

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: P776751

Luminaire Tested: HCDJBS4050CSD-HCD81TRH-5000lm-3000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776751
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B043-HCD81TRH)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL54050CSD-HCD81TRH-5000lm-3000K
Description: 8 INCH ROUND SHALLOW-WIDE HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5645.9 lumens
Efficiency: N/A
Efficacy: 117.6 lumens/watt
Spacing Criteria (0/90/45): 1.42 / 1.42 / 1.43
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

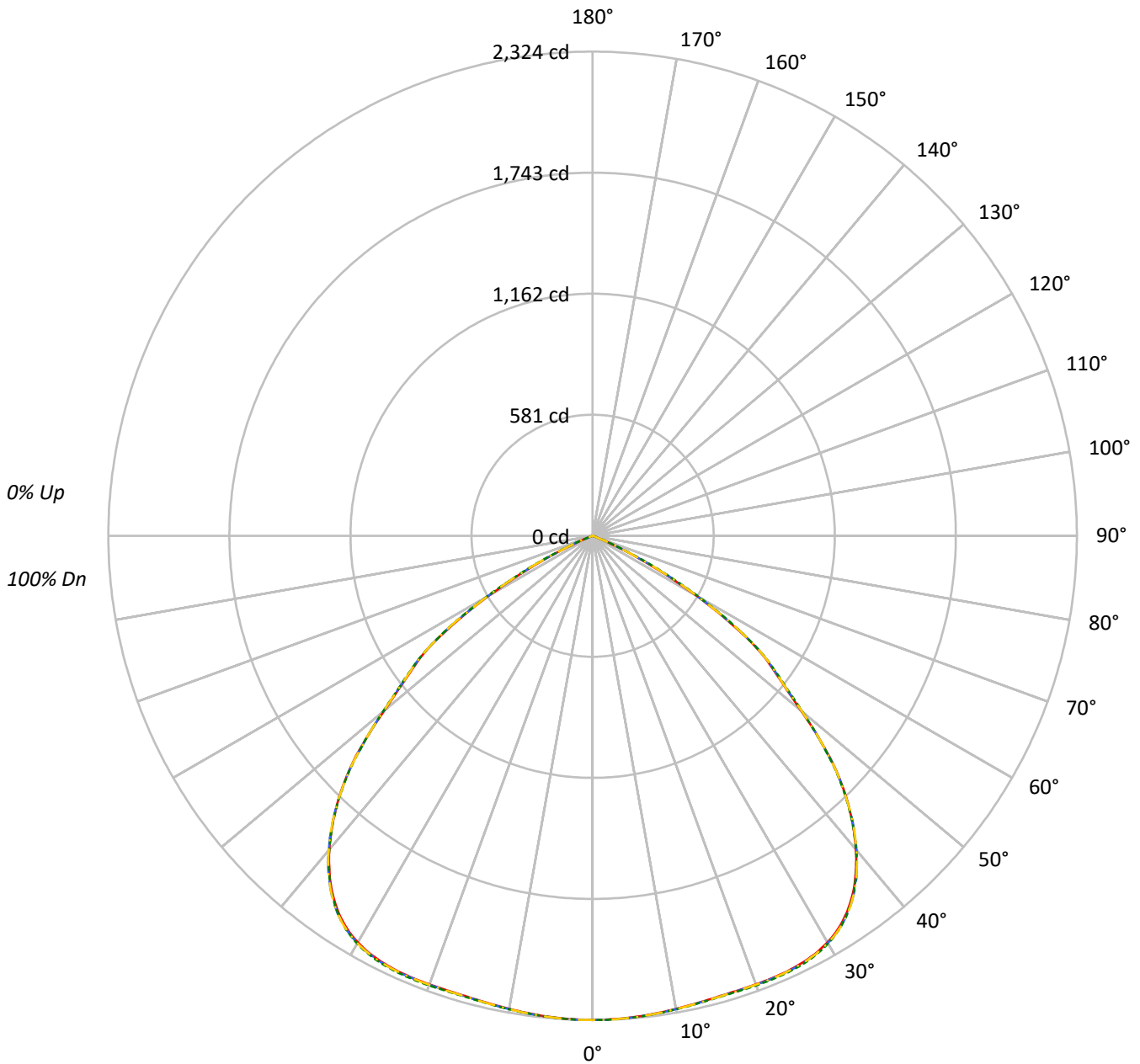
Input Watts (W): 48
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20										
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	102	109	106	103	100	102	99	97	98	96	94	94	93	91	89	89	89	89	89	89		
	2	103	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80	78	78	78	78	78	78		
	3	96	87	80	75	93	85	79	74	82	77	73	80	75	71	77	74	70	68	68	68	68	68	68		
	4	88	78	70	65	86	77	70	64	74	68	63	72	67	63	70	66	62	60	60	60	60	60	60		
	5	82	70	62	57	80	69	62	56	67	61	56	65	60	55	64	59	55	53	53	53	53	53	53		
	6	76	64	56	50	74	63	55	50	61	54	49	59	53	49	58	53	48	47	47	47	47	47	47		
	7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	41	41	41	41	41	41		
	8	65	53	45	40	64	52	45	40	51	44	39	50	44	39	49	43	39	37	37	37	37	37	37		
	9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	33	33	33	33	33	33		
	10	57	45	37	32	56	44	37	32	43	37	32	42	36	32	42	36	32	30	30	30	30	30	30		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	70968	70968	70968	70968
5°	71070	71098	71070	71098
10°	71489	71545	71489	71545
15°	72488	72592	72488	72592
20°	74437	74603	74437	74603
25°	77038	77256	77038	77256
30°	79440	79669	79440	79669
35°	80281	80452	80281	80452
40°	78322	78362	78322	78362
45°	73050	72951	73050	72951
50°	61993	62434	61993	62434
55°	52994	53292	52994	53292
60°	34853	36215	34853	36215
65°	12288	14809	12288	14809
70°	205	1125	205	1125
75°	59	59	59	59
80°	0	88	0	88
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 73050 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.0	3.9
