

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: P776335

Luminaire Tested: HCDJBL3040CSD-HCD61TRC-4000lm-2700K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776335  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B035-HCD61TRC)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL3040CSD-HCD61TRC-4000lm-2700K  
Description: 6 INCH ROUND SHALLOW-WIDE SPECULAR CLEAR TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

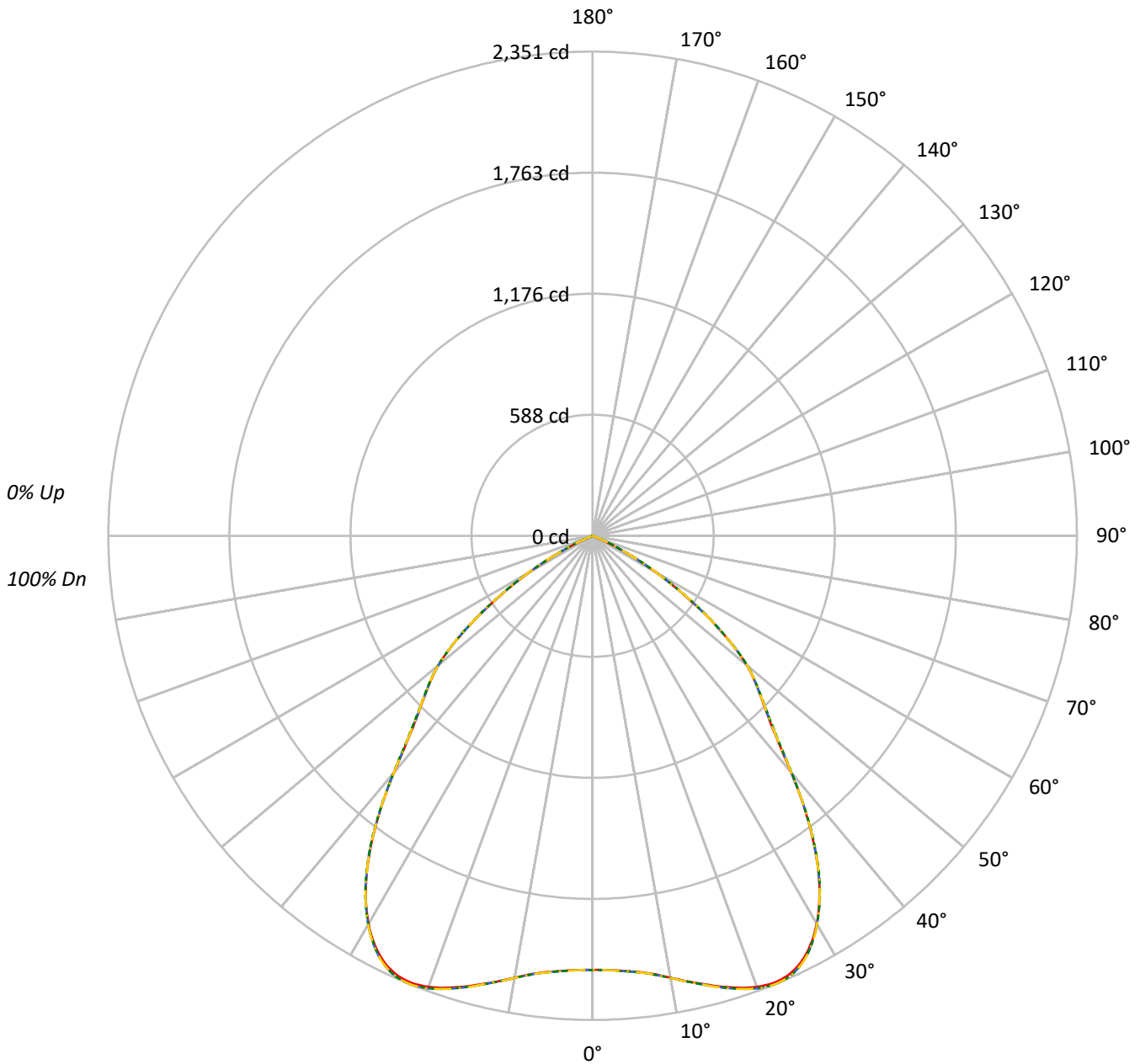
Lumens per Lamp: N/A  
Luminaire Lumens: 4737.8 lumens  
Efficiency: N/A  
Efficacy: 123.1 lumens/watt  
Spacing Criteria (0/90/45): 1.39 / 1.39 / 1.3  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

