

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: P838581

Luminaire Tested: HCSQ640D010-HM63040830-61SQLWW

Issue Date: 5/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P838581
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-HM63040830-61SQLWW
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: -

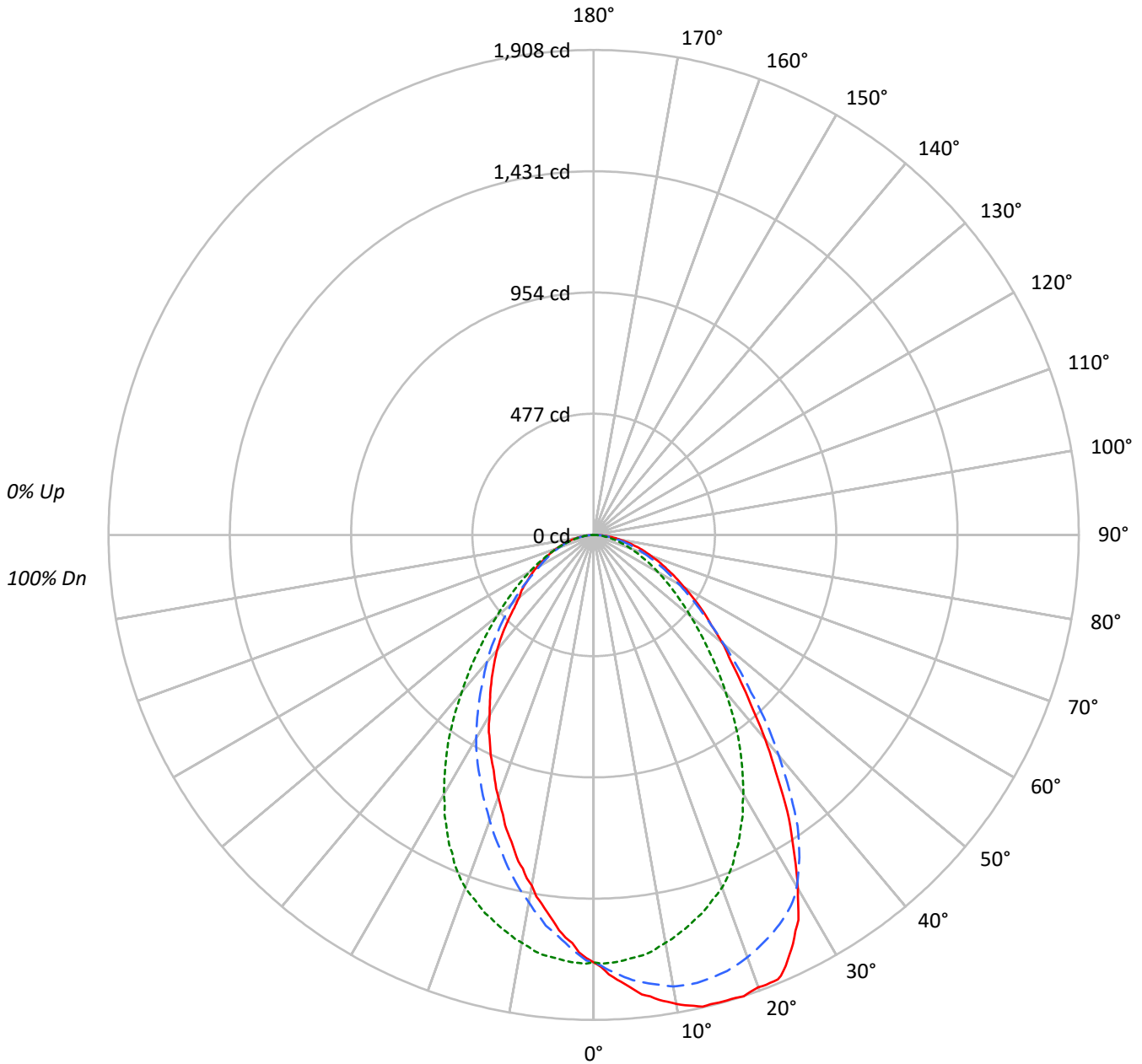
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3179.8 lumens
Efficiency: N/A
Efficacy: 77.6 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 (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	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°	162906	162906	162906	162906	162906
5°	174556	170967	162653	154251	151800
10°	184365	177459	160284	144338	137787
15°	191038	180748	156557	133801	125316
20°	195258	182268	152196	123247	113031
25°	194754	182248	143757	112962	102379
30°	179651	178744	131718	103316	91436
35°	157136	165332	117956	92411	82831
40°	132734	143104	102004	82643	74676
45°	112232	119877	87312	72515	65364
50°	99590	100532	74889	63223	57527
55°	89093	86053	64772	54436	54132
60°	79535	75001	56517	47101	50937
65°	73055	66659	49100	43736	46625
70°	67327	59651	43336	40787	43336
75°	63331	53225	37729	37055	39750
80°	58243	47699	33138	34142	36151
85°	58021	43016	28010	28010	32012

