

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: P776238

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

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776238
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-4000K
Description: 4 INCH ROUND SHALLOW-WIDE SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

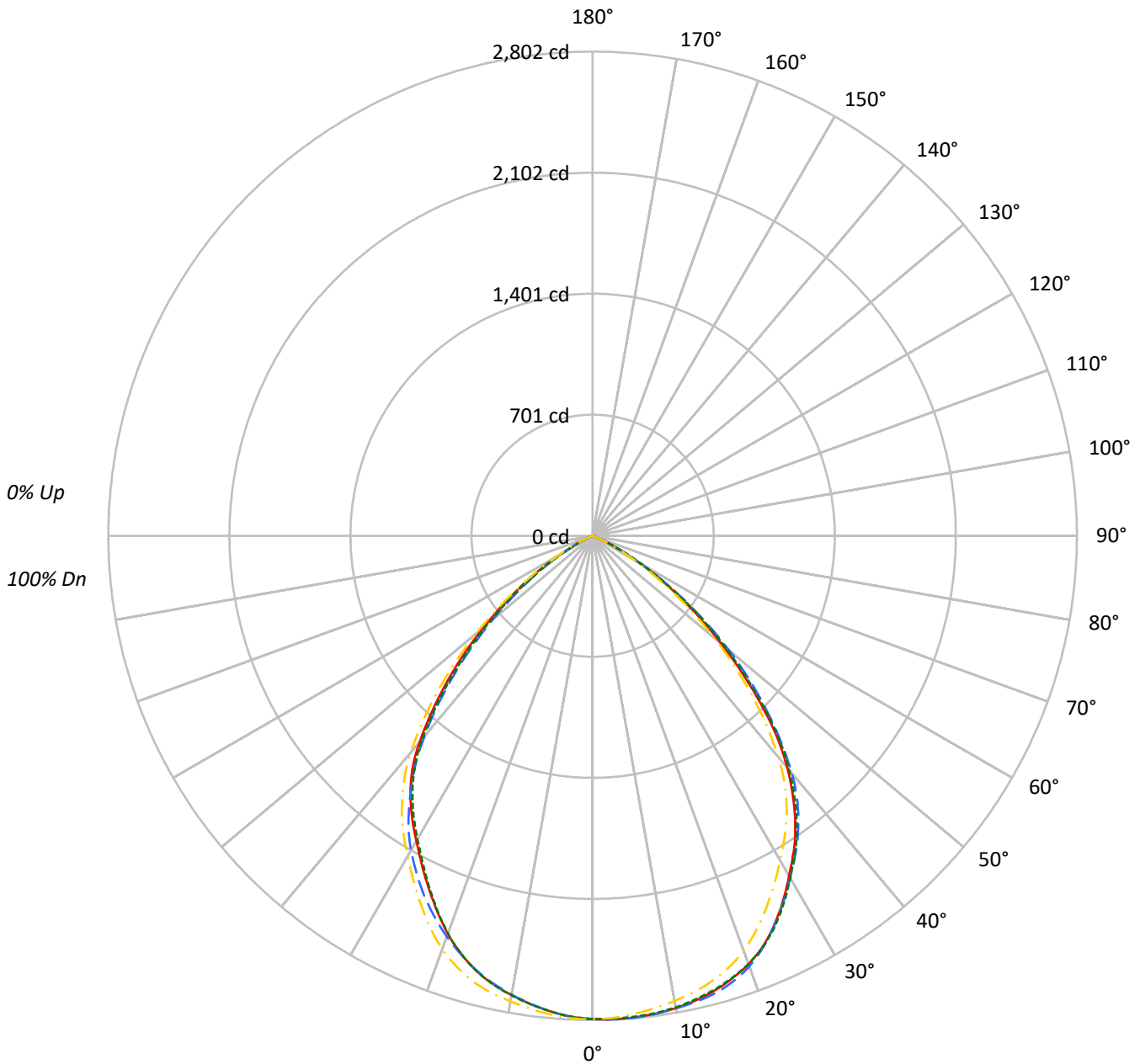
Lumens per Lamp: N/A
Luminaire Lumens: 4876.8 lumens
Efficiency: N/A
Efficacy: 126.7 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.16 / 1.22
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (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								
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°	351989	351989	351989	351989
5°	353485	352866	349203	349253
10°	354685	354071	344947	345100
15°	355103	354322	339338	339508
20°	353245	353138	328187	327866
25°	345095	346330	311949	310949
30°	330324	332373	296465	294532
35°	313921	316456	282272	279046
40°	287729	290785	255480	251701
45°	245130	249366	211332	205725
50°	190247	195298	160957	154006
55°	133491	138888	107753	100315
60°	76919	82205	55600	49107
65°	26771	30374	15128	12001
70°	883	1913	883	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: 252729 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	264.0	5.4
10°-20°	750.6	15.4
20°-30°	1089.2	22.3
30°-40°	1207.9	24.8
40°-50°	980.8	20.1
50°-60°	492.4	10.1
60°-70°	89.6	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°	2103.8	43.1
0°-40°	3311.7	67.9
0°-60°	4785.0	98.1
0°-90°	4876.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4876.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2797	2797	2797	2797	2797	
5°	2798	2793	2764	2765	2798	266
15°	2726	2720	2604	2606	2726	769
25°	2485	2494	2246	2239	2485	1140
35°	2043	2060	1837	1816	2043	1270
45°	1377	1401	1187	1156	1377	1054
