

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: P776549

Luminaire Tested: HCDJBS4050CSD-HCD41TRC-5000lm-5000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776549
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: HCDJBL54050CSD-HCD41TRC-5000lm-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: 5874.1 lumens
Efficiency: N/A
Efficacy: 122.4 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

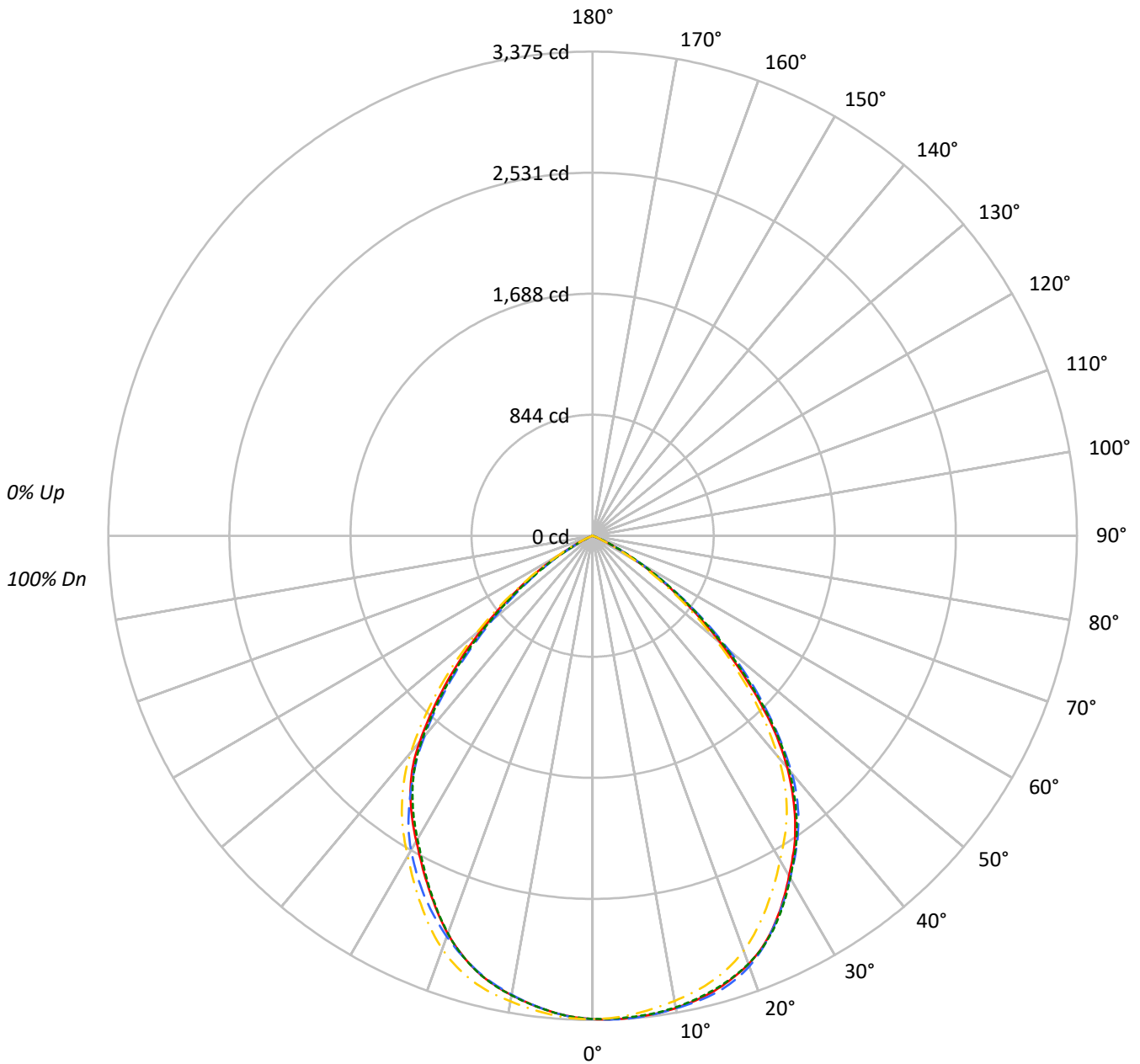
Input Watts (W): 48
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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								
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°	423963	423963	423963	423963
5°	425772	425039	420617	420681
10°	427219	426478	415488	415679
15°	427727	426776	408744	408926
20°	425485	425351	395311	394923
25°	415663	417149	375741	374533
30°	397883	400353	357092	354767
35°	378125	381182	339993	336121
40°	346576	350240	307723	303172
45°	295249	300356	254545	247799
50°	229150	235239	193869	185509
55°	160785	167280	129782	120830
60°	92651	99019	66977	59149
65°	32250	36598	18225	14472
70°	1067	2318	1067	883
75°	924	1167	924	924
80°	725	1087	725	725
85°	0	722	0	722

