

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: P776811

Luminaire Tested: HCDJBS4050CSD-HCD8TRMB-5000lm-3000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776811
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2310613A001)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD8TRMB-5000lm-3000K
Description: 8 INCH ROUND MEDIUM MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3426.6 lumens
Efficiency: N/A
Efficacy: 71.4 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.25 / 1.15
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

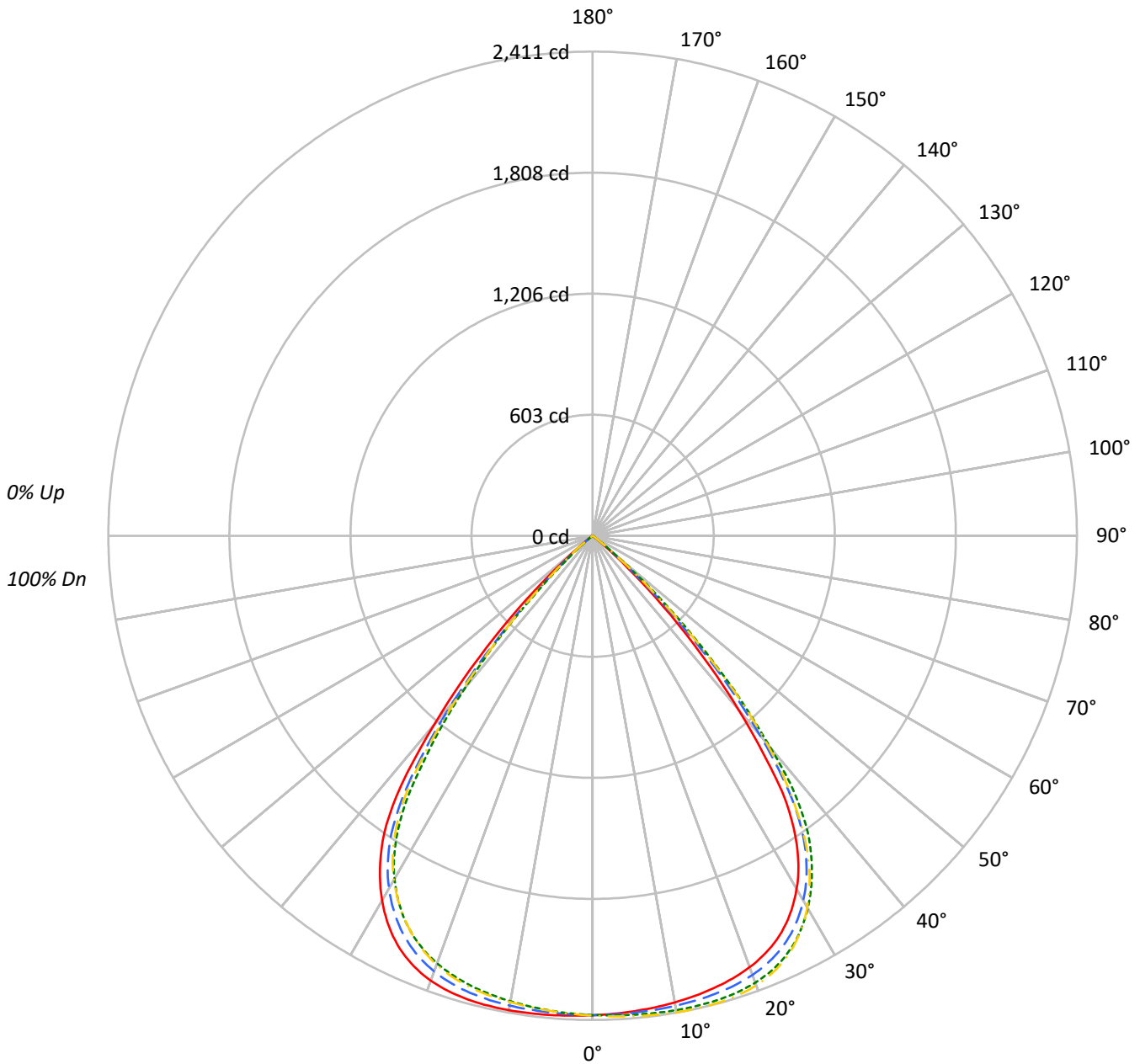
Input Watts (W): 48
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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					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	99	97	97	95	94	93
	1	113	110	107	105	111	108	106	103	104	102	100	100	99	97	97	95	94	93	93	92	90	94	91	89	85
	2	107	102	97	94	105	100	96	92	97	93	90	94	91	89	91	89	87	85	85	82	81	85	82	79	78
	3	101	94	88	84	99	92	87	83	90	85	82	87	84	81	85	82	79	78	78	75	74	79	76	73	71
	4	95	87	81	76	93	85	80	76	83	78	75	81	77	74	79	76	73	71	71	68	67	74	70	67	65
	5	89	80	74	69	88	79	73	69	77	72	68	76	71	67	74	70	67	65	65	62	62	67	63	61	60
	6	84	74	68	63	83	74	67	63	72	66	62	70	66	62	69	65	61	60	60	57	57	61	56	52	51
	7	79	69	62	58	78	68	62	58	67	61	57	66	61	57	65	60	57	55	55	53	53	60	56	52	51
	8	75	64	58	53	73	64	57	53	63	57	53	61	56	53	60	56	52	51	51	49	49	57	52	48	47
	9	71	60	53	49	69	59	53	49	58	53	49	57	52	49	57	52	48	47	47	45	45	53	48	45	43
	10	67	56	50	45	66	56	49	45	55	49	45	54	49	45	53	48	45	43	43	41	41	49	44	41	40

