

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: P776747

Luminaire Tested: HCDJBS4050CSD-HCD81TRC-5000lm-3500K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776747
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-3500K
Description: 8 INCH ROUND SHALLOW-WIDE SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

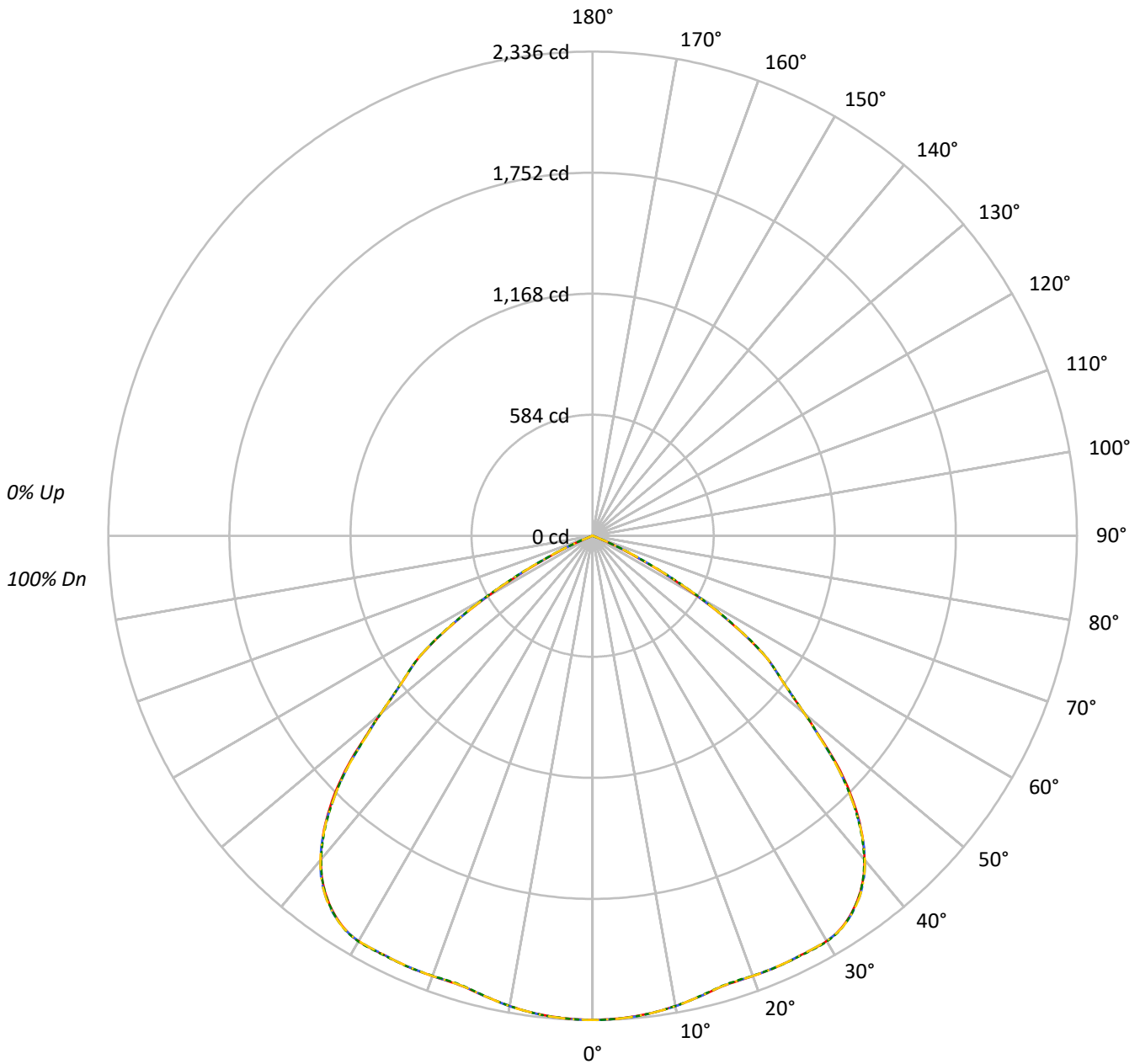
Lumens per Lamp: N/A
Luminaire Lumens: 5717.8 lumens
Efficiency: N/A
Efficacy: 119.1 lumens/watt
Spacing Criteria (0/90/45): 1.44 / 1.44 / 1.44
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

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°	71322	71322	71322	71322
5°	71334	71346	71334	71346
10°	71427	71411	71427	71411
15°	71704	71628	71704	71628
20°	73446	73401	73446	73401
25°	76165	76182	76165	76182
30°	79609	79676	79609	79676
35°	81842	81898	81842	81898
40°	81295	81199	81295	81199
45°	75951	75546	75951	75546
50°	63299	63408	63299	63408
55°	54362	54489	54362	54489
60°	35775	36752	35775	36752
65°	12714	14549	12714	14549
70°	375	714	375	714
75°	165	224	165	224
80°	88	158	88	158
85°	0	175	0	175