10°-20°	650.9	11.5
20°-30°	1057.3	18.7
30°-40°	1342.5	23.8
40°-50°	1287.5	22.8
50°-60°	866.5	15.3
60°-70°	219.2	3.9
70°-80°	0.9	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°	1929.2	34.2
0°-40°	3271.7	57.9
0°-60°	5425.8	96.1
0°-90°	5645.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5645.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2324	2324	2324	2324	2324	
5°	2319	2320	2319	2320	2319	221
15°	2293	2297	2293	2297	2293	650
25°	2287	2293	2287	2293	2287	1056
35°	2154	2159	2154	2159	2154	1340
45°	1692	1690	1692	1690	1692	1287
55°	996	1001	996	1001	996	861
65°	170	205	170	205	170	204
75°	0	0	0	0	0	1
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°	2324.5	2324.5	2324.5	2324.5	2324.5	2324.5	2324.5	2324.5	2324.5	2324.5	2324.5
0.5°	2324.1	2324.1	2324.5	2325.0	2324.5	2325.0	2324.5	2324.1	2324.1	2324.1	2324.5
1°	2324.1	2324.1	2324.5	2325.0	2324.1	2325.0	2324.5	2324.1	2324.1	2324.1	2324.5
1.5°	2323.6	2323.6	2324.1	2324.5	2324.1	2324.5	2324.1	2323.6	2323.6	2323.6	2324.1
2°	2323.2	2323.2	2324.1	2324.1	2323.6	2324.1	2324.1	2323.2	2323.2	2323.2	2324.1
2.5°	2322.7	2323.2	2323.6	2324.1	2323.2	2324.1	2323.6	2323.2	2322.7	2323.2	2323.6
3°	2322.2	2322.2	2323.2	2323.2	2322.7	2323.2	2323.2	2322.2	2322.2	2322.2	2323.2
3.5°	2321.3	2321.8	2322.2	2322.7	2322.2	2322.7	2322.2	2321.8	2321.3	2321.8	2322.2
4°	2320.8	2320.8	2321.3	2322.2	2321.3	2322.2	2321.3	2320.8	2320.8	2320.8	2321.3
4.5°	2319.9	2320.4	2320.8	2321.3	2320.8	2321.3	2320.8	2320.4	2319.9	2320.4	2320.8
5°	2319.0	2319.4	2319.9	2320.4	2319.9	2320.4	2319.9	2319.4	2319.0	2319.4	2319.9
5.5°	2318.0	2318.0	2319.0	2319.4	2319.0	2319.4	2319.0	2318.0	2318.0	2318.0	2319.0
6°	2316.6	2317.1	2317.6	2318.5	2318.0	2318.5	2317.6	2317.1	2316.6	2317.1	2317.6
6.5°	2315.7	2316.2	2316.6	2317.6	2316.6	2317.6	2316.6	2316.2	2315.7	2316.2	2316.6
7°	2314.3	2314.8	2315.7	2316.2	2315.7	2316.2	2315.7	2314.8	2314.3	2314.8	2315.7
7.5°	2312.9	2313.4	2314.3	2314.8	2314.3	2314.8	2314.3	2313.4	2312.9	2313.4	2314.3
8°	2312.0	2312.0	2312.9	2313.9	2313.4	2313.9	2312.9	2312.0	2312.0	2312.0	2312.9
