

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: P838591

Luminaire Tested: HCSQ640D010-HM63040840-61SQLWW

Issue Date: 5/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P838591
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-HM63040840-61SQLWW
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: -

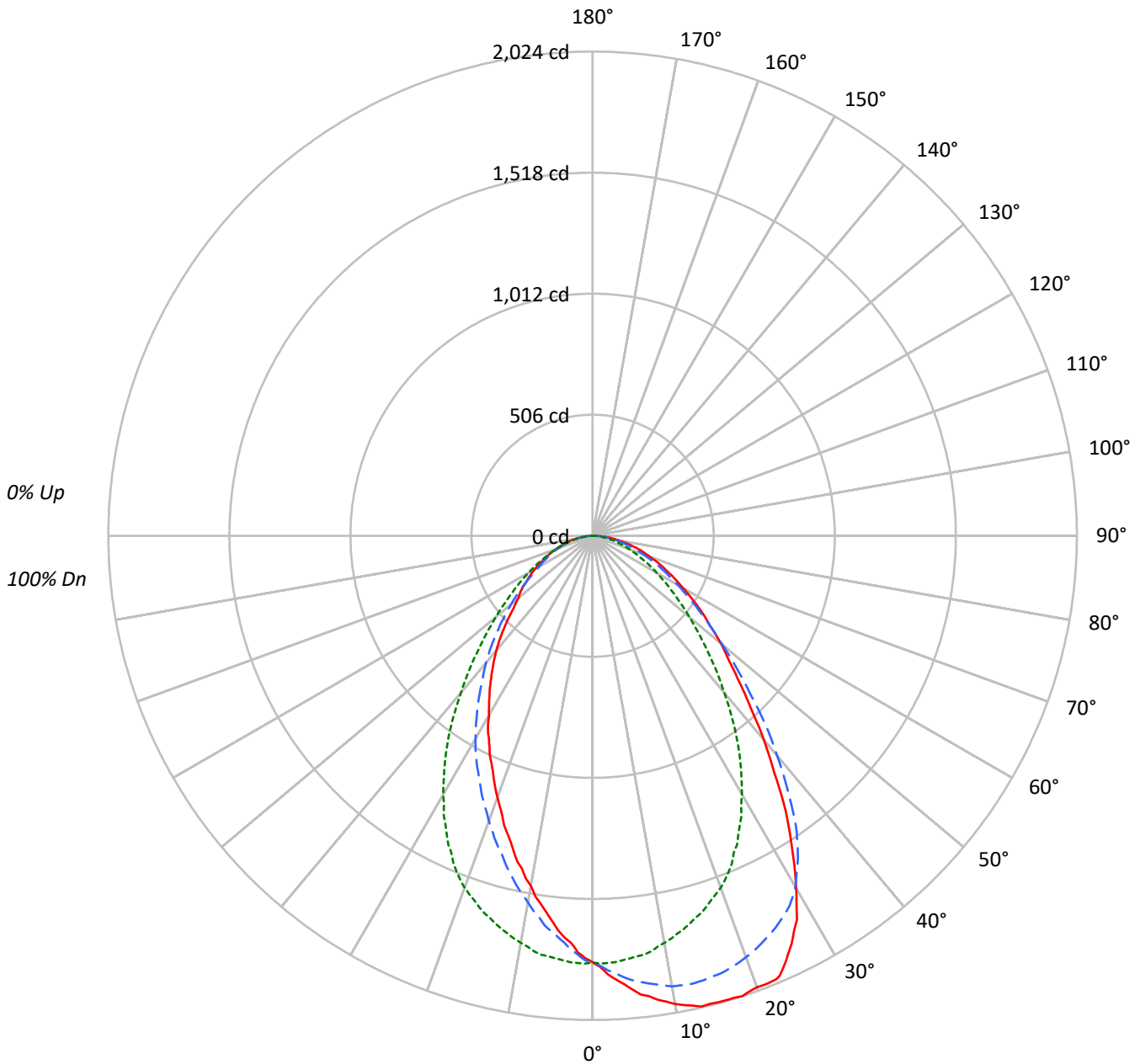
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3371.7 lumens
Efficiency: N/A
Efficacy: 82.2 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): 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			
1	110	106	103	99	108	104	101	98	100	97	95	96	94	92	92	91	89	87					87			
2	102	95	89	84	99	93	87	83	89	85	81	86	82	79	83	80	77	75					75			
3	94	85	78	72	92	83	77	71	80	75	70	78	73	69	75	71	68	66					66			
4	87	76	69	63	85	75	68	62	73	66	62	71	65	61	68	64	60	58					58			
5	81	69	61	55	79	68	61	55	66	60	55	64	59	54	63	58	53	51					51			
6	75	63	55	49	74	62	55	49	61	54	49	59	53	48	58	52	48	46					46			
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	42					42			
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38					38			
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34					34			
10	58	46	39	34	57	45	38	34	44	38	34	44	38	33	43	37	33	32					32			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	172729	172729	172729	172729	172729
5°	185087	181285	172465	163557	160951
10°	195490	188167	169954	153054	146099
15°	202571	191655	165995	141874	132878
20°	207041	193268	161381	130680	119856
25°	206512	193241	152436	119781	108558
30°	190490	189522	139660	109547	96951
35°	166621	175307	125075	97981	87822
40°	140752	151729	108163	87638	79190
45°	119000	127111	92586	76900	69310
50°	105588	106598	79410	67036	60993
55°	94464	91247	68674	57712	57391
60°	84340	79525	59927	49930	53998
65°	77456	70671	52080	46396	49444
70°	71378	63263	45971	43251	45971
75°	67186	56444	40012	39301	42146
80°	61758	50572	35147	36207	38327
85°	61578	45628	29678	29678	33901

