

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: P776764

Luminaire Tested: HCDJBS4050CSD-HCD81TRMB-5000lm-5000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776764
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B045-HCD81TRMB)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD81TRMB-5000lm-5000K
Description: 8 INCH ROUND SHALLOW-WIDE MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

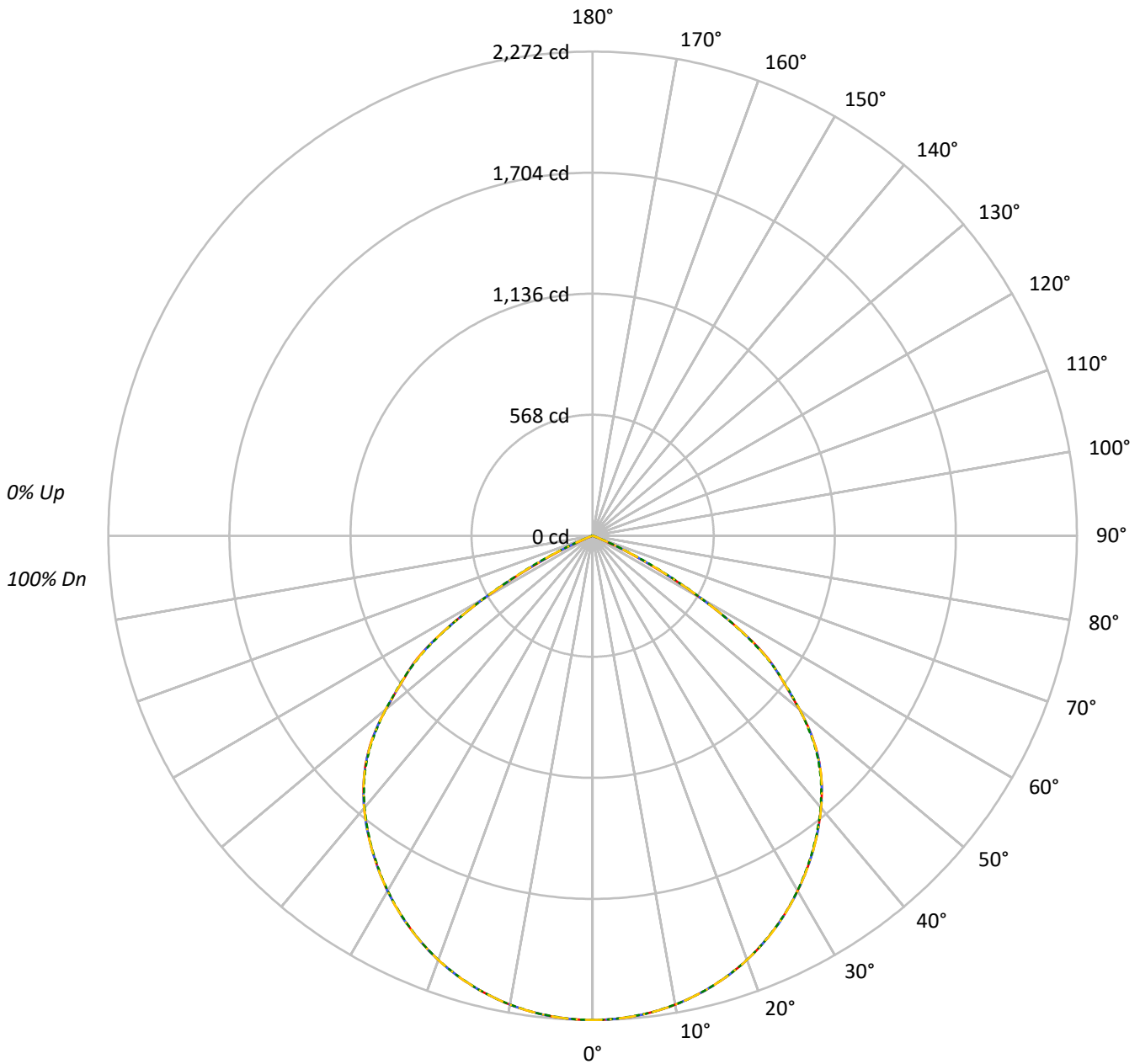
Lumens per Lamp: N/A
Luminaire Lumens: 5132.0 lumens
Efficiency: N/A
Efficacy: 106.9 lumens/watt
Spacing Criteria (0/90/45): 1.26 / 1.26 / 1.37
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