55°	608	633	491	457	608	549
65°	90	102	51	40	90	107
75°	2	2	2	2	2	2
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°	2796.9	2796.9	2796.9	2796.9	2796.9	2796.9	2796.9	2796.9	2796.9	2796.9	2796.9
0.5°	2798.1	2798.1	2798.5	2799.3	2796.1	2796.9	2797.3	2797.3	2795.2	2794.8	2795.7
1°	2799.3	2799.3	2799.7	2800.1	2796.9	2796.5	2796.5	2796.5	2793.6	2792.8	2794.0
1.5°	2800.1	2800.1	2800.9	2800.9	2797.3	2796.1	2795.2	2794.0	2791.6	2790.8	2792.0
2°	2800.5	2800.9	2801.3	2801.3	2796.9	2795.2	2793.6	2791.2	2789.2	2788.0	2789.2
2.5°	2800.5	2801.7	2802.1	2801.3	2796.5	2794.4	2792.0	2788.8	2786.4	2785.2	2786.4
3°	2800.5	2801.7	2802.1	2801.3	2796.1	2793.2	2790.0	2785.6	2782.8	2781.5	2783.2
3.5°	2800.5	2801.7	2802.1	2800.9	2796.1	2791.6	2787.2	2781.9	2778.3	2777.1	2779.1
4°	2799.7	2801.3	2801.7	2800.9	2794.8	2790.4	2784.4	2778.3	2773.9	2773.1	2774.7
4.5°	2798.9	2800.9	2801.3	2800.1	2794.0	2788.4	2781.5	2774.3	2769.0	2767.8	2769.4
5°	2798.1	2799.7	2800.1	2799.3	2793.2	2786.8	2777.9	2769.4	2764.2	2762.6	2764.2
5.5°	2796.5	2798.9	2798.9	2797.7	2792.0	2784.4	2774.3	2764.6	2758.2	2756.9	2758.6
6°	2794.8	2797.3	2797.3	2796.5	2790.8	2781.9	2770.3	2759.4	2752.5	2751.3	2752.5
6.5°	2793.6	2795.7	2795.2	2794.4	2789.2	2779.5	2766.2	2754.1	2746.9	2745.3	2746.5
7°	2791.6	2793.6	2793.6	2792.4	2787.6	2776.3	2761.8	2748.5	2740.4	2738.8	2740.0
7.5°	2790.0	2791.2	2791.2	2790.4	2785.2	2773.5	2757.4	2742.8	2734.0	2732.4	2732.8
8°	2787.6	2788.4	2788.8	2788.0	2783.2	2770.3	2752.9	2737.2	2727.5	2725.5	2726.3
8.5°	2784.8	2785.6	2786.0	2785.2	2780.7	2766.6	2748.5	2731.5	2720.7	2718.6	2718.6
9°	2781.9	2782.8	2783.2	2781.9	2777.5	2763.0	2743.6	2725.1	2714.2	2711.8	2711.4
9.5°	2778.7	2779.1	2780.3	2778.3	2774.3	2759.4	2738.4	2719.0	2707.0	2704.5	2704.1
10°	2775.5	2775.5	2777.5	2774.7	2770.7	2754.9	2733.6	2712.6	2699.3	2697.7	2696.5
