

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: P838586

Luminaire Tested: HCSQ640D010-HM63040835-61SQLWW

Issue Date: 5/21/2024

**Test Information**

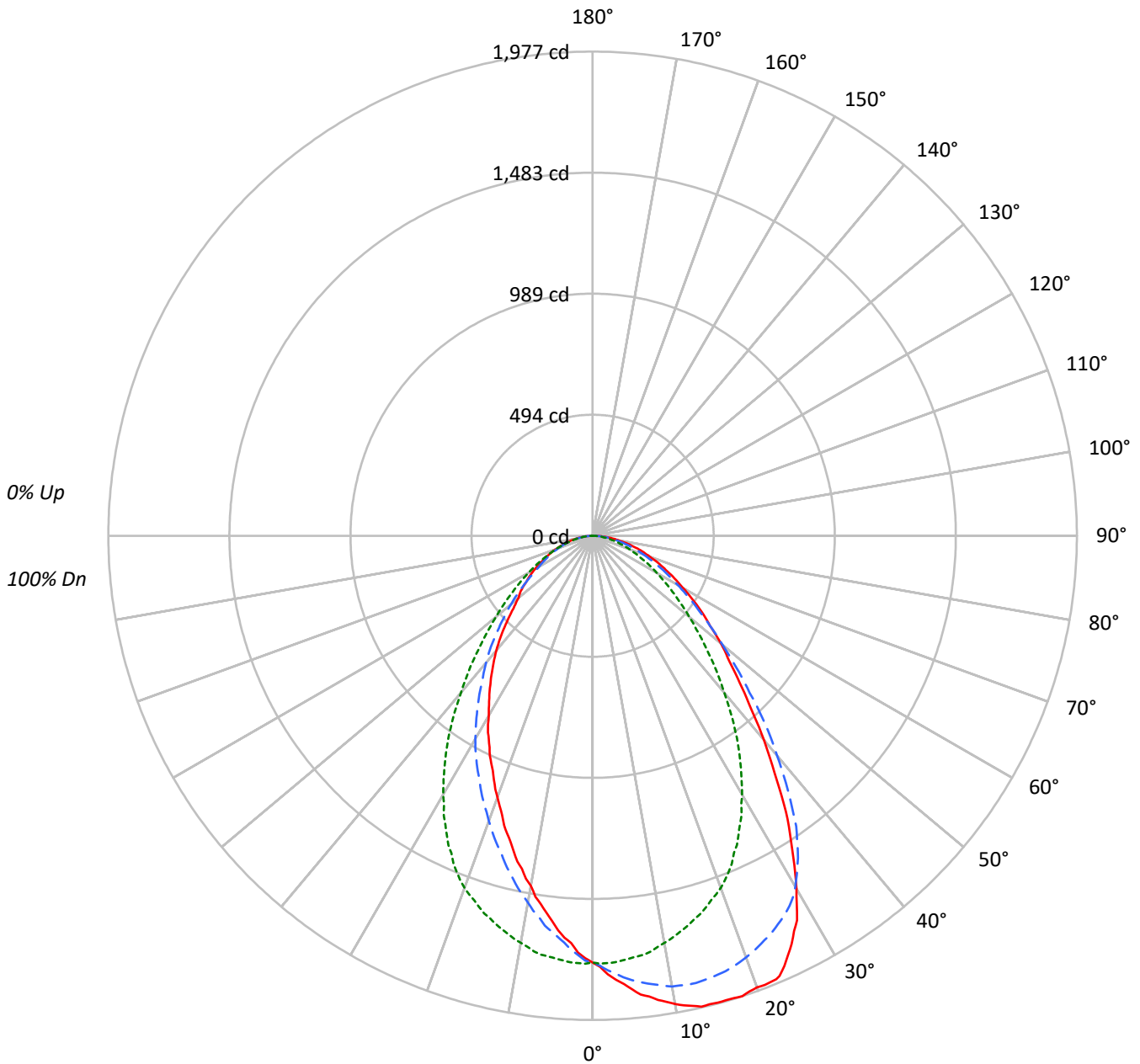
Test Method: LM-79-2019  
Report Number: P838586  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-5)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ640D010-HM63040835-61SQLWW  
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3294.5 lumens  
Efficiency: N/A  
Efficacy: 80.4 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<sub>in</sub>): 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