8.5°	2310.6	2310.6	2311.5	2312.0	2312.0	2312.0	2311.5	2310.6	2310.6	2310.6	2311.5
9°	2308.7	2309.2	2310.1	2311.1	2310.6	2311.1	2310.1	2309.2	2308.7	2309.2	2310.1
9.5°	2307.4	2307.8	2308.7	2309.7	2309.2	2309.7	2308.7	2307.8	2307.4	2307.8	2308.7
10°	2306.0	2306.4	2307.4	2308.3	2307.8	2308.3	2307.4	2306.4	2306.0	2306.4	2307.4
10.5°	2304.6	2305.0	2305.5	2306.9	2306.4	2306.9	2305.5	2305.0	2304.6	2305.0	2305.5
11°	2303.2	2303.2	2304.1	2305.5	2305.0	2305.5	2304.1	2303.2	2303.2	2303.2	2304.1
11.5°	2301.8	2301.8	2302.7	2304.1	2303.6	2304.1	2302.7	2301.8	2301.8	2301.8	2302.7
12°	2300.4	2300.4	2301.3	2302.7	2302.7	2302.7	2301.3	2300.4	2300.4	2300.4	2301.3
12.5°	2299.0	2299.0	2300.4	2301.3	2301.3	2301.3	2300.4	2299.0	2299.0	2299.0	2300.4
13°	2297.6	2298.1	2299.0	2299.9	2300.4	2299.9	2299.0	2298.1	2297.6	2298.1	2299.0
13.5°	2296.2	2296.7	2298.1	2299.0	2299.0	2299.0	2298.1	2296.7	2296.2	2296.7	2298.1
14°	2295.3	2295.7	2296.7	2298.1	2298.1	2298.1	2296.7	2295.7	2295.3	2295.7	2296.7
14.5°	2294.3	2294.8	2295.7	2297.1	2297.6	2297.1	2295.7	2294.8	2294.3	2294.8	2295.7
15°	2293.4	2293.9	2294.8	2296.7	2296.7	2296.7	2294.8	2293.9	2293.4	2293.9	2294.8
15.5°	2292.5	2292.9	2294.3	2295.7	2296.2	2295.7	2294.3	2292.9	2292.5	2292.9	2294.3
16°	2292.0	2292.5	2293.4	2295.3	2295.7	2295.3	2293.4	2292.5	2292.0	2292.5	2293.4
16.5°	2291.5	2292.0	2292.9	2294.8	2295.3	2294.8	2292.9	2292.0	2291.5	2292.0	2292.9
17°	2291.1	2291.5	2292.9	2294.8	2295.3	2294.8	2292.9	2291.5	2291.1	2291.5	2292.9
17.5°	2291.1	2291.5	2292.5	2294.8	2295.3	2294.8	2292.5	2291.5	2291.1	2291.5	2292.5
18°	2290.6	2291.1	2292.5	2294.8	2295.3	2294.8	2292.5	2291.1	2290.6	2291.1	2292.5
18.5°	2290.6	2291.1	2292.5	2294.8	2295.3	2294.8	2292.5	2291.1	2290.6	2291.1	2292.5
19°	2291.1	2291.1	2292.5	2295.3	2295.7	2295.3	2292.5	2291.1	2291.1	2291.1	2292.5
19.5°	2291.1	2291.5	2292.9	2295.3	2296.2	2295.3	2292.9	2291.5	2291.1	2291.5	2292.9
20°	2291.1	2291.5	2292.9	2295.7	2296.2	2295.7	2292.9	2291.5	2291.1	2291.5	2292.9
20.5°	2291.5	2291.5	2293.4	2295.7	2296.7	2295.7	2293.4	2291.5	2291.5	2291.5	2293.4
21°	2291.5	2292.0	2293.4	2296.2	2296.7	2296.2	2293.4	2292.0	2291.5	2292.0	2293.4