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	72888	72888	72888	72888
5°	72826	73366	73409	72756
10°	73135	74360	74372	72977
15°	73711	75665	75576	73389
20°	74275	76932	76585	73596
25°	74036	77294	76448	72769
30°	71600	75516	73895	69569
35°	64407	70434	67385	60404
40°	45075	54740	48889	39241
45°	21467	30616	24999	16208
50°	4370	8212	4655	2076
55°	197	298	176	122
60°	55	55	55	55
65°	36	36	36	36
70°	45	45	45	45
75°	0	0	0	0
80°	0	0	0	0
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 30616 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	227.5	6.6
10°-20°	667.6	19.5
20°-30°	1022.5	29.8
30°-40°	1064.0	31.1
40°-50°	429.6	12.5
50°-60°	14.7	0.4
60°-70°	0.6	0.0
70°-80°	0.1	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°	1917.6	56.0
0°-40°	2981.6	87.0
0°-60°	3425.9	100.0
0°-90°	3426.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3426.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2387	2387	2387	2387	2387	
5°	2376	2394	2395	2374	2376	226
15°	2332	2394	2391	2322	2332	659
25°	2198	2294	2269	2160	2198	1008
35°	1728	1890	1808	1621	1728	1039
45°	497	709	579	375	497	400
55°	4	6	3	2	4	12
65°	0	0	0	0	0	1
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°	2387.4	2387.4	2387.4	2387.4	2387.4	2387.4	2387.4	2387.4	2387.4	2387.4	2387.4
0.5°	2386.5	2385.6	2386.5	2387.0	2387.4	2389.8	2390.7	2390.7	2388.4	2387.0	2386.5
1°	2385.6	2385.6	2386.5	2387.4	2388.4	2391.1	2392.1	2391.6	2389.3	2387.4	2386.0
1.5°	2384.6	2384.6	2386.5	2387.9	2389.3	2392.1	2393.5	2393.0	2390.2	2387.4	2386.0
2°	2383.7	2384.2	2386.0	2388.4	2390.2	2393.0	2394.4	2393.9	2390.7	2387.9	2386.0
2.5°	2382.8	2383.2	2386.0	2388.8	2390.7	2393.9	2395.8	2394.9	2391.6	2388.4	2385.6
3°	2381.4	2382.8	2385.6	2388.8	2391.1	2395.3	2396.7	2396.3	2392.5	2388.8	2385.1
3.5°	2380.5	2381.9	2385.6	2388.8	2392.1	2395.8	2397.7	2397.2	2393.5	2388.8	2384.6
4°	2379.1	2380.9	2384.6	2389.3	2392.5	2396.7	2399.0	2398.1	2394.4	2388.8	2384.6
4.5°	2377.7	2380.0	2384.2	2389.3	2393.0	2398.1	2400.0	2399.0	2394.9	2389.3	2383.7
5°	2376.3	2379.1	2383.7	2389.3	2393.9	2399.0	2400.9	2400.4	2395.3	2389.3	2383.2
5.5°	2374.9	2377.7	2383.2	2389.8	2394.4	2400.0	2402.3	2401.4	2396.3	2389.3	2382.8
6°	2373.5	2376.7	2382.8	2389.8	2394.9	2400.9	2403.2	2401.8	2396.7	2389.8	2382.3
6.5°	2372.1	2375.3	2381.9	2389.8	2395.8	2401.8	2404.2	2402.8	2397.2	2389.8	2381.9
