

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: P838611

Luminaire Tested: HCSQ640D010-HM63040940-61SQLWW

Issue Date: 5/21/2024



Test Information

Test Method: LM-79-2019
Report Number: P838611
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: HCSQ640D010-HM63040940-61SQLWW
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

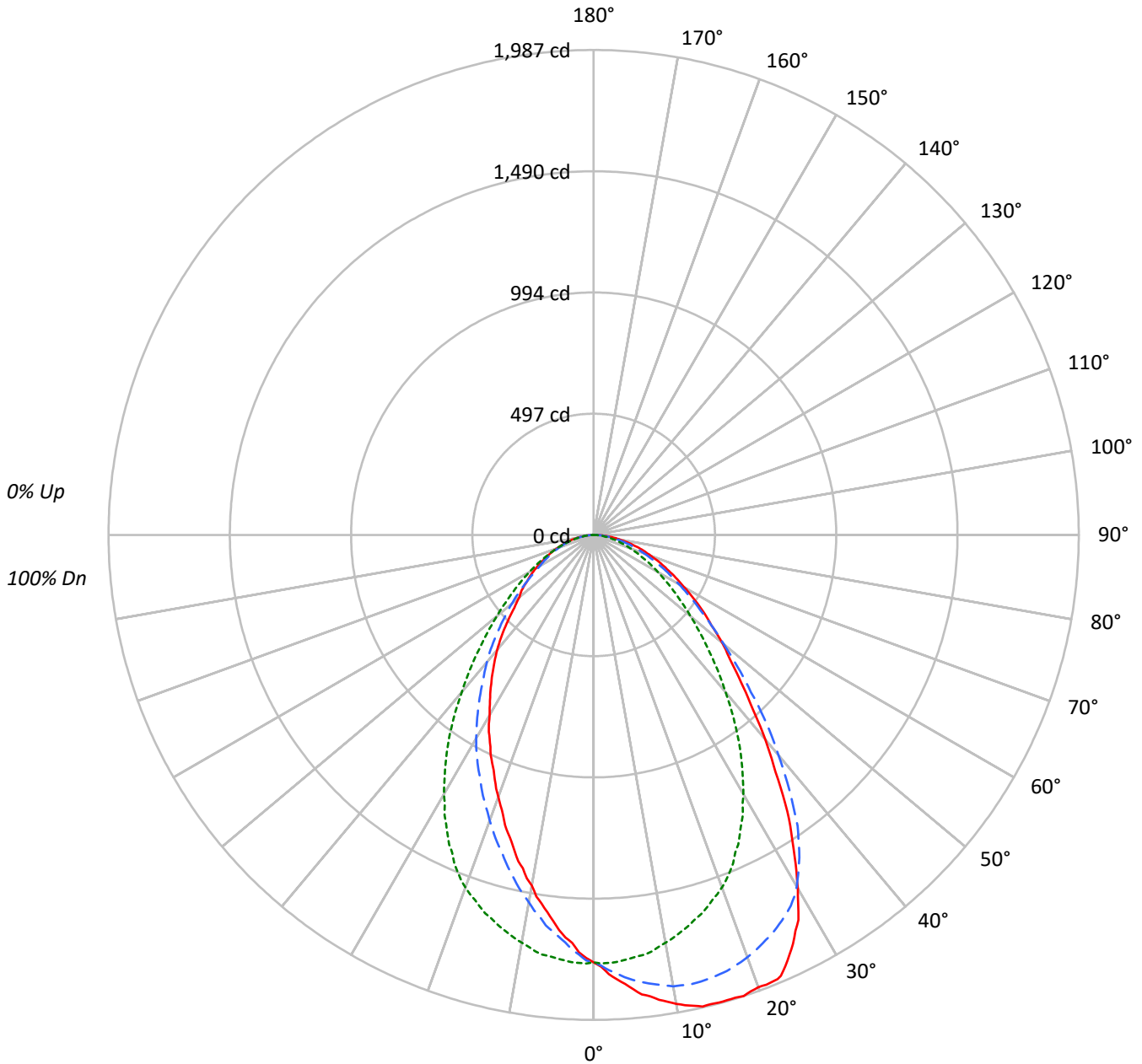
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3310.9 lumens
Efficiency: N/A
Efficacy: 80.8 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): 41
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					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	50	30	10	0		
RCR	0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100		
	1	110	106	103	99	108	104	101	98	100	97	95	96	94	92	92	91	89	87	87	87	87	87	87		
	2	102	95	89	84	99	93	87	83	89	85	81	86	82	79	83	80	77	75	75	75	75	75	75		
	3	94	85	78	72	92	83	77	71	80	75	70	78	73	69	75	71	68	66	66	66	66	66	66		
	4	87	76	69	63	85	75	68	62	73	66	62	71	65	61	68	64	60	58	58	58	58	58	58		
	5	81	69	61	55	79	68	61	55	66	60	55	64	59	54	63	58	53	51	51	51	51	51	51		
	6	75	63	55	49	74	62	55	49	61	54	49	59	53	48	58	52	48	46	46	46	46	46	46		
	7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	42	42	42	42	42	42		
	8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38	38	38	38	38	38		
	9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34	34	34	34	34	34		
	10	58	46	39	34	57	45	38	34	44	38	34	44	38	33	43	37	33	32	32	32	32	32	32		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	169619	169619	169619	169619	169619
5°	181752	178013	169353	160601	158053
10°	191969	184773	166885	150290	143463
15°	198911	188199	163006	139317	130481
20°	203309	189778	158474	128319	117691
25°	202781	189757	149678	117622	106602
30°	187045	186105	137143	107578	95206
35°	163617	172144	122816	96219	86237
40°	138210	148997	106203	86057	77761
45°	116849	124823	90915	75502	68063
50°	103689	104677	77978	65831	59893
55°	92775	89600	67441	56682	56361
60°	82809	78091	58842	49038	53030
65°	76057	69398	51140	45547	48550
70°	70075	62130	45121	42487	45121
75°	65951	55434	39301	38590	41397
80°	60642	49680	34533	35537	37657
85°	60467	44794	29122	29122	33346