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 40°
 Vertical Angle: 45°
 Luminance: 128152 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	168.2	5.0
10°-20°	468.7	13.9
20°-30°	668.6	19.8
30°-40°	689.1	20.4
40°-50°	554.7	16.5
50°-60°	392.2	11.6
60°-70°	254.2	7.5
70°-80°	136.6	4.0
80°-90°	39.4	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°	1305.5	38.7
0°-40°	1994.6	59.2
0°-60°	2941.5	87.2
0°-90°	3371.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3371.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1783	1783	1783	1783	1783	
5°	1903	1864	1774	1682	1655	184
15°	2020	1911	1655	1415	1325	571
25°	1932	1808	1426	1121	1016	880
35°	1409	1482	1058	828	743	875
45°	869	928	676	561	506	679
55°	559	540	407	342	340	500
65°	338	308	227	202	216	337
75°	180	151	107	105	113	190
85°	55	41	27	27	30	61
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°	1783.0	1783.0	1783.0	1783.0	1783.0	1783.0	1783.0	1783.0	1783.0	1783.0	1783.0
1°	1802.1	1809.8	1804.0	1804.0	1798.3	1796.4	1800.2	1794.5	1792.6	1788.8	1781.1
2°	1834.6	1828.9	1827.0	1828.9	1817.4	1817.4	1811.7	1800.2	1794.5	1786.9	1765.9
3°	1857.5	1853.7	1849.9	1848.0	1836.5	1827.0	1819.3	1806.0	1794.5	1785.0	1754.4
4°	1878.5	1878.5	1874.7	1867.0	1855.6	1844.1	1828.9	1813.6	1796.4	1779.2	1739.1
5°	1903.3	1905.2	1888.0	1886.1	1872.8	1855.6	1838.4	1817.4	1796.4	1773.5	1729.6
6°	1928.1	1918.6	1914.8	1901.4	1882.3	1867.0	1846.0	1823.1	1794.5	1767.8	1708.6
7°	1939.6	1937.7	1928.1	1914.8	1897.6	1872.8	1851.8	1821.2	1790.7	1764.0	1693.3
8°	1958.7	1958.7	1947.2	1930.0	1905.2	1882.3	1855.6	1819.3	1788.8	1754.4	1672.3
9°	1972.0	1972.0	1956.8	1941.5	1918.6	1888.0	1857.5	1817.4	1779.2	1739.1	1653.2
10°	1987.3	1983.5	1972.0	1949.1	1930.0	1895.7	1857.5	1815.5	1773.5	1727.7	1634.1
11°	1998.8	1993.0	1979.7	1962.5	1932.0	1897.6	1857.5	1815.5	1765.9	1716.2	1615.1
12°	2008.3	2004.5	1987.3	1966.3	1935.8	1901.4	1855.6	1807.9	1752.5	1701.0	1590.2
13°	2019.8	2008.3	1991.1	1972.0	1937.7	1897.6	1848.0	1796.4	1743.0	1687.6	1569.2
14°	2017.9	2016.0	2000.7	1974.0	1935.8	1893.8	1846.0	1785.0	1729.6	1672.3	1544.4
15°	2019.8	2017.9	2000.7	1975.9	1933.9	1888.0	1840.3	1777.3	1716.2	1655.1	1519.6
