

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: P776239

Luminaire Tested: HCDJBL3040CSD-HCD41TRC-4000lm-5000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776239
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B028)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS3040CSD-HCD41TRC-4000lm-5000K
Description: 4 INCH ROUND SHALLOW-WIDE SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

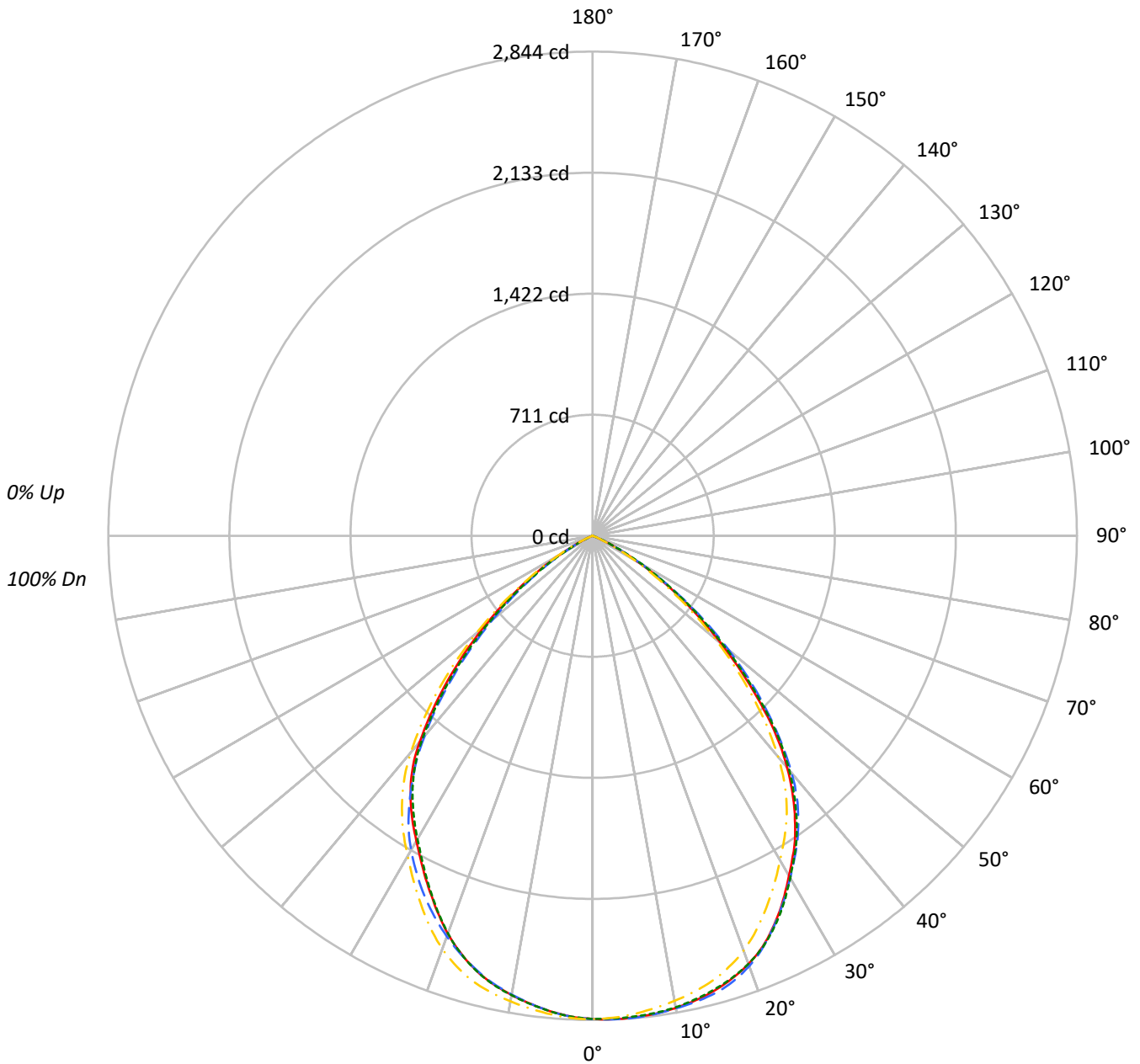
Lumens per Lamp: N/A
Luminaire Lumens: 4949.0 lumens
Efficiency: N/A
Efficacy: 128.5 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.16 / 1.22
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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								
1	112	109	106	103	110	107	104	101	102	100	98	99	97	95	95	94	93	91								
2	105	99	94	90	102	97	92	89	94	90	87	91	87	85	88	85	83	81								
3	98	90	83	78	95	88	82	78	85	80	76	83	79	75	80	77	74	72								
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64								
5	85	74	67	62	83	73	66	61	71	65	61	70	64	60	68	63	60	58								
6	79	68	61	55	77	67	60	55	65	59	55	64	58	54	62	58	54	52								
7	74	62	55	50	72	62	55	50	60	54	49	59	53	49	58	53	49	47								
8	69	58	50	45	68	57	50	45	56	49	45	55	49	45	53	48	44	43								
9	65	53	46	41	64	53	46	41	52	45	41	51	45	41	50	44	41	39								
10	61	49	42	38	60	49	42	38	48	42	38	47	42	37	46	41	37	36								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	357199	357199	357199	357199
5°	358716	358096	354370	354420
10°	359937	359311	350059	350212
15°	360367	359559	344368	344524
20°	358481	358361	333049	332727
25°	350205	351454	316573	315545
30°	335221	337300	300854	298892
35°	318576	321142	286451	283179
40°	291984	295089	259259	255431
45°	248761	253050	214446	208769
50°	193066	198176	163346	156297
55°	135465	140951	109333	101807
60°	78052	83413	56431	49837
65°	27158	30821	15366	12179
70°	920	1950	920	736
75°	778	972	778	778
80°	580	870	580	580
85°	0	578	0	578