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 75951 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.5	3.9
10°-20°	643.6	11.3
20°-30°	1046.2	18.3
30°-40°	1368.7	23.9
40°-50°	1329.7	23.3
50°-60°	883.4	15.4
60°-70°	222.5	3.9
70°-80°	2.0	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°	1911.3	33.4
0°-40°	3280.0	57.4
0°-60°	5493.1	96.1
0°-90°	5717.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5717.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2336	2336	2336	2336	2336	
5°	2328	2328	2328	2328	2328	221
15°	2269	2266	2269	2266	2269	644
25°	2261	2262	2261	2262	2261	1046
35°	2196	2197	2196	2197	2196	1367
45°	1759	1750	1759	1750	1759	1333
55°	1021	1024	1021	1024	1021	881
65°	176	201	176	201	176	210
75°	1	2	1	2	1	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°	2336.1	2336.1	2336.1	2336.1	2336.1	2336.1	2336.1	2336.1	2336.1	2336.1	2336.1
0.5°	2335.6	2335.6	2336.5	2337.0	2335.6	2337.0	2336.5	2335.6	2335.6	2335.6	2336.5
1°	2335.1	2335.6	2336.1	2336.5	2335.6	2336.5	2336.1	2335.6	2335.1	2335.6	2336.1
1.5°	2334.6	2335.1	2335.6	2336.1	2335.1	2336.1	2335.6	2335.1	2334.6	2335.1	2335.6
2°	2334.2	2334.2	2335.1	2335.6	2334.6	2335.6	2335.1	2334.2	2334.2	2334.2	2335.1
2.5°	2333.2	2333.7	2334.2	2334.6	2333.7	2334.6	2334.2	2333.7	2333.2	2333.7	2334.2
3°	2332.8	2332.8	2333.7	2334.2	2332.8	2334.2	2333.7	2332.8	2332.8	2332.8	2333.7
3.5°	2331.8	2331.8	2332.8	2332.8	2331.8	2332.8	2332.8	2331.8	2331.8	2331.8	2332.8
4°	2330.4	2330.9	2331.3	2331.8	2330.4	2331.8	2331.3	2330.9	2330.4	2330.9	2331.3
4.5°	2329.0	2329.5	2329.9	2330.4	2329.5	2330.4	2329.9	2329.5	2329.0	2329.5	2329.9
5°	2327.6	2328.0	2328.5	2329.0	2328.0	2329.0	2328.5	2328.0	2327.6	2328.0	2328.5
5.5°	2326.1	2326.6	2327.1	2327.6	2326.6	2327.6	2327.1	2326.6	2326.1	2326.6	2327.1
6°	2324.3	2324.7	2325.2	2325.7	2324.7	2325.7	2325.2	2324.7	2324.3	2324.7	2325.2
6.5°	2322.4	2322.8	2323.3	2323.8	2322.4	2323.8	2323.3	2322.8	2322.4	2322.8	2323.3
7°	2320.5	2320.5	2321.0	2321.4	2320.0	2321.4	2321.0	2320.5	2320.5	2320.5	2321.0
7.5°	2318.1	2318.1	2318.6	2318.6	2317.7	2318.6	2318.6	2318.1	2318.1	2318.1	2318.6
8°	2315.3	2315.8	2315.8	2316.2	2315.3	2316.2	2315.8	2315.8	2315.3	2315.8	2315.8