Input Watts (W): 38.5  
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					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	50	30	10	0		
RCR	0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100		
	1	112	108	105	103	109	106	103	101	102	100	98	98	97	95	95	93	92	90	90	90	90	90	90		
	2	104	98	93	88	102	96	91	87	93	89	85	90	86	84	87	84	82	80	80	80	80	80	80		
	3	97	88	82	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71	71	71	71	71	71		
	4	90	80	73	67	88	79	72	67	76	71	66	74	69	65	72	68	64	63	63	63	63	63	63		
	5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56	56	56	56	56	56		
	6	78	66	59	53	76	65	58	53	64	57	52	62	56	52	61	56	52	50	50	50	50	50	50		
	7	72	61	53	48	71	60	53	47	58	52	47	57	51	47	56	51	47	45	45	45	45	45	45		
	8	68	56	48	43	66	55	48	43	54	47	43	53	47	42	52	46	42	40	40	40	40	40	40		
	9	63	51	44	39	62	51	44	39	50	43	39	49	43	39	48	42	38	37	37	37	37	37	37		
	10	60	48	40	36	58	47	40	36	46	40	35	45	39	35	44	39	35	34	34	34	34	34	34		

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	115583	115583	115583	115583
5°	116850	116932	116850	116932
10°	121318	121363	121318	121363
15°	128355	128485	128355	128485
20°	135969	136349	135969	136349
25°	140488	141069	140488	141069
30°	137743	137907	137743	137907
35°	126458	126866	126458	126866
40°	107201	107637	107201	107637
45°	91816	92296	91816	92296
50°	83289	83494	83289	83494
55°	64141	64801	64141	64801
60°	38637	39865	38637	39865
65°	12102	15436	12102	15436
70°	64	609	64	609
75°	0	85	0	85
80°	0	0	0	0
85°	0	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 45°  
 Luminance: 92296 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	204.5	4.3
10°-20°	643.8	13.6
20°-30°	1064.5	22.5
30°-40°	1168.4	24.7
40°-50°	927.8	19.6
50°-60°	597.6	12.6
60°-70°	130.8	2.8
70°-80°	0.4	0.0
80°-90°	0.0	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°	1912.8	40.4
0°-40°	3081.2	65.0
0°-60°	4606.6	97.2
0°-90°	4737.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4737.8	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2108	2108	2108	2108	2108	
5°	2123	2125	2123	2125	2123	204
15°	2262	2264	2262	2264	2262	643
25°	2323	2332	2323	2332	2323	1062
35°	1890	1896	1890	1896	1890	1167
45°	1184	1190	1184	1190	1184	926
55°	671	678	671	678	671	594
65°	93	119	93	119	93	119
75°	0	0	0	0	0	0
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°	2108.4	2108.4	2108.4	2108.4	2108.4	2108.4	2108.4	2108.4	2108.4	2108.4	2108.4
0.5°	2107.6	2108.4	2108.8	2109.2	2108.8	2109.2	2108.8	2108.4	2107.6	2108.4	2108.8
1°	2108.4	2108.8	2109.2	2109.5	2109.2	2109.5	2109.2	2108.8	2108.4	2108.8	2109.2
1.5°	2109.2	2109.5	2109.9	2110.3	2109.9	2110.3	2109.9	2109.5	2109.2	2109.5	2109.9
2°	2110.3	2110.7	2111.1	2111.1	2110.7	2111.1	2111.1	2110.7	2110.3	2110.7	2111.1
2.5°	2111.5	2111.8	2112.6	2112.6	2112.2	2112.6	2112.6	2111.8	2111.5	2111.8	2112.6
3°	2113.4	2113.8	2114.2	2114.2	2113.8	2114.2	2114.2	2113.8	2113.4	2113.8	2114.2
