

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: P838606

Luminaire Tested: HCSQ640D010-HM63040935-61SQLWW

Issue Date: 5/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P838606
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-HM63040935-61SQLWW
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

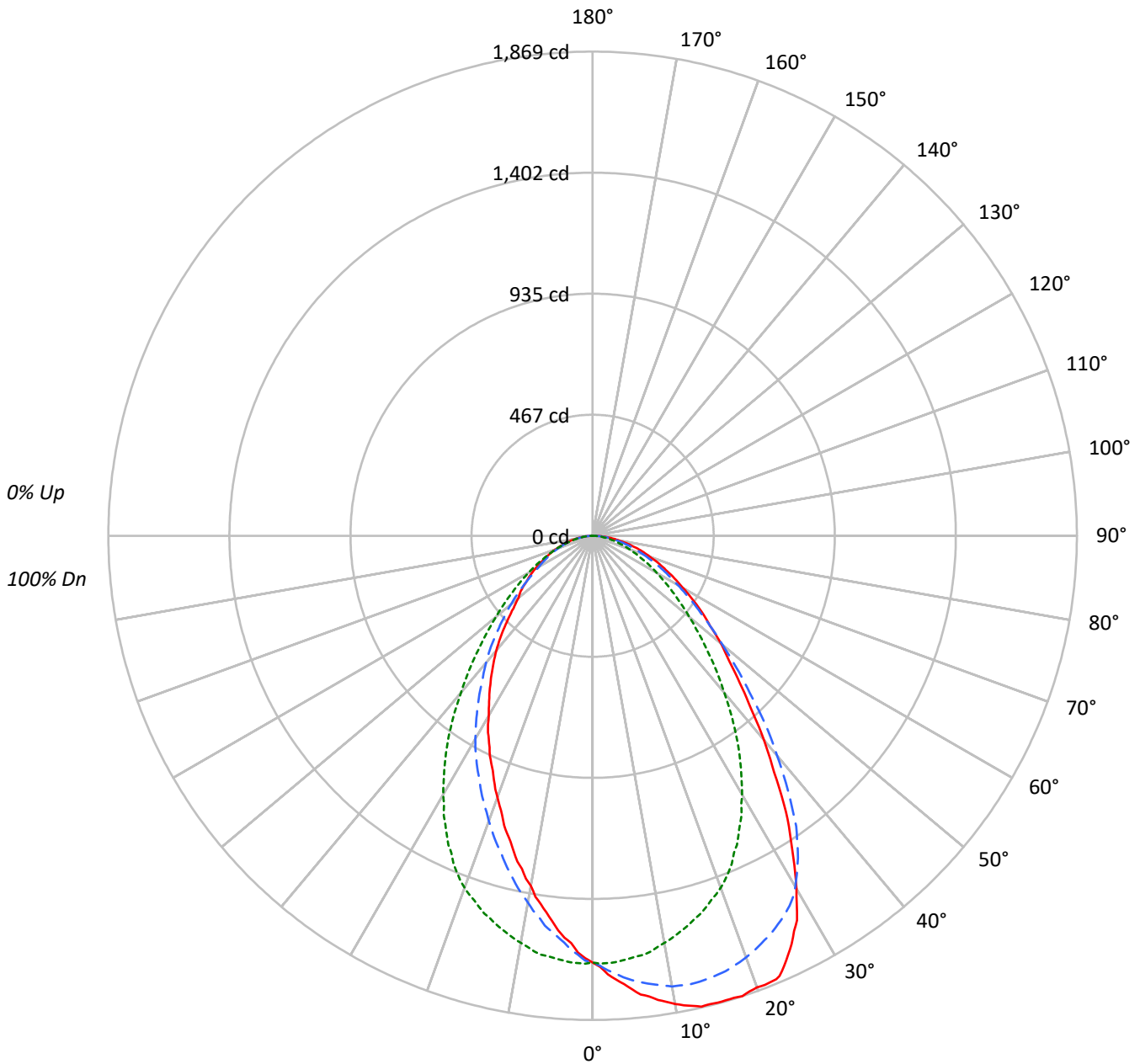
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3114.3 lumens
Efficiency: N/A
Efficacy: 76.0 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					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°	159544	159544	159544	159544	159544
5°	170958	167442	159298	151071	148669
10°	180568	173805	156979	141367	134954
15°	187106	177022	153328	131043	122728
20°	191237	178515	149062	120701	110711
25°	190746	178491	140796	110642	100274
30°	175948	175059	128999	101190	89546
35°	153896	161926	115531	90507	81117
40°	130003	140145	99905	80948	73146
45°	109917	117404	85517	71022	64021
50°	97525	98460	73351	61927	56336
55°	87269	84288	63438	53304	53017
60°	77888	73451	55355	46113	49871
65°	71542	65272	48092	42842	45685
70°	65939	58433	42458	39966	42458
75°	62059	52140	36943	36307	38927
80°	57071	46723	32469	33473	35426
85°	56799	42182	27455	27455	31345