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 40°
 Vertical Angle: 45°
 Luminance: 120864 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	158.6	5.0
10°-20°	442.1	13.9
20°-30°	630.6	19.8
30°-40°	649.8	20.4
40°-50°	523.1	16.5
50°-60°	369.9	11.6
60°-70°	239.7	7.5
70°-80°	128.8	4.0
80°-90°	37.2	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°	1231.2	38.7
0°-40°	1881.1	59.2
0°-60°	2774.1	87.2
0°-90°	3179.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3179.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1682	1682	1682	1682	1682	
5°	1795	1758	1673	1586	1561	174
15°	1905	1802	1561	1334	1250	539
25°	1822	1705	1345	1057	958	830
35°	1329	1398	997	781	700	825
45°	819	875	637	529	477	640
55°	528	510	384	322	320	472
65°	319	291	214	191	203	318
75°	169	142	101	99	106	179
85°	52	39	25	25	29	57
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°	1681.6	1681.6	1681.6	1681.6	1681.6	1681.6	1681.6	1681.6	1681.6	1681.6	1681.6
1°	1699.6	1706.8	1701.4	1701.4	1696.0	1694.2	1697.8	1692.4	1690.6	1687.0	1679.8
2°	1730.2	1724.8	1723.0	1724.8	1714.0	1714.0	1708.6	1697.8	1692.4	1685.2	1665.4
3°	1751.8	1748.2	1744.6	1742.8	1732.0	1723.0	1715.8	1703.2	1692.4	1683.4	1654.6
4°	1771.6	1771.6	1768.0	1760.8	1750.0	1739.2	1724.8	1710.4	1694.2	1678.0	1640.2
5°	1795.0	1796.8	1780.6	1778.8	1766.2	1750.0	1733.8	1714.0	1694.2	1672.6	1631.2
6°	1818.4	1809.4	1805.8	1793.2	1775.2	1760.8	1741.0	1719.4	1692.4	1667.2	1611.4
7°	1829.2	1827.4	1818.4	1805.8	1789.6	1766.2	1746.4	1717.6	1688.8	1663.6	1597.0
8°	1847.2	1847.2	1836.4	1820.2	1796.8	1775.2	1750.0	1715.8	1687.0	1654.6	1577.2
9°	1859.8	1859.8	1845.4	1831.0	1809.4	1780.6	1751.8	1714.0	1678.0	1640.2	1559.2
10°	1874.2	1870.6	1859.8	1838.2	1820.2	1787.8	1751.8	1712.2	1672.6	1629.4	1541.2
11°	1885.0	1879.6	1867.0	1850.8	1822.0	1789.6	1751.8	1712.2	1665.4	1618.6	1523.1
12°	1894.0	1890.4	1874.2	1854.4	1825.6	1793.2	1750.0	1705.0	1652.8	1604.2	1499.7
13°	1904.8	1894.0	1877.8	1859.8	1827.4	1789.6	1742.8	1694.2	1643.8	1591.6	1479.9
14°	1903.0	1901.2	1886.8	1861.6	1825.6	1786.0	1741.0	1683.4	1631.2	1577.2	1456.5
15°	1904.8	1903.0	1886.8	1863.4	1823.8	1780.6	1735.6	1676.2	1618.6	1561.0	1433.1