3.5°	2115.3	2115.7	2116.5	2116.5	2116.1	2116.5	2116.5	2115.7	2115.3	2115.7	2116.5
4°	2117.6	2118.0	2118.8	2119.1	2118.8	2119.1	2118.8	2118.0	2117.6	2118.0	2118.8
4.5°	2120.3	2120.7	2121.4	2121.8	2121.4	2121.8	2121.4	2120.7	2120.3	2120.7	2121.4
5°	2123.4	2123.7	2124.5	2124.9	2124.9	2124.9	2124.5	2123.7	2123.4	2123.7	2124.5
5.5°	2126.4	2127.2	2128.0	2128.7	2128.4	2128.7	2128.0	2127.2	2126.4	2127.2	2128.0
6°	2130.3	2130.7	2131.8	2132.6	2132.2	2132.6	2131.8	2130.7	2130.3	2130.7	2131.8
6.5°	2134.5	2134.9	2136.0	2136.4	2136.0	2136.4	2136.0	2134.9	2134.5	2134.9	2136.0
7°	2139.1	2139.5	2140.6	2141.0	2140.6	2141.0	2140.6	2139.5	2139.1	2139.5	2140.6
7.5°	2144.5	2144.9	2146.0	2146.0	2145.6	2146.0	2146.0	2144.9	2144.5	2144.9	2146.0
8°	2149.9	2150.6	2151.8	2152.2	2151.8	2152.2	2151.8	2150.6	2149.9	2150.6	2151.8
8.5°	2156.4	2157.1	2158.7	2158.7	2158.3	2158.7	2158.7	2157.1	2156.4	2157.1	2158.7
9°	2163.7	2164.4	2165.6	2166.0	2165.2	2166.0	2165.6	2164.4	2163.7	2164.4	2165.6
9.5°	2171.4	2172.1	2173.3	2173.7	2172.5	2173.7	2173.3	2172.1	2171.4	2172.1	2173.3
10°	2179.4	2180.2	2181.3	2181.3	2180.2	2181.3	2181.3	2180.2	2179.4	2180.2	2181.3
10.5°	2187.5	2188.2	2189.0	2189.0	2188.2	2189.0	2189.0	2188.2	2187.5	2188.2	2189.0
11°	2195.5	2196.7	2197.5	2197.1	2196.3	2197.1	2197.5	2196.7	2195.5	2196.7	2197.5
11.5°	2204.0	2204.8	2205.5	2205.1	2204.4	2205.1	2205.5	2204.8	2204.0	2204.8	2205.5
12°	2212.0	2212.8	2213.6	2213.6	2212.8	2213.6	2213.6	2212.8	2212.0	2212.8	2213.6
12.5°	2220.1	2221.3	2222.0	2222.0	2221.3	2222.0	2222.0	2221.3	2220.1	2221.3	2222.0
13°	2228.2	2229.7	2230.5	2230.5	2229.7	2230.5	2230.5	2229.7	2228.2	2229.7	2230.5
13.5°	2236.6	2238.2	2239.3	2238.9	2238.2	2238.9	2239.3	2238.2	2236.6	2238.2	2239.3
14°	2244.7	2246.6	2248.1	2248.1	2246.6	2248.1	2248.1	2246.6	2244.7	2246.6	2248.1
14.5°	2253.1	2255.0	2256.6	2257.0	2255.4	2257.0	2256.6	2255.0	2253.1	2255.0	2256.6
15°	2261.6	2263.5	2265.4	2265.8	2263.9	2265.8	2265.4	2263.5	2261.6	2263.5	2265.4
15.5°	2269.6	2271.9	2274.2	2274.2	2272.3	2274.2	2274.2	2271.9	2269.6	2271.9	2274.2
16°	2277.7	2280.4	2282.7	2282.7	2280.8	2282.7	2282.7	2280.4	2277.7	2280.4	2282.7
16.5°	2285.4	2288.1	2290.7	2290.7	2288.8	2290.7	2290.7	2288.1	2285.4	2288.1	2290.7
17°	2293.4	2296.1	2298.8	2298.8	2296.5	2298.8	2298.8	2296.1	2293.4	2296.1	2298.8
17.5°	2300.7	2303.8	2306.5	2306.5	2304.2	2306.5	2306.5	2303.8	2300.7	2303.8	2306.5
18°	2307.6	2311.1	2313.8	2313.8	2311.9	2313.8	2313.8	2311.1	2307.6	2311.1	2313.8
18.5°	2314.2	2318.0	2320.7	2320.7	2318.8	2320.7	2320.7	2318.0	2314.2	2318.0	2320.7
19°	2320.3	2324.1	2327.2	2326.8	2325.3	2326.8	2327.2	2324.1	2320.3	2324.1	2327.2
19.5°	2325.7	2329.5	2333.4	2332.6	2331.4	2332.6	2333.4	2329.5	2325.7	2329.5	2333.4
20°	2330.7	2334.5	2338.7	2337.6	2337.2	2337.6	2338.7	2334.5	2330.7	2334.5	2338.7
20.5°	2334.9	2338.7	2343.0	2341.8	2341.8	2341.8	2343.0	2338.7	2334.9	2338.7	2343.0
21°	2338.0	2341.8	2346.4	2344.9	2345.6	2344.9	2346.4	2341.8	2338.0	2341.8	2346.4