8.5°	2312.5	2312.9	2313.4	2313.4	2312.5	2313.4	2313.4	2312.9	2312.5	2312.9	2313.4
9°	2310.1	2310.1	2310.6	2310.6	2309.6	2310.6	2310.6	2310.1	2310.1	2310.1	2310.6
9.5°	2306.8	2307.3	2307.3	2307.8	2306.8	2307.8	2307.3	2307.3	2306.8	2307.3	2307.3
10°	2304.0	2304.0	2304.4	2304.4	2303.5	2304.4	2304.4	2304.0	2304.0	2304.0	2304.4
10.5°	2300.7	2300.7	2301.1	2301.1	2300.2	2301.1	2301.1	2300.7	2300.7	2300.7	2301.1
11°	2297.4	2297.4	2297.8	2297.8	2296.4	2297.8	2297.8	2297.4	2297.4	2297.4	2297.8
11.5°	2293.6	2293.6	2294.1	2294.1	2293.1	2294.1	2294.1	2293.6	2293.6	2293.6	2294.1
12°	2290.3	2290.3	2290.3	2290.3	2289.4	2290.3	2290.3	2290.3	2290.3	2290.3	2290.3
12.5°	2286.5	2286.5	2286.5	2286.5	2285.6	2286.5	2286.5	2286.5	2286.5	2286.5	2286.5
13°	2283.2	2282.7	2283.2	2282.7	2281.8	2282.7	2283.2	2282.7	2283.2	2282.7	2283.2
13.5°	2279.4	2279.0	2279.0	2279.0	2277.6	2279.0	2279.0	2279.0	2279.4	2279.0	2279.0
14°	2275.7	2275.7	2275.2	2275.2	2273.8	2275.2	2275.2	2275.7	2275.7	2275.7	2275.2
14.5°	2271.9	2271.9	2271.4	2271.4	2270.0	2271.4	2271.4	2271.9	2271.9	2271.9	2271.4
15°	2268.6	2268.1	2267.7	2267.7	2266.2	2267.7	2267.7	2268.1	2268.6	2268.1	2267.7
15.5°	2265.3	2264.8	2264.4	2263.9	2262.9	2263.9	2264.4	2264.8	2265.3	2264.8	2264.4
16°	2262.9	2262.5	2262.0	2261.0	2260.1	2261.0	2262.0	2262.5	2262.9	2262.5	2262.0
16.5°	2261.0	2260.6	2260.1	2258.7	2258.2	2258.7	2260.1	2260.6	2261.0	2260.6	2260.1
17°	2259.6	2259.6	2259.2	2257.7	2256.8	2257.7	2259.2	2259.6	2259.6	2259.6	2259.2
17.5°	2259.2	2259.2	2258.2	2257.3	2256.8	2257.3	2258.2	2259.2	2259.2	2259.2	2258.2
18°	2259.2	2259.2	2258.2	2257.7	2256.8	2257.7	2258.2	2259.2	2259.2	2259.2	2258.2
18.5°	2259.2	2259.2	2258.7	2257.7	2256.8	2257.7	2258.7	2259.2	2259.2	2259.2	2258.7
19°	2259.6	2259.6	2259.2	2258.7	2257.7	2258.7	2259.2	2259.6	2259.6	2259.6	2259.2
19.5°	2260.1	2260.1	2259.6	2259.2	2258.2	2259.2	2259.6	2260.1	2260.1	2260.1	2259.6
20°	2260.6	2260.6	2260.1	2259.6	2259.2	2259.6	2260.1	2260.6	2260.6	2260.6	2260.1
20.5°	2261.0	2260.6	2260.6	2260.6	2259.6	2260.6	2260.6	2260.6	2261.0	2260.6	2260.6
21°	2261.0	2261.0	2261.0	2261.0	2260.6	2261.0	2261.0	2261.0	2261.0	2261.0	2261.0