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°

Vertical Angle: 45°

Luminance: 304414 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	318.0	5.4
10°-20°	904.1	15.4
20°-30°	1311.9	22.3
30°-40°	1455.0	24.8
40°-50°	1181.4	20.1
50°-60°	593.1	10.1
60°-70°	107.9	1.8
70°-80°	2.2	0.0
80°-90°	0.5	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°	2534.0	43.1
0°-40°	3989.0	67.9
0°-60°	5763.5	98.1
0°-90°	5874.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5874.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3369	3369	3369	3369	3369	
5°	3370	3364	3330	3330	3370	321
15°	3283	3276	3137	3139	3283	926
25°	2993	3004	2706	2697	2993	1374
35°	2461	2481	2213	2188	2461	1530
45°	1659	1688	1430	1392	1659	1269
55°	733	762	592	551	733	661
65°	108	123	61	49	108	128
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°	3368.8	3368.8	3368.8	3368.8	3368.8	3368.8	3368.8	3368.8	3368.8	3368.8	3368.8
0.5°	3370.3	3370.3	3370.8	3371.7	3367.9	3368.8	3369.3	3369.3	3366.9	3366.4	3367.4
1°	3371.7	3371.7	3372.2	3372.7	3368.8	3368.3	3368.3	3368.3	3364.9	3364.0	3365.4
1.5°	3372.7	3372.7	3373.7	3373.7	3369.3	3367.9	3366.9	3365.4	3362.5	3361.5	3363.0
2°	3373.2	3373.7	3374.2	3374.2	3368.8	3366.9	3364.9	3362.0	3359.6	3358.1	3359.6
2.5°	3373.2	3374.7	3375.1	3374.2	3367.9	3364.5	3360.6	3355.2	3351.8	3350.4	3352.3
3°	3373.2	3374.7	3375.1	3373.7	3367.9	3362.5	3357.2	3350.9	3346.5	3345.0	3347.5
3.5°	3372.2	3374.2	3374.7	3373.7	3366.4	3361.1	3353.8	3346.5	3341.1	3340.2	3342.1
4°	3371.3	3373.7	3374.2	3372.7	3365.4	3358.6	3350.4	3341.6	3335.3	3333.9	3335.8
4.5°	3370.3	3372.2	3372.7	3371.7	3364.5	3356.7	3346.0	3335.8	3329.5	3327.5	3329.5
5°	3368.3	3371.3	3371.3	3369.8	3363.0	3353.8	3341.6	3330.0	3322.2	3320.7	3322.7
5.5°	3366.4	3369.3	3369.3	3368.3	3361.5	3350.9	3336.8	3323.7	3315.4	3313.9	3315.4
6°	3364.9	3367.4	3366.9	3365.9	3359.6	3347.9	3331.9	3317.3	3308.6	3306.7	3308.1
6.5°	3362.5	3364.9	3364.9	3363.5	3357.7	3344.1	3326.6	3310.5	3300.8	3298.9	3300.4
7°	3360.6	3362.0	3362.0	3361.1	3354.7	3340.7	3321.2	3303.7	3293.1	3291.1	3291.6
7.5°	3357.7	3358.6	3359.1	3358.1	3352.3	3336.8	3315.9	3297.0	3285.3	3282.9	3283.8
8°	3354.3	3355.2	3355.7	3354.7	3349.4	3332.4	3310.5	3290.2	3277.0	3274.6	3274.6
8.5°	3350.9	3351.8	3352.3	3350.9	3345.5	3328.0	3304.7	3282.4	3269.3	3266.4	3265.9
9°	3347.0	3347.5	3348.9	3346.5	3341.6	3323.7	3298.4	3275.1	3260.5	3257.6	3257.1
9.5°	3343.1	3343.1	3345.5	3342.1	3337.3	3318.3	3292.6	3267.3	3251.3	3249.4	3247.9
10°	3338.2	3338.7	3342.1	3338.2	3332.9	3312.5	3285.8	3259.6	3242.6	3241.1	3238.7
10.5°	3333.4	3333.9	3338.7	3333.4	3327.5	3306.2	3279.0	3251.3	3232.8	3231.9	3228.5
11°	3328.0	3328.5	3334.3	3328.0	3321.7	3299.4	3272.2	3243.0	3223.1	3222.6	3218.3
11.5°	3323.2	3323.7	3330.9	3322.7	3315.9	3293.1	3264.9	3234.8	3212.5	3212.9	3208.1
12°	3317.3	3318.3	3326.6	3316.4	3310.1	3285.8	3257.6	3226.0	3201.8	3203.2	3197.4
12.5°	3311.5	3313.0	3322.7	3310.1	3303.7	3278.5	3250.3	3217.3	3190.6	3192.5	3185.7
13°	3304.7	3306.7	3317.8	3303.3	3297.0	3270.2	3242.1	3208.1	3178.5	3181.9	3173.6
13.5°	3297.9	3299.9	3313.0	3296.5	3290.2	3262.5	3233.3	3197.9	3165.8	3170.7	3160.5
14°	3291.1	3292.6	3307.1	3289.2	3282.9	3253.7	3224.1	3186.7	3152.2	3158.1	3147.4
14.5°	3282.9	3285.3	3301.3	3280.9	3275.6	3244.5	3214.4	3175.5	3137.2	3145.4	3133.8
15°	3274.6	3276.6	3294.0	3272.2	3267.8	3235.3	3204.2	3162.9	3121.6	3131.8	3119.2
15.5°	3265.9	3266.8	3286.8	3262.5	3259.1	3225.1	3193.0	3150.3	3105.6	3116.8	3103.7
16°	3256.2	3256.6	3277.5	3252.3	3250.3	3213.9	3180.9	3136.2	3088.6	3101.7	3089.1
16.5°	3246.0	3246.0	3267.8	3241.1	3241.1	3202.7	3167.8	3122.1	3070.6	3086.2	3074.0
17°	3235.3	3234.8	3257.1	3229.9	3231.4	3190.1	3154.2	3106.6	3052.7	3069.2	3058.0
17.5°	3225.1	3223.1	3246.0	3217.8	3221.2	3178.0	3141.1	3089.6	3034.2	3051.7	3042.0
18°	3213.9	3211.0	3233.8	3205.2	3210.5	3164.4	3126.0	3073.1	3014.8	3032.3	3025.0
18.5°	3202.7	3198.4	3220.7	3192.5	3199.8	3151.3	3110.5	3055.1	2994.4	3013.3	3008.0
19°	3190.6	3185.3	3207.1	3179.4	3188.2	3137.2	3094.0	3036.2	2973.5	2993.4	2990.5
19.5°	3177.0	3171.2	3193.0	3165.3	3176.0	3122.1	3077.0	3016.7	2951.7	2972.5	2973.0
20°	3163.4	3156.6	3177.0	3150.3	3162.4	3106.6	3059.0	2995.4	2929.8	2949.7	2954.1
20.5°	3148.3	3141.1	3160.5	3135.2	3148.8	3090.1	3040.1	2973.5	2905.5	2926.9	2935.2