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 256467 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	267.9	5.4
10°-20°	761.7	15.4
20°-30°	1105.3	22.3
30°-40°	1225.8	24.8
40°-50°	995.3	20.1
50°-60°	499.7	10.1
60°-70°	90.9	1.8
70°-80°	1.8	0.0
80°-90°	0.4	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°	2135.0	43.1
0°-40°	3360.8	67.9
0°-60°	4855.8	98.1
0°-90°	4949.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4949.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2838	2838	2838	2838	2838	
5°	2840	2835	2805	2806	2840	270
15°	2766	2760	2643	2644	2766	780
25°	2522	2531	2280	2272	2522	1157
35°	2074	2090	1864	1843	2074	1289
45°	1398	1422	1205	1173	1398	1069
55°	617	642	498	464	617	557
65°	91	104	52	41	91	108
75°	2	2	2	2	2	2
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2838.3	2838.3	2838.3	2838.3	2838.3	2838.3	2838.3	2838.3	2838.3	2838.3	2838.3
0.5°	2839.5	2839.5	2839.9	2840.7	2837.5	2838.3	2838.7	2838.7	2836.6	2836.2	2837.0
1°	2840.7	2840.7	2841.1	2841.5	2838.3	2837.9	2837.9	2837.9	2835.0	2834.2	2835.4
1.5°	2841.5	2841.5	2842.4	2842.4	2838.7	2837.5	2836.6	2835.4	2833.0	2832.1	2833.4
2°	2842.0	2842.4	2842.8	2842.8	2838.3	2836.6	2835.0	2832.5	2830.5	2829.3	2830.5
2.5°	2842.0	2843.2	2843.6	2842.8	2837.9	2835.8	2833.4	2830.1	2827.6	2826.4	2827.6
3°	2842.0	2843.2	2843.6	2842.8	2837.5	2834.6	2831.3	2826.8	2824.0	2822.7	2824.4
3.5°	2842.0	2843.2	2843.6	2842.4	2837.5	2833.0	2828.5	2823.1	2819.5	2818.2	2820.3
4°	2841.1	2842.8	2843.2	2842.4	2836.2	2831.7	2825.6	2819.5	2815.0	2814.1	2815.8
4.5°	2840.3	2842.4	2842.8	2841.5	2835.4	2829.7	2822.7	2815.4	2810.0	2808.8	2810.5
5°	2839.5	2841.1	2841.5	2840.7	2834.6	2828.0	2819.0	2810.5	2805.1	2803.5	2805.1
5.5°	2837.9	2840.3	2840.3	2839.1	2833.4	2825.6	2815.4	2805.5	2799.0	2797.8	2799.4
6°	2836.2	2838.7	2838.7	2837.9	2832.1	2823.1	2811.3	2800.2	2793.3	2792.0	2793.3
6.5°	2835.0	2837.0	2836.6	2835.8	2830.5	2820.7	2807.2	2794.9	2787.5	2785.9	2787.1
7°	2833.0	2835.0	2835.0	2833.8	2828.9	2817.4	2802.7	2789.2	2781.0	2779.4	2780.6
7.5°	2831.3	2832.5	2832.5	2831.7	2826.4	2814.5	2798.2	2783.5	2774.4	2772.8	2773.2
8°	2828.9	2829.7	2830.1	2829.3	2824.4	2811.3	2793.7	2777.7	2767.9	2765.9	2766.7
8.5°	2826.0	2826.8	2827.2	2826.4	2821.9	2807.6	2789.2	2772.0	2760.9	2758.9	2758.9
9°	2823.1	2824.0	2824.4	2823.1	2818.6	2803.9	2784.3	2765.4	2754.4	2751.9	2751.5
9.5°	2819.9	2820.3	2821.5	2819.5	2815.4	2800.2	2778.9	2759.3	2747.0	2744.6	2744.2
10°	2816.6	2816.6	2818.6	2815.8	2811.7	2795.7	2774.0	2752.8	2739.3	2737.6	2736.4
10.5°	2812.5	2812.9	2815.8	2812.5	2808.0	2790.8	2768.3	2746.2	2731.9	2730.7	2728.6
11°	2808.4	2808.8	2812.9	2808.4	2803.5	2785.5	2762.6	2739.3	2723.7	2722.9	2720.0
11.5°	2803.9	2804.3	2809.2	2803.9	2798.6	2779.8	2756.9	2732.3	2715.5	2715.1	2711.4
12°	2799.8	2800.2	2806.4	2799.4	2793.7	2774.4	2750.7	2725.4	2706.5	2706.9	2702.8
12.5°	2794.9	2795.7	2802.7	2794.1	2788.8	2768.3	2744.6	2718.0	2697.5	2698.8	2693.8
13°	2790.0	2791.2	2799.4	2788.8	2783.5	2762.2	2738.4	2710.6	2688.1	2689.8	2684.0
13.5°	2784.3	2785.9	2795.3	2783.0	2777.7	2755.2	2731.5	2702.8	2677.9	2680.8	2673.8
14°	2778.5	2780.2	2791.2	2777.3	2772.0	2748.7	2724.1	2694.3	2667.3	2671.3	2662.8
14.5°	2772.8	2774.0	2786.3	2771.2	2765.9	2741.3	2716.3	2684.8	2655.8	2660.7	2651.7
15°	2765.9	2767.9	2781.4	2764.2	2759.7	2733.5	2708.2	2675.4	2643.1	2650.1	2640.2
15.5°	2758.9	2760.5	2775.3	2756.9	2753.2	2725.8	2699.6	2664.8	2630.0	2638.6	2628.0
16°	2751.5	2752.4	2769.1	2748.7	2745.8	2717.2	2690.2	2654.2	2616.5	2625.9	2614.9
16.5°	2743.4	2743.8	2761.4	2740.1	2738.4	2707.8	2679.9	2642.3	2602.2	2613.2	2602.6
17°	2734.8	2734.8	2753.2	2730.7	2730.7	2698.3	2668.9	2630.4	2587.1	2600.2	2589.9
17.5°	2725.8	2725.4	2744.2	2721.3	2722.5	2687.7	2657.4	2617.3	2571.9	2585.8	2576.4
18°	2717.2	2715.5	2734.8	2711.0	2713.9	2677.5	2646.4	2603.0	2556.4	2571.1	2562.9
18.5°	2707.8	2705.3	2724.5	2700.4	2704.9	2666.0	2633.7	2589.1	2540.0	2554.7	2548.6
19°	2698.3	2694.7	2713.5	2689.8	2695.9	2655.0	2620.6	2574.0	2522.8	2538.8	2534.3
19.5°	2688.1	2683.6	2702.0	2678.7	2686.1	2643.1	2606.7	2558.0	2505.2	2522.0	2519.5
20°	2676.7	2671.8	2690.2	2666.8	2675.8	2630.4	2592.4	2541.6	2486.8	2504.4	2504.8
20.5°	2665.2	2659.5	2676.7	2654.2	2664.4	2617.3	2577.2	2523.6	2468.4	2485.2	2488.9
21°	2652.5	2646.4	2662.8	2641.5	2652.9	2603.4	2561.3	2505.2	2447.9	2465.9	2472.9