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	111	108	105	102	109	106	103	100	101	99	97	98	96	94	94	93	91	89	89	89	89	89	89		
	2	103	97	91	86	101	95	90	85	91	87	84	88	85	82	85	82	80	78	78	78	78	78	78		
	3	95	86	80	74	93	85	79	74	82	77	72	80	75	71	77	73	70	68	68	68	68	68	68		
	4	88	78	70	64	86	76	69	64	74	68	63	72	66	62	70	65	61	59	59	59	59	59	59		
	5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52	52	52	52	52	52		
	6	75	63	55	50	74	62	55	49	61	54	49	59	53	49	58	52	48	46	46	46	46	46	46		
	7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41	41	41	41	41	41		
	8	65	53	45	39	64	52	45	39	51	44	39	50	43	39	48	43	39	37	37	37	37	37	37		
	9	61	48	41	36	60	48	41	36	47	40	35	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°	69365	69365	69365	69365
5°	69348	69317	69348	69317
10°	69260	69248	69260	69248
15°	69081	69065	69081	69065
20°	68803	68787	68803	68787
25°	68380	68346	68380	68346
30°	67831	67778	67831	67778
35°	67191	67098	67191	67098
40°	66433	66298	66433	66298
45°	64929	64700	64929	64700
50°	60136	60136	60136	60136
55°	53521	52925	53521	52925
60°	35733	36239	35733	36239
65°	12657	15142	12657	15142
70°	134	1428	134	1428
75°	0	0	0	0
80°	0	0	0	0
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 64929 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	215.1	4.2
10°-20°	616.9	12.0
20°-30°	935.4	18.2
30°-40°	1127.6	22.0
40°-50°	1149.5	22.4
50°-60°	863.8	16.8
60°-70°	223.2	4.3
70°-80°	0.6	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°	1767.3	34.4
0°-40°	2894.9	56.4
0°-60°	4908.2	95.6
0°-90°	5132.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5132.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2272	2272	2272	2272	2272	
5°	2263	2262	2263	2262	2263	215
15°	2186	2185	2186	2185	2186	617
25°	2030	2029	2030	2029	2030	935
35°	1803	1800	1803	1800	1803	1128
45°	1504	1498	1504	1498	1504	1150
55°	1006	994	1006	994	1006	864
65°	175	210	175	210	175	209
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
90°	0	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°	2272.0	2272.0	2272.0	2272.0	2272.0	2272.0	2272.0	2272.0	2272.0	2272.0	2272.0
0.5°	2272.0	2272.0	2272.0	2272.0	2271.5	2272.0	2272.0	2272.0	2272.0	2272.0	2272.0
1°	2272.0	2272.0	2272.0	2271.5	2271.0	2271.5	2272.0	2272.0	2272.0	2272.0	2272.0
1.5°	2271.5	2271.5	2271.5	2271.5	2271.0	2271.5	2271.5	2271.5	2271.5	2271.5	2271.5
2°	2271.0	2271.0	2271.0	2270.5	2270.1	2270.5	2271.0	2271.0	2271.0	2271.0	2271.0
2.5°	2269.6	2270.1	2270.1	2270.1	2269.1	2270.1	2270.1	2270.1	2269.6	2270.1	2270.1
3°	2268.6	2269.1	2269.1	2269.1	2268.1	2269.1	2269.1	2269.1	2268.6	2269.1	2269.1
3.5°	2267.6	2267.6	2267.6	2267.6	2267.1	2267.6	2267.6	2267.6	2267.6	2267.6	2267.6
4°	2266.2	2266.2	2266.2	2266.2	2265.2	2266.2	2266.2	2266.2	2266.2	2266.2	2266.2