16°	1904.8	1904.8	1883.2	1859.8	1822.0	1775.2	1724.8	1669.0	1606.0	1548.4	1413.3
17°	1904.8	1904.8	1886.8	1854.4	1816.6	1771.6	1714.0	1654.6	1591.6	1530.3	1384.5
18°	1908.4	1903.0	1879.6	1852.6	1809.4	1762.6	1706.8	1643.8	1579.0	1510.5	1364.7
19°	1899.4	1895.8	1876.0	1841.8	1804.0	1751.8	1696.0	1631.2	1566.4	1494.3	1341.3
20°	1894.0	1899.4	1872.4	1836.4	1793.2	1742.8	1685.2	1618.6	1548.4	1476.3	1317.9
21°	1895.8	1894.0	1865.2	1827.4	1786.0	1730.2	1672.6	1604.2	1528.5	1454.7	1296.3
22.5°	1892.2	1886.8	1856.2	1814.8	1764.4	1714.0	1651.0	1580.8	1499.7	1416.9	1254.9
23°	1885.0	1879.6	1856.2	1811.2	1757.2	1706.8	1640.2	1566.4	1488.9	1404.3	1244.1
24°	1856.2	1854.4	1843.6	1798.6	1748.2	1692.4	1627.6	1543.0	1456.5	1368.3	1217.1
25°	1822.0	1825.6	1820.2	1791.4	1733.8	1676.2	1607.8	1514.1	1425.9	1344.9	1184.7
26°	1789.6	1789.6	1786.0	1775.2	1719.4	1658.2	1579.0	1479.9	1395.3	1310.7	1150.5
27°	1748.2	1755.4	1748.2	1742.8	1705.0	1638.4	1548.4	1456.5	1361.1	1278.3	1121.7
28°	1715.8	1715.8	1712.2	1703.2	1690.6	1615.0	1515.9	1422.3	1328.7	1249.5	1089.2
29°	1658.2	1669.0	1670.8	1672.6	1670.8	1584.4	1485.3	1384.5	1294.5	1208.1	1058.6
30°	1606.0	1616.8	1624.0	1636.6	1638.4	1557.4	1449.3	1353.9	1262.1	1177.5	1031.6
32.5°	1463.7	1483.5	1503.3	1524.9	1535.7	1476.3	1361.1	1256.7	1163.1	1087.4	948.8
35°	1328.7	1334.1	1355.7	1406.1	1416.9	1379.1	1256.7	1157.7	1069.4	997.4	871.4
37.5°	1175.7	1186.5	1217.1	1274.7	1278.3	1247.7	1163.1	1047.8	965.0	902.0	792.2
40°	1049.6	1055.0	1076.6	1125.3	1141.5	1121.7	1047.8	943.4	867.8	806.6	716.6
42.5°	923.6	930.8	957.8	995.6	1019.0	995.6	930.8	840.8	767.0	722.0	644.5
45°	819.2	828.2	853.4	875.0	882.2	867.8	810.2	736.4	684.2	637.3	577.9
47.5°	729.2	738.2	756.2	765.2	774.2	759.8	714.8	653.5	601.3	563.5	509.5
50°	660.8	658.9	671.6	675.2	675.2	658.9	621.1	570.7	527.5	496.9	451.9
52.5°	583.3	586.9	595.9	592.3	590.5	576.1	543.7	500.5	464.5	437.5	396.1
55°	527.5	522.1	527.5	523.9	516.7	502.3	473.5	437.5	406.9	383.5	345.7
57.5°	466.3	466.3	468.1	460.9	451.9	435.7	410.5	381.7	354.7	334.9	304.3
60°	410.5	414.1	412.3	405.1	396.1	378.1	358.3	329.5	306.1	291.7	262.9



