

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: P776749

Luminaire Tested: HCDJBS4050CSD-HCD81TRC-5000lm-5000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776749
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B042-HCD81TRC)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD81TRC-5000lm-5000K
Description: 8 INCH ROUND SHALLOW-WIDE SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5883.8 lumens
Efficiency: N/A
Efficacy: 122.6 lumens/watt
Spacing Criteria (0/90/45): 1.44 / 1.44 / 1.44
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

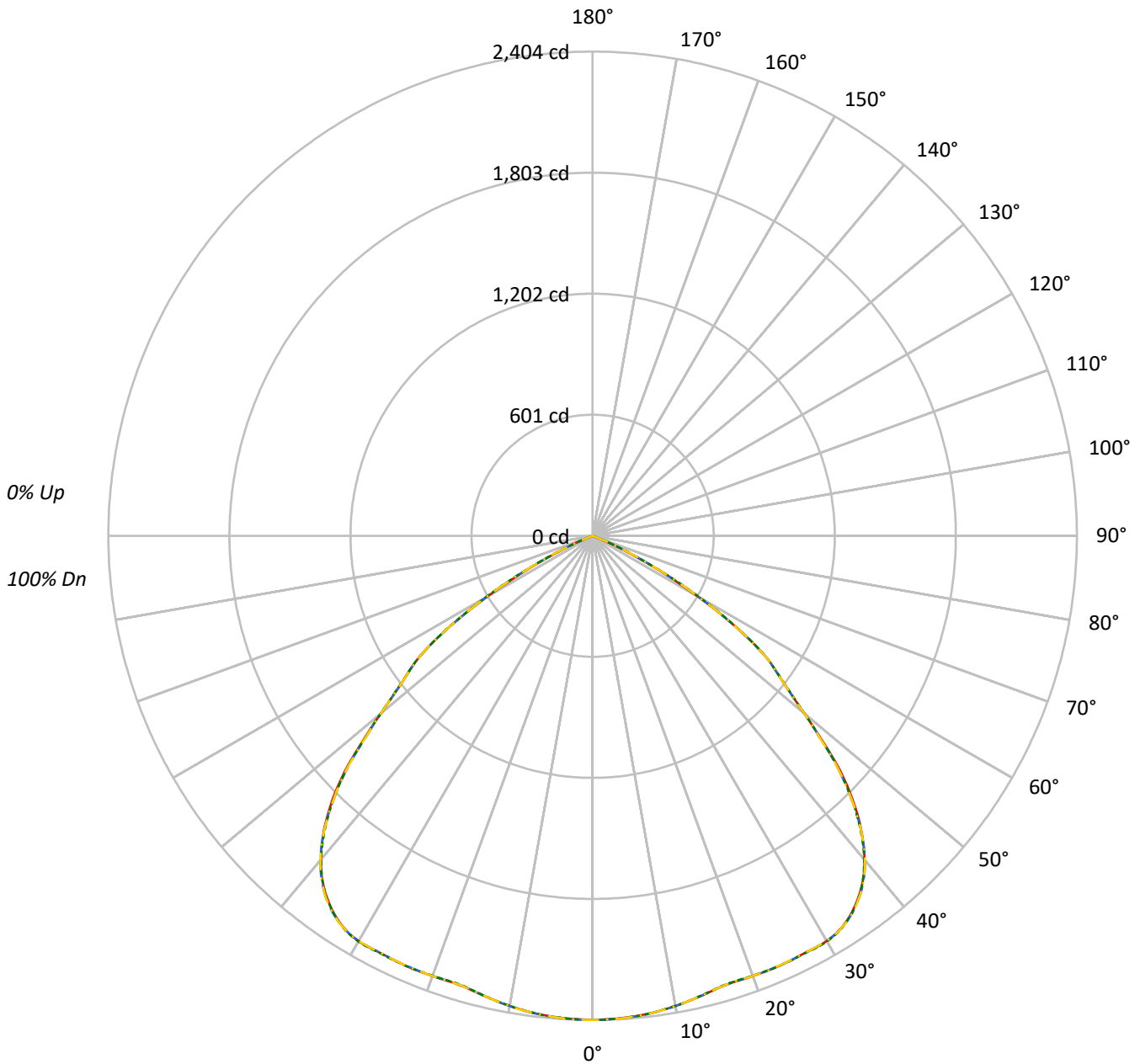
Input Watts (W): 48
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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	111	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	91	89																			
2	103	97	91	87	101	95	90	86	91	87	84	88	85	82	85	83	80	78																			
3	95	87	80	74	93	85	79	74	82	77	73	80	75	71	77	73	70	68																			
4	88	78	70	64	86	77	69	64	74	68	63	72	67	62	70	65	62	60																			
5	81	70	62	56	80	69	62	56	67	60	55	65	59	55	63	58	54	52																			
6	75	63	55	50	74	63	55	49	61	54	49	59	53	49	58	52	48	46																			
7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41																			
8	65	53	45	39	64	52	45	39	51	44	39	50	43	39	48	43	39	37																			
9	61	48	41	35	60	48	40	35	47	40	35	46	39	35	45	39	35	33																			
10	57	45	37	32	56	44	37	32	43	37	32	42	36	32	41	36	32	30																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	73392	73392	73392	73392
5°	73402	73418	73402	73418
10°	73501	73485	73501	73485
15°	73787	73708	73787	73708
20°	75577	75529	75577	75529
25°	78378	78395	78378	78395
30°	81922	81989	81922	81989
35°	84220	84276	84220	84276
40°	83654	83559	83654	83559
45°	78158	77739	78158	77739
50°	65137	65251	65137	65251
55°	55943	56070	55943	56070
60°	36813	37821	36813	37821
65°	13083	14976	13083	14976
70°	393	741	393	741
75°	177	224	177	224
80°	88	176	88	176
85°	0	175	0	175