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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°	3098.3	3090.1	3105.1	3084.2	3102.2	3035.2	2978.4	2902.1	2832.2	2853.6	2875.9
23°	3079.9	3071.6	3084.2	3066.3	3084.2	3015.8	2956.0	2877.9	2806.9	2827.8	2855.5
23.5°	3059.5	3052.7	3063.4	3047.8	3065.3	2995.4	2933.7	2852.1	2781.7	2802.1	2835.6
24°	3038.6	3033.3	3041.5	3028.9	3045.9	2974.5	2909.9	2826.4	2756.0	2776.4	2815.2
24.5°	3016.7	3013.8	3019.7	3009.9	3025.5	2952.6	2886.6	2800.2	2731.2	2749.6	2794.3
25°	2993.4	2993.9	2997.3	2991.0	3004.1	2931.8	2862.8	2773.9	2705.9	2723.4	2772.5
25.5°	2970.6	2973.5	2974.5	2971.1	2981.8	2909.4	2839.0	2746.7	2680.7	2696.7	2750.1
26°	2946.8	2953.1	2950.7	2951.2	2959.4	2887.1	2814.7	2721.5	2655.9	2670.5	2727.3
26.5°	2922.5	2932.7	2927.4	2931.3	2936.1	2864.3	2790.0	2695.3	2630.7	2643.3	2704.0
27°	2897.3	2911.8	2903.6	2910.4	2911.4	2840.5	2765.7	2669.0	2605.4	2616.1	2680.2
27.5°	2871.1	2890.5	2879.3	2888.5	2886.6	2816.2	2740.9	2642.8	2579.7	2589.9	2655.4
28°	2844.8	2868.1	2854.5	2866.7	2860.9	2791.9	2715.7	2616.6	2554.4	2563.6	2631.2
28.5°	2818.1	2845.8	2829.3	2843.9	2834.1	2767.1	2690.4	2590.4	2530.1	2537.9	2605.9
29°	2791.4	2822.5	2803.5	2820.5	2807.9	2741.9	2664.2	2564.6	2505.4	2512.7	2580.6
29.5°	2765.2	2799.7	2779.3	2797.2	2781.7	2717.1	2638.9	2539.4	2481.1	2486.9	2555.4
30°	2738.0	2776.8	2754.5	2773.0	2755.0	2691.9	2613.7	2514.1	2457.3	2461.7	2529.7
30.5°	2711.8	2753.0	2729.2	2748.7	2727.3	2667.1	2588.4	2488.9	2434.0	2436.9	2504.4
31°	2685.5	2728.8	2703.5	2724.4	2701.1	2642.8	2563.6	2465.1	2410.7	2412.6	2477.7
31.5°	2660.3	2705.0	2679.7	2699.1	2675.3	2617.6	2538.9	2441.8	2386.9	2387.8	2449.5
32°	2633.1	2680.7	2654.9	2674.9	2649.6	2592.8	2514.6	2418.0	2363.6	2364.1	2419.9
32.5°	2608.3	2656.4	2631.2	2649.6	2623.4	2568.5	2490.3	2393.7	2340.7	2338.8	2389.3
33°	2581.6	2630.2	2605.4	2624.4	2598.1	2543.7	2465.6	2369.4	2316.0	2313.1	2356.3
33.5°	2553.4	2603.0	2580.6	2597.2	2570.4	2518.5	2439.3	2344.1	2290.7	2285.9	2322.3
34°	2522.9	2572.9	2553.9	2568.0	2542.3	2490.8	2413.1	2318.9	2265.5	2259.2	2288.3
34.5°	2492.3	2542.3	2525.8	2536.9	2512.2	2463.1	2385.9	2292.7	2239.2	2231.0	2252.8
35°	2461.2	2509.7	2497.1	2504.9	2481.1	2433.0	2358.2	2266.0	2213.0	2202.8	2217.4
35.5°	2429.1	2477.2	2468.9	2472.8	2449.5	2403.4	2329.6	2238.8	2185.8	2173.2	2181.9
36°	2397.1	2443.7	2439.8	2438.4	2418.4	2372.8	2299.0	2211.1	2157.7	2143.6	2145.5
36.5°	2364.5	2409.7	2409.2	2404.4	2383.5	2339.8	2267.9	2181.9	2128.5	2111.5	2108.6
37°	2329.6	2374.3	2376.7	2368.9	2350.0	2305.8	2235.4	2151.3	2097.9	2079.5	2071.7
37.5°	2295.1	2337.8	2345.1	2333.0	2314.5	2270.8	2202.3	2120.8	2066.4	2046.0	2034.3
38°	2258.2	2299.9	2310.6	2296.1	2278.6	2235.4	2168.3	2086.8	2032.9	2008.6	1995.9
38.5°	2221.8	2262.1	2274.7	2258.2	2242.6	2199.4	2131.0	2050.3	1996.9	1968.7	1954.7
39°	2186.3	2224.7	2238.8	2220.8	2207.2	2162.0	2092.1	2012.9	1957.6	1928.0	1910.0
39.5°	2147.9	2184.9	2199.9	2181.5	2169.8	2124.2	2052.8	1973.1	1916.3	1886.7	1866.3
40°	2109.6	2143.6	2157.7	2140.7	2131.9	2083.8	2012.0	1932.3	1873.1	1843.5	1822.1
40.5°	2068.8	2100.8	2114.9	2097.9	2092.1	2042.6	1969.7	1891.0	1829.9	1797.8	1776.9
41°	2029.9	2057.6	2071.7	2054.7	2052.8	2000.3	1926.5	1848.3	1786.2	1752.6	1732.2
41.5°	1987.7	2013.4	2027.0	2011.0	2011.5	1957.1	1883.8	1805.6	1741.5	1708.0	1686.1
42°	1945.0	1969.2	1982.8	1967.8	1969.7	1912.4	1840.5	1761.9	1697.8	1660.9	1640.0
42.5°	1898.8	1924.1	1938.6	1924.1	1925.0	1868.2	1796.4	1717.7	1653.1	1613.3	1592.9
43°	1854.6	1879.4	1894.0	1878.9	1880.4	1824.0	1752.2	1673.0	1608.9	1566.6	1546.7
43.5°	1807.0	1833.7	1848.3	1834.2	1832.3	1777.4	1706.5	1629.3	1564.2	1520.0	1499.6



