5	1847.7	1845.8	1832.8	1816.0	1799.1	1778.6	1758.0	1735.6	1692.7
6°	1886.9	1877.6	1873.9	1860.8	1842.1	1827.2	1806.6	1784.2	1756.2	1730.0	1672.1
7°	1898.2	1896.3	1886.9	1873.9	1857.1	1832.8	1812.2	1782.3	1752.4	1726.3	1657.2
8°	1916.8	1916.8	1905.6	1888.8	1864.5	1842.1	1816.0	1780.5	1750.6	1716.9	1636.6
9°	1929.9	1929.9	1915.0	1900.0	1877.6	1847.7	1817.8	1778.6	1741.2	1702.0	1617.9
10°	1944.9	1941.1	1929.9	1907.5	1888.8	1855.2	1817.8	1776.7	1735.6	1690.8	1599.2
11°	1956.1	1950.5	1937.4	1920.6	1890.7	1857.1	1817.8	1776.7	1728.1	1679.6	1580.6
12°	1965.4	1961.7	1944.9	1924.3	1894.4	1860.8	1816.0	1769.2	1715.1	1664.6	1556.3
13°	1976.6	1965.4	1948.6	1929.9	1896.3	1857.1	1808.5	1758.0	1705.7	1651.5	1535.7
14°	1974.8	1972.9	1957.9	1931.8	1894.4	1853.3	1806.6	1746.8	1692.7	1636.6	1511.4
15°	1976.6	1974.8	1957.9	1933.7	1892.6	1847.7	1801.0	1739.4	1679.6	1619.8	1487.1
16°	1976.6	1976.6	1954.2	1929.9	1890.7	1842.1	1789.8	1731.9	1666.5	1606.7	1466.6
17°	1976.6	1976.6	1957.9	1924.3	1885.1	1838.4	1778.6	1716.9	1651.5	1588.0	1436.7
18°	1980.4	1974.8	1950.5	1922.4	1877.6	1829.0	1771.1	1705.7	1638.5	1567.5	1416.1
19°	1971.0	1967.3	1946.7	1911.2	1872.0	1817.8	1759.9	1692.7	1625.4	1550.7	1391.9
20°	1965.4	1971.0	1943.0	1905.6	1860.8	1808.5	1748.7	1679.6	1606.7	1532.0	1367.6
21°	1967.3	1965.4	1935.5	1896.3	1853.3	1795.4	1735.6	1664.6	1586.2	1509.6	1345.2
22.5°	1963.5	1957.9	1926.2	1883.2	1830.9	1778.6	1713.2	1640.3	1556.3	1470.3	1302.2
23°	1956.1	1950.5	1926.2	1879.5	1823.4	1771.1	1702.0	1625.4	1545.1	1457.2	1291.0
24°	1926.2	1924.3	1913.1	1866.4	1814.1	1756.2	1688.9	1601.1	1511.4	1419.9	1262.9
25°	1890.7	1894.4	1888.8	1858.9	1799.1	1739.4	1668.4	1571.2	1479.7	1395.6	1229.3
26°	1857.1	1857.1	1853.3	1842.1	1784.2	1720.7	1638.5	1535.7	1447.9	1360.1	1193.8
27°	1814.1	1821.6	1814.1	1808.5	1769.2	1700.1	1606.7	1511.4	1412.4	1326.5	1163.9
28°	1780.5	1780.5	1776.7	1767.4	1754.3	1675.8	1573.1	1475.9	1378.8	1296.6	1130.3
29°	1720.7	1731.9	1733.8	1735.6	1733.8	1644.1	1541.3	1436.7	1343.3	1253.6	1098.5
30°	1666.5	1677.7	1685.2	1698.3	1700.1	1616.1	1504.0	1404.9	1309.7	1221.8	1070.5
32.5°	1518.9	1539.5	1560.0	1582.4	1593.6	1532.0	1412.4	1304.1	1206.9	1128.4	984.6
35°	1378.8	1384.4	1406.8	1459.1	1470.3	1431.1	1304.1	1201.3	1109.8	1035.0	904.2
37.5°	1220.0	1231.2	1262.9	1322.7	1326.5	1294.7	1206.9	1087.3	1001.4	936.0	822.0
40°	1089.2	1094.8	1117.2	1167.7	1184.5	1163.9	1087.3	979.0	900.5	837.0	743.6
42.5°	958.4	965.9	993.9	1033.2	1057.4	1033.2	965.9	872.5	795.9	749.2	668.8
45°	850.1	859.4	885.6	908.0	915.5	900.5	840.7	764.1	709.9	661.4	599.7
47.5°	756.6	766.0	784.7	794.0	803.4	788.4	741.7	678.2	624.0	584.8	528.7
50°	685.7	683.8	696.9	700.6	700.6	683.8	644.6	592.2	547.4	515.6	468.9
52.5°	605.3	609.1	618.4	614.7	612.8	597.8	564.2	519.4	482.0	454.0	411.0
55°	547.4	541.8	547.4	543.7	536.2	521.2	491.4	454.0	422.2	397.9	358.7
57.5°	483.9	483.9	485.7	478.3	468.9	452.1	426.0	396.1	368.0	347.5	315.7
60°	426.0	429.7	427.8	420.4	411.0	392.3	371.8	341.9	317.6	302.7	272.8