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 40°
 Vertical Angle: 45°
 Luminance: 118370 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	155.3	5.0
10°-20°	433.0	13.9
20°-30°	617.6	19.8
30°-40°	636.5	20.4
40°-50°	512.4	16.5
50°-60°	362.3	11.6
60°-70°	234.8	7.5
70°-80°	126.1	4.1
80°-90°	36.4	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°	1205.9	38.7
0°-40°	1842.3	59.2
0°-60°	2717.0	87.2
0°-90°	3114.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3114.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1647	1647	1647	1647	1647	
5°	1758	1722	1638	1554	1529	170
15°	1866	1765	1529	1307	1224	528
25°	1784	1670	1317	1035	938	813
35°	1301	1369	977	765	686	808
45°	802	857	624	518	467	627
55°	517	499	376	316	314	462
65°	312	285	210	187	199	311
75°	166	139	99	97	104	176
85°	51	38	25	25	28	56
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°	1646.9	1646.9	1646.9	1646.9	1646.9	1646.9	1646.9	1646.9	1646.9	1646.9	1646.9
1°	1664.6	1671.6	1666.3	1666.3	1661.0	1659.3	1662.8	1657.5	1655.8	1652.2	1645.2
2°	1694.5	1689.3	1687.5	1689.3	1678.7	1678.7	1673.4	1662.8	1657.5	1650.5	1631.1
3°	1715.7	1712.2	1708.7	1706.9	1696.3	1687.5	1680.4	1668.1	1657.5	1648.7	1620.5
4°	1735.1	1735.1	1731.6	1724.5	1713.9	1703.4	1689.3	1675.1	1659.3	1643.4	1606.4
5°	1758.0	1759.8	1743.9	1742.2	1729.8	1713.9	1698.1	1678.7	1659.3	1638.1	1597.6
6°	1780.9	1772.1	1768.6	1756.3	1738.6	1724.5	1705.1	1684.0	1657.5	1632.8	1578.2
7°	1791.5	1789.8	1780.9	1768.6	1752.7	1729.8	1710.4	1682.2	1654.0	1629.3	1564.1
8°	1809.2	1809.2	1798.6	1782.7	1759.8	1738.6	1713.9	1680.4	1652.2	1620.5	1544.7
9°	1821.5	1821.5	1807.4	1793.3	1772.1	1743.9	1715.7	1678.7	1643.4	1606.4	1527.0
10°	1835.6	1832.1	1821.5	1800.3	1782.7	1751.0	1715.7	1676.9	1638.1	1595.8	1509.4
11°	1846.2	1840.9	1828.6	1812.7	1784.5	1752.7	1715.7	1676.9	1631.1	1585.2	1491.8
12°	1855.0	1851.5	1835.6	1816.2	1788.0	1756.3	1713.9	1669.9	1618.7	1571.1	1468.8
13°	1865.6	1855.0	1839.1	1821.5	1789.8	1752.7	1706.9	1659.3	1609.9	1558.8	1449.4
14°	1863.8	1862.1	1848.0	1823.3	1788.0	1749.2	1705.1	1648.7	1597.6	1544.7	1426.5
15°	1865.6	1863.8	1848.0	1825.0	1786.2	1743.9	1699.8	1641.6	1585.2	1528.8	1403.6