7°	2370.7	2374.0	2381.4	2389.8	2396.3	2402.3	2405.1	2403.7	2397.7	2389.3	2380.9
7.5°	2368.8	2372.6	2380.9	2390.2	2396.7	2403.2	2406.0	2404.6	2398.1	2389.3	2380.5
8°	2367.0	2371.2	2380.0	2389.8	2397.2	2404.2	2406.9	2405.1	2398.6	2389.8	2379.5
8.5°	2365.1	2369.3	2379.1	2390.2	2397.7	2404.6	2407.4	2406.0	2398.6	2389.3	2378.6
9°	2363.3	2367.9	2378.1	2389.8	2398.1	2405.1	2408.3	2406.5	2399.0	2388.8	2378.1
9.5°	2360.9	2366.1	2377.2	2389.8	2398.1	2405.6	2408.8	2406.9	2399.0	2388.8	2376.7
10°	2359.1	2364.2	2376.3	2389.3	2398.6	2406.0	2409.3	2407.4	2399.0	2388.4	2375.8
10.5°	2356.8	2362.3	2375.3	2389.3	2398.6	2406.5	2409.7	2407.4	2399.0	2387.9	2374.4
11°	2354.4	2360.5	2374.0	2388.8	2398.6	2406.9	2410.2	2407.9	2398.6	2387.0	2373.0
11.5°	2352.1	2358.2	2372.6	2388.4	2398.6	2406.9	2410.2	2407.9	2398.6	2386.0	2371.6
12°	2349.8	2355.8	2371.6	2387.9	2398.6	2406.9	2410.7	2407.9	2398.1	2385.1	2369.8
12.5°	2347.0	2354.0	2370.2	2387.4	2398.1	2406.9	2410.7	2407.4	2397.2	2384.2	2368.4
13°	2344.2	2351.2	2368.4	2386.5	2397.7	2406.9	2410.2	2407.4	2396.7	2382.8	2366.1
13.5°	2341.4	2348.9	2367.0	2385.6	2396.7	2406.9	2409.7	2406.9	2395.8	2380.9	2364.2
14°	2338.2	2346.5	2365.1	2384.6	2395.8	2406.0	2409.3	2406.5	2394.4	2379.5	2361.4
14.5°	2335.4	2343.8	2363.3	2383.2	2395.3	2405.6	2408.8	2405.6	2393.0	2377.7	2359.1
15°	2332.1	2341.0	2360.9	2381.9	2393.9	2404.6	2407.9	2404.6	2391.1	2375.3	2356.3
15.5°	2328.4	2338.2	2358.6	2380.0	2393.0	2403.7	2406.5	2403.2	2389.3	2373.0	2353.0
16°	2324.7	2334.9	2356.3	2378.1	2391.1	2402.3	2405.1	2401.4	2387.0	2370.2	2349.8
16.5°	2321.0	2331.7	2353.5	2376.3	2389.3	2400.4	2403.7	2399.5	2384.6	2367.0	2346.1
17°	2316.8	2328.0	2350.7	2373.5	2387.4	2398.6	2401.4	2396.7	2381.9	2363.7	2341.9
17.5°	2312.2	2324.2	2347.5	2370.7	2385.1	2396.3	2399.0	2394.4	2379.1	2360.0	2337.2
18°	2307.5	2320.5	2343.8	2367.4	2382.3	2393.5	2396.7	2391.1	2375.3	2355.8	2332.1
18.5°	2302.9	2315.9	2340.5	2364.2	2379.5	2390.2	2393.5	2387.4	2371.6	2351.2	2327.0
19°	2297.3	2311.7	2336.3	2360.5	2375.8	2386.5	2390.2	2383.7	2367.0	2346.1	2321.4
19.5°	2291.7	2306.6	2331.7	2355.8	2372.1	2382.8	2386.5	2379.1	2362.3	2340.5	2314.9
20°	2286.1	2301.5	2327.0	2351.2	2367.9	2378.6	2381.9	2374.4	2357.2	2334.5	2308.0
20.5°	2279.6	2295.9	2321.4	2346.1	2363.3	2373.5	2377.2	2368.8	2351.2	2328.0	2300.5
21°	2272.7	2289.8	2315.9	2340.5	2357.7	2367.9	2371.6	2363.3	2345.1	2320.5	2293.1