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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°	2341.8	2345.3	2350.6	2348.7	2351.0	2348.7	2350.6	2345.3	2341.8	2345.3	2350.6
23°	2341.0	2344.1	2349.9	2347.6	2350.3	2347.6	2349.9	2344.1	2341.0	2344.1	2349.9
23.5°	2338.7	2341.8	2347.6	2344.9	2348.3	2344.9	2347.6	2341.8	2338.7	2341.8	2347.6
24°	2334.9	2338.0	2343.7	2341.4	2344.5	2341.4	2343.7	2338.0	2334.9	2338.0	2343.7
24.5°	2329.5	2332.6	2338.4	2336.4	2339.1	2336.4	2338.4	2332.6	2329.5	2332.6	2338.4
25°	2322.6	2326.1	2331.4	2329.9	2332.2	2329.9	2331.4	2326.1	2322.6	2326.1	2331.4
25.5°	2314.9	2318.0	2323.4	2322.2	2323.4	2322.2	2323.4	2318.0	2314.9	2318.0	2323.4
26°	2305.3	2308.4	2313.4	2313.0	2313.4	2313.0	2313.4	2308.4	2305.3	2308.4	2313.4
26.5°	2293.4	2296.9	2301.9	2302.3	2301.5	2302.3	2301.9	2296.9	2293.4	2296.9	2301.9
27°	2281.1	2284.6	2288.8	2290.0	2288.1	2290.0	2288.8	2284.6	2281.1	2284.6	2288.8
27.5°	2266.9	2270.4	2274.2	2276.2	2273.1	2276.2	2274.2	2270.4	2266.9	2270.4	2274.2
28°	2251.2	2254.7	2257.7	2260.8	2256.6	2260.8	2257.7	2254.7	2251.2	2254.7	2257.7
28.5°	2234.7	2237.4	2240.5	2244.3	2238.9	2244.3	2240.5	2237.4	2234.7	2237.4	2240.5
29°	2216.3	2219.0	2221.3	2225.9	2220.1	2225.9	2221.3	2219.0	2216.3	2219.0	2221.3
29.5°	2196.7	2199.0	2201.7	2205.5	2200.1	2205.5	2201.7	2199.0	2196.7	2199.0	2201.7
30°	2176.0	2177.5	2179.4	2184.0	2178.6	2184.0	2179.4	2177.5	2176.0	2177.5	2179.4
30.5°	2153.7	2154.5	2156.8	2161.4	2156.0	2161.4	2156.8	2154.5	2153.7	2154.5	2156.8
31°	2129.5	2130.3	2132.6	2136.8	2132.2	2136.8	2132.6	2130.3	2129.5	2130.3	2132.6
31.5°	2104.6	2104.6	2107.2	2110.7	2107.2	2110.7	2107.2	2104.6	2104.6	2104.6	2107.2
32°	2078.1	2077.7	2080.0	2083.4	2081.1	2083.4	2080.0	2077.7	2078.1	2077.7	2080.0
32.5°	2050.0	2049.3	2052.3	2054.6	2053.9	2054.6	2052.3	2049.3	2050.0	2049.3	2052.3
33°	2020.9	2020.1	2022.8	2024.7	2025.1	2024.7	2022.8	2020.1	2020.9	2020.1	2022.8
33.5°	1990.2	1988.6	1992.1	1993.2	1994.4	1993.2	1992.1	1988.6	1990.2	1988.6	1992.1
34°	1958.3	1956.8	1959.8	1960.2	1963.3	1960.2	1959.8	1956.8	1958.3	1956.8	1959.8
34.5°	1924.1	1924.1	1926.0	1926.4	1929.9	1926.4	1926.0	1924.1	1924.1	1924.1	1926.0
35°	1889.6	1889.2	1891.1	1891.9	1895.7	1891.9	1891.1	1889.2	1889.6	1889.2	1891.1
35.5°	1854.3	1854.3	1855.8	1856.6	1860.4	1856.6	1855.8	1854.3	1854.3	1854.3	1855.8
36°	1818.2	1818.2	1819.3	1820.5	1823.2	1820.5	1819.3	1818.2	1818.2	1818.2	1819.3
36.5°	1780.9	1781.3	1782.1	1782.8	1785.9	1782.8	1782.1	1781.3	1780.9	1781.3	1782.1
37°	1742.2	1742.9	1743.3	1744.5	1746.8	1744.5	1743.3	1742.9	1742.2	1742.9	1743.3
37.5°	1703.4	1703.8	1704.5	1705.7	1706.8	1705.7	1704.5	1703.8	1703.4	1703.8	1704.5
38°	1663.8	1663.8	1665.0	1665.8	1666.9	1665.8	1665.0	1663.8	1663.8	1663.8	1665.0
38.5°	1623.5	1623.5	1624.7	1625.4	1626.2	1625.4	1624.7	1623.5	1623.5	1623.5	1624.7
39°	1582.4	1582.4	1584.0	1585.1	1585.5	1585.1	1584.0	1582.4	1582.4	1582.4	1584.0
39.5°	1540.2	1540.6	1542.1	1544.4	1544.8	1544.4	1542.1	1540.6	1540.2	1540.6	1542.1
40°	1498.0	1498.4	1501.1	1503.0	1504.1	1503.0	1501.1	1498.4	1498.0	1498.4	1501.1
40.5°	1456.5	1457.3	1460.7	1464.2	1465.0	1464.2	1460.7	1457.3	1456.5	1457.3	1460.7
41°	1417.4	1418.5	1422.0	1425.8	1427.4	1425.8	1422.0	1418.5	1417.4	1418.5	1422.0
41.5°	1380.5	1382.0	1385.1	1389.0	1390.1	1389.0	1385.1	1382.0	1380.5	1382.0	1385.1
42°	1346.7	1347.5	1350.6	1353.3	1355.6	1353.3	1350.6	1347.5	1346.7	1347.5	1350.6
42.5°	1315.3	1315.6	1319.5	1322.2	1323.7	1322.2	1319.5	1315.6	1315.3	1315.6	1319.5
43°	1284.5	1284.9	1289.1	1292.2	1295.7	1292.2	1289.1	1284.9	1284.5	1284.9	1289.1
43.5°	1256.1	1257.3	1260.4	1263.4	1266.1	1263.4	1260.4	1257.3	1256.1	1257.3	1260.4