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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°	2610.4	2603.4	2616.1	2598.5	2613.7	2557.2	2509.3	2445.1	2386.2	2404.2	2423.0
23°	2594.8	2587.9	2598.5	2583.4	2598.5	2540.8	2490.5	2424.6	2364.9	2382.5	2405.8
23.5°	2577.6	2571.9	2580.9	2567.8	2582.6	2523.6	2471.7	2402.9	2343.6	2360.8	2389.0
24°	2560.1	2555.6	2562.5	2551.9	2566.2	2506.0	2451.6	2381.3	2321.9	2339.1	2371.8
24.5°	2541.6	2539.2	2544.1	2535.9	2549.0	2487.6	2432.0	2359.2	2301.1	2316.6	2354.3
25°	2522.0	2522.4	2525.3	2520.0	2531.0	2470.0	2411.9	2337.1	2279.8	2294.5	2335.8
25.5°	2502.8	2505.2	2506.0	2503.2	2512.2	2451.2	2391.9	2314.2	2258.5	2272.0	2317.0
26°	2482.7	2488.0	2486.0	2486.4	2493.4	2432.4	2371.4	2292.9	2237.6	2249.9	2297.8
26.5°	2462.3	2470.9	2466.4	2469.6	2473.7	2413.2	2350.6	2270.8	2216.4	2227.0	2278.1
27°	2441.0	2453.3	2446.3	2452.0	2452.9	2393.1	2330.1	2248.7	2195.1	2204.1	2258.1
27.5°	2418.9	2435.3	2425.9	2433.6	2432.0	2372.7	2309.2	2226.6	2173.4	2182.0	2237.2
28°	2396.8	2416.4	2405.0	2415.2	2410.3	2352.2	2288.0	2204.5	2152.1	2159.9	2216.8
28.5°	2374.3	2397.6	2383.7	2396.0	2387.8	2331.3	2266.7	2182.4	2131.7	2138.2	2195.5
29°	2351.8	2378.0	2362.0	2376.3	2365.7	2310.1	2244.6	2160.7	2110.8	2116.9	2174.2
29.5°	2329.7	2358.8	2341.6	2356.7	2343.6	2289.2	2223.3	2139.4	2090.3	2095.3	2152.9
30°	2306.8	2339.5	2320.7	2336.2	2321.1	2267.9	2202.0	2118.2	2070.3	2074.0	2131.3
30.5°	2284.7	2319.5	2299.4	2315.8	2297.8	2247.1	2180.8	2096.9	2050.7	2053.1	2110.0
31°	2262.6	2299.0	2277.7	2295.3	2275.7	2226.6	2159.9	2076.8	2031.0	2032.7	2087.5
31.5°	2241.3	2279.0	2257.7	2274.1	2254.0	2205.3	2139.0	2057.2	2011.0	2011.8	2063.8
32°	2218.4	2258.5	2236.8	2253.6	2232.3	2184.5	2118.6	2037.2	1991.3	1991.7	2038.8
32.5°	2197.5	2238.1	2216.8	2232.3	2210.2	2164.0	2098.1	2016.7	1972.1	1970.5	2013.0
33°	2175.0	2216.0	2195.1	2211.0	2189.0	2143.1	2077.3	1996.2	1951.2	1948.8	1985.2
33.5°	2151.3	2193.0	2174.2	2188.1	2165.6	2121.9	2055.2	1975.0	1930.0	1925.9	1956.6
34°	2125.5	2167.7	2151.7	2163.6	2141.9	2098.5	2033.1	1953.7	1908.7	1903.4	1927.9
34.5°	2099.8	2141.9	2128.0	2137.4	2116.5	2075.2	2010.2	1931.6	1886.6	1879.6	1898.0
35°	2073.6	2114.5	2103.9	2110.4	2090.3	2049.8	1986.8	1909.1	1864.5	1855.9	1868.2
35.5°	2046.6	2087.1	2080.1	2083.4	2063.8	2024.9	1962.7	1886.2	1841.6	1830.9	1838.3
36°	2019.6	2058.8	2055.6	2054.3	2037.6	1999.1	1936.9	1862.9	1817.9	1806.0	1807.6
36.5°	1992.2	2030.2	2029.8	2025.7	2008.1	1971.3	1910.7	1838.3	1793.3	1779.0	1776.5
37°	1962.7	2000.3	2002.4	1995.8	1979.9	1942.6	1883.3	1812.5	1767.5	1752.0	1745.4
37.5°	1933.6	1969.7	1975.8	1965.6	1950.0	1913.2	1855.5	1786.8	1740.9	1723.8	1713.9
38°	1902.5	1937.7	1946.7	1934.5	1919.7	1883.3	1826.9	1758.1	1712.7	1692.2	1681.6
38.5°	1871.9	1905.8	1916.5	1902.5	1889.5	1853.0	1795.4	1727.4	1682.4	1658.7	1646.8
39°	1842.0	1874.3	1886.2	1871.0	1859.6	1821.5	1762.6	1695.9	1649.3	1624.3	1609.2
39.5°	1809.7	1840.8	1853.5	1837.9	1828.1	1789.6	1729.5	1662.4	1614.5	1589.5	1572.4
40°	1777.3	1806.0	1817.9	1803.5	1796.2	1755.7	1695.1	1628.0	1578.1	1553.1	1535.1
40.5°	1743.0	1770.0	1781.9	1767.5	1762.6	1720.9	1659.5	1593.2	1541.7	1514.7	1497.1
41°	1710.2	1733.6	1745.4	1731.1	1729.5	1685.3	1623.1	1557.2	1504.9	1476.6	1459.4
41.5°	1674.7	1696.3	1707.8	1694.3	1694.7	1648.9	1587.1	1521.2	1467.2	1439.0	1420.6
42°	1638.6	1659.1	1670.6	1657.9	1659.5	1611.2	1550.7	1484.4	1430.4	1399.3	1381.7