16°	1865.6	1865.6	1844.4	1821.5	1784.5	1738.6	1689.3	1634.6	1572.9	1516.5	1384.2
17°	1865.6	1865.6	1848.0	1816.2	1779.2	1735.1	1678.7	1620.5	1558.8	1498.8	1356.0
18°	1869.1	1863.8	1840.9	1814.5	1772.1	1726.3	1671.6	1609.9	1546.4	1479.4	1336.6
19°	1860.3	1856.8	1837.4	1803.9	1766.8	1715.7	1661.0	1597.6	1534.1	1463.6	1313.7
20°	1855.0	1860.3	1833.8	1798.6	1756.3	1706.9	1650.5	1585.2	1516.5	1445.9	1290.7
21°	1856.8	1855.0	1826.8	1789.8	1749.2	1694.5	1638.1	1571.1	1497.1	1424.8	1269.6
22.5°	1853.2	1848.0	1818.0	1777.4	1728.0	1678.7	1617.0	1548.2	1468.8	1387.7	1229.0
23°	1846.2	1840.9	1818.0	1773.9	1721.0	1671.6	1606.4	1534.1	1458.3	1375.4	1218.5
24°	1818.0	1816.2	1805.6	1761.6	1712.2	1657.5	1594.0	1511.2	1426.5	1340.1	1192.0
25°	1784.5	1788.0	1782.7	1754.5	1698.1	1641.6	1574.6	1482.9	1396.5	1317.2	1160.3
26°	1752.7	1752.7	1749.2	1738.6	1684.0	1624.0	1546.4	1449.4	1366.6	1283.7	1126.8
27°	1712.2	1719.2	1712.2	1706.9	1669.9	1604.6	1516.5	1426.5	1333.1	1252.0	1098.5
28°	1680.4	1680.4	1676.9	1668.1	1655.8	1581.7	1484.7	1393.0	1301.3	1223.7	1066.8
29°	1624.0	1634.6	1636.4	1638.1	1636.4	1551.7	1454.7	1356.0	1267.8	1183.2	1036.8
30°	1572.9	1583.5	1590.5	1602.9	1604.6	1525.3	1419.5	1326.0	1236.1	1153.2	1010.4
32.5°	1433.6	1453.0	1472.4	1493.5	1504.1	1445.9	1333.1	1230.8	1139.1	1065.0	929.3
35°	1301.3	1306.6	1327.8	1377.1	1387.7	1350.7	1230.8	1133.8	1047.4	976.9	853.4
37.5°	1151.4	1162.0	1192.0	1248.4	1252.0	1222.0	1139.1	1026.2	945.1	883.4	775.9
40°	1028.0	1033.3	1054.5	1102.1	1117.9	1098.5	1026.2	924.0	849.9	790.0	701.8
42.5°	904.6	911.6	938.1	975.1	998.0	975.1	911.6	823.5	751.2	707.1	631.3
45°	802.3	811.1	835.8	857.0	864.0	849.9	793.5	721.2	670.1	624.2	566.0
47.5°	714.1	723.0	740.6	749.4	758.2	744.1	700.0	640.1	588.9	551.9	499.0
50°	647.1	645.4	657.7	661.2	661.2	645.4	608.3	559.0	516.7	486.7	442.6
52.5°	571.3	574.8	583.7	580.1	578.4	564.3	532.5	490.2	454.9	428.5	387.9
55°	516.7	511.4	516.7	513.1	506.1	492.0	463.8	428.5	398.5	375.6	338.6
57.5°	456.7	456.7	458.5	451.4	442.6	426.7	402.0	373.8	347.4	328.0	298.0
60°	402.0	405.6	403.8	396.7	387.9	370.3	350.9	322.7	299.8	285.7	257.4



