

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: P776609

Luminaire Tested: HCDJBS4050CSD-HCD4TRH-HCD4TRLWW-5000lm-5000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776609
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B004)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD4TRH-HCD4TRLWW-5000lm-5000K
Description: 4 INCH ROUND MEDIUM LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

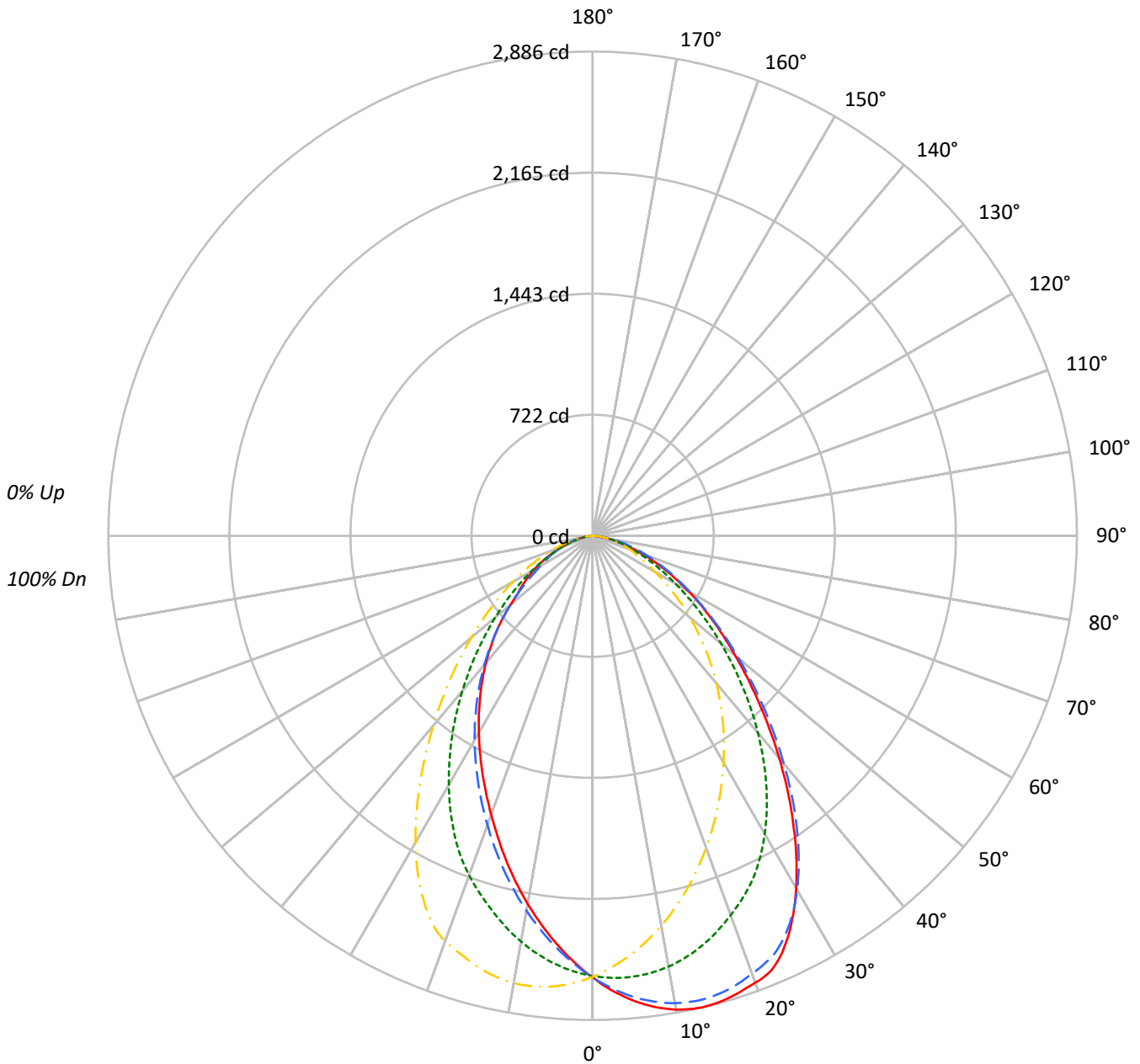
Lumens per Lamp: N/A
Luminaire Lumens: 4937.9 lumens
Efficiency: N/A
Efficacy: 102.9 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1.09 / 1.15
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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					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			
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88					88			
2	102	95	89	84	100	93	88	83	90	85	82	87	83	80	84	81	78	76					76			
3	94	85	78	73	92	84	77	72	81	75	71	78	73	69	76	72	68	66					66			
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60	58					58			
5	81	70	62	56	79	69	61	55	67	60	55	65	59	54	63	58	54	52					52			
6	75	63	55	50	74	63	55	49	61	54	49	59	53	49	58	52	48	46					46			
7	70	58	50	45	69	57	50	44	56	49	44	54	48	44	53	48	44	42					42			
8	66	54	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38					38			
9	62	49	42	37	61	49	42	37	48	41	37	47	41	36	46	40	36	35					35			
10	58	46	39	34	57	45	38	34	45	38	34	44	38	33	43	37	33	32					32			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	331010	331010	331010	331010
5°	351350	333374	308714	323621
10°	366454	333139	284681	313894
15°	375455	329332	260253	301372
20°	379762	322334	236769	288397
25°	375547	313518	215955	271304
30°	352514	298252	197067	249135
35°	319943	276972	179552	224229
40°	284213	251669	162412	198457
45°	248956	223897	144483	172568
50°	217030	195455	125108	148113
55°	189836	168223	111747	125811
60°	165593	143242	101183	105210
65°	140406	121318	87043	86477
70°	115429	101667	71642	69692
75°	88789	84996	58058	54751
80°	56675	70735	41165	40440
85°	16894	61657	16172	18916

