

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: P838596

Luminaire Tested: HCSQ640D010-HM63040927-61SQLWW

Issue Date: 5/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P838596
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-HM63040927-61SQLWW
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

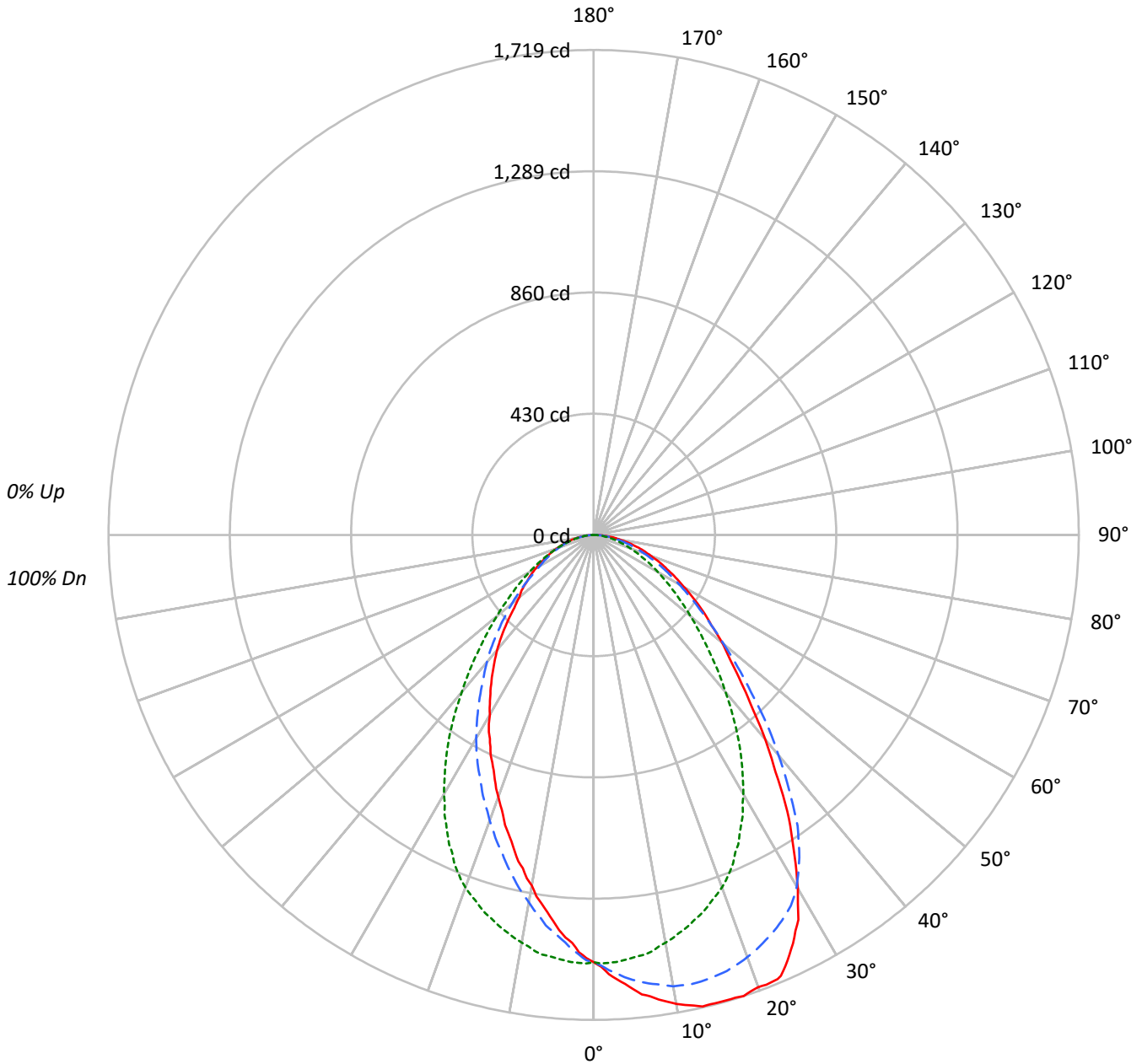
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2864.0 lumens
Efficiency: N/A
Efficacy: 69.9 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°	146718	146718	146718	146718	146718
5°	157217	153988	146491	138925	136717
10°	166048	159831	144358	130006	124103
15°	172062	162790	141002	120512	112870
20°	175866	164165	137082	111000	101804
25°	175407	164146	129476	101749	92214
30°	161797	160986	118630	93058	82353
35°	141525	148911	106236	83234	74600
40°	119557	128884	91875	74435	67265
45°	101080	107972	78639	65309	58870
50°	89688	90547	67458	56939	51815
55°	80243	77507	58337	49031	48744
60°	71630	67542	50898	42412	45861
65°	65788	60034	44241	39404	41994
70°	60614	53746	39031	36737	39031
75°	57043	47948	33986	33387	35820
80°	52497	42985	29847	30739	32580
85°	52241	38737	25232	25232	28788