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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°	2262.0	2261.5	2261.5	2262.0	2262.0	2262.0	2261.5	2261.5	2262.0	2261.5	2261.5
23°	2262.0	2261.5	2261.5	2262.5	2262.0	2262.5	2261.5	2261.5	2262.0	2261.5	2261.5
23.5°	2262.0	2261.5	2261.0	2262.0	2262.0	2262.0	2261.0	2261.5	2262.0	2261.5	2261.0
24°	2261.5	2261.0	2260.6	2262.0	2262.0	2262.0	2260.6	2261.0	2261.5	2261.0	2260.6
24.5°	2261.5	2260.6	2260.6	2262.0	2262.0	2262.0	2260.6	2260.6	2261.5	2260.6	2260.6
25°	2261.0	2260.1	2260.1	2261.5	2261.5	2261.5	2260.1	2260.1	2261.0	2260.1	2260.1
25.5°	2260.6	2259.6	2259.6	2261.5	2261.5	2261.5	2259.6	2259.6	2260.6	2259.6	2259.6
26°	2259.6	2259.2	2258.7	2261.0	2261.0	2261.0	2258.7	2259.2	2259.6	2259.2	2258.7
26.5°	2259.2	2258.7	2258.2	2260.6	2260.6	2260.6	2258.2	2258.7	2259.2	2258.7	2258.2
27°	2259.2	2258.2	2257.7	2260.1	2260.6	2260.1	2257.7	2258.2	2259.2	2258.2	2257.7
27.5°	2259.2	2258.7	2257.7	2260.1	2260.6	2260.1	2257.7	2258.7	2259.2	2258.7	2257.7
28°	2259.6	2258.7	2258.2	2260.6	2261.0	2260.6	2258.2	2258.7	2259.6	2258.7	2258.2
28.5°	2260.1	2259.2	2258.2	2261.0	2261.5	2261.0	2258.2	2259.2	2260.1	2259.2	2258.2
29°	2260.1	2259.2	2258.2	2261.5	2261.5	2261.5	2258.2	2259.2	2260.1	2259.2	2258.2
29.5°	2259.6	2258.7	2258.2	2261.0	2261.0	2261.0	2258.2	2258.7	2259.6	2258.7	2258.2
30°	2258.2	2257.7	2257.3	2260.1	2260.1	2260.1	2257.3	2257.7	2258.2	2257.7	2257.3
30.5°	2256.3	2255.9	2255.9	2258.7	2258.2	2258.7	2255.9	2255.9	2256.3	2255.9	2255.9
31°	2253.5	2253.0	2253.0	2255.9	2255.4	2255.9	2253.0	2253.0	2253.5	2253.0	2253.0
31.5°	2249.7	2249.7	2250.2	2252.6	2251.6	2252.6	2250.2	2249.7	2249.7	2249.7	2250.2
32°	2244.5	2245.0	2245.5	2247.8	2246.9	2247.8	2245.5	2245.0	2244.5	2245.0	2245.5
32.5°	2238.9	2239.3	2240.3	2242.2	2241.2	2242.2	2240.3	2239.3	2238.9	2239.3	2240.3
33°	2232.3	2232.7	2234.2	2235.6	2234.2	2235.6	2234.2	2232.7	2232.3	2232.7	2234.2
33.5°	2224.7	2225.2	2227.1	2228.0	2226.6	2228.0	2227.1	2225.2	2224.7	2225.2	2227.1
34°	2215.8	2217.2	2219.1	2219.5	2217.6	2219.5	2219.1	2217.2	2215.8	2217.2	2219.1
34.5°	2206.3	2207.7	2210.1	2210.1	2208.2	2210.1	2210.1	2207.7	2206.3	2207.7	2210.1
35°	2195.9	2197.4	2200.2	2199.7	2197.4	2199.7	2200.2	2197.4	2195.9	2197.4	2200.2
35.5°	2185.1	2187.0	2189.3	2188.9	2186.5	2188.9	2189.3	2187.0	2185.1	2187.0	2189.3
36°	2173.3	2175.2	2178.0	2177.1	2174.2	2177.1	2178.0	2175.2	2173.3	2175.2	2178.0
36.5°	2160.6	2162.9	2165.8	2164.3	2161.5	2164.3	2165.8	2162.9	2160.6	2162.9	2165.8
37°	2146.9	2149.2	2152.1	2150.7	2147.4	2150.7	2152.1	2149.2	2146.9	2149.2	2152.1
37.5°	2132.3	2135.1	2137.0	2135.6	2132.3	2135.6	2137.0	2135.1	2132.3	2135.1	2137.0
38°	2116.2	2119.1	2121.4	2119.5	2116.2	2119.5	2121.4	2119.1	2116.2	2119.1	2121.4
38.5°	2098.8	2102.1	2104.4	2102.1	2098.3	2102.1	2104.4	2102.1	2098.8	2102.1	2104.4
39°	2080.4	2084.1	2085.6	2083.2	2079.4	2083.2	2085.6	2084.1	2080.4	2084.1	2085.6
39.5°	2061.0	2064.3	2065.3	2062.4	2058.7	2062.4	2065.3	2064.3	2061.0	2064.3	2065.3
40°	2039.8	2042.6	2043.6	2040.7	2037.4	2040.7	2043.6	2042.6	2039.8	2042.6	2043.6
40.5°	2017.6	2020.0	2020.5	2017.6	2013.9	2017.6	2020.5	2020.0	2017.6	2020.0	2020.5
41°	1994.0	1995.9	1995.5	1992.6	1989.8	1992.6	1995.5	1995.9	1994.0	1995.9	1995.5
41.5°	1969.0	1970.5	1969.5	1966.7	1964.3	1966.7	1969.5	1970.5	1969.0	1970.5	1969.5
42°	1943.1	1943.6	1941.7	1939.3	1937.9	1939.3	1941.7	1943.6	1943.1	1943.6	1941.7
42.5°	1916.2	1915.7	1912.9	1911.0	1909.6	1911.0	1912.9	1915.7	1916.2	1915.7	1912.9