4.5°	2264.7	2264.7	2264.7	2264.7	2263.8	2264.7	2264.7	2264.7	2264.7	2264.7	2264.7
5°	2262.8	2262.8	2262.8	2262.8	2261.8	2262.8	2262.8	2262.8	2262.8	2262.8	2262.8
5.5°	2260.8	2260.8	2260.8	2260.8	2259.9	2260.8	2260.8	2260.8	2260.8	2260.8	2260.8
6°	2258.4	2258.9	2258.4	2258.4	2257.9	2258.4	2258.4	2258.9	2258.4	2258.9	2258.4
6.5°	2256.0	2256.5	2256.5	2256.0	2255.5	2256.0	2256.5	2256.5	2256.0	2256.5	2256.5
7°	2253.6	2253.6	2253.6	2253.6	2253.1	2253.6	2253.6	2253.6	2253.6	2253.6	2253.6
7.5°	2250.6	2250.6	2250.6	2251.1	2250.2	2251.1	2250.6	2250.6	2250.6	2250.6	2250.6
8°	2247.7	2247.7	2247.7	2247.7	2247.3	2247.7	2247.7	2247.7	2247.7	2247.7	2247.7
8.5°	2244.8	2244.8	2244.8	2244.8	2243.9	2244.8	2244.8	2244.8	2244.8	2244.8	2244.8
9°	2241.4	2241.4	2241.4	2241.4	2240.9	2241.4	2241.4	2241.4	2241.4	2241.4	2241.4
9.5°	2237.5	2238.0	2238.0	2238.0	2237.1	2238.0	2238.0	2238.0	2237.5	2238.0	2238.0
10°	2234.1	2234.1	2234.1	2234.1	2233.7	2234.1	2234.1	2234.1	2234.1	2234.1	2234.1
10.5°	2230.3	2230.3	2230.3	2230.3	2229.8	2230.3	2230.3	2230.3	2230.3	2230.3	2230.3
11°	2225.9	2225.9	2225.9	2226.4	2225.4	2226.4	2225.9	2225.9	2225.9	2225.9	2225.9
11.5°	2221.5	2221.5	2221.5	2222.0	2221.0	2222.0	2221.5	2221.5	2221.5	2221.5	2221.5
12°	2217.2	2217.2	2217.2	2217.2	2216.7	2217.2	2217.2	2217.2	2217.2	2217.2	2217.2
12.5°	2212.3	2212.3	2212.3	2212.8	2211.8	2212.8	2212.3	2212.3	2212.3	2212.3	2212.3
13°	2207.5	2207.5	2207.5	2207.5	2207.0	2207.5	2207.5	2207.5	2207.5	2207.5	2207.5
13.5°	2202.1	2202.6	2202.6	2202.6	2201.6	2202.6	2202.6	2202.6	2202.1	2202.6	2202.6
14°	2196.8	2197.3	2197.3	2197.3	2196.3	2197.3	2197.3	2197.3	2196.8	2197.3	2197.3
14.5°	2191.4	2191.4	2191.4	2191.4	2191.0	2191.4	2191.4	2191.4	2191.4	2191.4	2191.4
15°	2185.6	2185.6	2185.6	2186.1	2185.1	2186.1	2185.6	2185.6	2185.6	2185.6	2185.6
15.5°	2179.8	2179.8	2179.8	2179.8	2179.3	2179.8	2179.8	2179.8	2179.8	2179.8	2179.8
16°	2173.5	2174.0	2174.0	2174.0	2173.0	2174.0	2174.0	2174.0	2173.5	2174.0	2174.0
16.5°	2167.2	2167.2	2167.7	2167.7	2167.2	2167.7	2167.7	2167.2	2167.2	2167.2	2167.7
17°	2160.9	2160.9	2161.4	2160.9	2160.4	2160.9	2161.4	2160.9	2160.9	2160.9	2161.4
17.5°	2154.1	2154.1	2154.6	2154.6	2154.1	2154.6	2154.6	2154.1	2154.1	2154.1	2154.6
18°	2147.3	2147.3	2147.3	2147.3	2146.8	2147.3	2147.3	2147.3	2147.3	2147.3	2147.3
18.5°	2140.0	2140.0	2140.5	2140.5	2139.5	2140.5	2140.5	2140.0	2140.0	2140.0	2140.5
19°	2132.7	2132.7	2133.2	2133.2	2132.2	2133.2	2133.2	2132.7	2132.7	2132.7	2133.2
19.5°	2125.5	2125.5	2125.5	2125.5	2125.0	2125.5	2125.5	2125.5	2125.5	2125.5	2125.5
20°	2117.7	2117.7	2117.7	2117.7	2117.2	2117.7	2117.7	2117.7	2117.7	2117.7	2117.7
20.5°	2109.4	2109.9	2109.9	2109.9	2109.0	2109.9	2109.9	2109.9	2109.4	2109.9	2109.9
21°	2101.7	2101.7	2101.7	2101.7	2101.2	2101.7	2101.7	2101.7	2101.7	2101.7	2101.7