10.5°	2771.5	2771.9	2774.7	2771.5	2767.0	2750.1	2727.9	2706.1	2692.0	2690.8	2688.8
11°	2767.4	2767.8	2771.9	2767.4	2762.6	2744.9	2722.3	2699.3	2684.0	2683.2	2680.3
11.5°	2763.0	2763.4	2768.2	2763.0	2757.8	2739.2	2716.6	2692.4	2675.9	2675.5	2671.9
12°	2759.0	2759.4	2765.4	2758.6	2752.9	2734.0	2710.6	2685.6	2667.0	2667.4	2663.4
12.5°	2754.1	2754.9	2761.8	2753.3	2748.1	2727.9	2704.5	2678.3	2658.2	2659.4	2654.5
13°	2749.3	2750.5	2758.6	2748.1	2742.8	2721.9	2698.5	2671.1	2648.9	2650.5	2644.9
13.5°	2743.6	2745.3	2754.5	2742.4	2737.2	2715.0	2691.6	2663.4	2638.8	2641.6	2634.8
14°	2738.0	2739.6	2750.5	2736.8	2731.5	2708.6	2684.4	2654.9	2628.3	2632.4	2623.9
14.5°	2732.4	2733.6	2745.7	2730.7	2725.5	2701.3	2676.7	2645.7	2617.0	2621.9	2613.0
15°	2725.5	2727.5	2740.8	2723.9	2719.5	2693.6	2668.7	2636.4	2604.5	2611.4	2601.7
15.5°	2718.6	2720.3	2734.8	2716.6	2713.0	2686.0	2660.2	2625.9	2591.6	2600.1	2589.6
16°	2711.4	2712.2	2728.7	2708.6	2705.7	2677.5	2650.9	2615.4	2578.3	2587.6	2576.7
16.5°	2703.3	2703.7	2721.1	2700.1	2698.5	2668.2	2640.8	2603.7	2564.2	2575.1	2564.6
17°	2694.9	2694.9	2713.0	2690.8	2690.8	2659.0	2629.9	2592.0	2549.3	2562.2	2552.1
17.5°	2686.0	2685.6	2704.1	2681.6	2682.8	2648.5	2618.7	2579.1	2534.4	2548.1	2538.8
18°	2677.5	2675.9	2694.9	2671.5	2674.3	2638.4	2607.8	2565.0	2519.1	2533.6	2525.5
18.5°	2668.2	2665.8	2684.8	2661.0	2665.4	2627.1	2595.3	2551.3	2502.9	2517.5	2511.4
19°	2659.0	2655.3	2673.9	2650.5	2656.6	2616.2	2582.4	2536.4	2486.0	2501.7	2497.3
19.5°	2648.9	2644.5	2662.6	2639.6	2646.9	2604.5	2568.7	2520.7	2468.7	2485.2	2482.8
20°	2637.6	2632.8	2650.9	2627.9	2636.8	2592.0	2554.6	2504.6	2450.5	2467.9	2468.3
20.5°	2626.3	2620.7	2637.6	2615.4	2625.5	2579.1	2539.6	2486.8	2432.4	2448.9	2452.5
21°	2613.8	2607.8	2623.9	2602.9	2614.2	2565.4	2523.9	2468.7	2412.2	2430.0	2436.8