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 40°
 Vertical Angle: 45°
 Luminance: 125851 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	165.1	5.0
10°-20°	460.3	13.9
20°-30°	656.6	19.8
30°-40°	676.6	20.4
40°-50°	544.7	16.5
50°-60°	385.2	11.6
60°-70°	249.6	7.5
70°-80°	134.1	4.1
80°-90°	38.7	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°	1282.0	38.7
0°-40°	1958.6	59.2
0°-60°	2888.5	87.2
0°-90°	3310.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3310.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1751	1751	1751	1751	1751	
5°	1869	1831	1742	1652	1625	181
15°	1983	1876	1625	1389	1301	561
25°	1897	1775	1400	1100	997	864
35°	1384	1456	1038	814	729	859
45°	853	911	664	551	497	666
55°	549	530	399	336	334	491
65°	332	303	223	199	212	331
75°	176	148	105	103	111	187
85°	54	40	26	26	30	60
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°	1750.9	1750.9	1750.9	1750.9	1750.9	1750.9	1750.9	1750.9	1750.9	1750.9	1750.9
1°	1769.6	1777.1	1771.5	1771.5	1765.9	1764.0	1767.7	1762.1	1760.2	1756.5	1749.0
2°	1801.5	1795.9	1794.0	1795.9	1784.6	1784.6	1779.0	1767.7	1762.1	1754.6	1734.0
3°	1824.0	1820.2	1816.5	1814.6	1803.4	1794.0	1786.5	1773.4	1762.1	1752.7	1722.8
4°	1844.6	1844.6	1840.9	1833.4	1822.1	1810.9	1795.9	1780.9	1764.0	1747.1	1707.8
5°	1869.0	1870.8	1854.0	1852.1	1839.0	1822.1	1805.2	1784.6	1764.0	1741.5	1698.4
6°	1893.3	1884.0	1880.2	1867.1	1848.4	1833.4	1812.7	1790.2	1762.1	1735.9	1677.8
7°	1904.6	1902.7	1893.3	1880.2	1863.4	1839.0	1818.4	1788.4	1758.4	1732.1	1662.8
8°	1923.3	1923.3	1912.1	1895.2	1870.8	1848.4	1822.1	1786.5	1756.5	1722.8	1642.1
9°	1936.5	1936.5	1921.5	1906.5	1884.0	1854.0	1824.0	1784.6	1747.1	1707.8	1623.4
10°	1951.5	1947.7	1936.5	1914.0	1895.2	1861.5	1824.0	1782.7	1741.5	1696.5	1604.7
11°	1962.7	1957.1	1944.0	1927.1	1897.1	1863.4	1824.0	1782.7	1734.0	1685.3	1585.9
12°	1972.1	1968.3	1951.5	1930.8	1900.8	1867.1	1822.1	1775.2	1720.9	1670.3	1561.5
13°	1983.3	1972.1	1955.2	1936.5	1902.7	1863.4	1814.6	1764.0	1711.5	1657.1	1540.9
14°	1981.5	1979.6	1964.6	1938.3	1900.8	1859.6	1812.7	1752.7	1698.4	1642.1	1516.6
15°	1983.3	1981.5	1964.6	1940.2	1899.0	1854.0	1807.1	1745.3	1685.3	1625.3	1492.2