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 40°
 Vertical Angle: 45°
 Luminance: 108862 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.8	5.0
10°-20°	398.2	13.9
20°-30°	567.9	19.8
30°-40°	585.3	20.4
40°-50°	471.2	16.5
50°-60°	333.2	11.6
60°-70°	215.9	7.5
70°-80°	116.0	4.1
80°-90°	33.5	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°	1108.9	38.7
0°-40°	1694.2	59.2
0°-60°	2498.6	87.2
0°-90°	2864.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2864.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1514	1514	1514	1514	1514	
5°	1617	1584	1506	1429	1406	157
15°	1716	1623	1406	1202	1125	485
25°	1641	1536	1211	952	863	747
35°	1197	1259	898	704	631	743
45°	738	788	574	477	430	576
55°	475	459	345	290	289	425
65°	287	262	193	172	183	286
75°	152	128	91	89	96	162
85°	47	35	23	23	26	52
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°	1514.5	1514.5	1514.5	1514.5	1514.5	1514.5	1514.5	1514.5	1514.5	1514.5	1514.5
1°	1530.8	1537.2	1532.4	1532.4	1527.5	1525.9	1529.1	1524.3	1522.6	1519.4	1512.9
2°	1558.3	1553.5	1551.8	1553.5	1543.7	1543.7	1538.9	1529.1	1524.3	1517.8	1499.9
3°	1577.8	1574.5	1571.3	1569.7	1559.9	1551.8	1545.3	1534.0	1524.3	1516.2	1490.2
4°	1595.6	1595.6	1592.4	1585.9	1576.2	1566.4	1553.5	1540.5	1525.9	1511.3	1477.2
5°	1616.7	1618.3	1603.7	1602.1	1590.8	1576.2	1561.6	1543.7	1525.9	1506.4	1469.1
6°	1637.8	1629.7	1626.4	1615.1	1598.9	1585.9	1568.0	1548.6	1524.3	1501.6	1451.3
7°	1647.5	1645.9	1637.8	1626.4	1611.8	1590.8	1572.9	1547.0	1521.0	1498.3	1438.3
8°	1663.7	1663.7	1654.0	1639.4	1618.3	1598.9	1576.2	1545.3	1519.4	1490.2	1420.5
9°	1675.1	1675.1	1662.1	1649.1	1629.7	1603.7	1577.8	1543.7	1511.3	1477.2	1404.3
10°	1688.0	1684.8	1675.1	1655.6	1639.4	1610.2	1577.8	1542.1	1506.4	1467.5	1388.1
11°	1697.8	1692.9	1681.6	1667.0	1641.0	1611.8	1577.8	1542.1	1499.9	1457.8	1371.8
12°	1705.9	1702.6	1688.0	1670.2	1644.3	1615.1	1576.2	1535.6	1488.6	1444.8	1350.8
13°	1715.6	1705.9	1691.3	1675.1	1645.9	1611.8	1569.7	1525.9	1480.5	1433.5	1332.9
14°	1714.0	1712.4	1699.4	1676.7	1644.3	1608.6	1568.0	1516.2	1469.1	1420.5	1311.8
15°	1715.6	1714.0	1699.4	1678.3	1642.6	1603.7	1563.2	1509.7	1457.8	1405.9	1290.8