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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°	2249.4	2269.4	2295.4	2320.5	2339.6	2347.9	2351.2	2341.4	2321.9	2295.9	2265.7
23°	2240.6	2261.5	2287.5	2312.6	2332.1	2340.0	2343.3	2333.1	2313.1	2286.1	2255.5
23.5°	2230.8	2253.1	2279.2	2303.8	2323.3	2331.2	2334.5	2323.3	2303.3	2275.4	2244.8
24°	2220.6	2243.8	2269.9	2295.0	2315.4	2321.9	2325.2	2313.5	2293.1	2264.8	2233.2
24.5°	2209.9	2234.6	2260.1	2284.7	2306.1	2311.7	2314.0	2302.9	2281.5	2252.7	2220.6
25°	2197.8	2223.9	2249.9	2274.1	2294.5	2301.0	2303.3	2291.2	2269.4	2240.1	2207.6
25.5°	2185.8	2212.7	2238.3	2262.9	2283.8	2288.9	2290.8	2278.7	2256.4	2226.7	2194.1
26°	2172.3	2200.2	2226.2	2250.8	2272.2	2276.4	2277.8	2265.2	2242.5	2212.3	2179.3
26.5°	2158.4	2187.6	2213.6	2237.8	2259.2	2262.0	2263.4	2250.8	2227.6	2196.9	2163.5
27°	2143.0	2173.2	2199.7	2224.3	2244.3	2247.6	2248.0	2235.5	2211.8	2181.1	2147.2
27.5°	2126.8	2158.8	2184.8	2209.9	2230.4	2232.2	2232.2	2219.2	2195.1	2163.9	2129.1
28°	2109.6	2142.6	2169.0	2194.1	2214.6	2215.0	2215.5	2201.6	2177.4	2145.8	2111.0
28.5°	2091.4	2125.4	2152.8	2178.3	2197.8	2197.4	2196.9	2183.0	2158.4	2126.3	2091.9
29°	2071.9	2107.2	2135.1	2161.1	2180.2	2178.8	2178.3	2163.5	2138.8	2106.8	2071.5
29.5°	2052.4	2088.7	2117.0	2143.0	2162.1	2158.8	2157.9	2143.0	2117.9	2085.9	2050.1
30°	2031.0	2068.2	2097.5	2124.4	2142.1	2137.9	2136.5	2121.6	2096.1	2064.5	2027.8
30.5°	2009.2	2046.8	2077.0	2104.5	2122.1	2116.1	2114.2	2098.9	2073.3	2041.7	2004.5
31°	1985.0	2023.6	2055.7	2083.1	2100.3	2092.4	2090.0	2074.7	2049.6	2017.6	1979.5
31.5°	1959.9	1999.9	2033.4	2061.2	2077.5	2068.7	2065.9	2049.6	2025.0	1992.5	1953.0
32°	1933.5	1973.9	2008.7	2038.9	2054.3	2043.6	2038.5	2023.1	1998.5	1966.4	1924.6
32.5°	1905.1	1946.0	1982.7	2014.3	2030.6	2016.2	2010.1	1994.8	1970.6	1939.0	1893.5
33°	1874.0	1916.7	1955.3	1989.2	2004.1	1987.8	1980.9	1964.6	1941.8	1909.8	1861.9
33.5°	1841.9	1884.7	1925.6	1962.7	1977.6	1958.5	1949.3	1933.5	1912.1	1879.1	1828.0
34°	1806.1	1852.1	1895.8	1934.8	1949.7	1927.9	1916.3	1900.0	1880.0	1846.1	1791.7
34.5°	1768.5	1816.4	1862.4	1905.6	1920.4	1894.4	1880.5	1864.7	1845.2	1809.9	1752.2
35°	1728.1	1777.3	1828.0	1873.5	1889.8	1858.6	1841.9	1826.6	1808.0	1769.4	1706.7
35.5°	1686.3	1735.0	1789.9	1839.1	1855.9	1818.7	1801.5	1785.2	1767.1	1724.4	1658.8
36°	1640.3	1690.0	1750.4	1801.5	1820.1	1777.8	1758.7	1741.1	1722.5	1677.0	1607.7
36.5°	1586.4	1641.2	1705.8	1758.7	1780.6	1731.8	1712.7	1695.1	1674.2	1624.5	1551.0
37°	1524.6	1584.5	1657.0	1714.6	1736.0	1686.3	1666.3	1646.8	1621.7	1567.8	1491.6
37.5°	1458.1	1521.3	1604.5	1665.3	1689.5	1635.6	1617.9	1597.0	1563.1	1503.6	1427.4
38°	1392.1	1457.2	1548.7	1616.6	1640.3	1583.6	1569.2	1544.5	1499.0	1435.3	1363.3
38.5°	1324.3	1394.4	1489.7	1559.4	1586.4	1526.9	1518.0	1490.6	1431.2	1365.6	1295.9
39°	1259.2	1335.0	1427.9	1502.7	1521.3	1469.3	1464.1	1433.5	1361.9	1292.7	1225.8
39.5°	1195.1	1274.1	1362.9	1439.5	1447.4	1407.0	1403.7	1373.1	1292.7	1221.1	1154.2
40°	1131.0	1214.6	1295.9	1375.4	1373.5	1342.4	1344.3	1309.0	1226.7	1150.5	1083.1
40.5°	1064.5	1149.1	1229.5	1303.8	1302.9	1274.1	1286.2	1244.4	1162.6	1080.8	1007.4