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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°	2076.0	2076.4	2076.4	2076.4	2075.5	2076.4	2076.4	2076.4	2076.0	2076.4	2076.4
23°	2067.2	2067.2	2067.2	2067.2	2066.7	2067.2	2067.2	2067.2	2067.2	2067.2	2067.2
23.5°	2058.0	2058.5	2058.5	2058.5	2057.5	2058.5	2058.5	2058.5	2058.0	2058.5	2058.5
24°	2048.8	2048.8	2049.3	2048.8	2048.3	2048.8	2049.3	2048.8	2048.8	2048.8	2049.3
24.5°	2039.1	2039.6	2040.0	2039.6	2038.6	2039.6	2040.0	2039.6	2039.1	2039.6	2040.0
25°	2029.9	2029.9	2030.3	2029.9	2028.9	2029.9	2030.3	2029.9	2029.9	2029.9	2030.3
25.5°	2019.7	2020.1	2020.6	2020.1	2019.2	2020.1	2020.6	2020.1	2019.7	2020.1	2020.6
26°	2010.0	2010.0	2010.4	2010.0	2009.0	2010.0	2010.4	2010.0	2010.0	2010.0	2010.4
26.5°	1999.8	2000.3	2000.3	1999.8	1998.8	1999.8	2000.3	2000.3	1999.8	2000.3	2000.3
27°	1989.6	1989.6	1990.1	1989.6	1988.6	1989.6	1990.1	1989.6	1989.6	1989.6	1990.1
27.5°	1978.9	1979.4	1979.4	1978.9	1977.9	1978.9	1979.4	1979.4	1978.9	1979.4	1979.4
28°	1968.2	1968.7	1968.7	1968.2	1967.3	1968.2	1968.7	1968.7	1968.2	1968.7	1968.7
28.5°	1957.5	1957.5	1958.0	1957.5	1956.6	1957.5	1958.0	1957.5	1957.5	1957.5	1958.0
29°	1946.4	1946.9	1946.9	1946.4	1944.9	1946.4	1946.9	1946.9	1946.4	1946.9	1946.9
29.5°	1935.2	1935.7	1935.7	1935.2	1933.8	1935.2	1935.7	1935.7	1935.2	1935.7	1935.7
30°	1924.1	1924.6	1924.6	1923.6	1922.6	1923.6	1924.6	1924.6	1924.1	1924.6	1924.6
30.5°	1912.9	1912.9	1912.9	1912.4	1911.0	1912.4	1912.9	1912.9	1912.9	1912.9	1912.9
31°	1900.8	1901.3	1901.7	1900.3	1899.3	1900.3	1901.7	1901.3	1900.8	1901.3	1901.7
31.5°	1889.1	1889.6	1889.6	1888.6	1887.2	1888.6	1889.6	1889.6	1889.1	1889.6	1889.6
32°	1877.5	1878.0	1878.0	1877.0	1875.1	1877.0	1878.0	1878.0	1877.5	1878.0	1878.0
32.5°	1865.3	1865.8	1865.8	1864.4	1862.9	1864.4	1865.8	1865.8	1865.3	1865.8	1865.8
33°	1852.7	1853.7	1853.7	1852.7	1850.8	1852.7	1853.7	1853.7	1852.7	1853.7	1853.7
33.5°	1840.6	1841.1	1841.6	1840.1	1838.2	1840.1	1841.6	1841.1	1840.6	1841.1	1841.6
34°	1828.0	1828.5	1829.0	1827.5	1826.0	1827.5	1829.0	1828.5	1828.0	1828.5	1829.0
34.5°	1815.4	1815.9	1816.3	1814.9	1813.4	1814.9	1816.3	1815.9	1815.4	1815.9	1816.3
35°	1802.8	1803.2	1803.7	1802.3	1800.3	1802.3	1803.7	1803.2	1802.8	1803.2	1803.7
35.5°	1789.6	1790.6	1790.6	1789.2	1787.2	1789.2	1790.6	1790.6	1789.6	1790.6	1790.6
36°	1777.0	1777.5	1778.0	1776.1	1774.1	1776.1	1778.0	1777.5	1777.0	1777.5	1778.0
36.5°	1763.9	1764.4	1764.9	1763.0	1761.0	1763.0	1764.9	1764.4	1763.9	1764.4	1764.9
37°	1750.3	1750.8	1751.3	1749.4	1747.9	1749.4	1751.3	1750.8	1750.3	1750.8	1751.3
37.5°	1736.8	1737.7	1738.2	1735.8	1733.8	1735.8	1738.2	1737.7	1736.8	1737.7	1738.2
38°	1723.2	1723.7	1724.6	1722.2	1720.7	1722.2	1724.6	1723.7	1723.2	1723.7	1724.6
38.5°	1709.1	1710.1	1710.6	1708.6	1706.7	1708.6	1710.6	1710.1	1709.1	1710.1	1710.6
39°	1695.5	1696.5	1697.0	1694.5	1692.6	1694.5	1697.0	1696.5	1695.5	1696.5	1697.0
39.5°	1681.4	1681.9	1682.4	1680.5	1678.0	1680.5	1682.4	1681.9	1681.4	1681.9	1682.4
40°	1666.9	1667.8	1667.8	1665.9	1663.5	1665.9	1667.8	1667.8	1666.9	1667.8	1667.8
40.5°	1652.3	1652.8	1653.3	1650.9	1648.9	1650.9	1653.3	1652.8	1652.3	1652.8	1653.3
41°	1637.3	1638.2	1638.7	1636.3	1633.9	1636.3	1638.7	1638.2	1637.3	1638.2	1638.7
41.5°	1622.2	1622.7	1623.2	1620.8	1618.8	1620.8	1623.2	1622.7	1622.2	1622.7	1623.2
42°	1606.7	1607.2	1607.7	1605.2	1602.8	1605.2	1607.7	1607.2	1606.7	1607.2	1607.7
42.5°	1590.7	1591.7	1591.7	1589.2	1586.8	1589.2	1591.7	1591.7	1590.7	1591.7	1591.7