42.5°	1599.8	1621.1	1633.3	1621.1	1621.9	1574.0	1513.4	1447.2	1392.7	1359.2	1342.0
43°	1562.5	1583.4	1595.7	1583.0	1584.2	1536.8	1476.2	1409.5	1355.5	1319.9	1303.1
43.5°	1522.4	1545.0	1557.2	1545.4	1543.7	1497.5	1437.8	1372.7	1317.9	1280.6	1263.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1397.7	1427.9	1441.0	1429.6	1421.8	1378.8	1321.1	1259.0	1204.9	1162.8	1145.2
45.5°	1355.5	1388.7	1401.7	1392.3	1379.2	1337.9	1282.3	1222.5	1167.3	1124.3	1106.8
46°	1313.4	1349.4	1362.5	1353.1	1337.1	1296.2	1242.6	1184.5	1129.3	1085.5	1067.1
46.5°	1270.4	1309.3	1323.2	1312.6	1295.4	1255.3	1203.7	1147.3	1092.4	1047.8	1028.2
47°	1228.7	1269.2	1283.1	1271.6	1253.6	1214.4	1163.6	1109.2	1054.4	1010.2	988.9
47.5°	1187.4	1227.9	1243.0	1232.4	1211.9	1173.0	1124.3	1072.0	1017.1	971.7	950.9
48°	1146.0	1187.4	1203.7	1192.3	1171.8	1131.7	1084.7	1033.9	980.3	934.9	912.4
48.5°	1104.7	1146.8	1163.2	1151.8	1131.7	1090.4	1046.6	997.1	943.5	898.9	874.8
49°	1065.8	1106.8	1123.9	1111.3	1091.6	1050.7	1007.3	959.0	906.3	861.7	837.5
49.5°	1025.3	1066.7	1084.2	1071.2	1051.5	1011.0	968.9	921.8	870.3	825.7	801.1
50°	986.1	1026.1	1044.2	1030.6	1012.2	971.3	930.4	884.2	834.3	790.1	764.3
50.5°	946.4	985.2	1004.5	991.0	974.2	931.2	892.4	847.4	799.1	755.3	729.1
51°	908.3	946.0	963.5	950.5	935.3	892.8	854.3	810.9	763.1	719.7	694.3
51.5°	869.9	907.5	924.7	912.0	897.3	855.5	817.1	774.9	728.7	685.7	660.8
52°	833.0	868.6	885.4	873.5	859.6	817.5	780.2	739.3	694.7	652.2	627.2
52.5°	795.0	829.8	846.5	835.5	821.6	781.5	743.8	702.9	660.4	619.5	594.5
53°	759.0	791.7	807.7	797.4	784.8	744.2	707.0	668.1	626.8	585.9	562.6
53.5°	721.7	754.5	768.0	759.4	748.3	708.2	671.8	634.2	593.7	554.0	532.3
54°	687.0	717.6	729.5	721.7	712.3	672.6	637.0	600.2	560.9	522.5	501.6
54.5°	652.2	680.4	691.9	685.7	676.7	638.7	602.7	567.1	529.0	491.8	471.3
55°	617.4	645.6	655.5	649.7	642.4	604.7	569.5	533.9	498.3	461.5	442.7
55.5°	583.0	610.0	618.2	615.0	608.8	570.8	536.0	501.6	467.2	432.5	414.5
56°	550.3	575.3	582.6	580.2	574.0	538.0	503.3	470.5	437.4	403.8	388.3
56.5°	518.0	540.9	547.9	545.4	540.9	505.7	472.2	440.2	407.9	377.6	362.5
57°	485.3	508.2	513.5	512.7	508.2	474.6	441.1	409.6	380.9	351.5	336.7
57.5°	454.2	475.8	479.5	479.9	477.1	444.3	410.8	381.7	353.9	325.3	310.5
58°	423.9	443.5	446.8	448.4	445.6	414.5	383.4	354.3	326.9	299.1	284.8
58.5°	394.4	412.8	415.7	417.3	415.3	387.1	356.0	326.5	299.9	272.5	261.4
59°	365.8	383.0	385.0	386.6	387.5	360.1	328.5	298.7	272.9	249.2	238.9
59.5°	337.1	353.9	355.6	357.6	359.2	332.6	301.1	271.3	247.9	226.3	216.4
60°	310.1	325.3	327.3	329.4	331.4	305.2	274.1	246.3	224.2	204.2	196.0
60.5°	283.5	297.5	299.5	302.0	303.2	278.2	250.0	222.6	201.7	183.7	175.9
61°	257.8	271.3	272.9	274.5	275.4	253.7	225.4	200.1	179.6	163.7	157.5
61.5°	234.0	245.9	248.4	249.6	250.0	229.5	203.3	178.4	159.2	145.2	139.9
62°	209.9	221.8	224.6	225.0	225.9	207.0	182.1	157.5	139.5	127.7	123.2
62.5°	187.4	198.0	201.7	201.7	202.1	184.9	161.6	138.3	121.1	110.9	107.6
63°	166.5	175.9	179.6	179.2	180.0	163.7	142.0	120.7	103.1	95.7	93.3
63.5°	146.1	155.1	159.6	157.9	159.2	144.0	124.4	103.5	87.6	81.4	79.8
64°	127.7	137.5	139.9	139.1	139.5	125.2	107.6	88.4	73.2	68.7	68.3
64.5°	109.2	120.3	123.6	122.3	120.7	108.0	92.1	73.6	60.1	57.7	57.3
65°	91.2	102.7	107.2	105.6	103.5	92.1	77.7	61.0	51.6	49.5	49.5
65.5°	72.8	85.1	90.8	88.8	87.6	76.9	64.2	52.4	43.4	41.7	41.7
66°	54.4	67.9	74.5	72.0	72.8	63.4	54.8	43.4	34.8	34.0	34.4