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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°	2572.3	2565.4	2577.9	2560.6	2575.5	2519.9	2472.7	2409.4	2351.3	2369.1	2387.6
23°	2557.0	2550.1	2560.6	2545.7	2560.6	2503.8	2454.2	2389.2	2330.4	2347.7	2370.7
23.5°	2540.0	2534.4	2543.3	2530.4	2544.9	2486.8	2435.6	2367.9	2309.4	2326.4	2354.2
24°	2522.7	2518.3	2525.1	2514.6	2528.7	2469.5	2415.9	2346.5	2288.0	2305.0	2337.2
24.5°	2504.6	2502.1	2507.0	2498.9	2511.8	2451.3	2396.5	2324.7	2267.5	2282.8	2319.9
25°	2485.2	2485.6	2488.4	2483.2	2494.1	2434.0	2376.7	2303.0	2246.5	2261.0	2301.8
25.5°	2466.3	2468.7	2469.5	2466.7	2475.5	2415.5	2357.0	2280.4	2225.6	2238.9	2283.2
26°	2446.5	2451.7	2449.7	2450.1	2457.0	2396.9	2336.8	2259.4	2205.0	2217.1	2264.3
26.5°	2426.3	2434.8	2430.4	2433.6	2437.6	2378.0	2316.3	2237.7	2184.0	2194.5	2244.9
27°	2405.4	2417.5	2410.6	2416.3	2417.1	2358.2	2296.1	2215.9	2163.1	2171.9	2225.2
27.5°	2383.6	2399.7	2390.5	2398.1	2396.5	2338.0	2275.5	2194.1	2141.7	2150.2	2204.6
28°	2361.8	2381.2	2369.9	2380.0	2375.1	2317.9	2254.6	2172.3	2120.7	2128.4	2184.4
28.5°	2339.7	2362.6	2348.9	2361.0	2353.0	2297.3	2233.6	2150.6	2100.6	2107.0	2163.5
29°	2317.5	2343.3	2327.6	2341.7	2331.2	2276.4	2211.8	2129.2	2080.0	2086.1	2142.5
29.5°	2295.7	2324.3	2307.4	2322.3	2309.4	2255.8	2190.9	2108.2	2059.8	2064.7	2121.5
30°	2273.1	2305.4	2286.8	2302.2	2287.2	2234.8	2169.9	2087.3	2040.1	2043.7	2100.2
30.5°	2251.4	2285.6	2265.9	2282.0	2264.3	2214.3	2149.0	2066.3	2020.7	2023.2	2079.2
31°	2229.6	2265.5	2244.5	2261.8	2242.5	2194.1	2128.4	2046.5	2001.4	2003.0	2057.0
31.5°	2208.6	2245.7	2224.7	2240.9	2221.1	2173.1	2107.8	2027.2	1981.6	1982.4	2033.6
32°	2186.0	2225.6	2204.2	2220.7	2199.8	2152.6	2087.7	2007.4	1962.3	1962.7	2009.0
32.5°	2165.5	2205.4	2184.4	2199.8	2178.0	2132.4	2067.5	1987.3	1943.3	1941.7	1983.6
33°	2143.3	2183.6	2163.1	2178.8	2157.0	2111.9	2046.9	1967.1	1922.8	1920.3	1956.2
33.5°	2119.9	2161.0	2142.5	2156.2	2134.0	2090.9	2025.2	1946.2	1901.8	1897.8	1928.0
34°	2094.5	2136.0	2120.3	2132.0	2110.6	2067.9	2003.4	1925.2	1880.8	1875.6	1899.8
34.5°	2069.1	2110.6	2096.9	2106.2	2085.7	2044.9	1980.8	1903.4	1859.1	1852.2	1870.4
35°	2043.3	2083.6	2073.2	2079.6	2059.8	2019.9	1957.8	1881.2	1837.3	1828.8	1840.9
35.5°	2016.7	2056.6	2049.8	2053.0	2033.6	1995.3	1934.1	1858.7	1814.7	1804.2	1811.5
36°	1990.1	2028.8	2025.6	2024.4	2007.8	1969.9	1908.7	1835.7	1791.3	1779.6	1781.3
36.5°	1963.1	2000.6	2000.2	1996.1	1978.8	1942.5	1882.9	1811.5	1767.1	1753.0	1750.6
37°	1934.1	1971.1	1973.2	1966.7	1951.0	1914.3	1855.8	1786.1	1741.7	1726.4	1720.0
37.5°	1905.4	1940.9	1947.0	1936.9	1921.6	1885.3	1828.4	1760.7	1715.5	1698.6	1688.9
38°	1874.8	1909.5	1918.3	1906.2	1891.7	1855.8	1800.2	1732.5	1687.7	1667.6	1657.1
38.5°	1844.6	1878.0	1888.5	1874.8	1861.9	1826.0	1769.2	1702.2	1657.9	1634.5	1622.8
39°	1815.1	1847.0	1858.7	1843.7	1832.5	1795.0	1736.9	1671.2	1625.2	1600.6	1585.7
39.5°	1783.3	1813.9	1826.4	1811.1	1801.4	1763.5	1704.2	1638.1	1590.9	1566.4	1549.4
40°	1751.4	1779.6	1791.3	1777.2	1770.0	1730.0	1670.4	1604.3	1555.1	1530.5	1512.7
40.5°	1717.5	1744.2	1755.9	1741.7	1736.9	1695.8	1635.3	1570.0	1519.2	1492.6	1475.2
41°	1685.3	1708.3	1720.0	1705.9	1704.2	1660.7	1599.4	1534.5	1482.9	1455.1	1438.1
41.5°	1650.2	1671.6	1682.9	1669.6	1670.0	1624.8	1563.9	1499.0	1445.8	1418.0	1399.8
42°	1614.7	1634.9	1646.2	1633.7	1635.3	1587.7	1528.1	1462.7	1409.5	1378.9	1361.5