43°	1574.7	1575.2	1575.2	1572.7	1570.3	1572.7	1575.2	1575.2	1574.7	1575.2	1575.2
43.5°	1557.7	1558.2	1558.2	1555.8	1553.3	1555.8	1558.2	1558.2	1557.7	1558.2	1558.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1503.8	1503.8	1503.3	1500.9	1498.5	1500.9	1503.3	1503.8	1503.8	1503.8	1503.3
45.5°	1484.4	1484.4	1483.9	1481.0	1478.6	1481.0	1483.9	1484.4	1484.4	1484.4	1483.9
46°	1464.5	1464.5	1463.6	1460.6	1457.7	1460.6	1463.6	1464.5	1464.5	1464.5	1463.6
46.5°	1443.2	1443.2	1442.2	1438.8	1436.9	1438.8	1442.2	1443.2	1443.2	1443.2	1442.2
47°	1420.8	1420.8	1419.4	1416.5	1414.1	1416.5	1419.4	1420.8	1420.8	1420.8	1419.4
47.5°	1397.6	1397.6	1396.1	1393.2	1390.8	1393.2	1396.1	1397.6	1397.6	1397.6	1396.1
48°	1373.3	1373.3	1372.3	1369.4	1367.5	1369.4	1372.3	1373.3	1373.3	1373.3	1372.3
48.5°	1348.1	1348.1	1347.1	1345.1	1343.2	1345.1	1347.1	1348.1	1348.1	1348.1	1347.1
49°	1321.4	1321.4	1320.9	1319.4	1318.5	1319.4	1320.9	1321.4	1321.4	1321.4	1320.9
49.5°	1294.7	1294.2	1294.7	1293.2	1292.7	1293.2	1294.7	1294.2	1294.7	1294.2	1294.7
50°	1266.1	1266.5	1267.5	1266.5	1266.1	1266.5	1267.5	1266.5	1266.1	1266.5	1267.5
50.5°	1236.4	1238.4	1239.8	1239.4	1239.4	1239.4	1239.8	1238.4	1236.4	1238.4	1239.8
51°	1208.3	1209.3	1210.7	1212.2	1213.2	1212.2	1210.7	1209.3	1208.3	1209.3	1210.7
51.5°	1180.6	1181.1	1183.1	1184.5	1186.0	1184.5	1183.1	1181.1	1180.6	1181.1	1183.1
52°	1153.0	1154.0	1155.9	1157.8	1160.3	1157.8	1155.9	1154.0	1153.0	1154.0	1155.9
52.5°	1126.8	1127.8	1130.2	1132.6	1134.5	1132.6	1130.2	1127.8	1126.8	1127.8	1130.2
53°	1102.0	1103.0	1105.4	1107.4	1109.3	1107.4	1105.4	1103.0	1102.0	1103.0	1105.4
53.5°	1078.7	1079.7	1080.7	1081.7	1083.1	1081.7	1080.7	1079.7	1078.7	1079.7	1080.7
54°	1056.9	1055.9	1055.9	1055.4	1055.4	1055.4	1055.9	1055.9	1056.9	1055.9	1055.9
54.5°	1032.6	1031.7	1029.7	1027.3	1025.4	1027.3	1029.7	1031.7	1032.6	1031.7	1029.7
55°	1005.5	1003.5	1000.6	997.2	994.3	997.2	1000.6	1003.5	1005.5	1003.5	1000.6
55.5°	973.4	971.0	968.1	965.2	962.3	965.2	968.1	971.0	973.4	971.0	968.1
56°	937.5	936.1	933.2	930.2	926.9	930.2	933.2	936.1	937.5	936.1	933.2
56.5°	898.2	896.8	895.8	892.9	890.5	892.9	895.8	896.8	898.2	896.8	895.8
57°	857.0	856.0	855.5	853.1	850.2	853.1	855.5	856.0	857.0	856.0	855.5
57.5°	813.3	813.3	813.3	810.9	808.9	810.9	813.3	813.3	813.3	813.3	813.3
58°	769.1	769.6	770.1	768.7	766.7	768.7	770.1	769.6	769.1	769.6	770.1
58.5°	724.0	724.0	725.5	725.0	723.0	725.0	725.5	724.0	724.0	724.0	725.5
59°	677.9	678.9	680.3	680.8	680.3	680.8	680.3	678.9	677.9	678.9	680.3
59.5°	631.8	632.8	635.2	637.1	637.1	637.1	635.2	632.8	631.8	632.8	635.2
60°	585.2	587.2	590.1	594.0	593.5	594.0	590.1	587.2	585.2	587.2	590.1
60.5°	539.1	541.6	545.4	549.8	550.3	549.8	545.4	541.6	539.1	541.6	545.4
61°	494.5	497.4	501.3	506.1	507.6	506.1	501.3	497.4	494.5	497.4	501.3
61.5°	450.8	453.2	458.6	462.9	465.9	462.9	458.6	453.2	450.8	453.2	458.6
62°	407.1	410.5	416.4	421.7	425.6	421.7	416.4	410.5	407.1	410.5	416.4
62.5°	363.9	367.8	375.6	381.4	385.3	381.4	375.6	367.8	363.9	367.8	375.6
63°	322.7	327.1	335.8	342.1	346.5	342.1	335.8	327.1	322.7	327.1	335.8
63.5°	283.4	287.8	297.0	304.7	312.0	304.7	297.0	287.8	283.4	287.8	297.0
64°	245.5	250.4	259.6	269.8	278.1	269.8	259.6	250.4	245.5	250.4	259.6
64.5°	209.1	215.5	225.2	235.8	243.6	235.8	225.2	215.5	209.1	215.5	225.2
65°	175.2	183.4	192.6	202.8	209.6	202.8	192.6	183.4	175.2	183.4	192.6
65.5°	144.1	153.3	161.6	171.3	177.6	171.3	161.6	153.3	144.1	153.3	161.6
66°	115.5	126.7	133.0	142.7	148.5	142.7	133.0	126.7	115.5	126.7	133.0