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 78158 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	227.9	3.9
10°-20°	662.3	11.3
20°-30°	1076.6	18.3
30°-40°	1408.4	23.9
40°-50°	1368.3	23.3
50°-60°	909.0	15.4
60°-70°	228.9	3.9
70°-80°	2.1	0.0
80°-90°	0.3	0.0
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°	1966.8	33.4
0°-40°	3375.3	57.4
0°-60°	5652.6	96.1
0°-90°	5883.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5883.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2404	2404	2404	2404	2404	
5°	2395	2396	2395	2396	2395	228
15°	2334	2332	2334	2332	2334	662
25°	2327	2327	2327	2327	2327	1077
35°	2260	2261	2260	2261	2260	1407
45°	1810	1800	1810	1800	1810	1372
55°	1051	1053	1051	1053	1051	907
65°	181	207	181	207	181	216
75°	2	2	2	2	2	2
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2403.9	2403.9	2403.9	2403.9	2403.9	2403.9	2403.9	2403.9	2403.9	2403.9	2403.9
0.5°	2403.4	2403.4	2404.4	2404.8	2403.4	2404.8	2404.4	2403.4	2403.4	2403.4	2404.4
1°	2402.9	2403.4	2403.9	2404.4	2403.4	2404.4	2403.9	2403.4	2402.9	2403.4	2403.9
1.5°	2402.4	2402.9	2403.4	2403.9	2402.9	2403.9	2403.4	2402.9	2402.4	2402.9	2403.4
2°	2401.9	2401.9	2402.9	2403.4	2402.4	2403.4	2402.9	2401.9	2401.9	2401.9	2402.9
2.5°	2401.0	2401.4	2401.9	2402.4	2401.4	2402.4	2401.9	2401.4	2401.0	2401.4	2401.9
3°	2400.5	2400.5	2401.4	2401.9	2400.5	2401.9	2401.4	2400.5	2400.5	2400.5	2401.4
3.5°	2399.5	2399.5	2400.5	2400.5	2399.5	2400.5	2400.5	2399.5	2399.5	2399.5	2400.5
4°	2398.0	2398.5	2399.0	2399.5	2398.0	2399.5	2399.0	2398.5	2398.0	2398.5	2399.0
4.5°	2396.6	2397.1	2397.6	2398.0	2397.1	2398.0	2397.6	2397.1	2396.6	2397.1	2397.6
5°	2395.1	2395.6	2396.1	2396.6	2395.6	2396.6	2396.1	2395.6	2395.1	2395.6	2396.1
5.5°	2393.7	2394.2	2394.6	2395.1	2394.2	2395.1	2394.6	2394.2	2393.7	2394.2	2394.6
6°	2391.7	2392.2	2392.7	2393.2	2392.2	2393.2	2392.7	2392.2	2391.7	2392.2	2392.7
6.5°	2389.8	2390.3	2390.8	2391.2	2389.8	2391.2	2390.8	2390.3	2389.8	2390.3	2390.8
7°	2387.8	2387.8	2388.3	2388.8	2387.4	2388.8	2388.3	2387.8	2387.8	2387.8	2388.3
7.5°	2385.4	2385.4	2385.9	2385.9	2384.9	2385.9	2385.9	2385.4	2385.4	2385.4	2385.9
8°	2382.5	2383.0	2383.0	2383.5	2382.5	2383.5	2383.0	2383.0	2382.5	2383.0	2383.0
8.5°	2379.6	2380.1	2380.6	2380.6	2379.6	2380.6	2380.6	2380.1	2379.6	2380.1	2380.6
9°	2377.2	2377.2	2377.7	2377.7	2376.7	2377.7	2377.7	2377.2	2377.2	2377.2	2377.7
9.5°	2373.8	2374.3	2374.3	2374.7	2373.8	2374.7	2374.3	2374.3	2373.8	2374.3	2374.3
10°	2370.9	2370.9	2371.3	2371.3	2370.4	2371.3	2371.3	2370.9	2370.9	2370.9	2371.3
10.5°	2367.5	2367.5	2367.9	2367.9	2367.0	2367.9	2367.9	2367.5	2367.5	2367.5	2367.9
11°	2364.1	2364.1	2364.5	2364.5	2363.1	2364.5	2364.5	2364.1	2364.1	2364.1	2364.5
11.5°	2360.2	2360.2	2360.7	2360.7	2359.7	2360.7	2360.7	2360.2	2360.2	2360.2	2360.7
12°	2356.8	2356.8	2356.8	2356.8	2355.8	2356.8	2356.8	2356.8	2356.8	2356.8	2356.8
12.5°	2352.9	2352.9	2352.9	2352.9	2351.9	2352.9	2352.9	2352.9	2352.9	2352.9	2352.9
13°	2349.5	2349.0	2349.5	2349.0	2348.0	2349.0	2349.5	2349.0	2349.5	2349.0	2349.5
13.5°	2345.6	2345.1	2345.1	2345.1	2343.7	2345.1	2345.1	2345.1	2345.6	2345.1	2345.1
14°	2341.7	2341.7	2341.2	2341.2	2339.8	2341.2	2341.2	2341.7	2341.7	2341.7	2341.2
14.5°	2337.8	2337.8	2337.4	2337.4	2335.9	2337.4	2337.4	2337.8	2337.8	2337.8	2337.4
15°	2334.5	2334.0	2333.5	2333.5	2332.0	2333.5	2333.5	2334.0	2334.5	2334.0	2333.5
15.5°	2331.1	2330.6	2330.1	2329.6	2328.6	2329.6	2330.1	2330.6	2331.1	2330.6	2330.1
16°	2328.6	2328.1	2327.7	2326.7	2325.7	2326.7	2327.7	2328.1	2328.6	2328.1	2327.7
16.5°	2326.7	2326.2	2325.7	2324.3	2323.8	2324.3	2325.7	2326.2	2326.7	2326.2	2325.7
17°	2325.2	2325.2	2324.7	2323.3	2322.3	2323.3	2324.7	2325.2	2325.2	2325.2	2324.7
17.5°	2324.7	2324.7	2323.8	2322.8	2322.3	2322.8	2323.8	2324.7	2324.7	2324.7	2323.8