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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°	2291.1	2291.5	2293.4	2296.2	2297.1	2296.2	2293.4	2291.5	2291.1	2291.5	2293.4
23°	2290.6	2291.1	2292.9	2295.7	2296.7	2295.7	2292.9	2291.1	2290.6	2291.1	2292.9
23.5°	2290.2	2290.6	2292.5	2295.3	2296.2	2295.3	2292.5	2290.6	2290.2	2290.6	2292.5
24°	2289.7	2289.7	2291.5	2294.8	2295.7	2294.8	2291.5	2289.7	2289.7	2289.7	2291.5
24.5°	2288.3	2288.8	2290.6	2293.9	2294.8	2293.9	2290.6	2288.8	2288.3	2288.8	2290.6
25°	2286.9	2287.4	2289.7	2292.9	2293.4	2292.9	2289.7	2287.4	2286.9	2287.4	2289.7
25.5°	2285.5	2286.0	2288.3	2291.5	2292.0	2291.5	2288.3	2286.0	2285.5	2286.0	2288.3
26°	2283.6	2284.1	2286.4	2289.7	2290.6	2289.7	2286.4	2284.1	2283.6	2284.1	2286.4
26.5°	2281.3	2281.8	2284.6	2287.8	2288.3	2287.8	2284.6	2281.8	2281.3	2281.8	2284.6
27°	2279.0	2279.5	2281.8	2285.0	2285.5	2285.0	2281.8	2279.5	2279.0	2279.5	2281.8
27.5°	2275.7	2276.7	2279.0	2282.3	2282.7	2282.3	2279.0	2276.7	2275.7	2276.7	2279.0
28°	2272.5	2273.0	2275.7	2279.0	2279.5	2279.0	2275.7	2273.0	2272.5	2273.0	2275.7
28.5°	2268.8	2269.2	2272.0	2275.3	2275.3	2275.3	2272.0	2269.2	2268.8	2269.2	2272.0
29°	2264.1	2265.1	2267.8	2270.6	2271.1	2270.6	2267.8	2265.1	2264.1	2265.1	2267.8
29.5°	2259.0	2259.9	2263.2	2266.0	2266.0	2266.0	2263.2	2259.9	2259.0	2259.9	2263.2
30°	2253.4	2254.4	2257.6	2260.4	2259.9	2260.4	2257.6	2254.4	2253.4	2254.4	2257.6
30.5°	2247.4	2248.3	2251.6	2254.4	2253.9	2254.4	2251.6	2248.3	2247.4	2248.3	2251.6
31°	2240.4	2241.3	2245.1	2247.4	2246.5	2247.4	2245.1	2241.3	2240.4	2241.3	2245.1
31.5°	2232.5	2233.9	2237.6	2239.5	2238.6	2239.5	2237.6	2233.9	2232.5	2233.9	2237.6
32°	2223.7	2225.5	2229.3	2231.1	2230.2	2231.1	2229.3	2225.5	2223.7	2225.5	2229.3
32.5°	2214.4	2216.2	2220.0	2221.4	2220.4	2221.4	2220.0	2216.2	2214.4	2216.2	2220.0
33°	2204.2	2206.0	2210.2	2211.1	2209.7	2211.1	2210.2	2206.0	2204.2	2206.0	2210.2
33.5°	2192.5	2194.9	2199.0	2200.0	2198.6	2200.0	2199.0	2194.9	2192.5	2194.9	2199.0
34°	2180.9	2183.2	2187.4	2187.9	2186.0	2187.9	2187.4	2183.2	2180.9	2183.2	2187.4
34.5°	2167.4	2170.2	2174.4	2174.4	2172.6	2174.4	2174.4	2170.2	2167.4	2170.2	2174.4
35°	2154.0	2156.3	2160.9	2160.5	2158.6	2160.5	2160.9	2156.3	2154.0	2156.3	2160.9
35.5°	2139.1	2141.4	2146.1	2145.6	2143.7	2145.6	2146.1	2141.4	2139.1	2141.4	2146.1
36°	2123.3	2126.1	2130.7	2129.8	2127.5	2129.8	2130.7	2126.1	2123.3	2126.1	2130.7
36.5°	2107.0	2109.3	2114.0	2113.1	2110.3	2113.1	2114.0	2109.3	2107.0	2109.3	2114.0
37°	2088.9	2091.7	2095.9	2095.4	2092.6	2095.4	2095.9	2091.7	2088.9	2091.7	2095.9
37.5°	2070.8	2073.1	2077.7	2076.3	2073.5	2076.3	2077.7	2073.1	2070.8	2073.1	2077.7
38°	2051.2	2054.0	2058.2	2056.8	2053.6	2056.8	2058.2	2054.0	2051.2	2054.0	2058.2
38.5°	2030.8	2033.6	2037.8	2035.9	2033.1	2035.9	2037.8	2033.6	2030.8	2033.6	2037.8
39°	2010.3	2012.7	2016.4	2015.0	2011.7	2015.0	2016.4	2012.7	2010.3	2012.7	2016.4
39.5°	1988.5	1990.3	1994.1	1992.7	1989.4	1992.7	1994.1	1990.3	1988.5	1990.3	1994.1
40°	1965.2	1967.1	1970.8	1969.4	1966.2	1969.4	1970.8	1967.1	1965.2	1967.1	1970.8
40.5°	1942.0	1943.4	1946.7	1945.3	1942.0	1945.3	1946.7	1943.4	1942.0	1943.4	1946.7
41°	1917.4	1918.8	1921.6	1920.6	1917.4	1920.6	1921.6	1918.8	1917.4	1918.8	1921.6
41.5°	1892.3	1893.2	1896.0	1894.1	1891.8	1894.1	1896.0	1893.2	1892.3	1893.2	1896.0
42°	1866.2	1867.2	1869.0	1868.1	1865.8	1868.1	1869.0	1867.2	1866.2	1867.2	1869.0
42.5°	1839.7	1839.7	1841.6	1840.7	1838.4	1840.7	1841.6	1839.7	1839.7	1839.7	1841.6