41°	997.2	1080.8	1162.6	1231.4	1238.3	1207.2	1222.1	1178.4	1097.5	1013.0	934.0
41.5°	931.6	1010.2	1093.8	1158.4	1174.2	1137.5	1156.5	1109.6	1031.5	943.7	862.4
42°	865.7	943.3	1026.0	1084.1	1108.7	1072.4	1089.2	1041.3	963.2	875.4	796.9
42.5°	802.0	877.3	957.7	1009.2	1042.7	1006.9	1019.9	973.5	897.3	807.1	726.3
43°	740.7	811.8	888.4	938.2	971.6	941.9	947.9	903.3	829.4	738.3	662.1
43.5°	677.9	747.6	817.3	865.7	902.4	875.4	878.7	835.5	765.8	673.3	598.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	497.2	553.9	605.5	666.3	709.1	677.0	666.8	639.4	579.0	502.3	430.7
45.5°	438.6	492.1	540.4	603.1	646.3	613.4	602.2	574.3	520.0	449.3	377.3
46°	385.2	433.1	479.5	545.5	584.5	551.1	536.2	512.5	464.2	396.8	323.9
46.5°	332.7	376.4	421.9	488.4	521.3	494.4	481.4	456.3	408.4	344.3	270.9
47°	283.0	322.9	367.5	433.5	467.4	437.2	426.6	400.5	352.7	291.3	229.5
47.5°	236.5	270.9	318.3	380.6	413.5	380.1	371.7	344.8	296.9	245.8	191.9
48°	195.6	224.4	271.8	328.5	359.6	322.9	316.9	288.6	249.1	204.0	158.4
48.5°	158.9	182.6	230.0	280.7	305.7	265.8	262.1	241.2	204.9	165.9	128.2
49°	136.6	148.7	192.8	237.0	259.3	217.0	219.3	196.1	164.5	131.5	102.7
49.5°	114.3	125.5	158.0	197.5	214.2	175.6	177.5	157.1	129.2	101.8	79.9
50°	92.0	102.2	134.8	161.2	172.9	139.4	139.4	122.7	98.0	84.6	66.0
50.5°	69.2	79.0	112.0	136.6	135.2	106.9	106.9	92.0	80.9	66.9	52.5
51°	47.4	56.2	89.2	112.4	102.2	88.3	87.8	75.7	63.7	49.7	38.6
51.5°	34.4	42.3	66.4	88.3	84.6	69.2	69.2	59.5	46.5	32.1	24.6
52°	23.7	30.2	43.7	64.1	66.9	50.6	50.2	43.2	29.3	14.4	11.2
52.5°	14.9	20.0	29.7	40.0	48.8	32.1	31.1	27.0	12.5	9.3	7.4
53°	12.5	17.2	18.6	25.6	31.1	13.9	12.5	10.2	8.4	7.0	6.0
53.5°	9.8	13.9	15.3	14.9	13.9	8.8	8.4	7.4	6.5	5.6	4.6
54°	7.0	10.7	11.6	12.1	8.8	7.0	6.5	6.0	5.1	4.2	3.7
54.5°	4.6	7.4	8.4	9.3	7.0	5.6	5.1	4.6	3.7	3.3	2.8
55°	3.7	4.2	5.1	7.0	5.6	4.2	4.2	3.7	3.3	2.8	2.3
55.5°	2.8	3.3	3.7	4.2	4.2	3.3	3.3	2.8	2.3	2.3	1.9
56°	2.3	2.8	3.3	3.3	3.3	2.3	2.3	2.3	1.9	1.9	1.9
56.5°	1.9	2.3	2.3	2.8	2.3	1.9	1.9	1.9	1.9	1.4	1.4
57°	1.9	1.9	1.9	2.3	1.9	1.9	1.9	1.9	1.4	1.4	1.4
57.5°	1.4	1.4	1.9	1.9	1.9	1.4	1.4	1.4	1.4	1.4	1.4
58°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.9
58.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.9	0.9	0.9
59°	0.9	1.4	1.4	1.4	1.4	0.9	0.9	0.9	0.9	0.9	0.9
59.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
60°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
60.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
61°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
61.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
62°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.5	0.5	0.5
62.5°	0.9	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.5	0.5	0.5
63°	0.5	0.9	0.9	0.9	0.5	0.5	0.5	0.5	0.5	0.5	0.5
63.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
64°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
64.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
65°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
65.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
66°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5