18°	2324.7	2324.7	2323.8	2323.3	2322.3	2323.3	2323.8	2324.7	2324.7	2324.7	2323.8
18.5°	2324.7	2324.7	2324.3	2323.3	2322.3	2323.3	2324.3	2324.7	2324.7	2324.7	2324.3
19°	2325.2	2325.2	2324.7	2324.3	2323.3	2324.3	2324.7	2325.2	2325.2	2325.2	2324.7
19.5°	2325.7	2325.7	2325.2	2324.7	2323.8	2324.7	2325.2	2325.7	2325.7	2325.7	2325.2
20°	2326.2	2326.2	2325.7	2325.2	2324.7	2325.2	2325.7	2326.2	2326.2	2326.2	2325.7
20.5°	2326.7	2326.2	2326.2	2326.2	2325.2	2326.2	2326.2	2326.2	2326.7	2326.2	2326.2
21°	2326.7	2326.7	2326.7	2326.7	2326.2	2326.7	2326.7	2326.7	2326.7	2326.7	2326.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	2327.7	2327.2	2327.2	2327.7	2327.7	2327.7	2327.2	2327.2	2327.7	2327.2	2327.2
23°	2327.7	2327.2	2327.2	2328.1	2327.7	2328.1	2327.2	2327.2	2327.7	2327.2	2327.2
23.5°	2327.7	2327.2	2326.7	2327.7	2327.7	2327.7	2326.7	2327.2	2327.7	2327.2	2326.7
24°	2327.2	2326.7	2326.2	2327.7	2327.7	2327.7	2326.2	2326.7	2327.2	2326.7	2326.2
24.5°	2327.2	2326.2	2326.2	2327.7	2327.7	2327.7	2326.2	2326.2	2327.2	2326.2	2326.2
25°	2326.7	2325.7	2325.7	2327.2	2327.2	2327.2	2325.7	2325.7	2326.7	2325.7	2325.7
25.5°	2326.2	2325.2	2325.2	2327.2	2327.2	2327.2	2325.2	2325.2	2326.2	2325.2	2325.2
26°	2325.2	2324.7	2324.3	2326.7	2326.7	2326.7	2324.3	2324.7	2325.2	2324.7	2324.3
26.5°	2324.7	2324.3	2323.8	2326.2	2326.2	2326.2	2323.8	2324.3	2324.7	2324.3	2323.8
27°	2324.7	2323.8	2323.3	2325.7	2326.2	2325.7	2323.3	2323.8	2324.7	2323.8	2323.3
27.5°	2324.7	2324.3	2323.3	2325.7	2326.2	2325.7	2323.3	2324.3	2324.7	2324.3	2323.3
28°	2325.2	2324.3	2323.8	2326.2	2326.7	2326.2	2323.8	2324.3	2325.2	2324.3	2323.8
28.5°	2325.7	2324.7	2323.8	2326.7	2327.2	2326.7	2323.8	2324.7	2325.7	2324.7	2323.8
29°	2325.7	2324.7	2323.8	2327.2	2327.2	2327.2	2323.8	2324.7	2325.7	2324.7	2323.8
29.5°	2325.2	2324.3	2323.8	2326.7	2326.7	2326.7	2323.8	2324.3	2325.2	2324.3	2323.8
30°	2323.8	2323.3	2322.8	2325.7	2325.7	2325.7	2322.8	2323.3	2323.8	2323.3	2322.8
30.5°	2321.8	2321.3	2321.3	2324.3	2323.8	2324.3	2321.3	2321.3	2321.8	2321.3	2321.3
31°	2318.9	2318.4	2318.4	2321.3	2320.9	2321.3	2318.4	2318.4	2318.9	2318.4	2318.4
31.5°	2315.0	2315.0	2315.5	2317.9	2317.0	2317.9	2315.5	2315.0	2315.0	2315.0	2315.5
32°	2309.7	2310.2	2310.7	2313.1	2312.1	2313.1	2310.7	2310.2	2309.7	2310.2	2310.7
32.5°	2303.9	2304.4	2305.3	2307.3	2306.3	2307.3	2305.3	2304.4	2303.9	2304.4	2305.3
33°	2297.1	2297.6	2299.0	2300.5	2299.0	2300.5	2299.0	2297.6	2297.1	2297.6	2299.0
33.5°	2289.3	2289.8	2291.7	2292.7	2291.2	2292.7	2291.7	2289.8	2289.3	2289.8	2291.7
34°	2280.1	2281.5	2283.5	2284.0	2282.0	2284.0	2283.5	2281.5	2280.1	2281.5	2283.5
34.5°	2270.4	2271.8	2274.3	2274.3	2272.3	2274.3	2274.3	2271.8	2270.4	2271.8	2274.3
35°	2259.7	2261.2	2264.1	2263.6	2261.2	2263.6	2264.1	2261.2	2259.7	2261.2	2264.1
35.5°	2248.5	2250.5	2252.9	2252.4	2250.0	2252.4	2252.9	2250.5	2248.5	2250.5	2252.9
36°	2236.4	2238.3	2241.2	2240.3	2237.4	2240.3	2241.2	2238.3	2236.4	2238.3	2241.2
36.5°	2223.3	2225.7	2228.6	2227.2	2224.3	2227.2	2228.6	2225.7	2223.3	2225.7	2228.6
37°	2209.2	2211.6	2214.5	2213.1	2209.7	2213.1	2214.5	2211.6	2209.2	2211.6	2214.5
37.5°	2194.2	2197.1	2199.0	2197.6	2194.2	2197.6	2199.0	2197.1	2194.2	2197.1	2199.0
38°	2177.7	2180.6	2183.0	2181.1	2177.7	2181.1	2183.0	2180.6	2177.7	2180.6	2183.0
38.5°	2159.7	2163.1	2165.5	2163.1	2159.2	2163.1	2165.5	2163.1	2159.7	2163.1	2165.5
39°	2140.8	2144.6	2146.1	2143.7	2139.8	2143.7	2146.1	2144.6	2140.8	2144.6	2146.1
39.5°	2120.9	2124.3	2125.2	2122.3	2118.4	2122.3	2125.2	2124.3	2120.9	2124.3	2125.2
40°	2099.0	2101.9	2102.9	2100.0	2096.6	2100.0	2102.9	2101.9	2099.0	2101.9	2102.9
40.5°	2076.2	2078.6	2079.1	2076.2	2072.3	2076.2	2079.1	2078.6	2076.2	2078.6	2079.1
41°	2051.9	2053.9	2053.4	2050.5	2047.6	2050.5	2053.4	2053.9	2051.9	2053.9	2053.4