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CANDELA DISTRIBUTION (continued):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
67.5°	279.1	279.1	273.7	268.3	255.7	239.5	225.1	207.0	194.4	181.8	163.8
70°	237.7	241.3	234.1	225.1	216.0	205.2	189.0	174.6	162.0	153.0	138.6
72.5°	205.2	203.4	198.0	189.0	181.8	169.2	154.8	144.0	133.2	126.0	115.2
75°	169.2	169.2	163.8	156.6	147.6	136.8	126.0	117.0	108.0	100.8	95.4
77.5°	135.0	136.8	131.4	126.0	118.8	108.0	99.0	91.8	84.6	79.2	75.6
80°	104.4	106.2	100.8	97.2	88.2	82.8	75.6	68.4	63.0	59.4	57.6
82.5°	79.2	77.4	73.8	72.0	64.8	59.4	52.2	48.6	45.0	41.4	41.4
85°	52.2	50.4	48.6	46.8	41.4	36.0	34.2	30.6	27.0	25.2	25.2
87.5°	27.0	27.0	25.2	23.4	21.6	18.0	16.2	12.6	10.8	10.8	10.8
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°	1681.6	1681.6	1681.6
1°	1674.4	1667.2	1665.4
2°	1652.8	1642.0	1643.8
3°	1633.0	1620.4	1607.8
4°	1607.8	1588.0	1588.0
5°	1586.2	1566.4	1561.0
6°	1566.4	1533.9	1526.7
7°	1548.4	1508.7	1496.1
8°	1517.7	1478.1	1465.5
9°	1496.1	1452.9	1440.3
10°	1467.3	1424.1	1400.7
11°	1443.9	1395.3	1377.3
12°	1418.7	1359.3	1341.3
13°	1389.9	1328.7	1317.9
14°	1362.9	1303.5	1283.7
15°	1334.1	1272.9	1249.5
16°	1303.5	1242.3	1220.7
17°	1278.3	1209.9	1193.7
18°	1253.1	1181.1	1155.9
19°	1222.5	1154.1	1125.3
20°	1195.5	1119.9	1096.4
21°	1166.7	1094.6	1069.4
22.5°	1127.1	1046.0	1022.6
23°	1114.5	1031.6	1006.4
24°	1085.6	1002.8	981.2
25°	1056.8	981.2	957.8
26°	1031.6	948.8	927.2
27°	1006.4	923.6	900.2
28°	979.4	896.6	878.6
29°	952.4	867.8	849.8
30°	923.6	848.0	817.4
32.5°	851.6	783.2	758.0
35°	781.4	722.0	700.4
37.5°	713.0	664.4	644.5
40°	653.5	610.3	590.5
42.5°	592.3	552.7	532.9
45°	529.3	496.9	477.1
47.5°	471.7	444.7	423.1
50°	419.5	392.5	381.7
52.5°	369.1	351.1	356.5
55°	322.3	322.3	320.5
57.5°	277.3	289.9	291.7
60°	243.1	259.3	262.9



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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
67.5°	167.4	176.4	180.0
70°	144.0	151.2	153.0
72.5°	122.4	127.8	131.4
75°	99.0	106.2	106.2
77.5°	81.0	84.6	86.4
80°	61.2	63.0	64.8
82.5°	43.2	45.0	46.8
85°	25.2	27.0	28.8
87.5°	10.8	10.8	10.8
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°	363.7	367.3	361.9	352.9	343.9	327.7	309.7	284.5	266.5	252.1	226.9
65°	318.7	320.5	316.9	307.9	298.9	282.7	264.7	243.1	228.7	214.2	192.6

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62.5°	217.8	230.5	232.3
65°	190.8	201.6	203.4

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Scaled Data Report



(END OF REPORT)