TEST NUMBER: P776811

CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
68°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
68.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
69°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
69.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
70°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
70.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
71°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0
71.5°	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
72°	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
73°	0.0	0.0	0.0	0.0	0.0	0.0	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: P776811

CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMB-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: P776811

CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2387.4	2387.4	2387.4	2387.4	2387.4	2387.4
0.5°	2386.0	2385.6	2387.4	2388.4	2388.4	2386.5
1°	2385.6	2384.6	2386.0	2387.0	2387.0	2385.6
1.5°	2384.6	2383.2	2384.6	2385.6	2385.6	2384.6
2°	2383.7	2382.3	2383.2	2384.2	2384.2	2383.7
2.5°	2383.2	2380.9	2382.3	2382.8	2383.2	2382.8
3°	2382.3	2380.0	2380.9	2381.4	2381.4	2381.4
3.5°	2380.9	2378.6	2379.1	2380.0	2380.0	2380.5
4°	2380.5	2377.2	2377.7	2378.6	2378.6	2379.1
4.5°	2379.1	2375.3	2376.3	2377.2	2377.2	2377.7
5°	2378.1	2374.0	2374.4	2375.3	2376.3	2376.3
5.5°	2376.7	2372.6	2373.0	2374.0	2374.4	2374.9
6°	2375.8	2370.7	2371.2	2372.6	2373.0	2373.5
6.5°	2374.4	2368.8	2369.8	2370.7	2371.6	2372.1
7°	2372.6	2367.0	2367.9	2369.3	2370.2	2370.7
7.5°	2371.2	2365.1	2366.1	2367.4	2368.4	2368.8
8°	2369.8	2363.3	2364.2	2366.1	2367.0	2367.0
8.5°	2367.9	2360.9	2361.9	2364.2	2365.1	2365.1
9°	2366.1	2358.6	2360.0	2362.3	2363.3	2363.3
9.5°	2364.7	2356.3	2357.7	2360.5	2361.4	2360.9
10°	2362.3	2354.0	2355.4	2358.6	2359.5	2359.1
10.5°	2360.5	2351.2	2353.0	2356.3	2357.2	2356.8
11°	2358.2	2348.9	2350.7	2354.4	2355.4	2354.4
11.5°	2355.8	2345.6	2347.9	2352.1	2353.0	2352.1
12°	2353.5	2342.8	2345.1	2349.8	2350.7	2349.8
12.5°	2350.7	2340.0	2341.9	2347.0	2348.4	2347.0
13°	2347.9	2336.8	2338.6	2344.2	2345.6	2344.2
13.5°	2344.7	2333.5	2335.9	2341.4	2342.4	2341.4
14°	2341.9	2329.8	2332.1	2338.2	2339.6	2338.2
14.5°	2338.2	2326.1	2328.4	2334.5	2336.3	2335.4
15°	2334.9	2321.9	2324.7	2330.7	2332.6	2332.1
15.5°	2331.2	2317.7	2320.1	2327.0	2328.9	2328.4
16°	2326.6	2313.1	2315.9	2322.4	2324.7	2324.7
16.5°	2322.4	2308.4	2311.2	2317.7	2320.5	2321.0
17°	2317.7	2303.3	2305.6	2312.6	2315.9	2316.8
17.5°	2312.6	2297.7	2300.5	2307.0	2310.8	2312.2
18°	2307.0	2291.7	2294.5	2301.0	2305.2	2307.5
18.5°	2301.0	2286.1	2288.5	2294.5	2299.1	2302.9
19°	2295.0	2279.6	2282.0	2287.5	2293.1	2297.3
19.5°	2288.5	2272.2	2275.0	2280.1	2286.1	2291.7
20°	2281.0	2265.2	2267.5	2272.2	2278.7	2286.1
20.5°	2273.6	2257.3	2259.6	2263.8	2270.8	2279.6
21°	2265.2	2249.0	2251.3	2254.5	2262.9	2272.7