43°	1887.4	1886.0	1882.7	1881.3	1880.4	1881.3	1882.7	1886.0	1887.4	1886.0	1882.7
43.5°	1857.2	1855.4	1850.6	1850.2	1849.7	1850.2	1850.6	1855.4	1857.2	1855.4	1850.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1759.1	1754.9	1748.3	1748.3	1749.7	1748.3	1748.3	1754.9	1759.1	1754.9	1748.3
45.5°	1723.3	1718.5	1711.0	1711.9	1713.4	1711.9	1711.0	1718.5	1723.3	1718.5	1711.0
46°	1685.5	1680.8	1673.3	1674.2	1676.6	1674.2	1673.3	1680.8	1685.5	1680.8	1673.3
46.5°	1645.9	1641.7	1634.1	1635.0	1637.4	1635.0	1634.1	1641.7	1645.9	1641.7	1634.1
47°	1604.4	1600.1	1593.1	1594.0	1595.9	1594.0	1593.1	1600.1	1604.4	1600.1	1593.1
47.5°	1558.2	1553.9	1546.8	1548.2	1550.1	1548.2	1546.8	1553.9	1558.2	1553.9	1546.8
48°	1508.6	1504.8	1499.2	1501.5	1503.4	1501.5	1499.2	1504.8	1508.6	1504.8	1499.2
48.5°	1462.4	1460.5	1455.3	1457.2	1459.6	1457.2	1455.3	1460.5	1462.4	1460.5	1455.3
49°	1419.0	1418.0	1415.2	1416.6	1418.0	1416.6	1415.2	1418.0	1419.0	1418.0	1415.2
49.5°	1376.1	1375.6	1374.2	1375.1	1376.1	1375.1	1374.2	1375.6	1376.1	1375.6	1374.2
50°	1332.7	1332.2	1332.2	1333.6	1335.0	1333.6	1332.2	1332.2	1332.7	1332.2	1332.2
50.5°	1292.1	1292.6	1292.1	1293.0	1294.0	1293.0	1292.1	1292.6	1292.1	1292.6	1292.1
51°	1255.3	1255.3	1254.8	1255.8	1254.8	1255.8	1254.8	1255.3	1255.3	1255.3	1254.8
51.5°	1220.4	1219.9	1219.4	1220.4	1220.9	1220.4	1219.4	1219.9	1220.4	1219.9	1219.4
52°	1186.9	1186.9	1186.9	1188.3	1189.7	1188.3	1186.9	1186.9	1186.9	1186.9	1186.9
52.5°	1156.2	1156.7	1156.2	1158.1	1159.5	1158.1	1156.2	1156.7	1156.2	1156.7	1156.2
53°	1128.9	1128.4	1128.4	1130.8	1131.7	1130.8	1128.4	1128.4	1128.9	1128.4	1128.4
53.5°	1102.9	1102.9	1102.9	1104.8	1105.8	1104.8	1102.9	1102.9	1102.9	1102.9	1102.9
54°	1077.9	1077.5	1077.5	1079.3	1079.3	1079.3	1077.5	1077.5	1077.9	1077.5	1077.5
54.5°	1051.0	1051.0	1051.0	1052.5	1052.9	1052.5	1051.0	1051.0	1051.0	1051.0	1051.0
55°	1021.3	1021.3	1021.3	1023.7	1023.7	1023.7	1021.3	1021.3	1021.3	1021.3	1021.3
55.5°	986.9	986.9	987.4	990.7	989.7	990.7	987.4	986.9	986.9	986.9	987.4
56°	947.7	948.7	950.1	952.9	952.4	952.9	950.1	948.7	947.7	948.7	950.1
56.5°	907.2	907.6	909.5	912.3	912.3	912.3	909.5	907.6	907.2	907.6	909.5
57°	864.2	864.7	867.1	869.9	868.9	869.9	867.1	864.7	864.2	864.7	867.1
57.5°	819.4	820.4	822.2	826.0	826.0	826.0	822.2	820.4	819.4	820.4	822.2
58°	774.6	774.6	777.4	781.7	782.6	781.7	777.4	774.6	774.6	774.6	777.4
58.5°	727.4	728.8	731.2	736.4	738.3	736.4	731.2	728.8	727.4	728.8	731.2
59°	680.2	682.1	685.0	690.2	692.5	690.2	685.0	682.1	680.2	682.1	685.0
59.5°	632.6	635.0	638.3	644.9	647.7	644.9	638.3	635.0	632.6	635.0	638.3
60°	585.9	588.7	593.0	599.1	601.9	599.1	593.0	588.7	585.9	588.7	593.0
60.5°	539.2	542.5	548.2	554.8	557.6	554.8	548.2	542.5	539.2	542.5	548.2
61°	493.4	497.7	504.3	510.4	512.8	510.4	504.3	497.7	493.4	497.7	504.3
61.5°	450.0	453.8	461.8	467.5	469.4	467.5	461.8	453.8	450.0	453.8	461.8
62°	406.6	411.4	419.4	424.6	426.9	424.6	419.4	411.4	406.6	411.4	419.4
62.5°	364.2	369.4	378.3	383.1	386.8	383.1	378.3	369.4	364.2	369.4	378.3
63°	322.2	328.3	338.2	343.0	346.7	343.0	338.2	328.3	322.2	328.3	338.2
63.5°	283.0	288.2	299.1	304.3	308.0	304.3	299.1	288.2	283.0	288.2	299.1
64°	245.8	251.4	261.3	267.0	269.8	267.0	261.3	251.4	245.8	251.4	261.3
64.5°	209.9	216.1	225.5	230.7	233.0	230.7	225.5	216.1	209.9	216.1	225.5
65°	176.0	182.6	192.9	198.6	201.4	198.6	192.9	182.6	176.0	182.6	192.9
65.5°	145.8	152.8	161.3	167.5	171.2	167.5	161.3	152.8	145.8	152.8	161.3
66°	116.5	126.0	132.1	138.2	142.0	138.2	132.1	126.0	116.5	126.0	132.1