42.5°	1576.4	1597.4	1609.5	1597.4	1598.2	1551.0	1491.4	1426.0	1372.4	1339.4	1322.4
43°	1539.7	1560.3	1572.4	1559.9	1561.1	1514.3	1454.7	1389.0	1335.7	1300.7	1284.1
43.5°	1500.2	1522.4	1534.5	1522.8	1521.2	1475.6	1416.8	1352.7	1298.6	1262.0	1245.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1377.3	1407.1	1420.0	1408.7	1401.1	1358.7	1301.9	1240.6	1187.4	1145.8	1128.5
45.5°	1335.7	1368.4	1381.3	1372.0	1359.1	1318.4	1263.6	1204.7	1150.3	1107.9	1090.6
46°	1294.2	1329.7	1342.6	1333.3	1317.6	1277.3	1224.5	1167.2	1112.8	1069.6	1051.5
46.5°	1251.9	1290.2	1303.9	1293.4	1276.5	1237.0	1186.2	1130.5	1076.5	1032.5	1013.2
47°	1210.8	1250.7	1264.4	1253.1	1235.3	1196.6	1146.6	1093.0	1039.0	995.5	974.5
47.5°	1170.0	1209.9	1224.9	1214.4	1194.2	1155.9	1107.9	1056.3	1002.3	957.6	937.0
48°	1129.3	1170.0	1186.2	1174.9	1154.7	1115.2	1068.8	1018.8	966.0	921.3	899.1
48.5°	1088.6	1130.1	1146.2	1135.0	1115.2	1074.5	1031.3	982.6	929.7	885.8	862.0
49°	1050.3	1090.6	1107.5	1095.0	1075.7	1035.4	992.6	945.1	893.0	849.1	825.3
49.5°	1010.4	1051.1	1068.4	1055.5	1036.2	996.3	954.7	908.4	857.6	813.6	789.4
50°	971.7	1011.2	1028.9	1015.6	997.5	957.2	916.8	871.3	822.1	778.5	753.1
50.5°	932.6	970.9	989.8	976.5	960.0	917.6	879.3	835.0	787.4	744.3	718.5
51°	895.1	932.2	949.5	936.6	921.7	879.7	841.8	799.1	751.9	709.2	684.2
51.5°	857.2	894.3	911.2	898.7	884.2	843.1	805.2	763.6	718.1	675.7	651.1
52°	820.9	856.0	872.5	860.8	847.1	805.6	768.9	728.5	684.6	642.7	618.1
52.5°	783.4	817.6	834.2	823.3	809.6	770.1	733.0	692.7	650.7	610.4	585.8
53°	747.9	780.2	795.9	785.8	773.3	733.4	696.7	658.4	617.7	577.4	554.4
53.5°	711.2	743.5	756.8	748.3	737.4	697.9	662.0	624.9	585.0	545.9	524.5
54°	676.9	707.2	718.9	711.2	701.9	662.8	627.8	591.5	552.8	514.9	494.3
54.5°	642.7	670.5	681.8	675.7	666.9	629.4	593.9	558.8	521.3	484.6	464.5
55°	608.4	636.2	645.9	640.3	633.0	595.9	561.2	526.2	491.1	454.8	436.2
55.5°	574.5	601.1	609.2	606.0	599.9	562.4	528.2	494.3	460.4	426.2	408.4
56°	542.3	566.9	574.1	571.7	565.7	530.2	495.9	463.7	431.0	397.9	382.6
56.5°	510.4	533.0	539.9	537.4	533.0	498.3	465.3	433.8	402.0	372.1	357.2
57°	478.2	500.8	506.0	505.2	500.8	467.7	434.6	403.6	375.4	346.3	331.8
57.5°	447.5	468.9	472.5	472.9	470.1	437.9	404.8	376.2	348.8	320.5	306.0
58°	417.7	437.0	440.3	441.9	439.1	408.4	377.8	349.2	322.1	294.7	280.6
58.5°	388.7	406.8	409.6	411.2	409.2	381.4	350.8	321.7	295.5	268.5	257.6
59°	360.4	377.4	379.4	381.0	381.8	354.8	323.8	294.3	268.9	245.5	235.5
59.5°	332.2	348.8	350.4	352.4	354.0	327.8	296.7	267.3	244.3	223.0	213.3
60°	305.6	320.5	322.5	324.6	326.6	300.8	270.1	242.7	220.9	201.2	193.1
60.5°	279.4	293.1	295.1	297.5	298.8	274.2	246.3	219.3	198.8	181.0	173.4
61°	254.0	267.3	268.9	270.5	271.3	250.0	222.2	197.2	177.0	161.3	155.2
61.5°	230.6	242.3	244.7	245.9	246.3	226.2	200.4	175.8	156.8	143.1	137.9
62°	206.8	218.5	221.3	221.7	222.6	204.0	179.4	155.2	137.5	125.8	121.4
62.5°	184.7	195.1	198.8	198.8	199.2	182.2	159.3	136.3	119.3	109.3	106.0
63°	164.1	173.4	177.0	176.6	177.4	161.3	139.9	118.9	101.6	94.3	91.9
63.5°	143.9	152.8	157.2	155.6	156.8	141.9	122.6	102.0	86.3	80.2	78.6
64°	125.8	135.5	137.9	137.1	137.5	123.4	106.0	87.1	72.2	67.7	67.3
64.5°	107.6	118.5	121.8	120.6	118.9	106.4	90.7	72.6	59.3	56.8	56.4
65°	89.9	101.2	105.6	104.0	102.0	90.7	76.6	60.1	50.8	48.8	48.8
65.5°	71.8	83.9	89.5	87.5	86.3	75.8	63.3	51.6	42.7	41.1	41.1
66°	53.6	66.9	73.4	71.0	71.8	62.5	54.0	42.7	34.3	33.5	33.9