16°	1983.3	1983.3	1960.8	1936.5	1897.1	1848.4	1795.9	1737.8	1672.1	1612.2	1471.6
17°	1983.3	1983.3	1964.6	1930.8	1891.5	1844.6	1784.6	1722.8	1657.1	1593.4	1441.6
18°	1987.1	1981.5	1957.1	1929.0	1884.0	1835.2	1777.1	1711.5	1644.0	1572.8	1420.9
19°	1977.7	1974.0	1953.3	1917.7	1878.3	1824.0	1765.9	1698.4	1630.9	1555.9	1396.6
20°	1972.1	1977.7	1949.6	1912.1	1867.1	1814.6	1754.6	1685.3	1612.2	1537.2	1372.2
21°	1974.0	1972.1	1942.1	1902.7	1859.6	1801.5	1741.5	1670.3	1591.5	1514.7	1349.7
22.5°	1970.2	1964.6	1932.7	1889.6	1837.1	1784.6	1719.0	1645.9	1561.5	1475.3	1306.6
23°	1962.7	1957.1	1932.7	1885.8	1829.6	1777.1	1707.8	1630.9	1550.3	1462.2	1295.3
24°	1932.7	1930.8	1919.6	1872.7	1820.2	1762.1	1694.6	1606.5	1516.6	1424.7	1267.2
25°	1897.1	1900.8	1895.2	1865.2	1805.2	1745.3	1674.0	1576.5	1484.7	1400.3	1233.5
26°	1863.4	1863.4	1859.6	1848.4	1790.2	1726.5	1644.0	1540.9	1452.8	1364.7	1197.9
27°	1820.2	1827.7	1820.2	1814.6	1775.2	1705.9	1612.2	1516.6	1417.2	1331.0	1167.9
28°	1786.5	1786.5	1782.7	1773.4	1760.2	1681.5	1578.4	1480.9	1383.5	1301.0	1134.1
29°	1726.5	1737.8	1739.6	1741.5	1739.6	1649.6	1546.5	1441.6	1347.8	1257.9	1102.3
30°	1672.1	1683.4	1690.9	1704.0	1705.9	1621.5	1509.1	1409.7	1314.1	1226.0	1074.1
32.5°	1524.0	1544.7	1565.3	1587.8	1599.0	1537.2	1417.2	1308.5	1211.0	1132.3	987.9
35°	1383.5	1389.1	1411.6	1464.1	1475.3	1435.9	1308.5	1205.4	1113.5	1038.5	907.3
37.5°	1224.1	1235.4	1267.2	1327.2	1331.0	1299.1	1211.0	1091.0	1004.8	939.2	824.8
40°	1092.9	1098.5	1121.0	1171.6	1188.5	1167.9	1091.0	982.3	903.6	839.8	746.1
42.5°	961.7	969.2	997.3	1036.7	1061.0	1036.7	969.2	875.4	798.6	751.7	671.1
45°	852.9	862.3	888.6	911.1	918.6	903.6	843.6	766.7	712.3	663.6	601.7
47.5°	759.2	768.6	787.3	796.7	806.1	791.1	744.2	680.5	626.1	586.7	530.5
50°	688.0	686.1	699.2	703.0	703.0	686.1	646.7	594.2	549.3	517.4	470.5
52.5°	607.4	611.1	620.5	616.7	614.9	599.9	566.1	521.1	483.6	455.5	412.4
55°	549.3	543.6	549.3	545.5	538.0	523.0	493.0	455.5	423.7	399.3	359.9
57.5°	485.5	485.5	487.4	479.9	470.5	453.7	427.4	397.4	369.3	348.7	316.8
60°	427.4	431.2	429.3	421.8	412.4	393.7	373.0	343.1	318.7	303.7	273.7