41.5°	2026.2	2027.7	2026.7	2023.8	2021.3	2023.8	2026.7	2027.7	2026.2	2027.7	2026.7
42°	1999.5	2000.0	1998.0	1995.6	1994.2	1995.6	1998.0	2000.0	1999.5	2000.0	1998.0
42.5°	1971.8	1971.3	1968.4	1966.5	1965.0	1966.5	1968.4	1971.3	1971.8	1971.3	1968.4
43°	1942.2	1940.8	1937.4	1935.9	1934.9	1935.9	1937.4	1940.8	1942.2	1940.8	1937.4
43.5°	1911.2	1909.2	1904.4	1903.9	1903.4	1903.9	1904.4	1909.2	1911.2	1909.2	1904.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1810.2	1805.8	1799.0	1799.0	1800.5	1799.0	1799.0	1805.8	1810.2	1805.8	1799.0
45.5°	1773.3	1768.4	1760.7	1761.6	1763.1	1761.6	1760.7	1768.4	1773.3	1768.4	1760.7
46°	1734.5	1729.6	1721.8	1722.8	1725.2	1722.8	1721.8	1729.6	1734.5	1729.6	1721.8
46.5°	1693.7	1689.3	1681.5	1682.5	1684.9	1682.5	1681.5	1689.3	1693.7	1689.3	1681.5
47°	1651.0	1646.6	1639.3	1640.3	1642.2	1640.3	1639.3	1646.6	1651.0	1646.6	1639.3
47.5°	1603.4	1599.0	1591.7	1593.2	1595.1	1593.2	1591.7	1599.0	1603.4	1599.0	1591.7
48°	1552.4	1548.5	1542.7	1545.1	1547.1	1545.1	1542.7	1548.5	1552.4	1548.5	1542.7
48.5°	1504.8	1502.9	1497.6	1499.5	1501.9	1499.5	1497.6	1502.9	1504.8	1502.9	1497.6
49°	1460.2	1459.2	1456.3	1457.8	1459.2	1457.8	1456.3	1459.2	1460.2	1459.2	1456.3
49.5°	1416.0	1415.5	1414.1	1415.0	1416.0	1415.0	1414.1	1415.5	1416.0	1415.5	1414.1
50°	1371.4	1370.9	1370.9	1372.3	1373.8	1372.3	1370.9	1370.9	1371.4	1370.9	1370.9
50.5°	1329.6	1330.1	1329.6	1330.6	1331.5	1330.6	1329.6	1330.1	1329.6	1330.1	1329.6
51°	1291.7	1291.7	1291.3	1292.2	1291.3	1292.2	1291.3	1291.7	1291.7	1291.7	1291.3
51.5°	1255.8	1255.3	1254.8	1255.8	1256.3	1255.8	1254.8	1255.3	1255.8	1255.3	1254.8
52°	1221.4	1221.4	1221.4	1222.8	1224.3	1222.8	1221.4	1221.4	1221.4	1221.4	1221.4
52.5°	1189.8	1190.3	1189.8	1191.7	1193.2	1191.7	1189.8	1190.3	1189.8	1190.3	1189.8
53°	1161.6	1161.2	1161.2	1163.6	1164.6	1163.6	1161.2	1161.2	1161.6	1161.2	1161.2
53.5°	1134.9	1134.9	1134.9	1136.9	1137.9	1136.9	1134.9	1134.9	1134.9	1134.9	1134.9
54°	1109.2	1108.7	1108.7	1110.7	1110.7	1110.7	1108.7	1108.7	1109.2	1108.7	1108.7
54.5°	1081.5	1081.5	1081.5	1083.0	1083.5	1083.0	1081.5	1081.5	1081.5	1081.5	1081.5
55°	1051.0	1051.0	1051.0	1053.4	1053.4	1053.4	1051.0	1051.0	1051.0	1051.0	1051.0
55.5°	1015.5	1015.5	1016.0	1019.4	1018.4	1019.4	1016.0	1015.5	1015.5	1015.5	1016.0
56°	975.2	976.2	977.7	980.6	980.1	980.6	977.7	976.2	975.2	976.2	977.7
56.5°	933.5	934.0	935.9	938.8	938.8	938.8	935.9	934.0	933.5	934.0	935.9
57°	889.3	889.8	892.2	895.1	894.2	895.1	892.2	889.8	889.3	889.8	892.2
57.5°	843.2	844.2	846.1	850.0	850.0	850.0	846.1	844.2	843.2	844.2	846.1
58°	797.1	797.1	800.0	804.4	805.3	804.4	800.0	797.1	797.1	797.1	800.0
58.5°	748.5	750.0	752.4	757.8	759.7	757.8	752.4	750.0	748.5	750.0	752.4
59°	700.0	701.9	704.8	710.2	712.6	710.2	704.8	701.9	700.0	701.9	704.8
59.5°	651.0	653.4	656.8	663.6	666.5	663.6	656.8	653.4	651.0	653.4	656.8
60°	602.9	605.8	610.2	616.5	619.4	616.5	610.2	605.8	602.9	605.8	610.2
60.5°	554.9	558.2	564.1	570.9	573.8	570.9	564.1	558.2	554.9	558.2	564.1
61°	507.8	512.1	518.9	525.2	527.7	525.2	518.9	512.1	507.8	512.1	518.9
61.5°	463.1	467.0	475.2	481.1	483.0	481.1	475.2	467.0	463.1	467.0	475.2
62°	418.4	423.3	431.6	436.9	439.3	436.9	431.6	423.3	418.4	423.3	431.6
62.5°	374.8	380.1	389.3	394.2	398.1	394.2	389.3	380.1	374.8	380.1	389.3
63°	331.6	337.9	348.1	352.9	356.8	352.9	348.1	337.9	331.6	337.9	348.1
63.5°	291.3	296.6	307.8	313.1	317.0	313.1	307.8	296.6	291.3	296.6	307.8
64°	252.9	258.7	268.9	274.8	277.7	274.8	268.9	258.7	252.9	258.7	268.9
64.5°	216.0	222.3	232.0	237.4	239.8	237.4	232.0	222.3	216.0	222.3	232.0
65°	181.1	187.9	198.5	204.4	207.3	204.4	198.5	187.9	181.1	187.9	198.5
65.5°	150.0	157.3	166.0	172.3	176.2	172.3	166.0	157.3	150.0	157.3	166.0
66°	119.9	129.6	135.9	142.2	146.1	142.2	135.9	129.6	119.9	129.6	135.9