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°
 Vertical Angle: 45°
 Luminance: 257428 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	246.8	5.0
10°-20°	683.8	13.8
20°-30°	968.8	19.6
30°-40°	1012.3	20.5
40°-50°	852.1	17.3
50°-60°	605.0	12.3
60°-70°	367.0	7.4
70°-80°	168.3	3.4
80°-90°	33.8	0.7
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°	1899.4	38.5
0°-40°	2911.7	59.0
0°-60°	4368.8	88.5
0°-90°	4937.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4937.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2630	2630	2630	2630	2630	
5°	2781	2639	2444	2562	2781	268
15°	2882	2528	1998	2313	2882	813
25°	2704	2258	1555	1954	2704	1234
35°	2082	1803	1169	1460	2082	1298
45°	1399	1258	812	970	1399	1081
55°	865	767	509	573	865	778
65°	472	407	292	290	472	470
75°	183	175	119	113	183	197
85°	12	43	11	13	12	23
90°	0	2	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°	2630.2	2630.2	2630.2	2630.2	2630.2	2630.2	2630.2	2630.2	2630.2	2630.2	2630.2
0.5°	2650.6	2650.6	2647.6	2641.8	2627.7	2622.4	2619.0	2616.6	2616.6	2616.1	2618.0
1°	2667.6	2667.1	2661.2	2651.0	2630.7	2619.0	2609.3	2601.5	2598.6	2597.6	2602.5
1.5°	2683.6	2683.6	2675.3	2660.3	2633.6	2614.6	2598.1	2586.0	2580.6	2579.7	2586.5
2°	2699.1	2699.1	2688.9	2668.5	2636.0	2610.3	2587.0	2570.0	2561.7	2560.7	2570.0
2.5°	2714.2	2714.7	2701.5	2676.8	2637.9	2604.9	2575.8	2553.5	2542.8	2541.8	2553.0
3°	2728.2	2729.2	2714.2	2684.1	2638.9	2599.6	2564.1	2536.9	2523.8	2522.4	2536.5
3.5°	2742.3	2743.3	2725.8	2690.9	2639.9	2593.3	2551.5	2520.0	2504.4	2502.5	2519.5
4°	2755.9	2757.4	2737.0	2697.7	2639.9	2587.0	2538.9	2502.5	2484.0	2482.6	2501.5
4.5°	2768.5	2770.5	2747.7	2704.0	2639.9	2579.7	2525.8	2484.5	2463.6	2463.1	2483.5
5°	2781.2	2783.1	2757.9	2709.3	2638.9	2572.4	2512.2	2466.5	2443.7	2442.3	2465.6
5.5°	2792.3	2795.3	2767.6	2714.2	2638.4	2564.6	2498.6	2448.1	2422.8	2420.9	2447.1
6°	2803.5	2806.9	2776.8	2719.0	2636.5	2556.4	2484.0	2429.6	2402.0	2400.0	2428.2
6.5°	2813.7	2817.6	2785.1	2722.9	2634.5	2548.1	2469.9	2411.2	2381.1	2379.1	2409.2
7°	2823.4	2827.8	2793.3	2726.3	2632.1	2538.9	2455.4	2391.8	2359.2	2358.3	2390.3
7.5°	2832.6	2837.5	2800.6	2729.2	2628.7	2529.2	2439.8	2372.3	2337.9	2336.4	2370.4
8°	2840.9	2846.2	2807.4	2731.2	2625.3	2519.5	2424.3	2352.9	2316.0	2314.6	2350.5
8.5°	2848.2	2854.5	2813.7	2733.1	2621.4	2508.8	2408.3	2333.0	2294.2	2292.7	2330.6
9°	2855.5	2862.3	2819.5	2734.6	2617.1	2498.6	2392.7	2313.1	2271.8	2270.4	2310.7
9.5°	2861.8	2869.1	2824.4	2735.5	2612.2	2487.4	2375.7	2292.7	2249.5	2248.5	2290.3
10°	2867.6	2875.4	2828.8	2735.5	2606.9	2475.8	2359.2	2272.3	2227.7	2225.7	2269.4
10.5°	2872.5	2880.7	2832.2	2735.0	2601.0	2463.6	2341.8	2251.9	2204.8	2202.9	2248.5
11°	2876.3	2885.6	2835.6	2734.6	2594.7	2451.5	2325.7	2230.6	2182.0	2180.6	2227.7
11.5°	2879.7	2889.4	2837.5	2732.6	2587.9	2439.4	2307.3	2209.7	2159.7	2158.2	2206.8
12°	2882.2	2892.8	2839.4	2730.7	2580.6	2426.2	2289.3	2188.3	2136.4	2134.9	2185.4
12.5°	2884.1	2895.3	2840.4	2728.2	2572.9	2413.1	2270.9	2167.4	2113.6	2112.1	2163.6
13°	2885.1	2897.2	2840.9	2724.8	2564.6	2399.5	2253.4	2145.6	2090.7	2088.8	2142.7
13.5°	2885.6	2898.2	2840.4	2721.0	2555.9	2385.5	2234.9	2124.7	2067.4	2066.0	2120.8
14°	2884.6	2898.7	2839.4	2716.6	2547.1	2370.9	2216.0	2102.4	2044.1	2042.2	2099.0
14.5°	2883.6	2898.2	2837.5	2711.7	2536.9	2356.3	2197.1	2080.5	2021.3	2018.9	2077.1
15°	2881.7	2896.7	2835.1	2705.9	2527.7	2341.8	2177.6	2058.2	1997.5	1996.1	2054.8
15.5°	2878.8	2894.8	2832.2	2700.1	2517.0	2326.2	2158.7	2036.4	1974.2	1972.7	2033.0
16°	2875.9	2891.9	2828.3	2693.3	2505.9	2310.7	2139.3	2014.5	1950.9	1949.0	2011.1
16.5°	2871.5	2888.5	2823.9	2686.0	2494.7	2294.7	2119.4	1992.7	1928.1	1925.7	1989.3
17°	2867.1	2884.6	2818.6	2678.2	2483.1	2279.1	2100.0	1970.3	1904.3	1902.3	1966.9
17.5°	2861.8	2880.2	2813.2	2670.0	2470.4	2262.1	2079.6	1948.0	1881.0	1879.5	1945.1
18°	2856.4	2874.9	2806.9	2661.2	2458.3	2245.6	2059.7	1925.7	1858.2	1855.7	1922.7
18.5°	2850.1	2869.1	2800.1	2652.0	2445.7	2228.6	2039.3	1902.8	1835.3	1832.9	1900.4
19°	2844.8	2862.7	2792.8	2642.8	2433.0	2212.1	2019.8	1880.5	1812.5	1809.6	1878.6
19.5°	2840.4	2856.9	2785.5	2632.6	2419.9	2195.1	1998.5	1858.6	1790.7	1787.3	1856.2
20°	2835.6	2852.1	2777.8	2622.4	2406.8	2178.1	1978.1	1836.3	1767.9	1764.5	1834.4
20.5°	2830.2	2846.7	2770.5	2612.7	2393.2	2160.7	1957.7	1814.0	1746.5	1742.6	1812.0
21°	2823.9	2840.9	2763.7	2603.0	2379.6	2143.2	1937.3	1792.6	1724.2	1720.3	1790.2