16°	1715.6	1715.6	1696.2	1675.1	1641.0	1598.9	1553.5	1503.2	1446.4	1394.5	1272.9
17°	1715.6	1715.6	1699.4	1670.2	1636.2	1595.6	1543.7	1490.2	1433.5	1378.3	1247.0
18°	1718.9	1714.0	1692.9	1668.6	1629.7	1587.5	1537.2	1480.5	1422.1	1360.5	1229.1
19°	1710.7	1707.5	1689.7	1658.9	1624.8	1577.8	1527.5	1469.1	1410.8	1345.9	1208.1
20°	1705.9	1710.7	1686.4	1654.0	1615.1	1569.7	1517.8	1457.8	1394.5	1329.7	1187.0
21°	1707.5	1705.9	1679.9	1645.9	1608.6	1558.3	1506.4	1444.8	1376.7	1310.2	1167.5
22.5°	1704.3	1699.4	1671.8	1634.5	1589.1	1543.7	1487.0	1423.7	1350.8	1276.2	1130.2
23°	1697.8	1692.9	1671.8	1631.3	1582.6	1537.2	1477.2	1410.8	1341.0	1264.8	1120.5
24°	1671.8	1670.2	1660.5	1619.9	1574.5	1524.3	1465.9	1389.7	1311.8	1232.4	1096.2
25°	1641.0	1644.3	1639.4	1613.5	1561.6	1509.7	1448.1	1363.7	1284.3	1211.3	1067.0
26°	1611.8	1611.8	1608.6	1598.9	1548.6	1493.5	1422.1	1332.9	1256.7	1180.5	1036.2
27°	1574.5	1581.0	1574.5	1569.7	1535.6	1475.6	1394.5	1311.8	1225.9	1151.3	1010.2
28°	1545.3	1545.3	1542.1	1534.0	1522.6	1454.5	1365.4	1281.0	1196.7	1125.4	981.0
29°	1493.5	1503.2	1504.8	1506.4	1504.8	1427.0	1337.8	1247.0	1165.9	1088.1	953.5
30°	1446.4	1456.2	1462.6	1474.0	1475.6	1402.7	1305.4	1219.4	1136.7	1060.5	929.2
32.5°	1318.3	1336.2	1354.0	1373.5	1383.2	1329.7	1225.9	1131.8	1047.5	979.4	854.6
35°	1196.7	1201.6	1221.0	1266.4	1276.2	1242.1	1131.8	1042.7	963.2	898.3	784.8
37.5°	1058.9	1068.6	1096.2	1148.1	1151.3	1123.7	1047.5	943.7	869.2	812.4	713.5
40°	945.4	950.2	969.7	1013.5	1028.1	1010.2	943.7	849.7	781.6	726.5	645.4
42.5°	831.9	838.3	862.7	896.7	917.8	896.7	838.3	757.3	690.8	650.2	580.5
45°	737.8	745.9	768.6	788.1	794.6	781.6	729.7	663.2	616.2	574.0	520.5
47.5°	656.7	664.8	681.1	689.2	697.3	684.3	643.8	588.6	541.6	507.5	458.9
50°	595.1	593.5	604.8	608.1	608.1	593.5	559.4	514.0	475.1	447.6	407.0
52.5°	525.4	528.6	536.7	533.5	531.9	518.9	489.7	450.8	418.4	394.0	356.7
55°	475.1	470.3	475.1	471.9	465.4	452.4	426.5	394.0	366.5	345.4	311.3
57.5°	420.0	420.0	421.6	415.1	407.0	392.4	369.7	343.8	319.4	301.6	274.0
60°	369.7	373.0	371.3	364.9	356.7	340.5	322.7	296.7	275.7	262.7	236.7