TEST NUMBER: P776749

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRC-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	48.1	62.1	67.5	69.9	70.9	69.9	67.5	62.1	48.1	62.1	67.5
68°	29.1	44.7	49.5	52.4	54.9	52.4	49.5	44.7	29.1	44.7	49.5
68.5°	12.6	29.6	32.5	35.4	40.3	35.4	32.5	29.6	12.6	29.6	32.5
69°	7.8	18.0	21.8	23.3	29.1	23.3	21.8	18.0	7.8	18.0	21.8
69.5°	5.3	10.7	14.6	13.6	18.4	13.6	14.6	10.7	5.3	10.7	14.6
70°	4.4	6.3	7.8	7.3	8.3	7.3	7.8	6.3	4.4	6.3	7.8
70.5°	2.9	3.9	4.9	4.9	3.9	4.9	4.9	3.9	2.9	3.9	4.9
71°	2.4	2.9	3.9	3.9	3.4	3.9	3.9	2.9	2.4	2.9	3.9
71.5°	2.4	2.4	2.9	2.9	2.9	2.9	2.9	2.4	2.4	2.4	2.9
72°	2.4	2.4	2.4	2.9	2.9	2.9	2.4	2.4	2.4	2.4	2.4
72.5°	1.9	2.4	2.4	2.4	2.9	2.4	2.4	2.4	1.9	2.4	2.4
73°	1.9	1.9	2.4	2.4	2.4	2.4	2.4	1.9	1.9	1.9	2.4
73.5°	1.9	1.9	1.9	2.4	2.4	2.4	1.9	1.9	1.9	1.9	1.9
74°	1.5	1.9	1.9	1.9	2.4	1.9	1.9	1.9	1.5	1.9	1.9
74.5°	1.5	1.5	1.9	1.9	1.9	1.9	1.9	1.5	1.5	1.5	1.9
75°	1.5	1.5	1.5	1.9	1.9	1.9	1.5	1.5	1.5	1.5	1.5
75.5°	1.5	1.5	1.5	1.9	1.9	1.9	1.5	1.5	1.5	1.5	1.5
76°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
76.5°	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.5
77°	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.5
77.5°	1.0	1.0	1.0	1.5	1.5	1.5	1.0	1.0	1.0	1.0	1.0
78°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
78.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
79°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
79.5°	0.5	0.5	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	1.0
80°	0.5	0.5	0.5	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.5
80.5°	0.5	0.5	0.5	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.5
81°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
81.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
82°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
82.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
83°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
83.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
84°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5
84.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776749
CATALOG NUMBER: HCDJBL54050CSD-HCD81TRC-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
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: P776749