TEST NUMBER: P776239

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRC-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	18.4	32.7	38.5	36.8	41.3	35.2	27.4	16.8	12.3	13.1	13.5
68°	15.1	24.1	28.6	27.8	31.9	25.8	18.0	12.3	7.8	9.0	9.0
68.5°	11.9	17.2	20.5	20.0	22.9	16.4	12.3	8.2	4.5	5.7	5.7
69°	8.6	14.3	13.9	13.9	13.5	11.0	8.2	5.3	2.9	3.7	3.7
69.5°	5.3	11.5	11.0	11.0	8.6	7.0	4.5	3.3	2.5	2.5	2.5
70°	2.5	8.6	8.2	8.2	5.3	3.7	2.9	2.5	2.5	2.5	2.5
70.5°	2.0	5.3	5.3	5.3	3.3	2.5	2.5	2.0	2.0	2.5	2.5
71°	2.0	2.5	2.9	2.9	2.5	2.5	2.0	2.0	2.0	2.0	2.5
71.5°	2.0	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0	2.0	2.0
72°	2.0	2.0	2.5	2.5	2.5	2.0	2.0	2.0	2.0	2.0	2.0
72.5°	2.0	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0
73°	2.0	2.0	2.5	2.5	2.0	2.0	2.0	1.6	2.0	2.0	2.0
73.5°	1.6	2.0	2.0	2.0	2.0	2.0	1.6	1.6	1.6	2.0	2.0
74°	1.6	2.0	2.0	2.0	2.0	2.0	1.6	1.6	1.6	1.6	2.0
74.5°	1.6	2.0	2.0	2.0	2.0	1.6	1.6	1.6	1.6	1.6	1.6
75°	1.6	1.6	2.0	2.0	2.0	1.6	1.6	1.6	1.6	1.6	1.6
75.5°	1.6	1.6	2.0	2.0	1.6	1.6	1.6	1.6	1.6	1.6	1.6
76°	1.6	1.6	1.6	2.0	1.6	1.6	1.6	1.6	1.6	1.6	1.6
76.5°	1.2	1.6	1.6	1.6	1.6	1.6	1.6	1.2	1.2	1.6	1.6
77°	1.2	1.6	1.6	1.6	1.6	1.6	1.2	1.2	1.2	1.2	1.6
77.5°	1.2	1.2	1.6	1.6	1.6	1.2	1.2	1.2	1.2	1.2	1.2
78°	1.2	1.2	1.6	1.6	1.6	1.2	1.2	1.2	1.2	1.2	1.2
78.5°	1.2	1.2	1.6	1.6	1.2	1.2	1.2	1.2	1.2	1.2	1.2
79°	1.2	1.2	1.2	1.6	1.2	1.2	1.2	1.2	1.2	1.2	1.2
79.5°	0.8	1.2	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8	1.2
80°	0.8	1.2	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8	1.2
80.5°	0.8	0.8	1.2	1.2	1.2	1.2	0.8	0.8	0.8	0.8	0.8
81°	0.8	0.8	1.2	1.2	1.2	0.8	0.8	0.8	0.8	0.8	0.8
81.5°	0.8	0.8	0.8	1.2	1.2	0.8	0.8	0.8	0.8	0.8	0.8
82°	0.8	0.8	0.8	1.2	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.8
83°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4
83.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4
84°	0.4	0.4	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4
84.5°	0.4	0.4	0.4	0.8	0.8	0.4	0.4	0.4	0.0	0.4	0.4
85°	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.4	0.4
85.5°	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
86°	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
86.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.4	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: P776239
CATALOG NUMBER: HCDJBL3040CSD-HCD41TRC-4000lm-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	0.4	0.4