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CANDELA DISTRIBUTION (continued):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
67.5°	273.3	273.3	268.0	262.7	250.4	234.5	220.4	202.8	190.4	178.1	160.5
70°	232.8	236.3	229.2	220.4	211.6	201.0	185.1	171.0	158.7	149.9	135.8
72.5°	201.0	199.3	194.0	185.1	178.1	165.8	151.6	141.1	130.5	123.4	112.9
75°	165.8	165.8	160.5	153.4	144.6	134.0	123.4	114.6	105.8	98.7	93.5
77.5°	132.2	134.0	128.7	123.4	116.4	105.8	97.0	89.9	82.9	77.6	74.1
80°	102.3	104.0	98.7	95.2	86.4	81.1	74.1	67.0	61.7	58.2	56.4
82.5°	77.6	75.8	72.3	70.5	63.5	58.2	51.1	47.6	44.1	40.6	40.6
85°	51.1	49.4	47.6	45.8	40.6	35.3	33.5	30.0	26.4	24.7	24.7
87.5°	26.4	26.4	24.7	22.9	21.2	17.6	15.9	12.3	10.6	10.6	10.6
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°	1646.9	1646.9	1646.9
1°	1639.9	1632.8	1631.1
2°	1618.7	1608.1	1609.9
3°	1599.3	1587.0	1574.6
4°	1574.6	1555.2	1555.2
5°	1553.5	1534.1	1528.8
6°	1534.1	1502.3	1495.3
7°	1516.5	1477.7	1465.3
8°	1486.5	1447.7	1435.3
9°	1465.3	1423.0	1410.7
10°	1437.1	1394.8	1371.9
11°	1414.2	1366.6	1348.9
12°	1389.5	1331.3	1313.7
13°	1361.3	1301.3	1290.7
14°	1334.8	1276.6	1257.2
15°	1306.6	1246.7	1223.7
16°	1276.6	1216.7	1195.5
17°	1252.0	1184.9	1169.1
18°	1227.3	1156.7	1132.0
19°	1197.3	1130.3	1102.1
20°	1170.8	1096.8	1073.9
21°	1142.6	1072.1	1047.4
22.5°	1103.8	1024.5	1001.6
23°	1091.5	1010.4	985.7
24°	1063.3	982.2	961.0
25°	1035.1	961.0	938.1
26°	1010.4	929.3	908.1
27°	985.7	904.6	881.7
28°	959.2	878.1	860.5
29°	932.8	849.9	832.3
30°	904.6	830.5	800.5
32.5°	834.0	767.0	742.4
35°	765.3	707.1	685.9
37.5°	698.3	650.7	631.3
40°	640.1	597.8	578.4
42.5°	580.1	541.3	521.9
45°	518.4	486.7	467.3
47.5°	462.0	435.5	414.4
50°	410.9	384.4	373.8
52.5°	361.5	343.8	349.1
55°	315.6	315.6	313.9
57.5°	271.6	283.9	285.7
60°	238.0	253.9	257.4



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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
67.5°	164.0	172.8	176.3
70°	141.1	148.1	149.9
72.5°	119.9	125.2	128.7
75°	97.0	104.0	104.0
77.5°	79.3	82.9	84.6
80°	60.0	61.7	63.5
82.5°	42.3	44.1	45.8
85°	24.7	26.4	28.2
87.5°	10.6	10.6	10.6
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°	356.2	359.7	354.4	345.6	336.8	320.9	303.3	278.6	261.0	246.9	222.2
65°	312.1	313.9	310.3	301.5	292.7	276.8	259.2	238.0	223.9	209.8	188.7

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62.5°	213.4	225.7	227.5
65°	186.9	197.5	199.3

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Scaled Data Report



(END OF REPORT)