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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°	2797.2	2818.1	2738.4	2570.9	2337.4	2090.2	1874.7	1728.0	1660.1	1655.2	1724.6
23°	2782.1	2806.9	2728.2	2559.3	2322.3	2072.3	1854.3	1707.2	1638.2	1633.8	1702.8
23.5°	2765.1	2793.8	2717.1	2546.7	2306.8	2053.8	1832.9	1685.8	1617.8	1613.4	1681.4
24°	2747.2	2777.8	2702.5	2532.6	2290.8	2035.4	1812.0	1664.9	1596.9	1591.6	1659.6
24.5°	2727.3	2759.3	2686.5	2518.0	2274.3	2016.0	1790.7	1644.5	1576.1	1570.2	1638.2
25°	2704.5	2740.9	2669.5	2501.5	2257.8	1996.5	1770.3	1623.2	1555.2	1549.8	1616.8
25.5°	2681.2	2721.5	2651.0	2484.0	2239.3	1977.1	1749.4	1603.3	1535.3	1529.5	1595.5
26°	2657.8	2699.6	2631.6	2465.6	2221.3	1957.2	1728.5	1582.4	1514.9	1509.1	1574.1
26.5°	2632.1	2675.3	2611.2	2445.7	2201.4	1936.8	1706.7	1562.5	1494.5	1488.2	1552.8
27°	2604.9	2652.0	2589.9	2424.8	2182.0	1916.9	1685.8	1541.6	1474.1	1468.3	1531.4
27.5°	2576.3	2626.8	2566.6	2403.4	2161.1	1896.0	1664.9	1521.7	1454.7	1448.4	1511.0
28°	2549.1	2599.6	2542.3	2380.6	2140.7	1875.2	1644.0	1501.3	1434.3	1428.5	1489.6
28.5°	2518.5	2571.9	2517.5	2357.8	2118.9	1854.3	1622.7	1481.9	1415.3	1408.6	1468.8
29°	2487.9	2543.7	2491.8	2333.5	2097.0	1832.4	1601.8	1462.0	1395.4	1388.6	1447.9
29.5°	2456.8	2514.1	2464.6	2309.2	2074.2	1811.5	1581.4	1442.1	1375.5	1369.2	1427.0
30°	2425.8	2484.0	2436.9	2284.0	2052.4	1789.2	1560.0	1422.6	1356.1	1349.8	1406.6
30.5°	2392.3	2452.9	2408.3	2257.8	2028.6	1766.9	1539.2	1403.2	1337.2	1330.4	1385.7
31°	2359.2	2420.9	2378.7	2231.5	2004.8	1745.0	1518.3	1383.3	1317.8	1311.0	1364.9
31.5°	2325.7	2387.9	2348.6	2203.9	1980.5	1722.2	1497.4	1363.4	1299.3	1291.1	1344.0
32°	2291.7	2355.4	2318.0	2176.2	1956.7	1699.9	1476.5	1344.0	1279.9	1272.1	1324.1
32.5°	2257.3	2321.9	2285.9	2148.5	1931.5	1677.5	1456.1	1325.0	1261.4	1253.2	1303.2
33°	2223.3	2287.9	2254.4	2120.4	1906.2	1654.2	1434.8	1305.6	1242.5	1234.2	1282.8
33.5°	2188.8	2252.9	2221.8	2090.7	1881.0	1631.4	1414.4	1286.7	1224.0	1215.3	1261.9
34°	2153.9	2218.9	2188.8	2061.1	1855.2	1608.1	1393.0	1267.7	1205.6	1196.4	1242.0
34.5°	2117.4	2182.5	2153.9	2031.5	1829.0	1584.8	1372.6	1248.3	1187.1	1177.4	1221.6
35°	2082.5	2147.5	2120.4	2000.9	1802.8	1561.5	1351.7	1229.4	1168.7	1159.0	1201.2
35.5°	2047.5	2111.6	2086.4	1970.3	1776.6	1538.7	1331.4	1210.5	1151.2	1140.5	1181.3
36°	2012.6	2077.1	2051.9	1939.2	1749.9	1515.4	1310.5	1192.0	1132.3	1121.6	1161.9
36.5°	1976.6	2041.2	2016.9	1908.2	1723.2	1491.1	1290.1	1173.1	1114.8	1103.1	1141.5
37°	1940.2	2004.3	1982.9	1876.6	1696.0	1467.8	1269.2	1154.1	1095.9	1084.7	1121.6
37.5°	1905.7	1968.4	1948.0	1845.1	1668.8	1445.0	1248.8	1135.7	1078.4	1066.2	1102.2
38°	1870.3	1932.4	1913.0	1813.0	1641.6	1420.7	1227.9	1117.2	1059.9	1048.3	1082.3
38.5°	1834.9	1896.0	1877.1	1781.0	1614.4	1397.4	1208.5	1098.8	1042.0	1029.8	1062.4
39°	1798.9	1861.1	1843.1	1748.9	1587.2	1373.6	1187.6	1079.8	1024.5	1011.9	1043.4
39.5°	1764.9	1825.1	1807.7	1716.9	1559.6	1350.3	1167.7	1061.4	1007.0	993.4	1023.5
40°	1730.0	1788.7	1773.2	1684.8	1531.9	1326.0	1147.3	1042.9	988.6	975.4	1004.6
40.5°	1694.5	1752.8	1737.7	1652.8	1504.2	1302.7	1126.9	1024.0	970.6	957.0	984.7
41°	1660.1	1718.3	1704.2	1620.2	1476.5	1278.9	1107.0	1006.0	953.1	938.5	966.2
41.5°	1626.6	1683.4	1669.3	1588.7	1449.8	1255.6	1087.1	987.6	935.6	920.6	946.8
42°	1593.1	1647.9	1635.8	1557.1	1421.7	1231.8	1066.7	969.1	917.7	903.1	927.9