TEST NUMBER: P776239

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRC-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2838.3	2838.3	2838.3	2838.3	2838.3	2838.3
0.5°	2837.9	2835.8	2837.5	2838.7	2839.9	2839.5
1°	2836.2	2834.2	2836.6	2838.7	2840.7	2840.7
1.5°	2834.2	2832.1	2835.4	2838.7	2840.7	2841.5
2°	2832.1	2829.7	2833.4	2837.5	2840.3	2842.0
2.5°	2829.3	2826.8	2831.3	2835.8	2839.9	2842.0
3°	2826.0	2823.5	2828.0	2833.8	2839.1	2842.0
3.5°	2822.3	2819.9	2824.8	2831.3	2837.9	2842.0
4°	2817.8	2815.4	2821.1	2828.9	2836.2	2841.1
4.5°	2812.9	2810.9	2816.6	2825.6	2834.6	2840.3
5°	2807.6	2805.5	2812.1	2821.9	2833.0	2839.5
5.5°	2801.9	2799.8	2807.2	2818.2	2830.9	2837.9
6°	2795.7	2794.1	2801.9	2814.1	2828.5	2836.2
6.5°	2789.6	2788.0	2796.5	2810.0	2825.6	2835.0
7°	2783.0	2781.8	2791.2	2806.0	2823.1	2833.0
7.5°	2776.5	2775.3	2785.1	2801.5	2819.9	2831.3
8°	2769.9	2768.7	2779.4	2797.0	2817.0	2828.9
8.5°	2763.0	2762.2	2773.2	2792.5	2813.3	2826.0
9°	2756.0	2755.2	2767.1	2787.5	2809.2	2823.1
9.5°	2749.1	2747.9	2760.5	2782.2	2804.7	2819.9
10°	2742.1	2740.5	2753.6	2776.9	2800.2	2816.6
10.5°	2734.8	2733.1	2747.0	2771.6	2795.3	2812.5
11°	2727.4	2725.4	2740.1	2766.3	2790.0	2808.4
11.5°	2719.6	2716.8	2732.3	2760.5	2784.7	2803.9
12°	2711.8	2708.6	2724.9	2754.8	2779.4	2799.8
12.5°	2703.7	2699.2	2716.8	2748.3	2773.2	2794.9
13°	2695.1	2689.8	2708.2	2742.1	2766.7	2790.0
13.5°	2686.5	2679.1	2699.6	2734.8	2760.1	2784.3
14°	2676.7	2668.1	2689.8	2727.0	2752.8	2778.5
14.5°	2666.4	2656.6	2679.1	2718.8	2745.0	2772.8
15°	2655.8	2644.3	2668.1	2709.4	2736.8	2765.9
15.5°	2643.9	2631.2	2656.2	2699.6	2727.4	2758.9
16°	2631.7	2617.3	2643.5	2689.3	2718.0	2751.5
16.5°	2618.6	2603.0	2630.0	2678.3	2707.3	2743.4
17°	2605.1	2587.9	2616.1	2666.4	2697.1	2734.8
17.5°	2591.1	2572.3	2601.4	2653.7	2686.1	2725.8
18°	2576.0	2556.0	2586.2	2641.1	2674.6	2717.2
18.5°	2560.5	2539.2	2571.1	2627.2	2662.8	2707.8
19°	2544.1	2522.0	2554.3	2612.8	2650.9	2698.3
19.5°	2526.9	2503.6	2537.1	2597.7	2638.2	2688.1
20°	2508.9	2484.4	2519.1	2581.7	2625.1	2676.7
20.5°	2490.1	2465.1	2500.7	2565.4	2610.8	2665.2
21°	2470.9	2444.7	2481.5	2547.8	2595.7	2652.5