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRC-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2403.9	2403.9	2403.9	2403.9	2403.9	2403.9
0.5°	2404.8	2403.4	2404.8	2404.4	2403.4	2403.4
1°	2404.4	2403.4	2404.4	2403.9	2403.4	2402.9
1.5°	2403.9	2402.9	2403.9	2403.4	2402.9	2402.4
2°	2403.4	2402.4	2403.4	2402.9	2401.9	2401.9
2.5°	2402.4	2401.4	2402.4	2401.9	2401.4	2401.0
3°	2401.9	2400.5	2401.9	2401.4	2400.5	2400.5
3.5°	2400.5	2399.5	2400.5	2400.5	2399.5	2399.5
4°	2399.5	2398.0	2399.5	2399.0	2398.5	2398.0
4.5°	2398.0	2397.1	2398.0	2397.6	2397.1	2396.6
5°	2396.6	2395.6	2396.6	2396.1	2395.6	2395.1
5.5°	2395.1	2394.2	2395.1	2394.6	2394.2	2393.7
6°	2393.2	2392.2	2393.2	2392.7	2392.2	2391.7
6.5°	2391.2	2389.8	2391.2	2390.8	2390.3	2389.8
7°	2388.8	2387.4	2388.8	2388.3	2387.8	2387.8
7.5°	2385.9	2384.9	2385.9	2385.9	2385.4	2385.4
8°	2383.5	2382.5	2383.5	2383.0	2383.0	2382.5
8.5°	2380.6	2379.6	2380.6	2380.6	2380.1	2379.6
9°	2377.7	2376.7	2377.7	2377.7	2377.2	2377.2
9.5°	2374.7	2373.8	2374.7	2374.3	2374.3	2373.8
10°	2371.3	2370.4	2371.3	2371.3	2370.9	2370.9
10.5°	2367.9	2367.0	2367.9	2367.9	2367.5	2367.5
11°	2364.5	2363.1	2364.5	2364.5	2364.1	2364.1
11.5°	2360.7	2359.7	2360.7	2360.7	2360.2	2360.2
12°	2356.8	2355.8	2356.8	2356.8	2356.8	2356.8
12.5°	2352.9	2351.9	2352.9	2352.9	2352.9	2352.9
13°	2349.0	2348.0	2349.0	2349.5	2349.0	2349.5
13.5°	2345.1	2343.7	2345.1	2345.1	2345.1	2345.6
14°	2341.2	2339.8	2341.2	2341.2	2341.7	2341.7
14.5°	2337.4	2335.9	2337.4	2337.4	2337.8	2337.8
15°	2333.5	2332.0	2333.5	2333.5	2334.0	2334.5
15.5°	2329.6	2328.6	2329.6	2330.1	2330.6	2331.1
16°	2326.7	2325.7	2326.7	2327.7	2328.1	2328.6
16.5°	2324.3	2323.8	2324.3	2325.7	2326.2	2326.7
17°	2323.3	2322.3	2323.3	2324.7	2325.2	2325.2
17.5°	2322.8	2322.3	2322.8	2323.8	2324.7	2324.7
18°	2323.3	2322.3	2323.3	2323.8	2324.7	2324.7
18.5°	2323.3	2322.3	2323.3	2324.3	2324.7	2324.7
19°	2324.3	2323.3	2324.3	2324.7	2325.2	2325.2
19.5°	2324.7	2323.8	2324.7	2325.2	2325.7	2325.7
20°	2325.2	2324.7	2325.2	2325.7	2326.2	2326.2
20.5°	2326.2	2325.2	2326.2	2326.2	2326.2	2326.7
21°	2326.7	2326.2	2326.7	2326.7	2326.7	2326.7