42.5°	1559.1	1613.0	1601.8	1525.1	1394.5	1209.0	1046.8	951.2	899.7	885.1	909.4
43°	1526.5	1579.9	1567.8	1494.5	1367.3	1185.7	1027.4	933.2	882.2	867.2	890.5
43.5°	1494.5	1546.0	1534.3	1462.4	1339.6	1162.4	1007.0	914.8	864.7	849.2	871.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1398.8	1446.4	1436.7	1370.7	1258.0	1093.0	948.7	860.4	811.8	796.3	816.2
45.5°	1368.3	1414.4	1404.7	1339.6	1231.3	1070.1	928.8	841.9	794.8	778.8	797.7
46°	1337.2	1382.3	1373.1	1310.0	1204.6	1047.3	909.4	824.4	777.3	761.3	779.3
46.5°	1306.1	1351.3	1342.5	1280.4	1178.4	1025.0	890.0	806.5	759.9	743.4	761.3
47°	1277.5	1320.7	1311.0	1251.2	1151.2	1002.2	870.6	788.5	742.4	726.4	744.3
47.5°	1248.3	1289.6	1280.4	1221.6	1125.0	979.8	851.6	771.0	724.4	708.9	725.4
48°	1218.7	1259.0	1250.8	1193.0	1099.3	958.0	832.2	753.6	707.9	691.9	707.9
48.5°	1190.5	1230.8	1221.6	1165.3	1074.0	936.1	813.8	735.6	690.4	674.4	690.4
49°	1163.8	1201.7	1193.0	1137.6	1048.3	913.8	794.8	718.6	673.0	657.9	673.9
49.5°	1136.2	1172.6	1164.3	1109.9	1023.0	892.9	775.9	701.1	656.0	640.9	656.0
50°	1108.5	1144.4	1135.7	1083.2	998.3	871.1	757.4	683.6	639.0	624.4	639.5
50.5°	1083.2	1117.7	1108.0	1055.6	973.5	849.7	739.0	666.2	621.5	607.9	622.5
51°	1057.0	1091.0	1080.3	1029.8	949.7	828.8	720.5	649.2	605.0	590.9	606.0
51.5°	1030.8	1063.3	1054.1	1003.6	925.9	807.9	702.6	632.2	589.0	575.4	589.4
52°	1006.5	1038.1	1028.4	978.4	901.6	787.5	684.6	615.7	572.0	559.8	573.4
52.5°	982.7	1013.3	1002.2	953.6	878.3	766.7	666.6	598.7	556.9	543.8	556.9
53°	957.5	987.1	976.9	928.4	855.5	746.8	649.2	582.2	548.7	528.3	541.4
53.5°	933.2	962.8	952.1	904.1	832.7	726.9	631.2	566.1	539.9	513.7	525.8
54°	911.4	939.0	927.4	880.3	809.9	706.9	614.2	550.1	530.2	505.0	510.8
54.5°	888.5	915.7	903.6	857.0	788.0	687.5	597.2	534.6	519.5	495.7	495.7
55°	865.2	892.4	880.3	833.7	766.7	668.6	580.7	519.5	509.3	486.0	481.2
55.5°	844.8	869.6	857.5	811.3	745.3	649.7	564.2	504.0	498.2	475.8	467.1
56°	823.0	847.3	834.6	788.5	723.9	631.2	547.7	492.8	487.5	465.6	453.0
56.5°	801.1	825.4	812.8	767.2	703.1	612.8	531.2	484.1	476.8	455.0	439.4
57°	780.3	803.6	790.9	745.8	683.2	594.8	515.6	474.4	465.6	444.8	426.3
57.5°	759.9	783.2	769.6	724.9	663.2	576.8	500.1	464.7	455.0	434.6	414.7
58°	738.0	762.3	748.7	704.0	643.8	559.8	485.1	454.5	444.8	424.4	403.0
58.5°	718.1	741.4	728.3	684.1	624.4	542.8	470.5	444.3	434.1	414.2	391.3
59°	697.2	721.5	707.9	664.2	605.5	525.8	455.9	433.6	423.4	404.5	379.7
59.5°	676.8	701.1	688.5	644.8	587.0	509.3	441.4	423.4	412.7	394.7	368.0
60°	657.9	681.2	669.1	625.4	569.1	493.3	427.3	413.7	402.0	384.5	359.3
60.5°	636.5	661.8	650.1	606.9	551.1	477.8	414.7	403.5	391.3	374.8	350.6
61°	618.1	640.9	630.7	588.5	534.1	462.2	402.0	393.3	380.7	364.6	341.8
61.5°	598.7	622.9	613.2	571.0	516.6	446.7	389.4	383.6	370.0	354.9	333.1
62°	580.2	604.0	595.3	553.0	500.1	432.6	376.8	373.4	358.8	345.2	324.3
62.5°	561.3	585.1	577.3	536.0	483.6	418.5	364.2	362.7	347.6	335.0	315.6
63°	542.3	567.1	559.8	518.6	467.6	404.9	352.0	352.5	336.5	324.8	306.9
63.5°	524.4	548.7	542.8	502.0	451.6	390.9	341.3	341.8	325.3	315.1	298.1
64°	505.9	531.2	526.3	485.5	436.0	377.3	331.1	331.6	314.1	304.9	290.4
64.5°	488.9	513.2	509.8	470.0	421.9	363.2	322.4	321.4	303.0	294.7	282.1
65°	471.5	496.7	493.8	454.5	407.4	351.0	314.1	311.7	292.3	285.0	273.8
65.5°	455.0	479.2	477.8	439.4	392.8	338.4	305.9	301.0	281.6	274.8	265.6
66°	437.5	463.2	462.2	424.4	378.7	325.3	297.2	291.3	270.9	265.1	257.8