TEST NUMBER: P838586  
CATALOG NUMBER: HCSQ640D010-HM63040835-61SQLWW

### Luminous Intensity Polar Plot





TEST NUMBER: P838586  
 CATALOG NUMBER: HCSQ640D010-HM63040835-61SQLWW

**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°	168776	168776	168776	168776	168776
5°	180847	177133	168517	159813	157265
10°	191015	183858	166058	149542	142754
15°	197928	187267	162194	138625	129829
20°	202299	188840	157691	127691	117113
25°	201777	188816	148941	117034	106078
30°	186127	185182	136461	107041	94736
35°	162801	171292	122213	95746	85812
40°	137527	148258	105684	85627	77369
45°	116274	124200	90463	75132	67720
50°	103177	104157	77586	65499	59591
55°	92302	89152	67103	56395	56074
60°	82402	77704	58552	48786	52758
65°	75691	69055	50888	45318	48321
70°	69735	61804	44923	42260	44923
75°	65614	55172	39114	38403	41210
80°	60363	49428	34366	35370	37490
85°	60133	44572	29011	29011	33123

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 40°  
 Vertical Angle: 45°  
 Luminance: 125220 cd/sqm



TEST NUMBER: P838586

CATALOG NUMBER: HCSQ640D010-HM63040835-61SQLWW

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	164.3	5.0
10°-20°	458.0	13.9
20°-30°	653.3	19.8
30°-40°	673.3	20.4
40°-50°	542.0	16.5
50°-60°	383.2	11.6
60°-70°	248.4	7.5
70°-80°	133.4	4.1
80°-90°	38.5	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°	1275.6	38.7
0°-40°	1948.9	59.2
0°-60°	2874.1	87.2
0°-90°	3294.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3294.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1742	1742	1742	1742	1742	
5°	1860	1822	1733	1643	1617	180
15°	1974	1867	1617	1382	1294	558
25°	1888	1766	1393	1095	992	860
35°	1377	1448	1033	810	726	855
45°	849	907	660	548	494	663
55°	546	528	397	334	332	489
65°	330	301	222	198	211	329
75°	175	147	104	103	110	186
85°	54	40	26	26	30	59
90°	0	0	0	0	0	