TEST NUMBER: P776749

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRC-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2327.7	2327.7	2327.7	2327.2	2327.2	2327.7
23°	2328.1	2327.7	2328.1	2327.2	2327.2	2327.7
23.5°	2327.7	2327.7	2327.7	2326.7	2327.2	2327.7
24°	2327.7	2327.7	2327.7	2326.2	2326.7	2327.2
24.5°	2327.7	2327.7	2327.7	2326.2	2326.2	2327.2
25°	2327.2	2327.2	2327.2	2325.7	2325.7	2326.7
25.5°	2327.2	2327.2	2327.2	2325.2	2325.2	2326.2
26°	2326.7	2326.7	2326.7	2324.3	2324.7	2325.2
26.5°	2326.2	2326.2	2326.2	2323.8	2324.3	2324.7
27°	2325.7	2326.2	2325.7	2323.3	2323.8	2324.7
27.5°	2325.7	2326.2	2325.7	2323.3	2324.3	2324.7
28°	2326.2	2326.7	2326.2	2323.8	2324.3	2325.2
28.5°	2326.7	2327.2	2326.7	2323.8	2324.7	2325.7
29°	2327.2	2327.2	2327.2	2323.8	2324.7	2325.7
29.5°	2326.7	2326.7	2326.7	2323.8	2324.3	2325.2
30°	2325.7	2325.7	2325.7	2322.8	2323.3	2323.8
30.5°	2324.3	2323.8	2324.3	2321.3	2321.3	2321.8
31°	2321.3	2320.9	2321.3	2318.4	2318.4	2318.9
31.5°	2317.9	2317.0	2317.9	2315.5	2315.0	2315.0
32°	2313.1	2312.1	2313.1	2310.7	2310.2	2309.7
32.5°	2307.3	2306.3	2307.3	2305.3	2304.4	2303.9
33°	2300.5	2299.0	2300.5	2299.0	2297.6	2297.1
33.5°	2292.7	2291.2	2292.7	2291.7	2289.8	2289.3
34°	2284.0	2282.0	2284.0	2283.5	2281.5	2280.1
34.5°	2274.3	2272.3	2274.3	2274.3	2271.8	2270.4
35°	2263.6	2261.2	2263.6	2264.1	2261.2	2259.7
35.5°	2252.4	2250.0	2252.4	2252.9	2250.5	2248.5
36°	2240.3	2237.4	2240.3	2241.2	2238.3	2236.4
36.5°	2227.2	2224.3	2227.2	2228.6	2225.7	2223.3
37°	2213.1	2209.7	2213.1	2214.5	2211.6	2209.2
37.5°	2197.6	2194.2	2197.6	2199.0	2197.1	2194.2
38°	2181.1	2177.7	2181.1	2183.0	2180.6	2177.7
38.5°	2163.1	2159.2	2163.1	2165.5	2163.1	2159.7
39°	2143.7	2139.8	2143.7	2146.1	2144.6	2140.8
39.5°	2122.3	2118.4	2122.3	2125.2	2124.3	2120.9
40°	2100.0	2096.6	2100.0	2102.9	2101.9	2099.0
40.5°	2076.2	2072.3	2076.2	2079.1	2078.6	2076.2
41°	2050.5	2047.6	2050.5	2053.4	2053.9	2051.9
41.5°	2023.8	2021.3	2023.8	2026.7	2027.7	2026.2
42°	1995.6	1994.2	1995.6	1998.0	2000.0	1999.5
42.5°	1966.5	1965.0	1966.5	1968.4	1971.3	1971.8
43°	1935.9	1934.9	1935.9	1937.4	1940.8	1942.2
43.5°	1903.9	1903.4	1903.9	1904.4	1909.2	1911.2



TEST NUMBER: P776749

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRC-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1799.0	1800.5	1799.0	1799.0	1805.8	1810.2
45.5°	1761.6	1763.1	1761.6	1760.7	1768.4	1773.3
46°	1722.8	1725.2	1722.8	1721.8	1729.6	1734.5
46.5°	1682.5	1684.9	1682.5	1681.5	1689.3	1693.7
47°	1640.3	1642.2	1640.3	1639.3	1646.6	1651.0
47.5°	1593.2	1595.1	1593.2	1591.7	1599.0	1603.4
48°	1545.1	1547.1	1545.1	1542.7	1548.5	1552.4
48.5°	1499.5	1501.9	1499.5	1497.6	1502.9	1504.8
49°	1457.8	1459.2	1457.8	1456.3	1459.2	1460.2
49.5°	1415.0	1416.0	1415.0	1414.1	1415.5	1416.0
50°	1372.3	1373.8	1372.3	1370.9	1370.9	1371.4
50.5°	1330.6	1331.5	1330.6	1329.6	1330.1	1329.6
51°	1292.2	1291.3	1292.2	1291.3	1291.7	1291.7
51.5°	1255.8	1256.3	1255.8	1254.8	1255.3	1255.8
52°	1222.8	1224.3	1222.8	1221.4	1221.4	1221.4
52.5°	1191.7	1193.2	1191.7	1189.8	1190.3	1189.8
53°	1163.6	1164.6	1163.6	1161.2	1161.2	1161.6
53.5°	1136.9	1137.9	1136.9	1134.9	1134.9	1134.9
54°	1110.7	1110.7	1110.7	1108.7	1108.7	1109.2
54.5°	1083.0	1083.5	1083.0	1081.5	1081.5	1081.5
55°	1053.4	1053.4	1053.4	1051.0	1051.0	1051.0
55.5°	1019.4	1018.4	1019.4	1016.0	1015.5	1015.5
56°	980.6	980.1	980.6	977.7	976.2	975.2
56.5°	938.8	938.8	938.8	935.9	934.0	933.5
57°	895.1	894.2	895.1	892.2	889.8	889.3
57.5°	850.0	850.0	850.0	846.1	844.2	843.2
58°	804.4	805.3	804.4	800.0	797.1	797.1
58.5°	757.8	759.7	757.8	752.4	750.0	748.5
59°	710.2	712.6	710.2	704.8	701.9	700.0
59.5°	663.6	666.5	663.6	656.8	653.4	651.0
60°	616.5	619.4	616.5	610.2	605.8	602.9
60.5°	570.9	573.8	570.9	564.1	558.2	554.9
61°	525.2	527.7	525.2	518.9	512.1	507.8
61.5°	481.1	483.0	481.1	475.2	467.0	463.1
62°	436.9	439.3	436.9	431.6	423.3	418.4
62.5°	394.2	398.1	394.2	389.3	380.1	374.8
63°	352.9	356.8	352.9	348.1	337.9	331.6
63.5°	313.1	317.0	313.1	307.8	296.6	291.3
64°	274.8	277.7	274.8	268.9	258.7	252.9
64.5°	237.4	239.8	237.4	232.0	222.3	216.0
65°	204.4	207.3	204.4	198.5	187.9	181.1
65.5°	172.3	176.2	172.3	166.0	157.3	150.0
66°	142.2	146.1	142.2	135.9	129.6	119.9