TEST NUMBER: P776239

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRC-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2408.7	2382.1	2420.5	2491.7	2548.2	2610.4
23°	2387.0	2360.0	2398.8	2471.3	2531.0	2594.8
23.5°	2364.9	2338.3	2378.0	2450.8	2513.8	2577.6
24°	2342.8	2316.6	2356.3	2430.4	2495.4	2560.1
24.5°	2319.9	2294.5	2334.6	2409.1	2476.6	2541.6
25°	2297.4	2272.4	2312.9	2387.4	2457.4	2522.0
25.5°	2274.9	2250.3	2291.7	2366.5	2438.9	2502.8
26°	2251.6	2228.6	2269.1	2345.3	2419.3	2482.7
26.5°	2228.2	2206.1	2247.5	2324.0	2399.3	2462.3
27°	2205.3	2184.0	2225.4	2301.9	2379.2	2441.0
27.5°	2182.8	2162.0	2203.7	2280.2	2358.8	2418.9
28°	2160.3	2140.7	2181.2	2258.1	2337.5	2396.8
28.5°	2138.2	2119.4	2160.3	2236.4	2316.6	2374.3
29°	2115.7	2097.3	2139.0	2214.7	2294.9	2351.8
29.5°	2094.0	2076.8	2117.8	2193.9	2273.6	2329.7
30°	2073.2	2056.8	2096.5	2172.6	2252.4	2306.8
30.5°	2052.7	2036.3	2076.4	2151.7	2231.9	2284.7
31°	2031.8	2016.3	2056.4	2130.9	2211.5	2262.6
31.5°	2010.6	1995.4	2035.5	2110.8	2190.2	2241.3
32°	1990.1	1975.4	2015.1	2089.1	2168.9	2218.4
32.5°	1969.2	1954.9	1994.6	2068.7	2148.0	2197.5
33°	1946.7	1933.2	1973.3	2047.4	2126.8	2175.0
33.5°	1923.8	1911.6	1951.2	2024.5	2103.9	2151.3
34°	1900.9	1888.6	1929.1	2001.2	2079.3	2125.5
34.5°	1877.6	1866.1	1905.8	1977.4	2053.5	2099.8
35°	1853.0	1843.2	1882.5	1952.9	2027.7	2073.6
35.5°	1828.9	1819.9	1859.2	1928.3	2001.2	2046.6
36°	1802.7	1794.9	1835.4	1902.5	1974.2	2019.6
36.5°	1776.1	1769.6	1810.5	1877.2	1945.9	1992.2
37°	1747.5	1743.4	1783.9	1849.8	1916.9	1962.7
37.5°	1719.7	1716.8	1757.3	1820.7	1886.6	1933.6
38°	1689.4	1688.2	1729.5	1791.7	1855.9	1902.5
38.5°	1656.2	1657.5	1699.6	1761.8	1825.2	1871.9
39°	1621.9	1625.1	1667.7	1729.5	1793.3	1842.0
39.5°	1587.1	1590.8	1633.7	1695.1	1761.0	1809.7
40°	1549.0	1554.8	1598.6	1659.5	1727.0	1777.3
40.5°	1511.0	1517.5	1563.0	1623.9	1692.2	1743.0
41°	1472.1	1479.5	1526.5	1587.5	1655.4	1710.2
41.5°	1433.7	1440.6	1488.9	1551.1	1617.8	1674.7
42°	1394.0	1403.8	1452.5	1513.9	1581.8	1638.6
42.5°	1354.3	1364.9	1414.8	1475.8	1544.1	1599.8
43°	1314.6	1327.3	1377.6	1437.8	1506.1	1562.5
43.5°	1276.1	1287.2	1339.6	1399.3	1466.0	1522.4

TEST NUMBER: P776239

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRC-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1155.0	1173.0	1225.8	1282.3	1346.9	1397.7
45.5°	1117.0	1134.2	1188.2	1243.4	1306.4	1355.5
46°	1076.9	1096.5	1150.9	1204.5	1265.5	1313.4
46.5°	1038.0	1058.5	1112.5	1164.0	1223.8	1270.4
47°	999.6	1020.8	1074.8	1125.2	1182.9	1228.7
47.5°	962.3	982.0	1036.4	1085.9	1141.9	1187.4
48°	924.3	945.1	998.3	1047.0	1101.0	1146.0
48.5°	887.4	907.5	959.9	1007.3	1059.7	1104.7
49°	850.2	871.1	922.2	970.1	1020.0	1065.8
49.5°	815.8	834.7	884.6	930.8	979.9	1025.3
50°	778.6	798.3	847.4	892.4	940.2	986.1
50.5°	743.4	761.8	809.3	854.3	900.1	946.4
51°	708.2	726.7	773.3	817.1	861.7	908.3
51.5°	673.9	691.9	736.9	779.4	823.6	869.9
52°	640.7	657.9	701.3	743.4	786.8	833.0
52.5°	607.2	624.4	665.3	706.6	749.2	795.0
53°	574.4	590.4	630.9	670.6	713.1	759.0
53.5°	542.5	557.7	596.5	634.2	677.6	721.7
54°	511.4	525.8	562.6	599.8	642.4	687.0
54.5°	480.3	494.7	529.8	566.3	608.4	652.2
55°	450.9	464.0	497.5	531.9	574.4	617.4
55.5°	421.8	433.3	465.2	498.3	541.7	583.0
56°	393.6	404.2	434.1	467.2	509.4	550.3
56.5°	367.0	375.6	403.8	436.2	478.3	518.0
57°	340.8	347.8	374.4	405.5	447.6	485.3
57.5°	314.6	320.0	344.9	375.6	416.9	454.2
58°	288.5	294.6	318.3	347.0	388.3	423.9
58.5°	264.3	268.8	290.9	319.5	360.9	394.4
59°	241.0	244.3	265.1	293.0	333.5	365.8
59.5°	218.5	220.9	240.2	267.6	307.3	337.1
60°	197.2	198.0	216.4	242.2	281.9	310.1
60.5°	177.2	176.8	193.9	219.7	256.5	283.5
61°	157.5	155.9	172.3	197.2	232.4	257.8
61.5°	139.5	138.7	151.8	176.3	209.9	234.0
62°	122.3	122.3	135.8	155.9	187.8	209.9
62.5°	106.4	106.0	119.5	139.1	166.5	187.4
63°	92.1	89.6	103.5	123.2	146.9	166.5
63.5°	78.6	72.8	87.1	107.2	130.5	146.1
64°	66.7	60.6	71.2	91.2	114.6	127.7
64.5°	56.1	50.3	58.9	75.3	98.6	109.2
65°	48.7	40.9	48.3	63.0	82.2	91.2
65.5°	40.9	33.1	38.9	51.6	66.3	72.8
66°	33.1	26.2	30.7	41.3	53.6	54.4