TEST NUMBER: P838586

CATALOG NUMBER: HCSQ640D010-HM63040835-61SQLWW

**CANDELA DISTRIBUTION (FULL):**

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
0°	1742.2	1742.2	1742.2	1742.2	1742.2	1742.2	1742.2	1742.2	1742.2	1742.2	1742.2
1°	1760.9	1768.3	1762.7	1762.7	1757.1	1755.3	1759.0	1753.4	1751.5	1747.8	1740.3
2°	1792.6	1787.0	1785.1	1787.0	1775.8	1775.8	1770.2	1759.0	1753.4	1745.9	1725.4
3°	1815.0	1811.2	1807.5	1805.6	1794.4	1785.1	1777.7	1764.6	1753.4	1744.1	1714.2
4°	1835.5	1835.5	1831.7	1824.3	1813.1	1801.9	1787.0	1772.1	1755.3	1738.5	1699.3
5°	1859.7	1861.6	1844.8	1842.9	1829.9	1813.1	1796.3	1775.8	1755.3	1732.9	1690.0
6°	1884.0	1874.7	1870.9	1857.9	1839.2	1824.3	1803.8	1781.4	1753.4	1727.3	1669.5
7°	1895.2	1893.3	1884.0	1870.9	1854.1	1829.9	1809.4	1779.5	1749.7	1723.6	1654.5
8°	1913.8	1913.8	1902.6	1885.8	1861.6	1839.2	1813.1	1777.7	1747.8	1714.2	1634.0
9°	1926.9	1926.9	1912.0	1897.0	1874.7	1844.8	1815.0	1775.8	1738.5	1699.3	1615.4
10°	1941.8	1938.1	1926.9	1904.5	1885.8	1852.3	1815.0	1773.9	1732.9	1688.1	1596.7
11°	1953.0	1947.4	1934.3	1917.6	1887.7	1854.1	1815.0	1773.9	1725.4	1676.9	1578.1
12°	1962.3	1958.6	1941.8	1921.3	1891.4	1857.9	1813.1	1766.5	1712.4	1662.0	1553.8
13°	1973.5	1962.3	1945.5	1926.9	1893.3	1854.1	1805.6	1755.3	1703.0	1648.9	1533.3
14°	1971.6	1969.8	1954.9	1928.7	1891.4	1850.4	1803.8	1744.1	1690.0	1634.0	1509.0
15°	1973.5	1971.6	1954.9	1930.6	1889.6	1844.8	1798.2	1736.6	1676.9	1617.2	1484.8
16°	1973.5	1973.5	1951.1	1926.9	1887.7	1839.2	1787.0	1729.2	1663.9	1604.2	1464.3
17°	1973.5	1973.5	1954.9	1921.3	1882.1	1835.5	1775.8	1714.2	1648.9	1585.5	1434.4
18°	1977.2	1971.6	1947.4	1919.4	1874.7	1826.2	1768.3	1703.0	1635.9	1565.0	1413.9
19°	1967.9	1964.2	1943.7	1908.2	1869.1	1815.0	1757.1	1690.0	1622.8	1548.2	1389.7
20°	1962.3	1967.9	1939.9	1902.6	1857.9	1805.6	1745.9	1676.9	1604.2	1529.6	1365.4
21°	1964.2	1962.3	1932.5	1893.3	1850.4	1792.6	1732.9	1662.0	1583.7	1507.2	1343.0
22.5°	1960.5	1954.9	1923.2	1880.2	1828.0	1775.8	1710.5	1637.8	1553.8	1468.0	1300.1
23°	1953.0	1947.4	1923.2	1876.5	1820.6	1768.3	1699.3	1622.8	1542.6	1455.0	1288.9
24°	1923.2	1921.3	1910.1	1863.5	1811.2	1753.4	1686.3	1598.6	1509.0	1417.6	1261.0
25°	1887.7	1891.4	1885.8	1856.0	1796.3	1736.6	1665.7	1568.7	1477.3	1393.4	1227.4
26°	1854.1	1854.1	1850.4	1839.2	1781.4	1718.0	1635.9	1533.3	1445.6	1358.0	1191.9
27°	1811.2	1818.7	1811.2	1805.6	1766.5	1697.4	1604.2	1509.0	1410.2	1324.4	1162.1
28°	1777.7	1777.7	1773.9	1764.6	1751.5	1673.2	1570.6	1473.6	1376.6	1294.5	1128.5
29°	1718.0	1729.2	1731.0	1732.9	1731.0	1641.5	1538.9	1434.4	1341.2	1251.6	1096.8
30°	1663.9	1675.1	1682.5	1695.6	1697.4	1613.5	1501.6	1402.7	1307.6	1219.9	1068.8
32.5°	1516.5	1537.0	1557.5	1579.9	1591.1	1529.6	1410.2	1302.0	1205.0	1126.7	983.0
35°	1376.6	1382.2	1404.6	1456.8	1468.0	1428.8	1302.0	1199.4	1108.0	1033.4	902.8
37.5°	1218.1	1229.2	1261.0	1320.7	1324.4	1292.7	1205.0	1085.6	999.8	934.5	820.7
40°	1087.5	1093.1	1115.5	1165.8	1182.6	1162.1	1085.6	977.4	899.1	835.7	742.4
42.5°	956.9	964.4	992.4	1031.5	1055.8	1031.5	964.4	871.1	794.6	748.0	667.8
45°	848.7	858.0	884.2	906.5	914.0	899.1	839.4	762.9	708.8	660.3	598.8
47.5°	755.5	764.8	783.4	792.8	802.1	787.2	740.5	677.1	623.0	583.8	527.9
50°	684.6	682.7	695.8	699.5	699.5	682.7	643.5	591.3	546.5	514.8	468.2
52.5°	604.4	608.1	617.4	613.7	611.8	596.9	563.3	518.6	481.3	453.3	410.4
55°	546.5	540.9	546.5	542.8	535.3	520.4	490.6	453.3	421.6	397.3	358.1
57.5°	483.1	483.1	485.0	477.5	468.2	451.4	425.3	395.4	367.5	347.0	315.2
60°	425.3	429.0	427.2	419.7	410.4	391.7	371.2	341.4	317.1	302.2	272.3