TEST NUMBER: P776764

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMB-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	44.2	59.7	66.5	74.7	79.1	74.7	66.5	59.7	44.2	59.7	66.5
68°	25.7	41.2	50.5	56.3	61.6	56.3	50.5	41.2	25.7	41.2	50.5
68.5°	9.7	27.7	36.4	42.7	49.0	42.7	36.4	27.7	9.7	27.7	36.4
69°	4.9	16.5	23.3	29.6	36.4	29.6	23.3	16.5	4.9	16.5	23.3
69.5°	2.9	7.3	13.1	19.4	26.2	19.4	13.1	7.3	2.9	7.3	13.1
70°	1.5	3.4	7.3	11.2	16.0	11.2	7.3	3.4	1.5	3.4	7.3
70.5°	0.5	1.9	4.4	5.3	6.3	5.3	4.4	1.9	0.5	1.9	4.4
71°	0.5	1.0	2.4	2.9	2.4	2.9	2.4	1.0	0.5	1.0	2.4
71.5°	0.5	0.5	1.5	1.5	0.5	1.5	1.5	0.5	0.5	0.5	1.5
72°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
72.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
73°	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
73.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76°	0.0	0.0	0.0	0.0	0.0	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: P776764

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMB-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: P776764

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMB-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2272.0	2272.0	2272.0	2272.0	2272.0	2272.0
0.5°	2272.0	2271.5	2272.0	2272.0	2272.0	2272.0
1°	2271.5	2271.0	2271.5	2272.0	2272.0	2272.0
1.5°	2271.5	2271.0	2271.5	2271.5	2271.5	2271.5
2°	2270.5	2270.1	2270.5	2271.0	2271.0	2271.0
2.5°	2270.1	2269.1	2270.1	2270.1	2270.1	2269.6
3°	2269.1	2268.1	2269.1	2269.1	2269.1	2268.6
3.5°	2267.6	2267.1	2267.6	2267.6	2267.6	2267.6
4°	2266.2	2265.2	2266.2	2266.2	2266.2	2266.2
4.5°	2264.7	2263.8	2264.7	2264.7	2264.7	2264.7
5°	2262.8	2261.8	2262.8	2262.8	2262.8	2262.8
5.5°	2260.8	2259.9	2260.8	2260.8	2260.8	2260.8
6°	2258.4	2257.9	2258.4	2258.4	2258.9	2258.4
6.5°	2256.0	2255.5	2256.0	2256.5	2256.5	2256.0
7°	2253.6	2253.1	2253.6	2253.6	2253.6	2253.6
7.5°	2251.1	2250.2	2251.1	2250.6	2250.6	2250.6
8°	2247.7	2247.3	2247.7	2247.7	2247.7	2247.7
8.5°	2244.8	2243.9	2244.8	2244.8	2244.8	2244.8
9°	2241.4	2240.9	2241.4	2241.4	2241.4	2241.4
9.5°	2238.0	2237.1	2238.0	2238.0	2238.0	2237.5
10°	2234.1	2233.7	2234.1	2234.1	2234.1	2234.1
10.5°	2230.3	2229.8	2230.3	2230.3	2230.3	2230.3
11°	2226.4	2225.4	2226.4	2225.9	2225.9	2225.9
11.5°	2222.0	2221.0	2222.0	2221.5	2221.5	2221.5
12°	2217.2	2216.7	2217.2	2217.2	2217.2	2217.2
12.5°	2212.8	2211.8	2212.8	2212.3	2212.3	2212.3
13°	2207.5	2207.0	2207.5	2207.5	2207.5	2207.5
13.5°	2202.6	2201.6	2202.6	2202.6	2202.6	2202.1
14°	2197.3	2196.3	2197.3	2197.3	2197.3	2196.8
14.5°	2191.4	2191.0	2191.4	2191.4	2191.4	2191.4
15°	2186.1	2185.1	2186.1	2185.6	2185.6	2185.6
15.5°	2179.8	2179.3	2179.8	2179.8	2179.8	2179.8
16°	2174.0	2173.0	2174.0	2174.0	2174.0	2173.5
16.5°	2167.7	2167.2	2167.7	2167.7	2167.2	2167.2
17°	2160.9	2160.4	2160.9	2161.4	2160.9	2160.9
17.5°	2154.6	2154.1	2154.6	2154.6	2154.1	2154.1
18°	2147.3	2146.8	2147.3	2147.3	2147.3	2147.3
18.5°	2140.5	2139.5	2140.5	2140.5	2140.0	2140.0
19°	2133.2	2132.2	2133.2	2133.2	2132.7	2132.7
19.5°	2125.5	2125.0	2125.5	2125.5	2125.5	2125.5
20°	2117.7	2117.2	2117.7	2117.7	2117.7	2117.7
20.5°	2109.9	2109.0	2109.9	2109.9	2109.9	2109.4
21°	2101.7	2101.2	2101.7	2101.7	2101.7	2101.7