TEST NUMBER: P776609

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRH-HCD4TRLWW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	389.4	414.7	416.6	381.1	337.9	291.3	272.4	261.7	239.9	236.5	234.0
68°	373.4	399.1	402.0	367.6	324.3	280.2	264.1	252.0	230.1	226.7	226.3
68.5°	357.8	384.1	387.9	353.5	312.2	269.5	256.4	242.8	220.9	218.0	218.5
69°	343.3	369.0	373.9	340.4	300.1	259.3	248.1	233.1	211.7	208.8	210.7
69.5°	328.2	354.0	359.3	327.3	287.9	249.1	239.9	223.8	203.4	200.5	203.0
70°	313.7	339.9	346.2	315.1	276.3	239.4	232.1	214.6	194.7	192.3	195.2
70.5°	299.1	325.8	333.1	302.0	264.6	230.1	224.3	206.4	186.4	184.0	187.4
71°	285.0	311.7	320.0	290.4	253.9	220.9	216.6	197.6	178.7	176.3	180.1
71.5°	271.4	298.1	306.4	278.2	242.8	212.2	208.8	189.4	170.9	168.5	172.4
72°	258.3	284.5	294.2	266.6	232.6	203.4	201.0	181.6	163.1	160.7	165.1
72.5°	244.7	271.9	281.6	255.4	221.9	195.2	193.2	173.8	155.4	153.4	157.8
73°	231.6	259.3	269.5	243.7	212.2	187.4	186.0	166.1	148.1	146.1	150.5
73.5°	219.0	246.2	257.3	233.1	202.0	179.2	178.2	158.8	140.8	138.9	143.2
74°	206.4	234.5	245.7	222.9	192.8	171.4	170.9	151.5	133.5	131.6	136.4
74.5°	194.2	222.4	234.5	212.2	183.5	164.1	164.1	144.2	126.7	124.8	130.1
75°	182.6	210.7	222.9	202.0	174.8	156.8	156.3	137.4	119.4	117.5	123.3
75.5°	171.4	199.1	211.7	192.3	166.1	149.5	149.5	130.6	112.6	110.7	117.0
76°	160.2	188.4	201.0	182.6	157.8	142.7	142.3	123.3	106.3	103.9	110.7
76.5°	149.5	177.2	190.3	173.3	149.5	136.0	136.0	116.5	99.5	97.6	104.4
77°	138.4	167.0	180.1	164.6	141.8	129.6	129.2	110.2	93.2	90.8	98.1
77.5°	127.7	157.3	170.4	155.4	133.5	123.3	122.8	103.9	86.9	84.5	92.3
78°	117.5	147.1	161.2	146.6	126.2	117.0	116.0	97.1	80.6	78.2	85.9
78.5°	106.8	136.9	151.5	137.9	118.5	111.2	110.2	90.8	74.3	71.9	80.1
79°	97.1	127.2	141.8	129.6	111.7	105.8	103.9	84.5	68.5	66.0	74.3
79.5°	87.4	118.0	132.6	121.4	104.4	100.0	97.6	78.7	62.6	60.2	68.5
80°	78.2	108.8	123.3	113.6	97.6	94.7	91.8	72.3	56.8	54.4	63.1
80.5°	68.9	99.5	115.1	105.8	91.3	89.3	85.9	66.5	51.0	49.0	57.8
81°	60.2	91.3	106.8	98.6	85.0	84.0	80.1	60.7	45.6	44.2	52.9
81.5°	51.5	83.0	98.1	91.3	79.1	78.7	74.8	55.4	40.3	39.3	47.6
82°	42.7	75.3	90.3	84.5	73.3	73.3	68.9	49.5	35.0	34.5	43.2
82.5°	35.0	67.5	83.0	77.7	67.5	68.0	63.6	45.2	29.6	29.6	38.8
83°	27.2	60.2	75.7	71.4	62.1	63.1	58.3	40.3	24.3	24.8	34.5
83.5°	19.9	53.4	68.9	65.1	56.8	58.3	53.4	35.4	19.4	21.4	30.1
84°	17.5	47.1	62.1	58.8	52.0	52.9	48.6	31.1	15.5	18.5	25.7
84.5°	14.6	41.8	55.8	52.9	47.1	48.6	44.2	26.2	12.6	16.0	21.8
85°	11.7	36.9	49.5	47.1	42.7	43.7	39.3	23.3	11.2	13.6	18.0
85.5°	8.7	32.0	43.7	41.8	37.9	39.3	35.0	20.4	9.2	11.2	14.1
86°	6.3	27.7	37.9	36.4	33.5	34.5	30.6	17.5	7.8	8.7	10.7
86.5°	4.9	23.3	32.0	31.1	28.6	29.6	25.7	14.6	6.3	6.8	6.8
87°	3.4	18.9	26.7	26.2	24.3	25.2	21.8	12.1	4.9	4.4	3.4
87.5°	2.4	14.6	21.4	21.4	20.4	20.9	17.5	9.2	2.9	2.4	1.0
88°	1.0	10.7	16.5	17.0	16.5	17.0	13.6	6.8	1.5	1.0	0.5
88.5°	0.5	6.8	12.6	13.1	12.6	12.6	9.7	3.9	0.5	0.5	0.0