43°	1811.9	1811.9	1813.3	1812.3	1810.0	1812.3	1813.3	1811.9	1811.9	1811.9	1813.3
43.5°	1783.0	1783.0	1783.5	1782.6	1781.2	1782.6	1783.5	1783.0	1783.0	1783.0	1783.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1691.9	1690.5	1690.5	1690.1	1689.6	1690.1	1690.5	1690.5	1691.9	1690.5	1690.5
45.5°	1659.4	1658.0	1657.5	1657.1	1656.6	1657.1	1657.5	1658.0	1659.4	1658.0	1657.5
46°	1625.9	1624.1	1623.6	1623.6	1623.1	1623.6	1623.6	1624.1	1625.9	1624.1	1623.6
46.5°	1591.1	1589.2	1588.7	1588.3	1587.8	1588.3	1588.7	1589.2	1591.1	1589.2	1588.7
47°	1553.9	1552.0	1550.6	1549.7	1548.8	1549.7	1550.6	1552.0	1553.9	1552.0	1550.6
47.5°	1513.4	1511.6	1509.7	1510.2	1509.7	1510.2	1509.7	1511.6	1513.4	1511.6	1509.7
48°	1470.7	1470.2	1471.1	1471.6	1472.1	1471.6	1471.1	1470.2	1470.7	1470.2	1471.1
48.5°	1429.8	1429.8	1431.6	1432.1	1432.1	1432.1	1431.6	1429.8	1429.8	1429.8	1431.6
49°	1390.3	1389.8	1391.2	1391.7	1392.1	1391.7	1391.2	1389.8	1390.3	1389.8	1391.2
49.5°	1347.5	1348.0	1350.8	1352.6	1353.1	1352.6	1350.8	1348.0	1347.5	1348.0	1350.8
50°	1305.2	1307.1	1310.8	1313.1	1314.5	1313.1	1310.8	1307.1	1305.2	1307.1	1310.8
50.5°	1266.2	1268.5	1272.2	1274.5	1275.5	1274.5	1272.2	1268.5	1266.2	1268.5	1272.2
51°	1230.4	1231.8	1235.5	1237.3	1238.3	1237.3	1235.5	1231.8	1230.4	1231.8	1235.5
51.5°	1196.0	1196.9	1201.1	1204.3	1205.7	1204.3	1201.1	1196.9	1196.0	1196.9	1201.1
52°	1162.0	1163.9	1168.1	1172.3	1174.1	1172.3	1168.1	1163.9	1162.0	1163.9	1168.1
52.5°	1131.4	1133.2	1137.9	1142.1	1144.8	1142.1	1137.9	1133.2	1131.4	1133.2	1137.9
53°	1103.0	1104.9	1110.0	1114.2	1116.0	1114.2	1110.0	1104.9	1103.0	1104.9	1110.0
53.5°	1076.5	1078.4	1083.0	1086.7	1088.6	1086.7	1083.0	1078.4	1076.5	1078.4	1083.0
54°	1051.4	1052.8	1057.0	1059.3	1060.2	1059.3	1057.0	1052.8	1051.4	1052.8	1057.0
54.5°	1024.9	1026.3	1029.6	1032.4	1032.8	1032.4	1029.6	1026.3	1024.9	1026.3	1029.6
55°	995.6	997.0	1000.3	1002.1	1001.2	1002.1	1000.3	997.0	995.6	997.0	1000.3
55.5°	961.7	963.1	966.8	968.7	968.2	968.7	966.8	963.1	961.7	963.1	966.8
56°	924.1	925.9	930.6	932.9	932.4	932.9	930.6	925.9	924.1	925.9	930.6
56.5°	884.1	886.9	891.1	894.8	894.3	894.8	891.1	886.9	884.1	886.9	891.1
57°	842.2	844.6	850.6	852.9	853.4	852.9	850.6	844.6	842.2	844.6	850.6
57.5°	798.6	801.3	807.9	810.6	811.1	810.6	807.9	801.3	798.6	801.3	807.9
58°	754.4	757.2	763.7	767.9	768.8	767.9	763.7	757.2	754.4	757.2	763.7
58.5°	709.3	711.6	718.6	723.7	725.1	723.7	718.6	711.6	709.3	711.6	718.6
59°	663.8	666.1	672.6	679.6	681.4	679.6	672.6	666.1	663.8	666.1	672.6
59.5°	617.3	620.1	627.5	635.4	637.3	635.4	627.5	620.1	617.3	620.1	627.5
60°	570.8	575.0	582.4	592.2	593.1	592.2	582.4	575.0	570.8	575.0	582.4
60.5°	525.2	529.0	539.2	548.0	549.9	548.0	539.2	529.0	525.2	529.0	539.2
61°	480.6	485.3	496.4	504.8	507.1	504.8	496.4	485.3	480.6	485.3	496.4
61.5°	437.9	442.0	454.1	461.6	465.7	461.6	454.1	442.0	437.9	442.0	454.1
62°	395.6	399.7	412.3	419.7	424.4	419.7	412.3	399.7	395.6	399.7	412.3
62.5°	353.3	358.8	371.9	379.3	384.4	379.3	371.9	358.8	353.3	358.8	371.9
63°	311.9	318.9	332.3	340.2	346.3	340.2	332.3	318.9	311.9	318.9	332.3
63.5°	273.8	279.8	294.2	302.6	308.6	302.6	294.2	279.8	273.8	279.8	294.2
64°	237.5	244.0	257.0	266.8	272.4	266.8	257.0	244.0	237.5	244.0	257.0
64.5°	203.1	209.2	221.7	232.9	238.5	232.9	221.7	209.2	203.1	209.2	221.7
65°	170.1	178.5	189.2	199.9	205.0	199.9	189.2	178.5	170.1	178.5	189.2
65.5°	141.3	149.2	158.5	169.2	173.8	169.2	158.5	149.2	141.3	149.2	158.5
66°	113.9	121.8	131.1	141.3	143.6	141.3	131.1	121.8	113.9	121.8	131.1