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CANDELA DISTRIBUTION (continued):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
67.5°	289.6	289.6	284.0	278.4	265.3	248.5	233.5	214.9	201.8	188.7	170.0
70°	246.6	250.3	242.9	233.5	224.2	213.0	196.2	181.2	168.1	158.8	143.9
72.5°	213.0	211.1	205.5	196.2	188.7	175.6	160.7	149.5	138.3	130.8	119.6
75°	175.6	175.6	170.0	162.5	153.2	142.0	130.8	121.4	112.1	104.6	99.0
77.5°	140.1	142.0	136.4	130.8	123.3	112.1	102.8	95.3	87.8	82.2	78.5
80°	108.4	110.2	104.6	100.9	91.5	85.9	78.5	71.0	65.4	61.7	59.8
82.5°	82.2	80.3	76.6	74.7	67.3	61.7	54.2	50.4	46.7	43.0	43.0
85°	54.2	52.3	50.4	48.6	43.0	37.4	35.5	31.8	28.0	26.2	26.2
87.5°	28.0	28.0	26.2	24.3	22.4	18.7	16.8	13.1	11.2	11.2	11.2
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°	1745.0	1745.0	1745.0
1°	1737.5	1730.0	1728.1
2°	1715.1	1703.9	1705.7
3°	1694.5	1681.4	1668.4
4°	1668.4	1647.8	1647.8
5°	1645.9	1625.4	1619.8
6°	1625.4	1591.8	1584.3
7°	1606.7	1565.6	1552.5
8°	1574.9	1533.8	1520.8
9°	1552.5	1507.7	1494.6
10°	1522.6	1477.8	1453.5
11°	1498.4	1447.9	1429.2
12°	1472.2	1410.5	1391.9
13°	1442.3	1378.8	1367.6
14°	1414.3	1352.6	1332.1
15°	1384.4	1320.9	1296.6
16°	1352.6	1289.1	1266.7
17°	1326.5	1255.5	1238.7
18°	1300.3	1225.6	1199.4
19°	1268.6	1197.6	1167.7
20°	1240.5	1162.1	1137.8
21°	1210.6	1135.9	1109.8
22.5°	1169.5	1085.5	1061.2
23°	1156.5	1070.5	1044.4
24°	1126.6	1040.6	1018.2
25°	1096.7	1018.2	993.9
26°	1070.5	984.6	962.2
27°	1044.4	958.4	934.1
28°	1016.3	930.4	911.7
29°	988.3	900.5	881.8
30°	958.4	880.0	848.2
32.5°	883.7	812.7	786.5
35°	810.8	749.2	726.8
37.5°	739.8	689.4	668.8
40°	678.2	633.3	612.8
42.5°	614.7	573.6	553.0
45°	549.3	515.6	495.1
47.5°	489.5	461.5	439.0
50°	435.3	407.3	396.1
52.5°	383.0	364.3	369.9
55°	334.4	334.4	332.6
57.5°	287.7	300.8	302.7
60°	252.2	269.0	272.8



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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
67.5°	173.7	183.1	186.8
70°	149.5	156.9	158.8
72.5°	127.0	132.6	136.4
75°	102.8	110.2	110.2
77.5°	84.1	87.8	89.7
80°	63.5	65.4	67.3
82.5°	44.8	46.7	48.6
85°	26.2	28.0	29.9
87.5°	11.2	11.2	11.2
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°	377.4	381.1	375.5	366.2	356.8	340.0	321.3	295.2	276.5	261.6	235.4
65°	330.7	332.6	328.8	319.5	310.1	293.3	274.6	252.2	237.3	222.3	199.9

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62.5°	226.1	239.1	241.0
65°	198.0	209.2	211.1

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Scaled Data Report



(END OF REPORT)