TEST NUMBER: P776747

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRC-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	46.7	60.4	65.6	67.9	68.9	67.9	65.6	60.4	46.7	60.4	65.6
68°	28.3	43.4	48.1	50.9	53.3	50.9	48.1	43.4	28.3	43.4	48.1
68.5°	12.3	28.8	31.6	34.4	39.2	34.4	31.6	28.8	12.3	28.8	31.6
69°	7.5	17.5	21.2	22.6	28.3	22.6	21.2	17.5	7.5	17.5	21.2
69.5°	5.2	10.4	14.2	13.2	17.9	13.2	14.2	10.4	5.2	10.4	14.2
70°	4.2	6.1	7.5	7.1	8.0	7.1	7.5	6.1	4.2	6.1	7.5
70.5°	2.8	3.8	4.7	4.7	3.8	4.7	4.7	3.8	2.8	3.8	4.7
71°	2.4	2.8	3.8	3.8	3.3	3.8	3.8	2.8	2.4	2.8	3.8
71.5°	2.4	2.4	2.8	2.8	2.8	2.8	2.8	2.4	2.4	2.4	2.8
72°	2.4	2.4	2.4	2.8	2.8	2.8	2.4	2.4	2.4	2.4	2.4
72.5°	1.9	2.4	2.4	2.4	2.8	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°	1.4	1.9	1.9	1.9	2.4	1.9	1.9	1.9	1.4	1.9	1.9
74.5°	1.4	1.4	1.9	1.9	1.9	1.9	1.9	1.4	1.4	1.4	1.9
75°	1.4	1.4	1.4	1.9	1.9	1.9	1.4	1.4	1.4	1.4	1.4
75.5°	1.4	1.4	1.4	1.9	1.9	1.9	1.4	1.4	1.4	1.4	1.4
76°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
76.5°	0.9	0.9	1.4	1.4	1.4	1.4	1.4	0.9	0.9	0.9	1.4
77°	0.9	0.9	1.4	1.4	1.4	1.4	1.4	0.9	0.9	0.9	1.4
77.5°	0.9	0.9	0.9	1.4	1.4	1.4	0.9	0.9	0.9	0.9	0.9
78°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
78.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
79°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
79.5°	0.5	0.5	0.9	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.9
80°	0.5	0.5	0.5	0.9	0.9	0.9	0.5	0.5	0.5	0.5	0.5
80.5°	0.5	0.5	0.5	0.9	0.9	0.9	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: P776747

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRC-5000lm-3500K

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: P776747

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRC-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2336.1	2336.1	2336.1	2336.1	2336.1	2336.1
0.5°	2337.0	2335.6	2337.0	2336.5	2335.6	2335.6
1°	2336.5	2335.6	2336.5	2336.1	2335.6	2335.1
1.5°	2336.1	2335.1	2336.1	2335.6	2335.1	2334.6
2°	2335.6	2334.6	2335.6	2335.1	2334.2	2334.2
2.5°	2334.6	2333.7	2334.6	2334.2	2333.7	2333.2
3°	2334.2	2332.8	2334.2	2333.7	2332.8	2332.8
3.5°	2332.8	2331.8	2332.8	2332.8	2331.8	2331.8
4°	2331.8	2330.4	2331.8	2331.3	2330.9	2330.4
4.5°	2330.4	2329.5	2330.4	2329.9	2329.5	2329.0
5°	2329.0	2328.0	2329.0	2328.5	2328.0	2327.6
5.5°	2327.6	2326.6	2327.6	2327.1	2326.6	2326.1
6°	2325.7	2324.7	2325.7	2325.2	2324.7	2324.3
6.5°	2323.8	2322.4	2323.8	2323.3	2322.8	2322.4
7°	2321.4	2320.0	2321.4	2321.0	2320.5	2320.5
7.5°	2318.6	2317.7	2318.6	2318.6	2318.1	2318.1
8°	2316.2	2315.3	2316.2	2315.8	2315.8	2315.3
8.5°	2313.4	2312.5	2313.4	2313.4	2312.9	2312.5
9°	2310.6	2309.6	2310.6	2310.6	2310.1	2310.1
9.5°	2307.8	2306.8	2307.8	2307.3	2307.3	2306.8
10°	2304.4	2303.5	2304.4	2304.4	2304.0	2304.0
10.5°	2301.1	2300.2	2301.1	2301.1	2300.7	2300.7
11°	2297.8	2296.4	2297.8	2297.8	2297.4	2297.4
11.5°	2294.1	2293.1	2294.1	2294.1	2293.6	2293.6
12°	2290.3	2289.4	2290.3	2290.3	2290.3	2290.3
12.5°	2286.5	2285.6	2286.5	2286.5	2286.5	2286.5
13°	2282.7	2281.8	2282.7	2283.2	2282.7	2283.2
13.5°	2279.0	2277.6	2279.0	2279.0	2279.0	2279.4
14°	2275.2	2273.8	2275.2	2275.2	2275.7	2275.7
14.5°	2271.4	2270.0	2271.4	2271.4	2271.9	2271.9
15°	2267.7	2266.2	2267.7	2267.7	2268.1	2268.6
15.5°	2263.9	2262.9	2263.9	2264.4	2264.8	2265.3
16°	2261.0	2260.1	2261.0	2262.0	2262.5	2262.9
16.5°	2258.7	2258.2	2258.7	2260.1	2260.6	2261.0
17°	2257.7	2256.8	2257.7	2259.2	2259.6	2259.6
17.5°	2257.3	2256.8	2257.3	2258.2	2259.2	2259.2
18°	2257.7	2256.8	2257.7	2258.2	2259.2	2259.2
18.5°	2257.7	2256.8	2257.7	2258.7	2259.2	2259.2
19°	2258.7	2257.7	2258.7	2259.2	2259.6	2259.6
19.5°	2259.2	2258.2	2259.2	2259.6	2260.1	2260.1
20°	2259.6	2259.2	2259.6	2260.1	2260.6	2260.6
20.5°	2260.6	2259.6	2260.6	2260.6	2260.6	2261.0
21°	2261.0	2260.6	2261.0	2261.0	2261.0	2261.0