TEST NUMBER: P776239

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRC-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	13.1	12.3	13.5	18.4	24.1	18.4
68°	9.0	9.4	10.6	13.1	17.2	15.1
68.5°	5.7	6.5	7.8	10.2	13.9	11.9
69°	3.7	3.3	5.3	7.4	11.0	8.6
69.5°	2.5	2.5	2.5	4.9	8.2	5.3
70°	2.5	2.0	2.0	2.0	4.9	2.5
70.5°	2.5	2.0	2.0	2.0	2.0	2.0
71°	2.0	2.0	2.0	2.0	2.0	2.0
71.5°	2.0	2.0	2.0	2.0	2.0	2.0
72°	2.0	2.0	1.6	1.6	2.0	2.0
72.5°	2.0	2.0	1.6	1.6	1.6	2.0
73°	2.0	1.6	1.6	1.6	1.6	2.0
73.5°	2.0	1.6	1.6	1.6	1.6	1.6
74°	1.6	1.6	1.6	1.6	1.6	1.6
74.5°	1.6	1.6	1.6	1.6	1.6	1.6
75°	1.6	1.6	1.6	1.6	1.6	1.6
75.5°	1.6	1.6	1.2	1.2	1.2	1.6
76°	1.6	1.6	1.2	1.2	1.2	1.6
76.5°	1.6	1.2	1.2	1.2	1.2	1.2
77°	1.6	1.2	1.2	1.2	1.2	1.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2
78°	1.2	1.2	1.2	1.2	1.2	1.2
78.5°	1.2	1.2	1.2	1.2	1.2	1.2
79°	1.2	1.2	1.2	0.8	0.8	1.2
79.5°	1.2	1.2	0.8	0.8	0.8	0.8
80°	1.2	0.8	0.8	0.8	0.8	0.8
80.5°	0.8	0.8	0.8	0.8	0.8	0.8
81°	0.8	0.8	0.8	0.8	0.8	0.8
81.5°	0.8	0.8	0.8	0.8	0.8	0.8
82°	0.8	0.8	0.8	0.8	0.4	0.8
82.5°	0.8	0.8	0.8	0.4	0.4	0.4
83°	0.8	0.8	0.4	0.4	0.4	0.4
83.5°	0.4	0.4	0.4	0.4	0.4	0.4
84°	0.4	0.4	0.4	0.4	0.4	0.4
84.5°	0.4	0.4	0.4	0.4	0.4	0.4
85°	0.4	0.4	0.4	0.4	0.4	0.0
85.5°	0.4	0.4	0.4	0.4	0.0	0.0
86°	0.4	0.4	0.4	0.4	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: P776239
CATALOG NUMBER: HCDJBL3040CSD-HCD41TRC-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.4	0.4	0.0	0.0	0.0	0.0



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

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21.5°	2639.0	2632.5	2647.6	2627.6	2640.7	2588.7	2544.5	2486.0	2427.5	2445.5	2456.5
22°	2625.5	2618.2	2632.1	2613.7	2627.6	2573.6	2527.7	2465.9	2407.0	2425.0	2440.2



44°	1481.5	1506.5	1518.8	1507.3	1504.9	1457.4	1398.5	1334.2	1279.4	1241.0	1224.2
44.5°	1437.8	1467.6	1479.9	1469.3	1461.9	1417.7	1360.0	1297.0	1242.2	1201.3	1184.9



66.5°	40.5	54.4	61.0	58.9	59.7	54.0	45.8	34.4	26.2	25.8	26.6
67°	27.8	43.0	49.1	47.1	50.3	44.6	36.4	25.8	18.0	18.0	18.8



89°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
89.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4

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21.5°	2450.8	2424.6	2461.9	2529.4	2580.5	2639.0
22°	2429.5	2402.9	2441.4	2511.0	2564.6	2625.5



44°	1234.0	1249.1	1301.1	1360.8	1426.7	1481.5
44.5°	1194.3	1210.7	1263.5	1321.6	1387.4	1437.8

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66.5°	25.4	20.5	23.7	32.7	42.1	40.5
67°	18.0	15.5	18.0	25.0	32.3	27.8

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89°	0.4	0.4	0.0	0.0	0.0	0.0
89.5°	0.4	0.4	0.0	0.0	0.0	0.0

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Scaled Data Report



(END OF REPORT)