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CATALOG NUMBER: HCDJBL54050CSD-HCD41TRC-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1658.9	1694.9	1710.4	1696.8	1687.6	1636.6	1568.1	1494.3	1430.2	1380.2	1359.3
45.5°	1608.9	1648.2	1663.8	1652.6	1637.1	1588.0	1522.0	1451.1	1385.5	1334.5	1313.6
46°	1558.9	1601.6	1617.2	1606.0	1587.0	1538.5	1474.9	1405.9	1340.3	1288.4	1266.5
46.5°	1507.9	1554.0	1570.5	1557.9	1537.5	1489.9	1428.7	1361.7	1296.6	1243.7	1220.4
47°	1458.4	1506.4	1522.9	1509.3	1488.0	1441.4	1381.1	1316.5	1251.5	1199.0	1173.8
47.5°	1409.3	1457.4	1475.3	1462.7	1438.4	1392.3	1334.5	1272.4	1207.3	1153.4	1128.6
48°	1360.3	1409.3	1428.7	1415.1	1390.8	1343.3	1287.4	1227.2	1163.6	1109.7	1083.0
48.5°	1311.2	1361.2	1380.6	1367.1	1343.3	1294.2	1242.2	1183.5	1119.9	1066.9	1038.3
49°	1265.1	1313.6	1334.0	1319.0	1295.7	1247.1	1195.6	1138.3	1075.7	1022.7	994.1
49.5°	1217.0	1266.0	1286.9	1271.4	1248.1	1200.0	1150.0	1094.1	1032.9	980.0	950.9
50°	1170.4	1218.0	1239.3	1223.3	1201.5	1152.9	1104.3	1049.4	990.2	937.8	907.2
50.5°	1123.3	1169.4	1192.2	1176.2	1156.3	1105.3	1059.2	1005.7	948.4	896.5	865.4
51°	1078.1	1122.8	1143.7	1128.1	1110.2	1059.6	1014.0	962.5	905.7	854.2	824.1
51.5°	1032.5	1077.1	1097.5	1082.5	1065.0	1015.5	969.8	919.8	864.9	813.9	784.3
52°	988.7	1031.0	1050.9	1036.8	1020.3	970.3	926.1	877.5	824.6	774.1	744.5
52.5°	943.6	984.9	1004.8	991.7	975.1	927.6	882.9	834.3	783.8	735.2	705.6
53°	900.8	939.7	958.6	946.5	931.4	883.4	839.2	793.0	744.0	695.4	667.7
53.5°	856.7	895.5	911.5	901.3	888.2	840.6	797.4	752.7	704.7	657.5	631.8
54°	815.4	851.8	865.9	856.7	845.5	798.4	756.1	712.4	665.8	620.2	595.4
54.5°	774.1	807.6	821.2	813.9	803.2	758.1	715.3	673.1	627.9	583.7	559.4
55°	732.8	766.3	778.0	771.2	762.4	717.8	676.0	633.7	591.5	547.8	525.5
55.5°	692.0	724.1	733.8	729.9	722.6	677.5	636.2	595.4	554.6	513.3	491.9
56°	653.2	682.8	691.5	688.6	681.3	638.6	597.3	558.5	519.1	479.3	460.9
56.5°	614.8	642.0	650.3	647.3	642.0	600.2	560.4	522.5	484.2	448.2	430.3
57°	576.0	603.2	609.5	608.5	603.2	563.3	523.5	486.1	452.1	417.2	399.7
57.5°	539.1	564.8	569.2	569.6	566.2	527.4	487.6	453.1	420.1	386.1	368.6
58°	503.1	526.4	530.3	532.3	528.9	491.9	455.0	420.6	388.0	355.0	338.0
58.5°	468.1	490.0	493.4	495.3	492.9	459.4	422.5	387.5	356.0	323.4	310.3
59°	434.2	454.6	457.0	458.9	459.9	427.4	390.0	354.5	323.9	295.7	283.6
59.5°	400.2	420.1	422.0	424.4	426.4	394.8	357.4	322.0	294.3	268.6	256.9
60°	368.1	386.1	388.5	390.9	393.4	362.3	325.4	292.4	266.1	242.3	232.6
60.5°	336.5	353.1	355.5	358.4	359.9	330.2	296.7	264.2	239.4	218.0	208.8
61°	305.9	322.0	323.9	325.9	326.8	301.1	267.6	237.5	213.2	194.3	187.0
61.5°	277.8	291.9	294.8	296.2	296.7	272.4	241.4	211.7	188.9	172.4	166.1
62°	249.1	263.2	266.6	267.1	268.1	245.7	216.1	187.0	165.6	151.5	146.2
62.5°	222.4	235.0	239.4	239.4	239.9	219.5	191.8	164.1	143.7	131.6	127.7
63°	197.7	208.8	213.2	212.7	213.7	194.3	168.5	143.3	122.4	113.6	110.7
63.5°	173.4	184.1	189.4	187.5	188.9	170.9	147.6	122.9	103.9	96.6	94.7
64°	151.5	163.2	166.1	165.1	165.6	148.6	127.7	104.9	86.9	81.6	81.1
64.5°	129.7	142.8	146.7	145.2	143.3	128.2	109.3	87.4	71.4	68.5	68.0
65°	108.3	121.9	127.2	125.3	122.9	109.3	92.3	72.4	61.2	58.8	58.8
65.5°	86.4	101.0	107.8	105.4	103.9	91.3	76.2	62.2	51.5	49.5	49.5
66°	64.6	80.6	88.4	85.5	86.4	75.3	65.1	51.5	41.3	40.3	40.8