TEST NUMBER: P776238

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	18.1	32.3	37.9	36.3	40.7	34.7	27.0	16.5	12.1	12.9	13.3
68°	14.9	23.8	28.2	27.4	31.4	25.4	17.7	12.1	7.7	8.9	8.9
68.5°	11.7	16.9	20.2	19.8	22.6	16.1	12.1	8.1	4.4	5.6	5.6
69°	8.5	14.1	13.7	13.7	13.3	10.9	8.1	5.2	2.8	3.6	3.6
69.5°	5.2	11.3	10.9	10.9	8.5	6.9	4.4	3.2	2.4	2.4	2.4
70°	2.4	8.5	8.1	8.1	5.2	3.6	2.8	2.4	2.4	2.4	2.4
70.5°	2.0	5.2	5.2	5.2	3.2	2.4	2.4	2.0	2.0	2.4	2.4
71°	2.0	2.4	2.8	2.8	2.4	2.4	2.0	2.0	2.0	2.0	2.4
71.5°	2.0	2.4	2.4	2.4	2.4	2.0	2.0	2.0	2.0	2.0	2.0
72°	2.0	2.0	2.4	2.4	2.4	2.0	2.0	2.0	2.0	2.0	2.0
72.5°	2.0	2.0	2.4	2.4	2.0	2.0	2.0	2.0	2.0	2.0	2.0
73°	2.0	2.0	2.4	2.4	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: P776238
CATALOG NUMBER: HCDJBL3040CSD-HCD41TRC-4000lm-4000K

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: P776238

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2796.9	2796.9	2796.9	2796.9	2796.9	2796.9
0.5°	2796.5	2794.4	2796.1	2797.3	2798.5	2798.1
1°	2794.8	2792.8	2795.2	2797.3	2799.3	2799.3
1.5°	2792.8	2790.8	2794.0	2797.3	2799.3	2800.1
2°	2790.8	2788.4	2792.0	2796.1	2798.9	2800.5
2.5°	2788.0	2785.6	2790.0	2794.4	2798.5	2800.5
3°	2784.8	2782.3	2786.8	2792.4	2797.7	2800.5
3.5°	2781.1	2778.7	2783.6	2790.0	2796.5	2800.5
4°	2776.7	2774.3	2779.9	2787.6	2794.8	2799.7
4.5°	2771.9	2769.8	2775.5	2784.4	2793.2	2798.9
5°	2766.6	2764.6	2771.1	2780.7	2791.6	2798.1
5.5°	2761.0	2759.0	2766.2	2777.1	2789.6	2796.5
6°	2754.9	2753.3	2761.0	2773.1	2787.2	2794.8
6.5°	2748.9	2747.3	2755.7	2769.0	2784.4	2793.6
7°	2742.4	2741.2	2750.5	2765.0	2781.9	2791.6
7.5°	2736.0	2734.8	2744.4	2760.6	2778.7	2790.0
8°	2729.5	2728.3	2738.8	2756.1	2775.9	2787.6
8.5°	2722.7	2721.9	2732.8	2751.7	2772.3	2784.8
9°	2715.8	2715.0	2726.7	2746.9	2768.2	2781.9
9.5°	2709.0	2707.8	2720.3	2741.6	2763.8	2778.7
10°	2702.1	2700.5	2713.4	2736.4	2759.4	2775.5
10.5°	2694.9	2693.2	2707.0	2731.1	2754.5	2771.5
11°	2687.6	2685.6	2700.1	2725.9	2749.3	2767.4
11.5°	2679.9	2677.1	2692.4	2720.3	2744.0	2763.0
12°	2672.3	2669.1	2685.2	2714.6	2738.8	2759.0
12.5°	2664.2	2659.8	2677.1	2708.2	2732.8	2754.1
13°	2655.7	2650.5	2668.7	2702.1	2726.3	2749.3
13.5°	2647.3	2640.0	2660.2	2694.9	2719.9	2743.6
14°	2637.6	2629.1	2650.5	2687.2	2712.6	2738.0
14.5°	2627.5	2617.9	2640.0	2679.1	2704.9	2732.4
15°	2617.0	2605.8	2629.1	2669.9	2696.9	2725.5
15.5°	2605.4	2592.9	2617.4	2660.2	2687.6	2718.6
16°	2593.3	2579.1	2604.9	2650.1	2678.3	2711.4
16.5°	2580.4	2565.0	2591.6	2639.2	2667.8	2703.3
17°	2567.0	2550.1	2577.9	2627.5	2657.8	2694.9
17.5°	2553.3	2534.8	2563.4	2615.0	2646.9	2686.0
18°	2538.4	2518.7	2548.5	2602.5	2635.6	2677.5
18.5°	2523.1	2502.1	2533.6	2588.8	2623.9	2668.2
19°	2507.0	2485.2	2517.1	2574.7	2612.2	2659.0
19.5°	2490.0	2467.1	2500.1	2559.8	2599.7	2648.9
20°	2472.3	2448.1	2482.4	2544.1	2586.8	2637.6
20.5°	2453.8	2429.2	2464.2	2527.9	2572.7	2626.3
21°	2434.8	2409.0	2445.3	2510.6	2557.8	2613.8