TEST NUMBER: P776747

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRC-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2262.0	2262.0	2262.0	2261.5	2261.5	2262.0
23°	2262.5	2262.0	2262.5	2261.5	2261.5	2262.0
23.5°	2262.0	2262.0	2262.0	2261.0	2261.5	2262.0
24°	2262.0	2262.0	2262.0	2260.6	2261.0	2261.5
24.5°	2262.0	2262.0	2262.0	2260.6	2260.6	2261.5
25°	2261.5	2261.5	2261.5	2260.1	2260.1	2261.0
25.5°	2261.5	2261.5	2261.5	2259.6	2259.6	2260.6
26°	2261.0	2261.0	2261.0	2258.7	2259.2	2259.6
26.5°	2260.6	2260.6	2260.6	2258.2	2258.7	2259.2
27°	2260.1	2260.6	2260.1	2257.7	2258.2	2259.2
27.5°	2260.1	2260.6	2260.1	2257.7	2258.7	2259.2
28°	2260.6	2261.0	2260.6	2258.2	2258.7	2259.6
28.5°	2261.0	2261.5	2261.0	2258.2	2259.2	2260.1
29°	2261.5	2261.5	2261.5	2258.2	2259.2	2260.1
29.5°	2261.0	2261.0	2261.0	2258.2	2258.7	2259.6
30°	2260.1	2260.1	2260.1	2257.3	2257.7	2258.2
30.5°	2258.7	2258.2	2258.7	2255.9	2255.9	2256.3
31°	2255.9	2255.4	2255.9	2253.0	2253.0	2253.5
31.5°	2252.6	2251.6	2252.6	2250.2	2249.7	2249.7
32°	2247.8	2246.9	2247.8	2245.5	2245.0	2244.5
32.5°	2242.2	2241.2	2242.2	2240.3	2239.3	2238.9
33°	2235.6	2234.2	2235.6	2234.2	2232.7	2232.3
33.5°	2228.0	2226.6	2228.0	2227.1	2225.2	2224.7
34°	2219.5	2217.6	2219.5	2219.1	2217.2	2215.8
34.5°	2210.1	2208.2	2210.1	2210.1	2207.7	2206.3
35°	2199.7	2197.4	2199.7	2200.2	2197.4	2195.9
35.5°	2188.9	2186.5	2188.9	2189.3	2187.0	2185.1
36°	2177.1	2174.2	2177.1	2178.0	2175.2	2173.3
36.5°	2164.3	2161.5	2164.3	2165.8	2162.9	2160.6
37°	2150.7	2147.4	2150.7	2152.1	2149.2	2146.9
37.5°	2135.6	2132.3	2135.6	2137.0	2135.1	2132.3
38°	2119.5	2116.2	2119.5	2121.4	2119.1	2116.2
38.5°	2102.1	2098.3	2102.1	2104.4	2102.1	2098.8
39°	2083.2	2079.4	2083.2	2085.6	2084.1	2080.4
39.5°	2062.4	2058.7	2062.4	2065.3	2064.3	2061.0
40°	2040.7	2037.4	2040.7	2043.6	2042.6	2039.8
40.5°	2017.6	2013.9	2017.6	2020.5	2020.0	2017.6
41°	1992.6	1989.8	1992.6	1995.5	1995.9	1994.0
41.5°	1966.7	1964.3	1966.7	1969.5	1970.5	1969.0
42°	1939.3	1937.9	1939.3	1941.7	1943.6	1943.1
42.5°	1911.0	1909.6	1911.0	1912.9	1915.7	1916.2
43°	1881.3	1880.4	1881.3	1882.7	1886.0	1887.4
43.5°	1850.2	1849.7	1850.2	1850.6	1855.4	1857.2