TEST NUMBER: P776549

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRC-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	21.9	38.9	45.6	43.7	49.0	41.8	32.5	19.9	14.6	15.5	16.0
68°	18.0	28.7	34.0	33.0	37.9	30.6	21.4	14.6	9.2	10.7	10.7
68.5°	14.1	20.4	24.3	23.8	27.2	19.4	14.6	9.7	5.3	6.8	6.8
69°	10.2	17.0	16.5	16.5	16.0	13.1	9.7	6.3	3.4	4.4	4.4
69.5°	6.3	13.6	13.1	13.1	10.2	8.3	5.3	3.9	2.9	2.9	2.9
70°	2.9	10.2	9.7	9.7	6.3	4.4	3.4	2.9	2.9	2.9	2.9
70.5°	2.4	6.3	6.3	6.3	3.9	2.9	2.9	2.4	2.4	2.9	2.9
71°	2.4	2.9	3.4	3.4	2.9	2.9	2.4	2.4	2.4	2.4	2.9
71.5°	2.4	2.9	2.9	2.9	2.9	2.4	2.4	2.4	2.4	2.4	2.4
72°	2.4	2.4	2.9	2.9	2.9	2.4	2.4	2.4	2.4	2.4	2.4
72.5°	2.4	2.4	2.9	2.9	2.4	2.4	2.4	2.4	2.4	2.4	2.4
73°	2.4	2.4	2.9	2.9	2.4	2.4	2.4	1.9	2.4	2.4	2.4
73.5°	1.9	2.4	2.4	2.4	2.4	2.4	1.9	1.9	1.9	2.4	2.4
74°	1.9	2.4	2.4	2.4	2.4	2.4	1.9	1.9	1.9	1.9	2.4
74.5°	1.9	2.4	2.4	2.4	2.4	1.9	1.9	1.9	1.9	1.9	1.9
75°	1.9	1.9	2.4	2.4	2.4	1.9	1.9	1.9	1.9	1.9	1.9
75.5°	1.9	1.9	2.4	2.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9
76°	1.9	1.9	1.9	2.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9
76.5°	1.5	1.9	1.9	1.9	1.9	1.9	1.9	1.5	1.5	1.9	1.9
77°	1.5	1.9	1.9	1.9	1.9	1.9	1.5	1.5	1.5	1.5	1.9
77.5°	1.5	1.5	1.9	1.9	1.9	1.5	1.5	1.5	1.5	1.5	1.5
78°	1.5	1.5	1.9	1.9	1.9	1.5	1.5	1.5	1.5	1.5	1.5
78.5°	1.5	1.5	1.9	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5
79°	1.5	1.5	1.5	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5
79.5°	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.5
80°	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.5
80.5°	1.0	1.0	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.0	1.0
81°	1.0	1.0	1.5	1.5	1.5	1.0	1.0	1.0	1.0	1.0	1.0
81.5°	1.0	1.0	1.0	1.5	1.5	1.0	1.0	1.0	1.0	1.0	1.0
82°	1.0	1.0	1.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	0.5	1.0	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	1.0
83°	0.5	0.5	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5
83.5°	0.5	0.5	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.5
84°	0.5	0.5	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.5
84.5°	0.5	0.5	0.5	1.0	1.0	0.5	0.5	0.5	0.0	0.5	0.5
85°	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.5	0.5
85.5°	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5
86°	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5
86.5°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.5	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: P776549
CATALOG NUMBER: HCDJBL54050CSD-HCD41TRC-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5