TEST NUMBER: P776609

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRH-HCD4TRLWW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.5	0.5	1.5	2.4	1.9	1.0	0.5	0.0	0.5	0.0



TEST NUMBER: P776609

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRH-HCD4TRLWW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2630.2	2630.2	2630.2	2630.2	2630.2	2630.2
0.5°	2621.4	2619.5	2628.2	2637.5	2645.2	2650.6
1°	2610.7	2615.1	2630.7	2646.2	2658.8	2667.6
1.5°	2599.6	2610.3	2632.1	2654.0	2671.9	2683.6
2°	2587.9	2604.0	2633.1	2661.7	2685.0	2699.1
2.5°	2575.8	2598.6	2634.1	2669.0	2696.7	2714.2
3°	2563.7	2592.3	2634.1	2675.3	2708.3	2728.2
3.5°	2550.5	2585.5	2634.1	2681.6	2719.5	2742.3
4°	2537.4	2578.2	2633.1	2687.0	2729.7	2755.9
4.5°	2524.3	2570.0	2631.6	2691.8	2739.9	2768.5
5°	2509.8	2561.7	2630.2	2696.2	2749.1	2781.2
5.5°	2495.7	2553.5	2627.7	2700.1	2758.4	2792.3
6°	2481.1	2544.2	2625.3	2703.0	2766.1	2803.5
6.5°	2466.5	2534.5	2621.4	2705.9	2773.9	2813.7
7°	2451.0	2524.8	2618.0	2707.9	2780.2	2823.4
7.5°	2435.5	2514.1	2613.7	2709.3	2786.5	2832.6
8°	2419.4	2503.4	2608.3	2710.3	2791.9	2840.9
8.5°	2402.9	2491.8	2603.0	2710.3	2796.7	2848.2
9°	2386.4	2480.6	2597.2	2710.3	2801.1	2855.5
9.5°	2369.9	2468.5	2590.8	2709.3	2804.5	2861.8
10°	2352.9	2456.3	2584.0	2707.4	2807.4	2867.6
10.5°	2335.4	2443.2	2576.8	2705.4	2809.8	2872.5
11°	2317.5	2430.6	2568.5	2702.5	2811.3	2876.3
11.5°	2299.5	2416.5	2559.8	2699.1	2811.8	2879.7
12°	2281.6	2402.9	2551.0	2694.7	2811.8	2882.2
12.5°	2263.1	2388.4	2541.3	2689.9	2810.8	2884.1
13°	2245.1	2373.8	2531.6	2684.5	2809.3	2885.1
13.5°	2226.7	2358.8	2521.4	2678.7	2806.9	2885.6
14°	2207.3	2344.2	2510.7	2672.4	2804.0	2884.6
14.5°	2187.8	2328.6	2499.6	2665.6	2800.6	2883.6
15°	2168.9	2313.1	2488.4	2657.8	2796.2	2881.7
15.5°	2150.0	2297.6	2476.7	2649.6	2791.4	2878.8
16°	2130.5	2282.5	2465.1	2641.3	2786.0	2875.9
16.5°	2111.1	2266.5	2452.9	2633.1	2780.2	2871.5
17°	2092.7	2251.0	2441.3	2623.9	2773.9	2867.1
17.5°	2072.8	2235.4	2429.6	2614.6	2767.1	2861.8
18°	2052.9	2219.4	2418.0	2606.9	2759.8	2856.4
18.5°	2033.0	2203.4	2405.4	2598.6	2754.0	2850.1
19°	2013.5	2186.9	2393.7	2589.9	2748.6	2844.8
19.5°	1994.1	2170.8	2380.1	2580.2	2742.8	2840.4
20°	1974.7	2153.4	2366.0	2570.0	2735.5	2835.6
20.5°	1954.8	2135.9	2352.0	2559.3	2727.8	2830.2
21°	1934.4	2117.4	2336.4	2547.1	2719.0	2823.9