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CANDELA DISTRIBUTION (continued):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
67.5°	290.6	290.6	284.9	279.3	266.2	249.3	234.3	215.6	202.5	189.3	170.6
70°	247.4	251.2	243.7	234.3	225.0	213.7	196.8	181.8	168.7	159.3	144.3
72.5°	213.7	211.8	206.2	196.8	189.3	176.2	161.2	150.0	138.7	131.2	120.0
75°	176.2	176.2	170.6	163.1	153.7	142.5	131.2	121.8	112.5	105.0	99.4
77.5°	140.6	142.5	136.8	131.2	123.7	112.5	103.1	95.6	88.1	82.5	78.7
80°	108.7	110.6	105.0	101.2	91.9	86.2	78.7	71.2	65.6	61.9	60.0
82.5°	82.5	80.6	76.9	75.0	67.5	61.9	54.4	50.6	46.9	43.1	43.1
85°	54.4	52.5	50.6	48.7	43.1	37.5	35.6	31.9	28.1	26.2	26.2
87.5°	28.1	28.1	26.2	24.4	22.5	18.7	16.9	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°	1750.9	1750.9	1750.9
1°	1743.4	1735.9	1734.0
2°	1720.9	1709.6	1711.5
3°	1700.3	1687.1	1674.0
4°	1674.0	1653.4	1653.4
5°	1651.5	1630.9	1625.3
6°	1630.9	1597.2	1589.7
7°	1612.2	1570.9	1557.8
8°	1580.3	1539.0	1525.9
9°	1557.8	1512.8	1499.7
10°	1527.8	1482.8	1458.4
11°	1503.4	1452.8	1434.1
12°	1477.2	1415.3	1396.6
13°	1447.2	1383.5	1372.2
14°	1419.1	1357.2	1336.6
15°	1389.1	1325.3	1301.0
16°	1357.2	1293.5	1271.0
17°	1331.0	1259.7	1242.9
18°	1304.7	1229.7	1203.5
19°	1272.9	1201.6	1171.6
20°	1244.7	1166.0	1141.6
21°	1214.7	1139.8	1113.5
22.5°	1173.5	1089.1	1064.8
23°	1160.4	1074.1	1047.9
24°	1130.4	1044.2	1021.7
25°	1100.4	1021.7	997.3
26°	1074.1	987.9	965.4
27°	1047.9	961.7	937.3
28°	1019.8	933.6	914.8
29°	991.7	903.6	884.8
30°	961.7	882.9	851.1
32.5°	886.7	815.5	789.2
35°	813.6	751.7	729.2
37.5°	742.3	691.7	671.1
40°	680.5	635.5	614.9
42.5°	616.7	575.5	554.9
45°	551.1	517.4	496.8
47.5°	491.1	463.0	440.5
50°	436.8	408.7	397.4
52.5°	384.3	365.5	371.2
55°	335.6	335.6	333.7
57.5°	288.7	301.8	303.7
60°	253.1	269.9	273.7



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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
67.5°	174.3	183.7	187.5
70°	150.0	157.5	159.3
72.5°	127.5	133.1	136.8
75°	103.1	110.6	110.6
77.5°	84.4	88.1	90.0
80°	63.7	65.6	67.5
82.5°	45.0	46.9	48.7
85°	26.2	28.1	30.0
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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Scaled Data Report





62.5°	378.7	382.4	376.8	367.4	358.0	341.2	322.4	296.2	277.4	262.4	236.2
65°	331.8	333.7	329.9	320.6	311.2	294.3	275.6	253.1	238.1	223.1	200.6

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Scaled Data Report



62.5°	226.8	239.9	241.8
65°	198.7	210.0	211.8

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Scaled Data Report



(END OF REPORT)