TEST NUMBER: P776335

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1184.3	1184.3	1187.0	1188.2	1190.5	1188.2	1187.0	1184.3	1184.3	1184.3	1187.0
45.5°	1162.5	1162.5	1165.1	1166.3	1167.4	1166.3	1165.1	1162.5	1162.5	1162.5	1165.1
46°	1141.3	1141.7	1143.6	1145.2	1145.9	1145.2	1143.6	1141.7	1141.3	1141.7	1143.6
46.5°	1121.0	1121.0	1122.9	1124.1	1125.6	1124.1	1122.9	1121.0	1121.0	1121.0	1122.9
47°	1101.0	1101.0	1102.6	1104.1	1105.3	1104.1	1102.6	1101.0	1101.0	1101.0	1102.6
47.5°	1081.1	1081.1	1083.0	1084.1	1084.5	1084.1	1083.0	1081.1	1081.1	1081.1	1083.0
48°	1061.9	1061.5	1063.4	1064.6	1065.3	1064.6	1063.4	1061.5	1061.9	1061.5	1063.4
48.5°	1041.9	1041.9	1043.4	1045.0	1045.4	1045.0	1043.4	1041.9	1041.9	1041.9	1043.4
49°	1021.2	1021.6	1023.1	1024.3	1025.0	1024.3	1023.1	1021.6	1021.2	1021.6	1023.1
49.5°	1000.1	999.7	1001.6	1002.8	1003.1	1002.8	1001.6	999.7	1000.1	999.7	1001.6
50°	976.6	976.6	977.8	979.0	979.0	979.0	977.8	976.6	976.6	976.6	977.8
50.5°	950.9	950.9	951.7	953.2	953.2	953.2	951.7	950.9	950.9	950.9	951.7
51°	923.7	923.3	924.4	925.6	926.7	925.6	924.4	923.3	923.7	923.3	924.4
51.5°	894.9	894.5	896.0	897.6	897.9	897.6	896.0	894.5	894.9	894.5	896.0
52°	864.9	865.3	866.5	867.6	868.4	867.6	866.5	865.3	864.9	865.3	866.5
52.5°	834.2	833.8	835.8	837.3	837.7	837.3	835.8	833.8	834.2	833.8	835.8
53°	802.0	802.4	804.3	806.2	805.8	806.2	804.3	802.4	802.0	802.4	804.3
53.5°	769.7	770.1	772.4	773.9	774.7	773.9	772.4	770.1	769.7	770.1	772.4
54°	736.7	737.5	739.8	741.3	741.7	741.3	739.8	737.5	736.7	737.5	739.8
54.5°	704.1	704.1	707.1	709.1	709.8	709.1	707.1	704.1	704.1	704.1	707.1
55°	671.1	671.4	674.9	676.4	678.0	676.4	674.9	671.4	671.1	671.4	674.9
55.5°	637.3	638.0	641.5	643.8	645.3	643.8	641.5	638.0	637.3	638.0	641.5
56°	603.9	605.0	608.9	610.8	612.7	610.8	608.9	605.0	603.9	605.0	608.9
56.5°	570.9	572.0	575.9	578.2	580.1	578.2	575.9	572.0	570.9	572.0	575.9
57°	537.8	539.8	543.2	545.9	547.8	545.9	543.2	539.8	537.8	539.8	543.2
57.5°	505.6	507.5	511.0	514.0	516.0	514.0	511.0	507.5	505.6	507.5	511.0
58°	473.7	475.3	479.1	482.9	484.5	482.9	479.1	475.3	473.7	475.3	479.1
58.5°	441.9	444.2	448.0	452.6	453.8	452.6	448.0	444.2	441.9	444.2	448.0
59°	411.2	413.8	416.9	421.9	423.1	421.9	416.9	413.8	411.2	413.8	416.9
59.5°	381.6	383.5	387.0	392.0	393.1	392.0	387.0	383.5	381.6	383.5	387.0
60°	352.4	354.0	357.4	362.0	363.6	362.0	357.4	354.0	352.4	354.0	357.4
60.5°	323.2	324.8	328.2	332.8	335.1	332.8	328.2	324.8	323.2	324.8	328.2
61°	294.8	296.4	300.6	304.8	307.1	304.8	300.6	296.4	294.8	296.4	300.6
61.5°	266.0	269.1	273.3	277.6	281.0	277.6	273.3	269.1	266.0	269.1	273.3
62°	238.8	242.6	246.8	251.5	254.9	251.5	246.8	242.6	238.8	242.6	246.8
62.5°	211.5	216.5	221.1	225.7	229.6	225.7	221.1	216.5	211.5	216.5	221.1
63°	185.0	192.0	196.2	200.8	205.0	200.8	196.2	192.0	185.0	192.0	196.2
63.5°	159.7	168.5	173.1	177.4	182.0	177.4	173.1	168.5	159.7	168.5	173.1
64°	135.1	146.7	152.0	155.9	160.5	155.9	152.0	146.7	135.1	146.7	152.0
64.5°	113.3	126.7	131.7	135.1	139.7	135.1	131.7	126.7	113.3	126.7	131.7
65°	93.3	107.5	112.5	115.6	119.0	115.6	112.5	107.5	93.3	107.5	112.5
65.5°	74.5	90.6	94.8	96.4	99.4	96.4	94.8	90.6	74.5	90.6	94.8
66°	58.4	75.2	78.3	80.6	82.2	80.6	78.3	75.2	58.4	75.2	78.3