TEST NUMBER: P838586

CATALOG NUMBER: HCSQ640D010-HM63040835-61SQLWW

**CANDELA DISTRIBUTION (continued):**

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
67.5°	289.1	289.1	283.5	277.9	264.9	248.1	233.2	214.5	201.5	188.4	169.7
70°	246.2	250.0	242.5	233.2	223.8	212.6	195.9	180.9	167.9	158.6	143.6
72.5°	212.6	210.8	205.2	195.9	188.4	175.3	160.4	149.2	138.0	130.6	119.4
75°	175.3	175.3	169.7	162.3	153.0	141.8	130.6	121.2	111.9	104.5	98.9
77.5°	139.9	141.8	136.2	130.6	123.1	111.9	102.6	95.1	87.7	82.1	78.3
80°	108.2	110.1	104.5	100.7	91.4	85.8	78.3	70.9	65.3	61.6	59.7
82.5°	82.1	80.2	76.5	74.6	67.2	61.6	54.1	50.4	46.6	42.9	42.9
85°	54.1	52.2	50.4	48.5	42.9	37.3	35.4	31.7	28.0	26.1	26.1
87.5°	28.0	28.0	26.1	24.2	22.4	18.7	16.8	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

TEST NUMBER: P838586

CATALOG NUMBER: HCSQ640D010-HM63040835-61SQLWW

**CANDELA DISTRIBUTION (continued):**

	135°	157.5°	180°
0°	1742.2	1742.2	1742.2
1°	1734.8	1727.3	1725.4
2°	1712.4	1701.2	1703.0
3°	1691.8	1678.8	1665.7
4°	1665.7	1645.2	1645.2
5°	1643.4	1622.8	1617.2
6°	1622.8	1589.3	1581.8
7°	1604.2	1563.1	1550.1
8°	1572.5	1531.4	1518.4
9°	1550.1	1505.3	1492.3
10°	1520.2	1475.5	1451.2
11°	1496.0	1445.6	1427.0
12°	1469.9	1408.3	1389.7
13°	1440.0	1376.6	1365.4
14°	1412.1	1350.5	1330.0
15°	1382.2	1318.8	1294.5
16°	1350.5	1287.1	1264.7
17°	1324.4	1253.5	1236.7
18°	1298.3	1223.7	1197.5
19°	1266.6	1195.7	1165.8
20°	1238.6	1160.2	1136.0
21°	1208.7	1134.1	1108.0
22.5°	1167.7	1083.8	1059.5
23°	1154.6	1068.8	1042.7
24°	1124.8	1039.0	1016.6
25°	1094.9	1016.6	992.4
26°	1068.8	983.0	960.6
27°	1042.7	956.9	932.7
28°	1014.7	928.9	910.3
29°	986.8	899.1	880.4
30°	956.9	878.6	846.9
32.5°	882.3	811.4	785.3
35°	809.6	748.0	725.6
37.5°	738.7	688.3	667.8
40°	677.1	632.3	611.8
42.5°	613.7	572.7	552.1
45°	548.4	514.8	494.3
47.5°	488.7	460.7	438.4
50°	434.6	406.6	395.4
52.5°	382.4	363.7	369.3
55°	333.9	333.9	332.0
57.5°	287.3	300.3	302.2
60°	251.8	268.6	272.3





TEST NUMBER: P838586

CATALOG NUMBER: HCSQ640D010-HM63040835-61SQLWW

**CANDELA DISTRIBUTION (continued):**

	135°	157.5°	180°
67.5°	173.5	182.8	186.5
70°	149.2	156.7	158.6
72.5°	126.8	132.4	136.2
75°	102.6	110.1	110.1
77.5°	83.9	87.7	89.5
80°	63.4	65.3	67.2
82.5°	44.8	46.6	48.5
85°	26.1	28.0	29.8
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



Report Generated By 670245859 / DESKTOP-T8S5UU9

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





— 0°-180°    - - 45°-225°    - - - - 90°-270°

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





62.5°	376.8	380.5	374.9	365.6	356.3	339.5	320.8	294.7	276.1	261.1	235.0
65°	330.2	332.0	328.3	319.0	309.6	292.9	274.2	251.8	236.9	222.0	199.6

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



62.5°	225.7	238.8	240.6
65°	197.7	208.9	210.8

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)