TEST NUMBER: P776609

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRH-HCD4TRLWW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1872.7	2060.6	2283.0	2499.1	2680.7	2797.2
23°	1851.4	2040.7	2263.1	2479.2	2663.2	2782.1
23.5°	1830.5	2019.8	2241.7	2458.8	2644.3	2765.1
24°	1809.1	1998.0	2219.9	2436.9	2623.9	2747.2
24.5°	1788.2	1976.1	2196.1	2413.1	2602.5	2727.3
25°	1766.4	1953.8	2173.3	2389.3	2579.2	2704.5
25.5°	1744.5	1931.0	2149.5	2365.6	2553.9	2681.2
26°	1722.2	1907.7	2124.7	2340.3	2528.7	2657.8
26.5°	1699.9	1884.9	2099.5	2313.6	2502.5	2632.1
27°	1678.0	1861.6	2074.2	2287.4	2474.3	2604.9
27.5°	1655.2	1837.3	2048.5	2259.2	2444.7	2576.3
28°	1632.4	1812.5	2022.3	2230.1	2415.1	2549.1
28.5°	1609.6	1789.2	1995.6	2201.4	2385.5	2518.5
29°	1586.7	1764.0	1968.4	2172.3	2354.9	2487.9
29.5°	1563.9	1739.7	1941.7	2141.2	2322.8	2456.8
30°	1540.6	1714.4	1914.5	2111.1	2291.7	2425.8
30.5°	1517.3	1689.7	1885.8	2079.6	2258.2	2392.3
31°	1494.0	1664.4	1858.2	2048.5	2225.7	2359.2
31.5°	1471.2	1639.2	1829.5	2017.4	2192.2	2325.7
32°	1448.4	1613.0	1800.4	1984.4	2158.7	2291.7
32.5°	1424.6	1588.2	1772.2	1952.8	2124.2	2257.3
33°	1401.8	1562.0	1743.1	1920.8	2091.2	2223.3
33.5°	1378.9	1537.2	1714.4	1888.8	2057.2	2188.8
34°	1356.6	1511.0	1684.3	1856.7	2023.2	2153.9
34.5°	1333.3	1485.8	1655.2	1823.7	1988.8	2117.4
35°	1310.0	1459.5	1625.6	1791.6	1954.8	2082.5
35.5°	1287.2	1434.8	1596.9	1759.6	1920.3	2047.5
36°	1264.8	1410.0	1567.3	1727.6	1887.3	2012.6
36.5°	1242.0	1383.8	1538.2	1696.0	1852.8	1976.6
37°	1219.7	1358.1	1509.5	1663.9	1819.3	1940.2
37.5°	1196.9	1333.3	1479.9	1632.4	1784.4	1905.7
38°	1175.0	1308.0	1451.3	1600.8	1750.9	1870.3
38.5°	1152.7	1282.8	1422.6	1570.2	1717.8	1834.9
39°	1131.3	1257.5	1394.0	1539.2	1683.9	1798.9
39.5°	1109.0	1232.8	1366.3	1508.6	1651.8	1764.9
40°	1086.6	1208.0	1337.2	1477.5	1618.3	1730.0
40.5°	1065.3	1183.3	1310.5	1447.9	1586.3	1694.5
41°	1043.9	1158.5	1282.8	1417.3	1552.3	1660.1
41.5°	1022.5	1133.7	1255.6	1388.6	1521.7	1626.6
42°	1001.2	1109.9	1228.4	1359.5	1490.6	1593.1
42.5°	980.3	1086.2	1202.2	1330.9	1459.0	1559.1
43°	958.9	1062.4	1176.0	1301.7	1427.0	1526.5
43.5°	938.5	1039.1	1149.8	1274.1	1397.4	1494.5

TEST NUMBER: P776609

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRH-HCD4TRLWW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	876.9	969.6	1074.0	1192.0	1307.1	1398.8
45.5°	856.5	947.3	1049.7	1165.3	1279.4	1368.3
46°	837.1	925.0	1025.5	1138.6	1251.2	1337.2
46.5°	817.2	902.6	1001.2	1113.3	1223.1	1306.1
47°	796.8	881.3	977.9	1087.6	1193.9	1277.5
47.5°	777.8	859.4	954.6	1062.4	1167.2	1248.3
48°	758.9	838.0	931.8	1037.1	1141.0	1218.7
48.5°	740.0	817.2	908.9	1013.3	1114.8	1190.5
49°	721.5	796.8	886.6	989.5	1088.1	1163.8
49.5°	702.6	776.9	864.7	966.2	1063.3	1136.2
50°	684.1	756.5	843.4	941.9	1037.6	1108.5
50.5°	666.2	737.0	821.5	919.6	1012.8	1083.2
51°	648.2	717.6	801.1	896.8	988.1	1057.0
51.5°	631.2	698.7	780.3	874.9	965.3	1030.8
52°	613.7	680.2	760.4	853.6	941.5	1006.5
52.5°	596.7	661.8	740.0	831.2	918.2	982.7
53°	579.7	643.3	721.0	810.4	895.8	957.5
53.5°	563.7	625.4	701.1	789.5	873.5	933.2
54°	547.7	607.9	682.2	769.1	851.2	911.4
54.5°	531.2	589.9	662.8	749.2	830.3	888.5
55°	515.6	573.4	645.3	729.3	808.9	865.2
55.5°	500.6	556.4	627.3	709.9	788.0	844.8
56°	485.5	539.9	609.4	690.9	767.2	823.0
56.5°	470.5	523.9	591.9	672.0	747.7	801.1
57°	455.9	507.9	574.9	653.5	727.8	780.3
57.5°	442.3	491.9	557.4	635.1	708.4	759.9
58°	428.2	477.3	540.9	617.6	690.0	738.0
58.5°	415.1	461.7	524.4	600.1	671.0	718.1
59°	402.5	447.2	508.4	583.1	652.6	697.2
59.5°	389.4	432.6	492.8	565.7	634.1	676.8
60°	376.3	418.0	477.3	548.7	615.7	657.9
60.5°	363.2	404.0	461.7	532.6	597.7	636.5
61°	351.0	390.4	447.2	516.6	579.7	618.1
61.5°	338.9	376.8	432.1	500.6	561.8	598.7
62°	327.7	363.7	418.0	485.1	544.3	580.2
62.5°	316.6	351.0	403.5	469.5	526.3	561.3
63°	304.9	338.4	389.9	454.5	509.3	542.3
63.5°	294.2	325.8	375.8	439.9	492.3	524.4
64°	284.0	313.7	362.7	425.3	475.8	505.9
64.5°	273.8	302.0	349.6	410.8	459.8	488.9
65°	264.1	290.4	337.0	397.2	443.3	471.5
65.5°	254.4	278.7	323.9	382.6	427.8	455.0
66°	244.7	268.0	311.7	369.0	411.7	437.5