TEST NUMBER: P776335

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	18.0	34.9	37.6	39.9	42.2	39.9	37.6	34.9	18.0	34.9	37.6
68°	10.7	24.6	26.9	29.9	34.6	29.9	26.9	24.6	10.7	24.6	26.9
68.5°	6.5	16.1	19.2	21.1	26.9	21.1	19.2	16.1	6.5	16.1	19.2
69°	3.8	9.6	11.9	13.4	19.2	13.4	11.9	9.6	3.8	9.6	11.9
69.5°	2.3	6.1	6.9	6.9	11.5	6.9	6.9	6.1	2.3	6.1	6.9
70°	0.4	3.1	3.8	3.8	3.8	3.8	3.8	3.1	0.4	3.1	3.8
70.5°	0.4	1.2	2.3	2.3	1.5	2.3	2.3	1.2	0.4	1.2	2.3
71°	0.4	0.4	1.2	1.2	0.4	1.2	1.2	0.4	0.4	0.4	1.2
71.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
72°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
72.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
73°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
73.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
74°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
74.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
75°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
75.5°	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
76°	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
76.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	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: P776335  
CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-2700K

**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: P776335

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2108.4	2108.4	2108.4	2108.4	2108.4	2108.4
0.5°	2109.2	2108.8	2109.2	2108.8	2108.4	2107.6
1°	2109.5	2109.2	2109.5	2109.2	2108.8	2108.4
1.5°	2110.3	2109.9	2110.3	2109.9	2109.5	2109.2
2°	2111.1	2110.7	2111.1	2111.1	2110.7	2110.3
2.5°	2112.6	2112.2	2112.6	2112.6	2111.8	2111.5
3°	2114.2	2113.8	2114.2	2114.2	2113.8	2113.4
3.5°	2116.5	2116.1	2116.5	2116.5	2115.7	2115.3
4°	2119.1	2118.8	2119.1	2118.8	2118.0	2117.6
4.5°	2121.8	2121.4	2121.8	2121.4	2120.7	2120.3
5°	2124.9	2124.9	2124.9	2124.5	2123.7	2123.4
5.5°	2128.7	2128.4	2128.7	2128.0	2127.2	2126.4
6°	2132.6	2132.2	2132.6	2131.8	2130.7	2130.3
6.5°	2136.4	2136.0	2136.4	2136.0	2134.9	2134.5
7°	2141.0	2140.6	2141.0	2140.6	2139.5	2139.1
7.5°	2146.0	2145.6	2146.0	2146.0	2144.9	2144.5
8°	2152.2	2151.8	2152.2	2151.8	2150.6	2149.9
8.5°	2158.7	2158.3	2158.7	2158.7	2157.1	2156.4
9°	2166.0	2165.2	2166.0	2165.6	2164.4	2163.7
9.5°	2173.7	2172.5	2173.7	2173.3	2172.1	2171.4
10°	2181.3	2180.2	2181.3	2181.3	2180.2	2179.4
10.5°	2189.0	2188.2	2189.0	2189.0	2188.2	2187.5
11°	2197.1	2196.3	2197.1	2197.5	2196.7	2195.5
11.5°	2205.1	2204.4	2205.1	2205.5	2204.8	2204.0
12°	2213.6	2212.8	2213.6	2213.6	2212.8	2212.0
12.5°	2222.0	2221.3	2222.0	2222.0	2221.3	2220.1
13°	2230.5	2229.7	2230.5	2230.5	2229.7	2228.2
13.5°	2238.9	2238.2	2238.9	2239.3	2238.2	2236.6
14°	2248.1	2246.6	2248.1	2248.1	2246.6	2244.7
14.5°	2257.0	2255.4	2257.0	2256.6	2255.0	2253.1
15°	2265.8	2263.9	2265.8	2265.4	2263.5	2261.6
15.5°	2274.2	2272.3	2274.2	2274.2	2271.9	2269.6
16°	2282.7	2280.8	2282.7	2282.7	2280.4	2277.7
16.5°	2290.7	2288.8	2290.7	2290.7	2288.1	2285.4
17°	2298.8	2296.5	2298.8	2298.8	2296.1	2293.4
17.5°	2306.5	2304.2	2306.5	2306.5	2303.8	2300.7
18°	2313.8	2311.9	2313.8	2313.8	2311.1	2307.6
18.5°	2320.7	2318.8	2320.7	2320.7	2318.0	2314.2
19°	2326.8	2325.3	2326.8	2327.2	2324.1	2320.3
19.5°	2332.6	2331.4	2332.6	2333.4	2329.5	2325.7
20°	2337.6	2337.2	2337.6	2338.7	2334.5	2330.7
20.5°	2341.8	2341.8	2341.8	2343.0	2338.7	2334.9
21°	2344.9	2345.6	2344.9	2346.4	2341.8	2338.0