16°	2019.8	2019.8	1996.9	1972.0	1932.0	1882.3	1828.9	1769.7	1702.9	1641.8	1498.6
17°	2019.8	2019.8	2000.7	1966.3	1926.2	1878.5	1817.4	1754.4	1687.6	1622.7	1468.1
18°	2023.6	2017.9	1993.0	1964.4	1918.6	1869.0	1809.8	1743.0	1674.2	1601.7	1447.1
19°	2014.0	2010.2	1989.2	1953.0	1912.9	1857.5	1798.3	1729.6	1660.9	1584.5	1422.2
20°	2008.3	2014.0	1985.4	1947.2	1901.4	1848.0	1786.9	1716.2	1641.8	1565.4	1397.4
21°	2010.2	2008.3	1977.8	1937.7	1893.8	1834.6	1773.5	1701.0	1620.8	1542.5	1374.5
22.5°	2006.4	2000.7	1968.2	1924.3	1870.9	1817.4	1750.6	1676.1	1590.2	1502.4	1330.6
23°	1998.8	1993.0	1968.2	1920.5	1863.2	1809.8	1739.1	1660.9	1578.8	1489.1	1319.1
24°	1968.2	1966.3	1954.9	1907.1	1853.7	1794.5	1725.8	1636.1	1544.4	1450.9	1290.5
25°	1932.0	1935.8	1930.0	1899.5	1838.4	1777.3	1704.8	1605.5	1512.0	1426.1	1256.2
26°	1897.6	1897.6	1893.8	1882.3	1823.1	1758.2	1674.2	1569.2	1479.5	1389.8	1219.9
27°	1853.7	1861.3	1853.7	1848.0	1807.9	1737.2	1641.8	1544.4	1443.2	1355.4	1189.3
28°	1819.3	1819.3	1815.5	1806.0	1792.6	1712.4	1607.4	1508.1	1408.9	1324.9	1155.0
29°	1758.2	1769.7	1771.6	1773.5	1771.6	1680.0	1575.0	1468.1	1372.6	1281.0	1122.5
30°	1702.9	1714.3	1722.0	1735.3	1737.2	1651.3	1536.8	1435.6	1338.2	1248.5	1093.9
32.5°	1552.1	1573.1	1594.1	1617.0	1628.4	1565.4	1443.2	1332.5	1233.2	1153.1	1006.1
35°	1408.9	1414.6	1437.5	1491.0	1502.4	1462.3	1332.5	1227.5	1134.0	1057.6	924.0
37.5°	1246.6	1258.1	1290.5	1351.6	1355.4	1323.0	1233.2	1111.1	1023.2	956.4	840.0
40°	1113.0	1118.7	1141.6	1193.2	1210.3	1189.3	1111.1	1000.3	920.2	855.3	759.8
42.5°	979.3	987.0	1015.6	1055.7	1080.5	1055.7	987.0	891.5	813.3	765.5	683.4
45°	868.6	878.2	904.9	927.8	935.4	920.2	859.1	780.8	725.4	675.8	612.8
47.5°	773.2	782.7	801.8	811.3	820.9	805.6	757.9	693.0	637.6	597.5	540.3
50°	700.6	698.7	712.1	715.9	715.9	698.7	658.6	605.2	559.3	526.9	479.2
52.5°	618.5	622.3	631.9	628.1	626.2	610.9	576.5	530.7	492.5	463.9	420.0
55°	559.3	553.6	559.3	555.5	547.9	532.6	502.1	463.9	431.4	406.6	366.5
57.5°	494.4	494.4	496.4	488.7	479.2	462.0	435.3	404.7	376.1	355.1	322.6
60°	435.3	439.1	437.2	429.5	420.0	400.9	379.9	349.4	324.5	309.3	278.7