TEST NUMBER: P776747

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRC-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1748.3	1749.7	1748.3	1748.3	1754.9	1759.1
45.5°	1711.9	1713.4	1711.9	1711.0	1718.5	1723.3
46°	1674.2	1676.6	1674.2	1673.3	1680.8	1685.5
46.5°	1635.0	1637.4	1635.0	1634.1	1641.7	1645.9
47°	1594.0	1595.9	1594.0	1593.1	1600.1	1604.4
47.5°	1548.2	1550.1	1548.2	1546.8	1553.9	1558.2
48°	1501.5	1503.4	1501.5	1499.2	1504.8	1508.6
48.5°	1457.2	1459.6	1457.2	1455.3	1460.5	1462.4
49°	1416.6	1418.0	1416.6	1415.2	1418.0	1419.0
49.5°	1375.1	1376.1	1375.1	1374.2	1375.6	1376.1
50°	1333.6	1335.0	1333.6	1332.2	1332.2	1332.7
50.5°	1293.0	1294.0	1293.0	1292.1	1292.6	1292.1
51°	1255.8	1254.8	1255.8	1254.8	1255.3	1255.3
51.5°	1220.4	1220.9	1220.4	1219.4	1219.9	1220.4
52°	1188.3	1189.7	1188.3	1186.9	1186.9	1186.9
52.5°	1158.1	1159.5	1158.1	1156.2	1156.7	1156.2
53°	1130.8	1131.7	1130.8	1128.4	1128.4	1128.9
53.5°	1104.8	1105.8	1104.8	1102.9	1102.9	1102.9
54°	1079.3	1079.3	1079.3	1077.5	1077.5	1077.9
54.5°	1052.5	1052.9	1052.5	1051.0	1051.0	1051.0
55°	1023.7	1023.7	1023.7	1021.3	1021.3	1021.3
55.5°	990.7	989.7	990.7	987.4	986.9	986.9
56°	952.9	952.4	952.9	950.1	948.7	947.7
56.5°	912.3	912.3	912.3	909.5	907.6	907.2
57°	869.9	868.9	869.9	867.1	864.7	864.2
57.5°	826.0	826.0	826.0	822.2	820.4	819.4
58°	781.7	782.6	781.7	777.4	774.6	774.6
58.5°	736.4	738.3	736.4	731.2	728.8	727.4
59°	690.2	692.5	690.2	685.0	682.1	680.2
59.5°	644.9	647.7	644.9	638.3	635.0	632.6
60°	599.1	601.9	599.1	593.0	588.7	585.9
60.5°	554.8	557.6	554.8	548.2	542.5	539.2
61°	510.4	512.8	510.4	504.3	497.7	493.4
61.5°	467.5	469.4	467.5	461.8	453.8	450.0
62°	424.6	426.9	424.6	419.4	411.4	406.6
62.5°	383.1	386.8	383.1	378.3	369.4	364.2
63°	343.0	346.7	343.0	338.2	328.3	322.2
63.5°	304.3	308.0	304.3	299.1	288.2	283.0
64°	267.0	269.8	267.0	261.3	251.4	245.8
64.5°	230.7	233.0	230.7	225.5	216.1	209.9
65°	198.6	201.4	198.6	192.9	182.6	176.0
65.5°	167.5	171.2	167.5	161.3	152.8	145.8
66°	138.2	142.0	138.2	132.1	126.0	116.5



TEST NUMBER: P776747

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRC-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	67.9	68.9	67.9	65.6	60.4	46.7
68°	50.9	53.3	50.9	48.1	43.4	28.3
68.5°	34.4	39.2	34.4	31.6	28.8	12.3
69°	22.6	28.3	22.6	21.2	17.5	7.5
69.5°	13.2	17.9	13.2	14.2	10.4	5.2
70°	7.1	8.0	7.1	7.5	6.1	4.2
70.5°	4.7	3.8	4.7	4.7	3.8	2.8
71°	3.8	3.3	3.8	3.8	2.8	2.4
71.5°	2.8	2.8	2.8	2.8	2.4	2.4
72°	2.8	2.8	2.8	2.4	2.4	2.4
72.5°	2.4	2.8	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	1.4
74.5°	1.9	1.9	1.9	1.9	1.4	1.4
75°	1.9	1.9	1.9	1.4	1.4	1.4
75.5°	1.9	1.9	1.9	1.4	1.4	1.4
76°	1.4	1.4	1.4	1.4	1.4	1.4
76.5°	1.4	1.4	1.4	1.4	0.9	0.9
77°	1.4	1.4	1.4	1.4	0.9	0.9
77.5°	1.4	1.4	1.4	0.9	0.9	0.9
78°	0.9	0.9	0.9	0.9	0.9	0.9
78.5°	0.9	0.9	0.9	0.9	0.9	0.9
79°	0.9	0.9	0.9	0.9	0.9	0.9
79.5°	0.9	0.9	0.9	0.9	0.5	0.5
80°	0.9	0.9	0.9	0.5	0.5	0.5
80.5°	0.9	0.9	0.9	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: P776747

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRC-5000lm-3500K

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°	2261.5	2261.5	2261.0	2261.5	2261.0	2261.5	2261.0	2261.5	2261.5	2261.5	2261.0
22°	2262.0	2261.5	2261.5	2261.5	2261.5	2261.5	2261.5	2261.5	2262.0	2261.5	2261.5



44°	1825.6	1823.3	1817.6	1817.1	1817.6	1817.1	1817.6	1823.3	1825.6	1823.3	1817.6
44.5°	1793.1	1790.3	1783.6	1783.6	1784.1	1783.6	1783.6	1790.3	1793.1	1790.3	1783.6



66.5°	93.4	101.0	107.6	112.3	113.7	112.3	107.6	101.0	93.4	101.0	107.6
67°	69.8	78.8	84.0	88.7	89.6	88.7	84.0	78.8	69.8	78.8	84.0



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°	2261.5	2261.0	2261.5	2261.0	2261.5	2261.5
22°	2261.5	2261.5	2261.5	2261.5	2261.5	2262.0



44°	1817.1	1817.6	1817.1	1817.6	1823.3	1825.6
44.5°	1783.6	1784.1	1783.6	1783.6	1790.3	1793.1

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66.5°	112.3	113.7	112.3	107.6	101.0	93.4
67°	88.7	89.6	88.7	84.0	78.8	69.8

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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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Scaled Data Report



(END OF REPORT)