TEST NUMBER: P776749

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRC-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	69.9	70.9	69.9	67.5	62.1	48.1
68°	52.4	54.9	52.4	49.5	44.7	29.1
68.5°	35.4	40.3	35.4	32.5	29.6	12.6
69°	23.3	29.1	23.3	21.8	18.0	7.8
69.5°	13.6	18.4	13.6	14.6	10.7	5.3
70°	7.3	8.3	7.3	7.8	6.3	4.4
70.5°	4.9	3.9	4.9	4.9	3.9	2.9
71°	3.9	3.4	3.9	3.9	2.9	2.4
71.5°	2.9	2.9	2.9	2.9	2.4	2.4
72°	2.9	2.9	2.9	2.4	2.4	2.4
72.5°	2.4	2.9	2.4	2.4	2.4	1.9
73°	2.4	2.4	2.4	2.4	1.9	1.9
73.5°	2.4	2.4	2.4	1.9	1.9	1.9
74°	1.9	2.4	1.9	1.9	1.9	1.5
74.5°	1.9	1.9	1.9	1.9	1.5	1.5
75°	1.9	1.9	1.9	1.5	1.5	1.5
75.5°	1.9	1.9	1.9	1.5	1.5	1.5
76°	1.5	1.5	1.5	1.5	1.5	1.5
76.5°	1.5	1.5	1.5	1.5	1.0	1.0
77°	1.5	1.5	1.5	1.5	1.0	1.0
77.5°	1.5	1.5	1.5	1.0	1.0	1.0
78°	1.0	1.0	1.0	1.0	1.0	1.0
78.5°	1.0	1.0	1.0	1.0	1.0	1.0
79°	1.0	1.0	1.0	1.0	1.0	1.0
79.5°	1.0	1.0	1.0	1.0	0.5	0.5
80°	1.0	1.0	1.0	0.5	0.5	0.5
80.5°	1.0	1.0	1.0	0.5	0.5	0.5
81°	0.5	0.5	0.5	0.5	0.5	0.5
81.5°	0.5	0.5	0.5	0.5	0.5	0.5
82°	0.5	0.5	0.5	0.5	0.5	0.5
82.5°	0.5	0.5	0.5	0.5	0.5	0.5
83°	0.5	0.5	0.5	0.5	0.5	0.5
83.5°	0.5	0.5	0.5	0.5	0.5	0.5
84°	0.5	0.5	0.5	0.5	0.0	0.0
84.5°	0.5	0.5	0.5	0.0	0.0	0.0
85°	0.5	0.5	0.5	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776749
CATALOG NUMBER: HCDJBL54050CSD-HCD81TRC-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270° - · - · 135°-315°

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Scaled Data Report



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Scaled Data Report





21.5°	2327.2	2327.2	2326.7	2327.2	2326.7	2327.2	2326.7	2327.2	2327.2	2327.2	2326.7
22°	2327.7	2327.2	2327.2	2327.2	2327.2	2327.2	2327.2	2327.2	2327.7	2327.2	2327.2



44°	1878.6	1876.2	1870.4	1869.9	1870.4	1869.9	1870.4	1876.2	1878.6	1876.2	1870.4
44.5°	1845.1	1842.2	1835.4	1835.4	1835.9	1835.4	1835.4	1842.2	1845.1	1842.2	1835.4



66.5°	96.1	103.9	110.7	115.5	117.0	115.5	110.7	103.9	96.1	103.9	110.7
67°	71.8	81.1	86.4	91.3	92.2	91.3	86.4	81.1	71.8	81.1	86.4



89°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	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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21.5°	2327.2	2326.7	2327.2	2326.7	2327.2	2327.2
22°	2327.2	2327.2	2327.2	2327.2	2327.2	2327.7



44°	1869.9	1870.4	1869.9	1870.4	1876.2	1878.6
44.5°	1835.4	1835.9	1835.4	1835.4	1842.2	1845.1



66.5°	115.5	117.0	115.5	110.7	103.9	96.1
67°	91.3	92.2	91.3	86.4	81.1	71.8

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89°	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0

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(END OF REPORT)