TEST NUMBER: P776751

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	45.6	58.1	62.8	71.6	72.0	71.6	62.8	58.1	45.6	58.1	62.8
68°	27.9	40.9	45.6	54.4	53.5	54.4	45.6	40.9	27.9	40.9	45.6
68.5°	12.1	26.5	32.1	38.6	42.8	38.6	32.1	26.5	12.1	26.5	32.1
69°	6.5	16.3	20.9	25.1	33.0	25.1	20.9	16.3	6.5	16.3	20.9
69.5°	4.2	7.9	11.6	14.9	22.8	14.9	11.6	7.9	4.2	7.9	11.6
70°	2.3	4.6	5.6	6.5	12.6	6.5	5.6	4.6	2.3	4.6	5.6
70.5°	0.9	2.3	3.3	2.8	3.7	2.8	3.3	2.3	0.9	2.3	3.3
71°	0.9	1.4	1.9	1.4	1.4	1.4	1.9	1.4	0.9	1.4	1.9
71.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
72°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
72.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
73°	0.5	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.5	0.9	0.9
73.5°	0.5	0.5	0.9	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.9
74°	0.5	0.5	0.5	0.9	0.9	0.9	0.5	0.5	0.5	0.5	0.5
74.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
75°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
75.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
76°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
76.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
77°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
77.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
78°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
78.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
79°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
79.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
80°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5
80.5°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5
81°	0.0	0.0	0.0	0.0	0.5	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: P776751

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-5000lm-3000K

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: P776751

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2324.5	2324.5	2324.5	2324.5	2324.5	2324.5
0.5°	2325.0	2324.5	2325.0	2324.5	2324.1	2324.1
1°	2325.0	2324.1	2325.0	2324.5	2324.1	2324.1
1.5°	2324.5	2324.1	2324.5	2324.1	2323.6	2323.6
2°	2324.1	2323.6	2324.1	2324.1	2323.2	2323.2
2.5°	2324.1	2323.2	2324.1	2323.6	2323.2	2322.7
3°	2323.2	2322.7	2323.2	2323.2	2322.2	2322.2
3.5°	2322.7	2322.2	2322.7	2322.2	2321.8	2321.3
4°	2322.2	2321.3	2322.2	2321.3	2320.8	2320.8
4.5°	2321.3	2320.8	2321.3	2320.8	2320.4	2319.9
5°	2320.4	2319.9	2320.4	2319.9	2319.4	2319.0
5.5°	2319.4	2319.0	2319.4	2319.0	2318.0	2318.0
6°	2318.5	2318.0	2318.5	2317.6	2317.1	2316.6
6.5°	2317.6	2316.6	2317.6	2316.6	2316.2	2315.7
7°	2316.2	2315.7	2316.2	2315.7	2314.8	2314.3
7.5°	2314.8	2314.3	2314.8	2314.3	2313.4	2312.9
8°	2313.9	2313.4	2313.9	2312.9	2312.0	2312.0
8.5°	2312.0	2312.0	2312.0	2311.5	2310.6	2310.6
9°	2311.1	2310.6	2311.1	2310.1	2309.2	2308.7
9.5°	2309.7	2309.2	2309.7	2308.7	2307.8	2307.4
10°	2308.3	2307.8	2308.3	2307.4	2306.4	2306.0
10.5°	2306.9	2306.4	2306.9	2305.5	2305.0	2304.6
11°	2305.5	2305.0	2305.5	2304.1	2303.2	2303.2
11.5°	2304.1	2303.6	2304.1	2302.7	2301.8	2301.8
12°	2302.7	2302.7	2302.7	2301.3	2300.4	2300.4
12.5°	2301.3	2301.3	2301.3	2300.4	2299.0	2299.0
13°	2299.9	2300.4	2299.9	2299.0	2298.1	2297.6
13.5°	2299.0	2299.0	2299.0	2298.1	2296.7	2296.2
14°	2298.1	2298.1	2298.1	2296.7	2295.7	2295.3
14.5°	2297.1	2297.6	2297.1	2295.7	2294.8	2294.3
15°	2296.7	2296.7	2296.7	2294.8	2293.9	2293.4
15.5°	2295.7	2296.2	2295.7	2294.3	2292.9	2292.5
16°	2295.3	2295.7	2295.3	2293.4	2292.5	2292.0
16.5°	2294.8	2295.3	2294.8	2292.9	2292.0	2291.5
17°	2294.8	2295.3	2294.8	2292.9	2291.5	2291.1
17.5°	2294.8	2295.3	2294.8	2292.5	2291.5	2291.1
18°	2294.8	2295.3	2294.8	2292.5	2291.1	2290.6
18.5°	2294.8	2295.3	2294.8	2292.5	2291.1	2290.6
19°	2295.3	2295.7	2295.3	2292.5	2291.1	2291.1
19.5°	2295.3	2296.2	2295.3	2292.9	2291.5	2291.1
20°	2295.7	2296.2	2295.7	2292.9	2291.5	2291.1
20.5°	2295.7	2296.7	2295.7	2293.4	2291.5	2291.5
21°	2296.2	2296.7	2296.2	2293.4	2292.0	2291.5