TEST NUMBER: P776335

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2348.7	2351.0	2348.7	2350.6	2345.3	2341.8
23°	2347.6	2350.3	2347.6	2349.9	2344.1	2341.0
23.5°	2344.9	2348.3	2344.9	2347.6	2341.8	2338.7
24°	2341.4	2344.5	2341.4	2343.7	2338.0	2334.9
24.5°	2336.4	2339.1	2336.4	2338.4	2332.6	2329.5
25°	2329.9	2332.2	2329.9	2331.4	2326.1	2322.6
25.5°	2322.2	2323.4	2322.2	2323.4	2318.0	2314.9
26°	2313.0	2313.4	2313.0	2313.4	2308.4	2305.3
26.5°	2302.3	2301.5	2302.3	2301.9	2296.9	2293.4
27°	2290.0	2288.1	2290.0	2288.8	2284.6	2281.1
27.5°	2276.2	2273.1	2276.2	2274.2	2270.4	2266.9
28°	2260.8	2256.6	2260.8	2257.7	2254.7	2251.2
28.5°	2244.3	2238.9	2244.3	2240.5	2237.4	2234.7
29°	2225.9	2220.1	2225.9	2221.3	2219.0	2216.3
29.5°	2205.5	2200.1	2205.5	2201.7	2199.0	2196.7
30°	2184.0	2178.6	2184.0	2179.4	2177.5	2176.0
30.5°	2161.4	2156.0	2161.4	2156.8	2154.5	2153.7
31°	2136.8	2132.2	2136.8	2132.6	2130.3	2129.5
31.5°	2110.7	2107.2	2110.7	2107.2	2104.6	2104.6
32°	2083.4	2081.1	2083.4	2080.0	2077.7	2078.1
32.5°	2054.6	2053.9	2054.6	2052.3	2049.3	2050.0
33°	2024.7	2025.1	2024.7	2022.8	2020.1	2020.9
33.5°	1993.2	1994.4	1993.2	1992.1	1988.6	1990.2
34°	1960.2	1963.3	1960.2	1959.8	1956.8	1958.3
34.5°	1926.4	1929.9	1926.4	1926.0	1924.1	1924.1
35°	1891.9	1895.7	1891.9	1891.1	1889.2	1889.6
35.5°	1856.6	1860.4	1856.6	1855.8	1854.3	1854.3
36°	1820.5	1823.2	1820.5	1819.3	1818.2	1818.2
36.5°	1782.8	1785.9	1782.8	1782.1	1781.3	1780.9
37°	1744.5	1746.8	1744.5	1743.3	1742.9	1742.2
37.5°	1705.7	1706.8	1705.7	1704.5	1703.8	1703.4
38°	1665.8	1666.9	1665.8	1665.0	1663.8	1663.8
38.5°	1625.4	1626.2	1625.4	1624.7	1623.5	1623.5
39°	1585.1	1585.5	1585.1	1584.0	1582.4	1582.4
39.5°	1544.4	1544.8	1544.4	1542.1	1540.6	1540.2
40°	1503.0	1504.1	1503.0	1501.1	1498.4	1498.0
40.5°	1464.2	1465.0	1464.2	1460.7	1457.3	1456.5
41°	1425.8	1427.4	1425.8	1422.0	1418.5	1417.4
41.5°	1389.0	1390.1	1389.0	1385.1	1382.0	1380.5
42°	1353.3	1355.6	1353.3	1350.6	1347.5	1346.7
42.5°	1322.2	1323.7	1322.2	1319.5	1315.6	1315.3
43°	1292.2	1295.7	1292.2	1289.1	1284.9	1284.5
43.5°	1263.4	1266.1	1263.4	1260.4	1257.3	1256.1