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CANDELA DISTRIBUTION (continued):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
67.5°	295.9	295.9	290.2	284.4	271.1	253.9	238.6	219.5	206.2	192.8	173.7
70°	252.0	255.8	248.2	238.6	229.1	217.6	200.4	185.2	171.8	162.3	147.0
72.5°	217.6	215.7	210.0	200.4	192.8	179.5	164.2	152.7	141.3	133.6	122.2
75°	179.5	179.5	173.7	166.1	156.5	145.1	133.6	124.1	114.5	106.9	101.2
77.5°	143.2	145.1	139.4	133.6	126.0	114.5	105.0	97.4	89.7	84.0	80.2
80°	110.7	112.6	106.9	103.1	93.5	87.8	80.2	72.5	66.8	63.0	61.1
82.5°	84.0	82.1	78.3	76.4	68.7	63.0	55.4	51.5	47.7	43.9	43.9
85°	55.4	53.5	51.5	49.6	43.9	38.2	36.3	32.5	28.6	26.7	26.7
87.5°	28.6	28.6	26.7	24.8	22.9	19.1	17.2	13.4	11.5	11.5	11.5
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°	1783.0	1783.0	1783.0
1°	1775.4	1767.8	1765.9
2°	1752.5	1741.0	1743.0
3°	1731.5	1718.1	1704.8
4°	1704.8	1683.8	1683.8
5°	1681.9	1660.9	1655.1
6°	1660.9	1626.5	1618.9
7°	1641.8	1599.8	1586.4
8°	1609.3	1567.3	1554.0
9°	1586.4	1540.6	1527.2
10°	1555.9	1510.1	1485.2
11°	1531.1	1479.5	1460.4
12°	1504.3	1441.3	1422.2
13°	1473.8	1408.9	1397.4
14°	1445.1	1382.1	1361.1
15°	1414.6	1349.7	1324.9
16°	1382.1	1317.2	1294.3
17°	1355.4	1282.9	1265.7
18°	1328.7	1252.3	1225.6
19°	1296.2	1223.7	1193.2
20°	1267.6	1187.4	1162.6
21°	1237.1	1160.7	1134.0
22.5°	1195.1	1109.2	1084.3
23°	1181.7	1093.9	1067.2
24°	1151.2	1063.3	1040.4
25°	1120.6	1040.4	1015.6
26°	1093.9	1006.1	983.2
27°	1067.2	979.3	954.5
28°	1038.5	950.7	931.6
29°	1009.9	920.2	901.1
30°	979.3	899.2	866.7
32.5°	903.0	830.4	803.7
35°	828.5	765.5	742.6
37.5°	756.0	704.4	683.4
40°	693.0	647.2	626.2
42.5°	628.1	586.1	565.1
45°	561.3	526.9	505.9
47.5°	500.2	471.5	448.6
50°	444.8	416.2	404.7
52.5°	391.4	372.3	378.0
55°	341.7	341.7	339.8
57.5°	294.0	307.4	309.3
60°	257.7	274.9	278.7



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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
67.5°	177.5	187.1	190.9
70°	152.7	160.4	162.3
72.5°	129.8	135.5	139.4
75°	105.0	112.6	112.6
77.5°	85.9	89.7	91.6
80°	64.9	66.8	68.7
82.5°	45.8	47.7	49.6
85°	26.7	28.6	30.5
87.5°	11.5	11.5	11.5
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°	385.6	389.4	383.7	374.2	364.6	347.4	328.4	301.6	282.5	267.3	240.5
65°	337.9	339.8	336.0	326.4	316.9	299.7	280.6	257.7	242.4	227.2	204.3

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Scaled Data Report



62.5°	231.0	244.4	246.3
65°	202.4	213.8	215.7

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Scaled Data Report



(END OF REPORT)