TEST NUMBER: P776751

CATALOG NUMBER: HCDJBLS4050CSD-HCD81TRH-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2296.2	2297.1	2296.2	2293.4	2291.5	2291.1
23°	2295.7	2296.7	2295.7	2292.9	2291.1	2290.6
23.5°	2295.3	2296.2	2295.3	2292.5	2290.6	2290.2
24°	2294.8	2295.7	2294.8	2291.5	2289.7	2289.7
24.5°	2293.9	2294.8	2293.9	2290.6	2288.8	2288.3
25°	2292.9	2293.4	2292.9	2289.7	2287.4	2286.9
25.5°	2291.5	2292.0	2291.5	2288.3	2286.0	2285.5
26°	2289.7	2290.6	2289.7	2286.4	2284.1	2283.6
26.5°	2287.8	2288.3	2287.8	2284.6	2281.8	2281.3
27°	2285.0	2285.5	2285.0	2281.8	2279.5	2279.0
27.5°	2282.3	2282.7	2282.3	2279.0	2276.7	2275.7
28°	2279.0	2279.5	2279.0	2275.7	2273.0	2272.5
28.5°	2275.3	2275.3	2275.3	2272.0	2269.2	2268.8
29°	2270.6	2271.1	2270.6	2267.8	2265.1	2264.1
29.5°	2266.0	2266.0	2266.0	2263.2	2259.9	2259.0
30°	2260.4	2259.9	2260.4	2257.6	2254.4	2253.4
30.5°	2254.4	2253.9	2254.4	2251.6	2248.3	2247.4
31°	2247.4	2246.5	2247.4	2245.1	2241.3	2240.4
31.5°	2239.5	2238.6	2239.5	2237.6	2233.9	2232.5
32°	2231.1	2230.2	2231.1	2229.3	2225.5	2223.7
32.5°	2221.4	2220.4	2221.4	2220.0	2216.2	2214.4
33°	2211.1	2209.7	2211.1	2210.2	2206.0	2204.2
33.5°	2200.0	2198.6	2200.0	2199.0	2194.9	2192.5
34°	2187.9	2186.0	2187.9	2187.4	2183.2	2180.9
34.5°	2174.4	2172.6	2174.4	2174.4	2170.2	2167.4
35°	2160.5	2158.6	2160.5	2160.9	2156.3	2154.0
35.5°	2145.6	2143.7	2145.6	2146.1	2141.4	2139.1
36°	2129.8	2127.5	2129.8	2130.7	2126.1	2123.3
36.5°	2113.1	2110.3	2113.1	2114.0	2109.3	2107.0
37°	2095.4	2092.6	2095.4	2095.9	2091.7	2088.9
37.5°	2076.3	2073.5	2076.3	2077.7	2073.1	2070.8
38°	2056.8	2053.6	2056.8	2058.2	2054.0	2051.2
38.5°	2035.9	2033.1	2035.9	2037.8	2033.6	2030.8
39°	2015.0	2011.7	2015.0	2016.4	2012.7	2010.3
39.5°	1992.7	1989.4	1992.7	1994.1	1990.3	1988.5
40°	1969.4	1966.2	1969.4	1970.8	1967.1	1965.2
40.5°	1945.3	1942.0	1945.3	1946.7	1943.4	1942.0
41°	1920.6	1917.4	1920.6	1921.6	1918.8	1917.4
41.5°	1894.1	1891.8	1894.1	1896.0	1893.2	1892.3
42°	1868.1	1865.8	1868.1	1869.0	1867.2	1866.2
42.5°	1840.7	1838.4	1840.7	1841.6	1839.7	1839.7
43°	1812.3	1810.0	1812.3	1813.3	1811.9	1811.9
43.5°	1782.6	1781.2	1782.6	1783.5	1783.0	1783.0