TEST NUMBER: P776549

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRC-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3368.8	3368.8	3368.8	3368.8	3368.8	3368.8
0.5°	3368.3	3365.9	3367.9	3369.3	3370.8	3370.3
1°	3366.4	3364.0	3366.9	3369.3	3371.7	3371.7
1.5°	3364.0	3361.5	3365.4	3369.3	3371.7	3372.7
2°	3361.5	3358.6	3363.0	3367.9	3371.3	3373.2
2.5°	3358.1	3355.2	3360.6	3365.9	3370.8	3373.2
3°	3354.3	3351.3	3356.7	3363.5	3369.8	3373.2
3.5°	3349.9	3347.0	3352.8	3360.6	3368.3	3373.2
4°	3344.5	3341.6	3348.4	3357.7	3366.4	3372.2
4.5°	3338.7	3336.3	3343.1	3353.8	3364.5	3371.3
5°	3332.4	3330.0	3337.7	3349.4	3362.5	3370.3
5.5°	3325.6	3323.2	3331.9	3345.0	3360.1	3368.3
6°	3318.3	3316.4	3325.6	3340.2	3357.2	3366.4
6.5°	3311.0	3309.1	3319.3	3335.3	3353.8	3364.9
7°	3303.3	3301.8	3313.0	3330.5	3350.9	3362.5
7.5°	3295.5	3294.0	3305.7	3325.1	3347.0	3360.6
8°	3287.7	3286.3	3298.9	3319.8	3343.6	3357.7
8.5°	3279.5	3278.5	3291.6	3314.4	3339.2	3354.3
9°	3271.2	3270.2	3284.3	3308.6	3334.3	3350.9
9.5°	3263.0	3261.5	3276.6	3302.3	3329.0	3347.0
10°	3254.7	3252.8	3268.3	3296.0	3323.7	3343.1
10.5°	3246.0	3244.0	3260.5	3289.7	3317.8	3338.2
11°	3237.2	3234.8	3252.3	3283.4	3311.5	3333.4
11.5°	3228.0	3224.6	3243.0	3276.6	3305.2	3328.0
12°	3218.8	3214.9	3234.3	3269.8	3298.9	3323.2
12.5°	3209.1	3203.7	3224.6	3262.0	3291.6	3317.3
13°	3198.9	3192.5	3214.4	3254.7	3283.8	3311.5
13.5°	3188.7	3179.9	3204.2	3246.0	3276.1	3304.7
14°	3177.0	3166.8	3192.5	3236.7	3267.3	3297.9
14.5°	3164.9	3153.2	3179.9	3227.0	3258.1	3291.1
15°	3152.2	3138.6	3166.8	3215.9	3248.4	3282.9
15.5°	3138.1	3123.1	3152.7	3204.2	3237.2	3274.6
16°	3123.6	3106.6	3137.7	3192.1	3226.0	3265.9
16.5°	3108.0	3089.6	3121.6	3178.9	3213.4	3256.2
17°	3092.0	3071.6	3105.1	3164.9	3201.3	3246.0
17.5°	3075.5	3053.2	3087.6	3149.8	3188.2	3235.3
18°	3057.5	3033.7	3069.7	3134.8	3174.6	3225.1
18.5°	3039.1	3013.8	3051.7	3118.2	3160.5	3213.9
19°	3019.7	2993.4	3031.8	3101.2	3146.4	3202.7
19.5°	2999.3	2971.6	3011.4	3083.3	3131.4	3190.6
20°	2977.9	2948.8	2990.0	3064.3	3115.8	3177.0
20.5°	2955.6	2925.9	2968.2	3044.9	3098.8	3163.4
21°	2932.7	2901.6	2945.4	3024.0	3080.8	3148.3