TEST NUMBER: P776764

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMB-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2076.4	2075.5	2076.4	2076.4	2076.4	2076.0
23°	2067.2	2066.7	2067.2	2067.2	2067.2	2067.2
23.5°	2058.5	2057.5	2058.5	2058.5	2058.5	2058.0
24°	2048.8	2048.3	2048.8	2049.3	2048.8	2048.8
24.5°	2039.6	2038.6	2039.6	2040.0	2039.6	2039.1
25°	2029.9	2028.9	2029.9	2030.3	2029.9	2029.9
25.5°	2020.1	2019.2	2020.1	2020.6	2020.1	2019.7
26°	2010.0	2009.0	2010.0	2010.4	2010.0	2010.0
26.5°	1999.8	1998.8	1999.8	2000.3	2000.3	1999.8
27°	1989.6	1988.6	1989.6	1990.1	1989.6	1989.6
27.5°	1978.9	1977.9	1978.9	1979.4	1979.4	1978.9
28°	1968.2	1967.3	1968.2	1968.7	1968.7	1968.2
28.5°	1957.5	1956.6	1957.5	1958.0	1957.5	1957.5
29°	1946.4	1944.9	1946.4	1946.9	1946.9	1946.4
29.5°	1935.2	1933.8	1935.2	1935.7	1935.7	1935.2
30°	1923.6	1922.6	1923.6	1924.6	1924.6	1924.1
30.5°	1912.4	1911.0	1912.4	1912.9	1912.9	1912.9
31°	1900.3	1899.3	1900.3	1901.7	1901.3	1900.8
31.5°	1888.6	1887.2	1888.6	1889.6	1889.6	1889.1
32°	1877.0	1875.1	1877.0	1878.0	1878.0	1877.5
32.5°	1864.4	1862.9	1864.4	1865.8	1865.8	1865.3
33°	1852.7	1850.8	1852.7	1853.7	1853.7	1852.7
33.5°	1840.1	1838.2	1840.1	1841.6	1841.1	1840.6
34°	1827.5	1826.0	1827.5	1829.0	1828.5	1828.0
34.5°	1814.9	1813.4	1814.9	1816.3	1815.9	1815.4
35°	1802.3	1800.3	1802.3	1803.7	1803.2	1802.8
35.5°	1789.2	1787.2	1789.2	1790.6	1790.6	1789.6
36°	1776.1	1774.1	1776.1	1778.0	1777.5	1777.0
36.5°	1763.0	1761.0	1763.0	1764.9	1764.4	1763.9
37°	1749.4	1747.9	1749.4	1751.3	1750.8	1750.3
37.5°	1735.8	1733.8	1735.8	1738.2	1737.7	1736.8
38°	1722.2	1720.7	1722.2	1724.6	1723.7	1723.2
38.5°	1708.6	1706.7	1708.6	1710.6	1710.1	1709.1
39°	1694.5	1692.6	1694.5	1697.0	1696.5	1695.5
39.5°	1680.5	1678.0	1680.5	1682.4	1681.9	1681.4
40°	1665.9	1663.5	1665.9	1667.8	1667.8	1666.9
40.5°	1650.9	1648.9	1650.9	1653.3	1652.8	1652.3
41°	1636.3	1633.9	1636.3	1638.7	1638.2	1637.3
41.5°	1620.8	1618.8	1620.8	1623.2	1622.7	1622.2
42°	1605.2	1602.8	1605.2	1607.7	1607.2	1606.7
42.5°	1589.2	1586.8	1589.2	1591.7	1591.7	1590.7
43°	1572.7	1570.3	1572.7	1575.2	1575.2	1574.7
43.5°	1555.8	1553.3	1555.8	1558.2	1558.2	1557.7