TEST NUMBER: P776751

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1690.1	1689.6	1690.1	1690.5	1690.5	1691.9
45.5°	1657.1	1656.6	1657.1	1657.5	1658.0	1659.4
46°	1623.6	1623.1	1623.6	1623.6	1624.1	1625.9
46.5°	1588.3	1587.8	1588.3	1588.7	1589.2	1591.1
47°	1549.7	1548.8	1549.7	1550.6	1552.0	1553.9
47.5°	1510.2	1509.7	1510.2	1509.7	1511.6	1513.4
48°	1471.6	1472.1	1471.6	1471.1	1470.2	1470.7
48.5°	1432.1	1432.1	1432.1	1431.6	1429.8	1429.8
49°	1391.7	1392.1	1391.7	1391.2	1389.8	1390.3
49.5°	1352.6	1353.1	1352.6	1350.8	1348.0	1347.5
50°	1313.1	1314.5	1313.1	1310.8	1307.1	1305.2
50.5°	1274.5	1275.5	1274.5	1272.2	1268.5	1266.2
51°	1237.3	1238.3	1237.3	1235.5	1231.8	1230.4
51.5°	1204.3	1205.7	1204.3	1201.1	1196.9	1196.0
52°	1172.3	1174.1	1172.3	1168.1	1163.9	1162.0
52.5°	1142.1	1144.8	1142.1	1137.9	1133.2	1131.4
53°	1114.2	1116.0	1114.2	1110.0	1104.9	1103.0
53.5°	1086.7	1088.6	1086.7	1083.0	1078.4	1076.5
54°	1059.3	1060.2	1059.3	1057.0	1052.8	1051.4
54.5°	1032.4	1032.8	1032.4	1029.6	1026.3	1024.9
55°	1002.1	1001.2	1002.1	1000.3	997.0	995.6
55.5°	968.7	968.2	968.7	966.8	963.1	961.7
56°	932.9	932.4	932.9	930.6	925.9	924.1
56.5°	894.8	894.3	894.8	891.1	886.9	884.1
57°	852.9	853.4	852.9	850.6	844.6	842.2
57.5°	810.6	811.1	810.6	807.9	801.3	798.6
58°	767.9	768.8	767.9	763.7	757.2	754.4
58.5°	723.7	725.1	723.7	718.6	711.6	709.3
59°	679.6	681.4	679.6	672.6	666.1	663.8
59.5°	635.4	637.3	635.4	627.5	620.1	617.3
60°	592.2	593.1	592.2	582.4	575.0	570.8
60.5°	548.0	549.9	548.0	539.2	529.0	525.2
61°	504.8	507.1	504.8	496.4	485.3	480.6
61.5°	461.6	465.7	461.6	454.1	442.0	437.9
62°	419.7	424.4	419.7	412.3	399.7	395.6
62.5°	379.3	384.4	379.3	371.9	358.8	353.3
63°	340.2	346.3	340.2	332.3	318.9	311.9
63.5°	302.6	308.6	302.6	294.2	279.8	273.8
64°	266.8	272.4	266.8	257.0	244.0	237.5
64.5°	232.9	238.5	232.9	221.7	209.2	203.1
65°	199.9	205.0	199.9	189.2	178.5	170.1
65.5°	169.2	173.8	169.2	158.5	149.2	141.3
66°	141.3	143.6	141.3	131.1	121.8	113.9



TEST NUMBER: P776751

CATALOG NUMBER: HCDJBL4050CSD-HCD81TRH-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	71.6	72.0	71.6	62.8	58.1	45.6
68°	54.4	53.5	54.4	45.6	40.9	27.9
68.5°	38.6	42.8	38.6	32.1	26.5	12.1
69°	25.1	33.0	25.1	20.9	16.3	6.5
69.5°	14.9	22.8	14.9	11.6	7.9	4.2
70°	6.5	12.6	6.5	5.6	4.6	2.3
70.5°	2.8	3.7	2.8	3.3	2.3	0.9
71°	1.4	1.4	1.4	1.9	1.4	0.9
71.5°	0.9	0.9	0.9	0.9	0.9	0.9
72°	0.9	0.9	0.9	0.9	0.9	0.9
72.5°	0.9	0.9	0.9	0.9	0.9	0.9
73°	0.9	0.9	0.9	0.9	0.9	0.5
73.5°	0.9	0.9	0.9	0.9	0.5	0.5
74°	0.9	0.9	0.9	0.5	0.5	0.5
74.5°	0.5	0.5	0.5	0.5	0.5	0.5
75°	0.5	0.5	0.5	0.5	0.5	0.5
75.5°	0.5	0.5	0.5	0.5	0.5	0.5
76°	0.5	0.5	0.5	0.5	0.5	0.5
76.5°	0.5	0.5	0.5	0.5	0.5	0.5
77°	0.5	0.5	0.5	0.5	0.5	0.5
77.5°	0.5	0.5	0.5	0.5	0.5	0.5
78°	0.5	0.5	0.5	0.5	0.5	0.5
78.5°	0.5	0.5	0.5	0.5	0.5	0.5
79°	0.5	0.5	0.5	0.5	0.5	0.5
79.5°	0.5	0.5	0.5	0.5	0.5	0.5
80°	0.5	0.5	0.5	0.5	0.0	0.0
80.5°	0.5	0.5	0.5	0.5	0.0	0.0
81°	0.0	0.5	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: P776751

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-5000lm-3000K

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

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

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Scaled Data Report





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

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Scaled Data Report





21.5°	2291.5	2292.0	2293.4	2296.2	2297.1	2296.2	2293.4	2292.0	2291.5	2292.0	2293.4
22°	2291.5	2291.5	2293.4	2296.2	2297.1	2296.2	2293.4	2291.5	2291.5	2291.5	2293.4



44°	1753.8	1752.8	1753.3	1752.4	1751.4	1752.4	1753.3	1752.8	1753.8	1752.8	1753.3
44.5°	1723.5	1722.1	1722.6	1722.1	1720.8	1722.1	1722.6	1722.1	1723.5	1722.1	1722.6



66.5°	91.1	98.5	105.0	114.8	117.6	114.8	105.0	98.5	91.1	98.5	105.0
67°	68.3	76.2	83.2	92.5	93.4	92.5	83.2	76.2	68.3	76.2	83.2



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°	2296.2	2297.1	2296.2	2293.4	2292.0	2291.5
22°	2296.2	2297.1	2296.2	2293.4	2291.5	2291.5



44°	1752.4	1751.4	1752.4	1753.3	1752.8	1753.8
44.5°	1722.1	1720.8	1722.1	1722.6	1722.1	1723.5

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66.5°	114.8	117.6	114.8	105.0	98.5	91.1
67°	92.5	93.4	92.5	83.2	76.2	68.3

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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)