TEST NUMBER: P776549

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRC-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2858.9	2827.3	2873.0	2957.5	3024.5	3098.3
23°	2833.2	2801.1	2847.3	2933.2	3004.1	3079.9
23.5°	2806.9	2775.4	2822.5	2908.9	2983.7	3059.5
24°	2780.7	2749.6	2796.8	2884.6	2961.9	3038.6
24.5°	2753.5	2723.4	2771.0	2859.4	2939.5	3016.7
25°	2726.8	2697.2	2745.3	2833.7	2916.7	2993.4
25.5°	2700.1	2671.0	2720.0	2808.9	2894.8	2970.6
26°	2672.4	2645.2	2693.3	2783.6	2871.5	2946.8
26.5°	2644.7	2618.5	2667.6	2758.4	2847.7	2922.5
27°	2617.6	2592.3	2641.3	2732.2	2823.9	2897.3
27.5°	2590.8	2566.1	2615.6	2706.4	2799.7	2871.1
28°	2564.1	2540.8	2588.9	2680.2	2774.4	2844.8
28.5°	2537.9	2515.6	2564.1	2654.5	2749.6	2818.1
29°	2511.2	2489.3	2538.9	2628.7	2723.9	2791.4
29.5°	2485.5	2465.1	2513.6	2604.0	2698.7	2765.2
30°	2460.7	2441.3	2488.4	2578.7	2673.4	2738.0
30.5°	2436.4	2417.0	2464.6	2553.9	2649.1	2711.8
31°	2411.6	2393.2	2440.8	2529.2	2624.8	2685.5
31.5°	2386.4	2368.4	2416.0	2505.4	2599.6	2660.3
32°	2362.1	2344.6	2391.7	2479.6	2574.3	2633.1
32.5°	2337.3	2320.3	2367.5	2455.4	2549.6	2608.3
33°	2310.6	2294.6	2342.2	2430.1	2524.3	2581.6
33.5°	2283.4	2268.9	2316.0	2402.9	2497.1	2553.4
34°	2256.2	2241.7	2289.8	2375.2	2468.0	2522.9
34.5°	2228.6	2215.0	2262.1	2347.1	2437.4	2492.3
35°	2199.4	2187.8	2234.4	2317.9	2406.8	2461.2
35.5°	2170.8	2160.1	2206.7	2288.8	2375.2	2429.1
36°	2139.7	2130.5	2178.5	2258.2	2343.2	2397.1
36.5°	2108.1	2100.4	2148.9	2228.1	2309.7	2364.5
37°	2074.1	2069.3	2117.4	2195.5	2275.2	2329.6
37.5°	2041.1	2037.7	2085.8	2161.1	2239.2	2295.1
38°	2005.2	2003.7	2052.8	2126.6	2202.8	2258.2
38.5°	1965.8	1967.3	2017.3	2091.1	2166.4	2221.8
39°	1925.0	1928.9	1979.4	2052.8	2128.5	2186.3
39.5°	1883.8	1888.1	1939.1	2012.0	2090.2	2147.9
40°	1838.6	1845.4	1897.4	1969.7	2049.8	2109.6
40.5°	1793.4	1801.2	1855.1	1927.5	2008.6	2068.8
41°	1747.3	1756.0	1811.9	1884.2	1964.9	2029.9
41.5°	1701.7	1709.9	1767.2	1841.0	1920.2	1987.7
42°	1654.5	1666.2	1724.0	1796.8	1877.5	1945.0
42.5°	1607.4	1620.1	1679.3	1751.7	1832.8	1898.8
43°	1560.3	1575.4	1635.1	1706.5	1787.6	1854.6
43.5°	1514.7	1527.8	1590.0	1660.9	1740.0	1807.0



TEST NUMBER: P776549

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRC-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1370.9	1392.3	1455.0	1522.0	1598.7	1658.9
45.5°	1325.8	1346.2	1410.3	1475.8	1550.6	1608.9
46°	1278.2	1301.5	1366.1	1429.7	1502.1	1558.9
46.5°	1232.0	1256.3	1320.4	1381.6	1452.5	1507.9
47°	1186.4	1211.7	1275.8	1335.5	1404.0	1458.4
47.5°	1142.2	1165.5	1230.1	1288.9	1355.4	1409.3
48°	1097.0	1121.8	1184.9	1242.7	1306.8	1360.3
48.5°	1053.3	1077.1	1139.3	1195.6	1257.8	1311.2
49°	1009.1	1033.9	1094.6	1151.4	1210.7	1265.1
49.5°	968.3	990.7	1049.9	1104.8	1163.1	1217.0
50°	924.2	947.5	1005.7	1059.2	1116.0	1170.4
50.5°	882.4	904.2	960.6	1014.0	1068.4	1123.3
51°	840.6	862.5	917.8	969.8	1022.7	1078.1
51.5°	799.8	821.2	874.6	925.1	977.6	1032.5
52°	760.5	780.9	832.4	882.4	933.9	988.7
52.5°	720.7	741.1	789.6	838.7	889.2	943.6
53°	681.8	700.8	748.8	795.9	846.5	900.8
53.5°	643.9	661.9	708.1	752.7	804.2	856.7
54°	607.0	624.0	667.7	711.9	762.4	815.4
54.5°	570.1	587.1	628.9	672.1	722.1	774.1
55°	535.2	550.7	590.5	631.3	681.8	732.8
55.5°	500.7	514.3	552.2	591.5	643.0	692.0
56°	467.2	479.8	515.3	554.6	604.6	653.2
56.5°	435.6	445.8	479.3	517.7	567.7	614.8
57°	404.5	412.8	444.4	481.3	531.3	576.0
57.5°	373.5	379.8	409.4	445.8	494.9	539.1
58°	342.4	349.7	377.8	411.8	460.9	503.1
58.5°	313.7	319.1	345.3	379.3	428.3	468.1
59°	286.0	289.9	314.7	347.7	395.8	434.2
59.5°	259.3	262.2	285.1	317.6	364.7	400.2
60°	234.1	235.0	256.9	287.5	334.6	368.1
60.5°	210.3	209.8	230.2	260.8	304.5	336.5
61°	187.0	185.0	204.5	234.1	275.8	305.9
61.5°	165.6	164.6	180.2	209.3	249.1	277.8
62°	145.2	145.2	161.2	185.0	222.9	249.1
62.5°	126.3	125.8	141.8	165.1	197.7	222.4
63°	109.3	106.4	122.9	146.2	174.3	197.7
63.5°	93.2	86.4	103.4	127.2	154.9	173.4
64°	79.2	71.9	84.5	108.3	136.0	151.5
64.5°	66.5	59.7	69.9	89.4	117.0	129.7
65°	57.8	48.6	57.3	74.8	97.6	108.3
65.5°	48.6	39.3	46.1	61.2	78.7	86.4
66°	39.3	31.1	36.4	49.0	63.6	64.6