TEST NUMBER: P776764

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMB-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1500.9	1498.5	1500.9	1503.3	1503.8	1503.8
45.5°	1481.0	1478.6	1481.0	1483.9	1484.4	1484.4
46°	1460.6	1457.7	1460.6	1463.6	1464.5	1464.5
46.5°	1438.8	1436.9	1438.8	1442.2	1443.2	1443.2
47°	1416.5	1414.1	1416.5	1419.4	1420.8	1420.8
47.5°	1393.2	1390.8	1393.2	1396.1	1397.6	1397.6
48°	1369.4	1367.5	1369.4	1372.3	1373.3	1373.3
48.5°	1345.1	1343.2	1345.1	1347.1	1348.1	1348.1
49°	1319.4	1318.5	1319.4	1320.9	1321.4	1321.4
49.5°	1293.2	1292.7	1293.2	1294.7	1294.2	1294.7
50°	1266.5	1266.1	1266.5	1267.5	1266.5	1266.1
50.5°	1239.4	1239.4	1239.4	1239.8	1238.4	1236.4
51°	1212.2	1213.2	1212.2	1210.7	1209.3	1208.3
51.5°	1184.5	1186.0	1184.5	1183.1	1181.1	1180.6
52°	1157.8	1160.3	1157.8	1155.9	1154.0	1153.0
52.5°	1132.6	1134.5	1132.6	1130.2	1127.8	1126.8
53°	1107.4	1109.3	1107.4	1105.4	1103.0	1102.0
53.5°	1081.7	1083.1	1081.7	1080.7	1079.7	1078.7
54°	1055.4	1055.4	1055.4	1055.9	1055.9	1056.9
54.5°	1027.3	1025.4	1027.3	1029.7	1031.7	1032.6
55°	997.2	994.3	997.2	1000.6	1003.5	1005.5
55.5°	965.2	962.3	965.2	968.1	971.0	973.4
56°	930.2	926.9	930.2	933.2	936.1	937.5
56.5°	892.9	890.5	892.9	895.8	896.8	898.2
57°	853.1	850.2	853.1	855.5	856.0	857.0
57.5°	810.9	808.9	810.9	813.3	813.3	813.3
58°	768.7	766.7	768.7	770.1	769.6	769.1
58.5°	725.0	723.0	725.0	725.5	724.0	724.0
59°	680.8	680.3	680.8	680.3	678.9	677.9
59.5°	637.1	637.1	637.1	635.2	632.8	631.8
60°	594.0	593.5	594.0	590.1	587.2	585.2
60.5°	549.8	550.3	549.8	545.4	541.6	539.1
61°	506.1	507.6	506.1	501.3	497.4	494.5
61.5°	462.9	465.9	462.9	458.6	453.2	450.8
62°	421.7	425.6	421.7	416.4	410.5	407.1
62.5°	381.4	385.3	381.4	375.6	367.8	363.9
63°	342.1	346.5	342.1	335.8	327.1	322.7
63.5°	304.7	312.0	304.7	297.0	287.8	283.4
64°	269.8	278.1	269.8	259.6	250.4	245.5
64.5°	235.8	243.6	235.8	225.2	215.5	209.1
65°	202.8	209.6	202.8	192.6	183.4	175.2
65.5°	171.3	177.6	171.3	161.6	153.3	144.1
66°	142.7	148.5	142.7	133.0	126.7	115.5



TEST NUMBER: P776764

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMB-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	74.7	79.1	74.7	66.5	59.7	44.2
68°	56.3	61.6	56.3	50.5	41.2	25.7
68.5°	42.7	49.0	42.7	36.4	27.7	9.7
69°	29.6	36.4	29.6	23.3	16.5	4.9
69.5°	19.4	26.2	19.4	13.1	7.3	2.9
70°	11.2	16.0	11.2	7.3	3.4	1.5
70.5°	5.3	6.3	5.3	4.4	1.9	0.5
71°	2.9	2.4	2.9	2.4	1.0	0.5
71.5°	1.5	0.5	1.5	1.5	0.5	0.5
72°	0.5	0.5	0.5	0.5	0.5	0.5
72.5°	0.5	0.5	0.5	0.5	0.5	0.5
73°	0.5	0.5	0.5	0.0	0.0	0.0
73.5°	0.0	0.0	0.0	0.0	0.0	0.0
74°	0.0	0.0	0.0	0.0	0.0	0.0
74.5°	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0
75.5°	0.0	0.0	0.0	0.0	0.0	0.0
76°	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
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: P776764

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMB-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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Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

Scaled Data Report





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

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Scaled Data Report



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Scaled Data Report





21.5°	2093.4	2093.4	2093.4	2093.4	2092.5	2093.4	2093.4	2093.4	2093.4	2093.4	2093.4
22°	2084.7	2084.7	2085.2	2085.2	2084.2	2085.2	2085.2	2084.7	2084.7	2084.7	2085.2



44°	1540.2	1540.7	1540.2	1537.8	1535.9	1537.8	1540.2	1540.7	1540.2	1540.7	1540.2
44.5°	1522.3	1522.8	1522.8	1519.8	1516.9	1519.8	1522.8	1522.8	1522.3	1522.8	1522.8



66.5°	91.2	102.4	107.7	116.9	122.3	116.9	107.7	102.4	91.2	102.4	107.7
67°	67.5	78.6	86.4	94.1	98.5	94.1	86.4	78.6	67.5	78.6	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°	2093.4	2092.5	2093.4	2093.4	2093.4	2093.4
22°	2085.2	2084.2	2085.2	2085.2	2084.7	2084.7



44°	1537.8	1535.9	1537.8	1540.2	1540.7	1540.2
44.5°	1519.8	1516.9	1519.8	1522.8	1522.8	1522.3

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66.5°	116.9	122.3	116.9	107.7	102.4	91.2
67°	94.1	98.5	94.1	86.4	78.6	67.5

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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)