TEST NUMBER: P776811

CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2237.8	2220.6	2222.5	2223.9	2234.1	2249.4
23°	2227.6	2209.9	2211.8	2212.3	2223.4	2240.6
23.5°	2216.0	2198.8	2200.2	2200.6	2211.8	2230.8
24°	2204.4	2186.7	2188.6	2188.1	2199.7	2220.6
24.5°	2191.8	2173.7	2175.5	2174.6	2187.2	2209.9
25°	2178.3	2160.2	2162.1	2160.2	2173.7	2197.8
25.5°	2164.4	2145.8	2147.2	2145.8	2159.3	2185.8
26°	2149.1	2130.9	2131.9	2130.0	2144.9	2172.3
26.5°	2133.3	2114.7	2116.1	2114.2	2129.1	2158.4
27°	2116.5	2097.0	2099.3	2097.0	2112.8	2143.0
27.5°	2098.4	2078.9	2081.7	2079.4	2095.2	2126.8
28°	2079.4	2059.8	2063.1	2059.8	2077.0	2109.6
28.5°	2059.4	2039.4	2043.6	2041.3	2057.5	2091.4
29°	2038.9	2018.5	2023.1	2020.3	2037.5	2071.9
29.5°	2017.1	1996.2	2002.2	1999.9	2017.6	2052.4
30°	1993.9	1973.4	1979.5	1977.6	1996.2	2031.0
30.5°	1968.8	1947.9	1956.7	1955.8	1973.9	2009.2
31°	1941.4	1921.8	1931.6	1931.1	1950.2	1985.0
31.5°	1912.5	1892.6	1905.1	1906.0	1924.6	1959.9
32°	1881.9	1862.4	1875.8	1877.2	1896.7	1933.5
32.5°	1848.4	1828.9	1845.6	1847.5	1867.0	1905.1
33°	1814.5	1794.1	1812.2	1815.0	1835.4	1874.0
33.5°	1776.4	1756.4	1779.2	1782.9	1803.8	1841.9
34°	1737.4	1714.6	1743.4	1748.1	1769.4	1806.1
34.5°	1694.6	1670.0	1704.8	1709.5	1732.3	1768.5
35°	1647.7	1620.7	1663.0	1667.2	1691.4	1728.1
35.5°	1594.7	1566.4	1615.2	1621.7	1646.8	1686.3
36°	1539.0	1506.0	1561.7	1570.1	1598.0	1640.3
36.5°	1476.2	1442.8	1501.8	1513.4	1542.7	1586.4
37°	1413.0	1381.4	1436.3	1451.6	1481.3	1524.6
37.5°	1346.6	1322.0	1365.6	1387.5	1414.9	1458.1
38°	1283.9	1260.6	1294.1	1318.7	1347.5	1392.1
38.5°	1219.3	1199.8	1226.2	1249.9	1279.2	1324.3
39°	1157.0	1128.7	1160.7	1176.5	1210.0	1259.2
39.5°	1092.9	1057.1	1098.0	1106.4	1139.8	1195.1
40°	1026.9	984.6	1032.5	1035.7	1067.8	1131.0
40.5°	958.1	921.9	964.2	964.6	999.5	1064.5
41°	887.5	859.6	896.8	894.0	933.0	997.2
41.5°	816.4	799.2	830.8	823.4	866.6	931.6
42°	748.1	735.6	766.7	756.9	800.6	865.7
42.5°	679.3	671.4	704.4	693.7	733.2	802.0
43°	612.0	608.2	644.0	632.4	669.1	740.7
43.5°	547.4	545.5	584.1	573.4	606.8	677.9