TEST NUMBER: P776238

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2373.5	2347.3	2385.2	2455.4	2511.0	2572.3
23°	2352.2	2325.5	2363.8	2435.2	2494.1	2557.0
23.5°	2330.4	2304.2	2343.3	2415.1	2477.1	2540.0
24°	2308.6	2282.8	2321.9	2394.9	2459.0	2522.7
24.5°	2286.0	2261.0	2300.5	2373.9	2440.5	2504.6
25°	2263.9	2239.3	2279.2	2352.6	2421.5	2485.2
25.5°	2241.7	2217.5	2258.2	2332.0	2403.4	2466.3
26°	2218.7	2196.1	2236.0	2311.0	2384.0	2446.5
26.5°	2195.7	2173.9	2214.7	2290.1	2364.2	2426.3
27°	2173.1	2152.2	2192.9	2268.3	2344.5	2405.4
27.5°	2151.0	2130.4	2171.5	2246.9	2324.3	2383.6
28°	2128.8	2109.4	2149.4	2225.2	2303.4	2361.8
28.5°	2107.0	2088.5	2128.8	2203.8	2282.8	2339.7
29°	2084.8	2066.7	2107.8	2182.4	2261.4	2317.5
29.5°	2063.5	2046.5	2086.9	2161.9	2240.5	2295.7
30°	2042.9	2026.8	2065.9	2140.9	2219.5	2273.1
30.5°	2022.8	2006.6	2046.1	2120.3	2199.3	2251.4
31°	2002.2	1986.9	2026.4	2099.8	2179.2	2229.6
31.5°	1981.2	1966.3	2005.8	2080.0	2158.2	2208.6
32°	1961.1	1946.6	1985.7	2058.6	2137.3	2186.0
32.5°	1940.5	1926.4	1965.5	2038.5	2116.7	2165.5
33°	1918.3	1905.0	1944.5	2017.5	2095.7	2143.3
33.5°	1895.8	1883.7	1922.8	1994.9	2073.2	2119.9
34°	1873.2	1861.1	1901.0	1972.0	2049.0	2094.5
34.5°	1850.2	1838.9	1878.0	1948.6	2023.6	2069.1
35°	1826.0	1816.3	1855.0	1924.4	1998.2	2043.3
35.5°	1802.2	1793.3	1832.1	1900.2	1972.0	2016.7
36°	1776.4	1768.8	1808.7	1874.8	1945.3	1990.1
36.5°	1750.2	1743.8	1784.1	1849.8	1917.5	1963.1
37°	1722.0	1718.0	1757.9	1822.8	1888.9	1934.1
37.5°	1694.6	1691.7	1731.7	1794.2	1859.1	1905.4
38°	1664.7	1663.5	1704.2	1765.5	1828.8	1874.8
38.5°	1632.1	1633.3	1674.8	1736.1	1798.6	1844.6
39°	1598.2	1601.4	1643.4	1704.2	1767.1	1815.1
39.5°	1563.9	1567.6	1609.9	1670.4	1735.3	1783.3
40°	1526.4	1532.1	1575.2	1635.3	1701.8	1751.4
40.5°	1488.9	1495.4	1540.1	1600.2	1667.6	1717.5
41°	1450.6	1457.9	1504.3	1564.3	1631.3	1685.3
41.5°	1412.7	1419.6	1467.2	1528.5	1594.2	1650.2
42°	1373.6	1383.3	1431.3	1491.8	1558.7	1614.7
42.5°	1334.5	1345.0	1394.2	1454.3	1521.6	1576.4
43°	1295.4	1307.9	1357.5	1416.8	1484.1	1539.7
43.5°	1257.5	1268.4	1320.0	1378.9	1444.6	1500.2