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CANDELA DISTRIBUTION (continued):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
67.5°	251.3	251.3	246.5	241.6	230.3	215.7	202.7	186.5	175.1	163.8	147.6
70°	214.0	217.3	210.8	202.7	194.6	184.9	170.3	157.3	145.9	137.8	124.9
72.5°	184.9	183.2	178.4	170.3	163.8	152.4	139.5	129.7	120.0	113.5	103.8
75°	152.4	152.4	147.6	141.1	133.0	123.2	113.5	105.4	97.3	90.8	85.9
77.5°	121.6	123.2	118.4	113.5	107.0	97.3	89.2	82.7	76.2	71.3	68.1
80°	94.1	95.7	90.8	87.6	79.5	74.6	68.1	61.6	56.8	53.5	51.9
82.5°	71.3	69.7	66.5	64.9	58.4	53.5	47.0	43.8	40.5	37.3	37.3
85°	47.0	45.4	43.8	42.2	37.3	32.4	30.8	27.6	24.3	22.7	22.7
87.5°	24.3	24.3	22.7	21.1	19.5	16.2	14.6	11.4	9.7	9.7	9.7
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°	1514.5	1514.5	1514.5
1°	1508.1	1501.6	1499.9
2°	1488.6	1478.9	1480.5
3°	1470.8	1459.4	1448.1
4°	1448.1	1430.2	1430.2
5°	1428.6	1410.8	1405.9
6°	1410.8	1381.6	1375.1
7°	1394.5	1358.9	1347.5
8°	1367.0	1331.3	1320.0
9°	1347.5	1308.6	1297.2
10°	1321.6	1282.7	1261.6
11°	1300.5	1256.7	1240.5
12°	1277.8	1224.3	1208.1
13°	1251.8	1196.7	1187.0
14°	1227.5	1174.0	1156.2
15°	1201.6	1146.4	1125.4
16°	1174.0	1118.9	1099.4
17°	1151.3	1089.7	1075.1
18°	1128.6	1063.7	1041.0
19°	1101.0	1039.4	1013.5
20°	1076.7	1008.6	987.5
21°	1050.8	985.9	963.2
22.5°	1015.1	942.1	921.0
23°	1003.7	929.2	906.5
24°	977.8	903.2	883.8
25°	951.9	883.8	862.7
26°	929.2	854.6	835.1
27°	906.5	831.9	810.8
28°	882.1	807.5	791.3
29°	857.8	781.6	765.4
30°	831.9	763.8	736.2
32.5°	767.0	705.4	682.7
35°	703.8	650.2	630.8
37.5°	642.1	598.4	580.5
40°	588.6	549.7	531.9
42.5°	533.5	497.8	480.0
45°	476.7	447.6	429.7
47.5°	424.8	400.5	381.1
50°	377.8	353.5	343.8
52.5°	332.4	316.2	321.1
55°	290.3	290.3	288.6
57.5°	249.7	261.1	262.7
60°	218.9	233.5	236.7



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CANDELA DISTRIBUTION (continued):

	135°	157.5°	180°
67.5°	150.8	158.9	162.2
70°	129.7	136.2	137.8
72.5°	110.3	115.1	118.4
75°	89.2	95.7	95.7
77.5°	73.0	76.2	77.8
80°	55.1	56.8	58.4
82.5°	38.9	40.5	42.2
85°	22.7	24.3	25.9
87.5°	9.7	9.7	9.7
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°	327.6	330.8	325.9	317.8	309.7	295.1	278.9	256.2	240.0	227.0	204.3
65°	287.0	288.6	285.4	277.3	269.2	254.6	238.4	218.9	205.9	193.0	173.5

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62.5°	196.2	207.6	209.2
65°	171.9	181.6	183.2

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Scaled Data Report



(END OF REPORT)