TEST NUMBER: P776811

CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	380.6	375.4	413.1	411.7	438.6	497.2
45.5°	324.8	322.0	361.0	365.2	388.0	438.6
46°	269.0	269.0	313.2	321.5	341.5	385.2
46.5°	225.8	222.1	269.0	280.2	298.3	332.7
47°	188.2	178.9	227.7	242.1	257.4	283.0
47.5°	154.3	154.3	189.6	206.3	220.2	236.5
48°	125.5	130.1	155.7	175.2	186.3	195.6
48.5°	99.9	105.9	132.0	151.0	155.2	158.9
49°	79.0	81.8	108.7	127.3	132.0	136.6
49.5°	65.5	57.6	86.0	104.1	108.7	114.3
50°	52.5	43.7	62.7	80.4	85.0	92.0
50.5°	39.5	32.1	46.5	56.7	62.3	69.2
51°	26.5	22.3	33.9	41.4	45.5	47.4
51.5°	13.5	13.9	22.8	27.9	31.6	34.4
52°	8.8	11.2	14.4	17.2	20.4	23.7
52.5°	6.5	8.8	11.6	13.9	17.2	14.9
53°	5.6	7.0	9.3	10.7	13.9	12.5
53.5°	4.2	4.6	7.0	7.9	10.7	9.8
54°	3.3	3.7	4.6	4.6	7.4	7.0
54.5°	2.8	2.8	3.7	3.7	4.2	4.6
55°	2.3	2.3	2.8	2.8	3.3	3.7
55.5°	1.9	1.9	2.3	2.3	2.8	2.8
56°	1.9	1.9	1.9	1.9	2.3	2.3
56.5°	1.4	1.4	1.9	1.9	1.9	1.9
57°	1.4	1.4	1.4	1.4	1.4	1.9
57.5°	1.4	1.4	1.4	1.4	1.4	1.4
58°	0.9	0.9	1.4	1.4	1.4	1.4
58.5°	0.9	0.9	0.9	1.4	1.4	1.4
59°	0.9	0.9	0.9	0.9	0.9	0.9
59.5°	0.9	0.9	0.9	0.9	0.9	0.9
60°	0.9	0.9	0.9	0.9	0.9	0.9
60.5°	0.9	0.9	0.9	0.9	0.9	0.9
61°	0.9	0.9	0.9	0.9	0.9	0.9
61.5°	0.9	0.9	0.9	0.9	0.9	0.9
62°	0.5	0.9	0.9	0.9	0.9	0.9
62.5°	0.5	0.5	0.9	0.9	0.9	0.9
63°	0.5	0.5	0.5	0.5	0.5	0.5
63.5°	0.5	0.5	0.5	0.5	0.5	0.5
64°	0.5	0.5	0.5	0.5	0.5	0.5
64.5°	0.5	0.5	0.5	0.5	0.5	0.5
65°	0.5	0.5	0.5	0.5	0.5	0.5
65.5°	0.5	0.5	0.5	0.5	0.5	0.5
66°	0.5	0.5	0.5	0.5	0.5	0.5



TEST NUMBER: P776811

CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	0.5	0.5	0.5	0.5	0.5	0.5
68°	0.5	0.5	0.5	0.5	0.5	0.5
68.5°	0.5	0.5	0.5	0.5	0.5	0.5
69°	0.5	0.5	0.5	0.5	0.5	0.5
69.5°	0.5	0.5	0.5	0.5	0.5	0.5
70°	0.5	0.5	0.5	0.5	0.5	0.5
70.5°	0.5	0.5	0.5	0.5	0.5	0.5
71°	0.5	0.5	0.5	0.5	0.5	0.5
71.5°	0.0	0.5	0.5	0.5	0.5	0.5
72°	0.0	0.0	0.5	0.5	0.5	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0
73°	0.0	0.0	0.0	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: P776811

CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMB-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



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Scaled Data Report





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

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21.5°	2265.7	2283.8	2309.8	2334.5	2352.1	2361.9	2365.6	2356.3	2338.2	2313.1	2284.7
22°	2257.8	2276.8	2302.9	2327.5	2346.5	2355.4	2358.6	2349.3	2330.3	2304.7	2275.9



44°	616.1	684.0	744.9	797.4	835.5	809.0	805.3	770.4	703.0	612.0	537.1
44.5°	555.7	618.9	673.3	729.5	770.4	742.5	737.9	704.4	641.7	554.8	483.7



66.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
67°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5



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°	2256.9	2240.1	2242.5	2245.2	2253.6	2265.7
22°	2247.6	2230.8	2232.7	2235.0	2244.3	2257.8



44°	491.6	486.0	526.0	515.3	547.4	616.1
44.5°	436.3	430.3	467.9	461.9	491.6	555.7

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66.5°	0.5	0.5	0.5	0.5	0.5	0.5
67°	0.5	0.5	0.5	0.5	0.5	0.5

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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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(END OF REPORT)