TEST NUMBER: P776238

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1138.2	1155.9	1207.9	1263.6	1327.3	1377.3
45.5°	1100.7	1117.6	1170.8	1225.3	1287.4	1335.7
46°	1061.2	1080.5	1134.1	1187.0	1247.0	1294.2
46.5°	1022.9	1043.0	1096.2	1147.0	1205.9	1251.9
47°	985.0	1005.9	1059.2	1108.7	1165.6	1210.8
47.5°	948.3	967.6	1021.3	1070.0	1125.3	1170.0
48°	910.8	931.3	983.8	1031.7	1085.0	1129.3
48.5°	874.5	894.3	945.9	992.6	1044.2	1088.6
49°	837.8	858.4	908.8	955.9	1005.1	1050.3
49.5°	803.9	822.5	871.7	917.2	965.6	1010.4
50°	767.3	786.6	835.0	879.3	926.5	971.7
50.5°	732.6	750.7	797.5	841.8	887.0	932.6
51°	697.9	716.0	762.0	805.2	849.1	895.1
51.5°	664.0	681.8	726.1	768.1	811.6	857.2
52°	631.4	648.3	691.1	732.6	775.3	820.9
52.5°	598.3	615.3	655.6	696.3	738.2	783.4
53°	566.1	581.8	621.7	660.8	702.7	747.9
53.5°	534.6	549.5	587.8	624.9	667.7	711.2
54°	504.0	518.1	554.4	591.1	633.0	676.9
54.5°	473.3	487.4	522.1	558.0	599.5	642.7
55°	444.3	457.2	490.3	524.1	566.1	608.4
55.5°	415.7	427.0	458.4	491.1	533.8	574.5
56°	387.9	398.3	427.8	460.4	502.0	542.3
56.5°	361.7	370.1	397.9	429.8	471.3	510.4
57°	335.8	342.7	368.9	399.6	441.1	478.2
57.5°	310.0	315.3	339.9	370.1	410.8	447.5
58°	284.2	290.3	313.7	341.9	382.6	417.7
58.5°	260.5	264.9	286.7	314.9	355.6	388.7
59°	237.5	240.7	261.3	288.7	328.6	360.4
59.5°	215.3	217.7	236.7	263.7	302.8	332.2
60°	194.3	195.1	213.3	238.7	277.8	305.6
60.5°	174.6	174.2	191.1	216.5	252.8	279.4
61°	155.2	153.6	169.7	194.3	229.0	254.0
61.5°	137.5	136.7	149.6	173.8	206.8	230.6
62°	120.6	120.6	133.9	153.6	185.1	206.8
62.5°	104.8	104.4	117.7	137.1	164.1	184.7
63°	90.7	88.3	102.0	121.4	144.7	164.1
63.5°	77.4	71.8	85.9	105.6	128.6	143.9
64°	65.7	59.7	70.2	89.9	112.9	125.8
64.5°	55.2	49.6	58.1	74.2	97.2	107.6
65°	48.0	40.3	47.6	62.1	81.0	89.9
65.5°	40.3	32.7	38.3	50.8	65.3	71.8
66°	32.7	25.8	30.2	40.7	52.8	53.6



TEST NUMBER: P776238

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	12.9	12.1	13.3	18.1	23.8	18.1
68°	8.9	9.3	10.5	12.9	16.9	14.9
68.5°	5.6	6.5	7.7	10.1	13.7	11.7
69°	3.6	3.2	5.2	7.3	10.9	8.5
69.5°	2.4	2.4	2.4	4.8	8.1	5.2
70°	2.4	2.0	2.0	2.0	4.8	2.4
70.5°	2.4	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: P776238

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

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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Scaled Data Report





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

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21.5°	2600.5	2594.1	2609.0	2589.2	2602.1	2550.9	2507.4	2449.7	2392.1	2409.8	2420.7
22°	2587.2	2580.0	2593.7	2575.5	2589.2	2536.0	2490.8	2430.0	2371.9	2389.6	2404.6



44°	1459.9	1484.5	1496.6	1485.3	1482.9	1436.1	1378.1	1314.8	1260.7	1222.8	1206.3
44.5°	1416.8	1446.2	1458.3	1447.8	1440.6	1397.0	1340.2	1278.1	1224.1	1183.7	1167.6



66.5°	39.9	53.6	60.1	58.1	58.9	53.2	45.2	33.9	25.8	25.4	26.2
67°	27.4	42.3	48.4	46.4	49.6	43.9	35.9	25.4	17.7	17.7	18.5



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°	2415.1	2389.2	2425.9	2492.5	2542.9	2600.5
22°	2394.1	2367.9	2405.8	2474.3	2527.1	2587.2



44°	1216.0	1230.9	1282.1	1341.0	1405.9	1459.9
44.5°	1176.9	1193.0	1245.0	1302.3	1367.2	1416.8

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66.5°	25.0	20.2	23.4	32.3	41.5	39.9
67°	17.7	15.3	17.7	24.6	31.9	27.4

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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)