TEST NUMBER: P776609

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRH-HCD4TRLWW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	218.5	236.5	275.8	329.7	367.1	389.4
68°	210.2	226.7	264.6	317.1	352.5	373.4
68.5°	202.5	216.6	253.5	303.9	338.4	357.8
69°	194.7	207.3	242.8	291.8	324.3	343.3
69.5°	186.9	198.1	232.1	279.7	310.7	328.2
70°	180.1	189.4	221.9	268.0	296.7	313.7
70.5°	173.3	180.6	211.7	255.9	283.6	299.1
71°	167.0	174.8	202.0	244.7	270.4	285.0
71.5°	160.2	166.5	192.3	233.5	257.8	271.4
72°	153.9	158.3	183.0	222.4	245.7	258.3
72.5°	147.6	149.5	172.9	211.7	233.5	244.7
73°	141.8	141.3	164.6	201.0	221.4	231.6
73.5°	135.5	134.0	156.3	190.8	209.8	219.0
74°	129.6	126.7	148.1	180.6	198.6	206.4
74.5°	123.8	119.9	139.8	171.4	187.4	194.2
75°	117.5	112.6	132.1	161.7	177.2	182.6
75.5°	112.2	106.3	124.3	152.5	167.0	171.4
76°	106.3	100.0	116.5	142.7	157.3	160.2
76.5°	100.5	93.7	108.8	133.5	147.1	149.5
77°	94.7	87.9	102.0	124.8	137.4	138.4
77.5°	89.3	82.1	94.7	116.5	127.2	127.7
78°	84.0	76.7	88.4	108.3	118.5	117.5
78.5°	78.7	71.4	81.6	100.0	109.2	106.8
79°	73.3	66.0	75.3	92.7	100.5	97.1
79.5°	68.0	60.7	69.4	85.0	92.3	87.4
80°	62.6	55.8	63.1	77.7	84.0	78.2
80.5°	57.8	51.0	57.8	70.9	76.7	68.9
81°	52.9	46.1	52.4	64.1	69.4	60.2
81.5°	48.1	41.8	46.6	57.8	62.1	51.5
82°	43.2	37.4	41.8	51.5	55.4	42.7
82.5°	38.8	33.0	36.9	45.6	49.5	35.0
83°	34.0	28.6	32.0	40.3	43.2	27.2
83.5°	29.6	24.3	27.2	35.0	37.9	19.9
84°	24.8	20.4	22.8	29.6	33.0	17.5
84.5°	20.4	16.5	18.5	24.8	28.6	14.6
85°	16.0	13.1	14.6	19.9	24.3	11.7
85.5°	12.1	9.7	10.7	16.0	19.9	8.7
86°	8.3	6.3	7.3	12.1	16.0	6.3
86.5°	4.4	2.4	3.4	8.3	12.6	4.9
87°	1.5	0.5	1.0	4.4	8.7	3.4
87.5°	0.5	0.0	0.5	1.0	4.9	2.4
88°	0.0	0.0	0.0	0.0	1.0	1.0
88.5°	0.0	0.0	0.0	0.0	0.5	0.5



TEST NUMBER: P776609

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRH-HCD4TRLWW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.5	0.0



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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°	2816.6	2834.1	2755.9	2592.8	2366.0	2125.7	1916.4	1770.8	1702.8	1698.4	1767.9
22°	2808.4	2826.8	2747.7	2582.1	2351.5	2107.7	1895.1	1749.4	1681.4	1676.6	1746.0



44°	1461.5	1512.0	1502.3	1431.4	1311.9	1138.6	987.6	896.3	846.8	831.7	852.6
44.5°	1429.4	1478.0	1469.2	1400.8	1284.7	1115.8	968.2	878.3	829.3	813.8	834.6



66.5°	421.4	446.7	446.7	409.8	364.2	313.7	288.9	281.6	260.2	255.4	249.6
67°	404.9	430.2	431.6	394.7	351.0	302.5	280.6	271.4	250.1	245.7	241.8



89°	0.0	2.9	8.7	9.2	8.7	8.7	5.8	1.9	0.0	0.5	0.0
89.5°	0.0	0.5	4.9	5.3	5.3	4.9	2.9	0.5	0.0	0.5	0.0

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21.5°	1914.0	2099.0	2320.4	2533.1	2708.8	2816.6
22°	1893.6	2080.5	2302.4	2517.5	2695.7	2808.4



44°	917.7	1014.8	1124.0	1245.9	1367.8	1461.5
44.5°	897.3	992.0	1098.8	1219.2	1338.1	1429.4

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66.5°	236.0	257.3	299.6	355.9	396.7	421.4
67°	227.2	246.7	287.4	342.3	381.6	404.9

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89°	0.0	0.0	0.0	0.0	0.5	0.0
89.5°	0.0	0.0	0.0	0.0	0.5	0.0

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Scaled Data Report



(END OF REPORT)