TEST NUMBER: P776335

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1188.2	1190.5	1188.2	1187.0	1184.3	1184.3
45.5°	1166.3	1167.4	1166.3	1165.1	1162.5	1162.5
46°	1145.2	1145.9	1145.2	1143.6	1141.7	1141.3
46.5°	1124.1	1125.6	1124.1	1122.9	1121.0	1121.0
47°	1104.1	1105.3	1104.1	1102.6	1101.0	1101.0
47.5°	1084.1	1084.5	1084.1	1083.0	1081.1	1081.1
48°	1064.6	1065.3	1064.6	1063.4	1061.5	1061.9
48.5°	1045.0	1045.4	1045.0	1043.4	1041.9	1041.9
49°	1024.3	1025.0	1024.3	1023.1	1021.6	1021.2
49.5°	1002.8	1003.1	1002.8	1001.6	999.7	1000.1
50°	979.0	979.0	979.0	977.8	976.6	976.6
50.5°	953.2	953.2	953.2	951.7	950.9	950.9
51°	925.6	926.7	925.6	924.4	923.3	923.7
51.5°	897.6	897.9	897.6	896.0	894.5	894.9
52°	867.6	868.4	867.6	866.5	865.3	864.9
52.5°	837.3	837.7	837.3	835.8	833.8	834.2
53°	806.2	805.8	806.2	804.3	802.4	802.0
53.5°	773.9	774.7	773.9	772.4	770.1	769.7
54°	741.3	741.7	741.3	739.8	737.5	736.7
54.5°	709.1	709.8	709.1	707.1	704.1	704.1
55°	676.4	678.0	676.4	674.9	671.4	671.1
55.5°	643.8	645.3	643.8	641.5	638.0	637.3
56°	610.8	612.7	610.8	608.9	605.0	603.9
56.5°	578.2	580.1	578.2	575.9	572.0	570.9
57°	545.9	547.8	545.9	543.2	539.8	537.8
57.5°	514.0	516.0	514.0	511.0	507.5	505.6
58°	482.9	484.5	482.9	479.1	475.3	473.7
58.5°	452.6	453.8	452.6	448.0	444.2	441.9
59°	421.9	423.1	421.9	416.9	413.8	411.2
59.5°	392.0	393.1	392.0	387.0	383.5	381.6
60°	362.0	363.6	362.0	357.4	354.0	352.4
60.5°	332.8	335.1	332.8	328.2	324.8	323.2
61°	304.8	307.1	304.8	300.6	296.4	294.8
61.5°	277.6	281.0	277.6	273.3	269.1	266.0
62°	251.5	254.9	251.5	246.8	242.6	238.8
62.5°	225.7	229.6	225.7	221.1	216.5	211.5
63°	200.8	205.0	200.8	196.2	192.0	185.0
63.5°	177.4	182.0	177.4	173.1	168.5	159.7
64°	155.9	160.5	155.9	152.0	146.7	135.1
64.5°	135.1	139.7	135.1	131.7	126.7	113.3
65°	115.6	119.0	115.6	112.5	107.5	93.3
65.5°	96.4	99.4	96.4	94.8	90.6	74.5
66°	80.6	82.2	80.6	78.3	75.2	58.4



TEST NUMBER: P776335  
 CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	39.9	42.2	39.9	37.6	34.9	18.0
68°	29.9	34.6	29.9	26.9	24.6	10.7
68.5°	21.1	26.9	21.1	19.2	16.1	6.5
69°	13.4	19.2	13.4	11.9	9.6	3.8
69.5°	6.9	11.5	6.9	6.9	6.1	2.3
70°	3.8	3.8	3.8	3.8	3.1	0.4
70.5°	2.3	1.5	2.3	2.3	1.2	0.4
71°	1.2	0.4	1.2	1.2	0.4	0.4
71.5°	0.4	0.4	0.4	0.4	0.4	0.4
72°	0.4	0.4	0.4	0.4	0.4	0.4
72.5°	0.4	0.4	0.4	0.4	0.4	0.4
73°	0.4	0.4	0.4	0.4	0.4	0.4
73.5°	0.4	0.4	0.4	0.4	0.4	0.4
74°	0.4	0.4	0.4	0.4	0.4	0.4
74.5°	0.4	0.4	0.4	0.4	0.4	0.4
75°	0.4	0.4	0.4	0.4	0.0	0.0
75.5°	0.4	0.4	0.4	0.0	0.0	0.0
76°	0.0	0.4	0.0	0.0	0.0	0.0
76.5°	0.0	0.0	0.0	0.0	0.0	0.0
77°	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0
78°	0.0	0.0	0.0	0.0	0.0	0.0
78.5°	0.0	0.0	0.0	0.0	0.0	0.0
79°	0.0	0.0	0.0	0.0	0.0	0.0
79.5°	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0
80.5°	0.0	0.0	0.0	0.0	0.0	0.0
81°	0.0	0.0	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	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: P776335

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-2700K

**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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Scaled Data Report





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

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Scaled Data Report





21.5°	2340.7	2344.1	2349.1	2347.2	2348.7	2347.2	2349.1	2344.1	2340.7	2344.1	2349.1
22°	2341.8	2345.3	2350.6	2348.3	2350.3	2348.3	2350.6	2345.3	2341.8	2345.3	2350.6



44°	1230.4	1231.2	1234.2	1236.2	1239.2	1236.2	1234.2	1231.2	1230.4	1231.2	1234.2
44.5°	1207.0	1207.4	1210.1	1211.6	1213.5	1211.6	1210.1	1207.4	1207.0	1207.4	1210.1



66.5°	42.6	59.9	63.7	66.0	66.4	66.0	63.7	59.9	42.6	59.9	63.7
67°	29.6	47.2	49.5	51.8	52.2	51.8	49.5	47.2	29.6	47.2	49.5



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°	2347.2	2348.7	2347.2	2349.1	2344.1	2340.7
22°	2348.3	2350.3	2348.3	2350.6	2345.3	2341.8



44°	1236.2	1239.2	1236.2	1234.2	1231.2	1230.4
44.5°	1211.6	1213.5	1211.6	1210.1	1207.4	1207.0

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66.5°	66.0	66.4	66.0	63.7	59.9	42.6
67°	51.8	52.2	51.8	49.5	47.2	29.6

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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)