TEST NUMBER: P776549
 CATALOG NUMBER: HCDJBL54050CSD-HCD41TRC-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	15.5	14.6	16.0	21.9	28.7	21.9
68°	10.7	11.2	12.6	15.5	20.4	18.0
68.5°	6.8	7.8	9.2	12.1	16.5	14.1
69°	4.4	3.9	6.3	8.7	13.1	10.2
69.5°	2.9	2.9	2.9	5.8	9.7	6.3
70°	2.9	2.4	2.4	2.4	5.8	2.9
70.5°	2.9	2.4	2.4	2.4	2.4	2.4
71°	2.4	2.4	2.4	2.4	2.4	2.4
71.5°	2.4	2.4	2.4	2.4	2.4	2.4
72°	2.4	2.4	1.9	1.9	2.4	2.4
72.5°	2.4	2.4	1.9	1.9	1.9	2.4
73°	2.4	1.9	1.9	1.9	1.9	2.4
73.5°	2.4	1.9	1.9	1.9	1.9	1.9
74°	1.9	1.9	1.9	1.9	1.9	1.9
74.5°	1.9	1.9	1.9	1.9	1.9	1.9
75°	1.9	1.9	1.9	1.9	1.9	1.9
75.5°	1.9	1.9	1.5	1.5	1.5	1.9
76°	1.9	1.9	1.5	1.5	1.5	1.9
76.5°	1.9	1.5	1.5	1.5	1.5	1.5
77°	1.9	1.5	1.5	1.5	1.5	1.5
77.5°	1.5	1.5	1.5	1.5	1.5	1.5
78°	1.5	1.5	1.5	1.5	1.5	1.5
78.5°	1.5	1.5	1.5	1.5	1.5	1.5
79°	1.5	1.5	1.5	1.0	1.0	1.5
79.5°	1.5	1.5	1.0	1.0	1.0	1.0
80°	1.5	1.0	1.0	1.0	1.0	1.0
80.5°	1.0	1.0	1.0	1.0	1.0	1.0
81°	1.0	1.0	1.0	1.0	1.0	1.0
81.5°	1.0	1.0	1.0	1.0	1.0	1.0
82°	1.0	1.0	1.0	1.0	0.5	1.0
82.5°	1.0	1.0	1.0	0.5	0.5	0.5
83°	1.0	1.0	0.5	0.5	0.5	0.5
83.5°	0.5	0.5	0.5	0.5	0.5	0.5
84°	0.5	0.5	0.5	0.5	0.5	0.5
84.5°	0.5	0.5	0.5	0.5	0.5	0.5
85°	0.5	0.5	0.5	0.5	0.5	0.0
85.5°	0.5	0.5	0.5	0.5	0.0	0.0
86°	0.5	0.5	0.5	0.5	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: P776549
CATALOG NUMBER: HCDJBL54050CSD-HCD41TRC-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.5	0.5	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°	3132.3	3124.6	3142.5	3118.7	3134.3	3072.6	3020.1	2950.7	2881.3	2902.6	2915.7
22°	3116.3	3107.6	3124.1	3102.2	3118.7	3054.6	3000.2	2926.9	2857.0	2878.3	2896.3



44°	1758.5	1788.1	1802.7	1789.1	1786.2	1729.8	1659.9	1583.6	1518.6	1472.9	1453.0
44.5°	1706.5	1742.0	1756.5	1743.9	1735.2	1682.7	1614.2	1539.5	1474.4	1425.8	1406.4



66.5°	48.1	64.6	72.4	69.9	70.9	64.1	54.4	40.8	31.1	30.6	31.6
67°	33.0	51.0	58.3	55.8	59.7	52.9	43.2	30.6	21.4	21.4	22.3



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

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21.5°	2908.9	2877.9	2922.0	3002.2	3062.9	3132.3
22°	2883.7	2852.1	2897.8	2980.3	3043.9	3116.3



44°	1464.7	1482.6	1544.3	1615.2	1693.4	1758.5
44.5°	1417.6	1437.0	1499.6	1568.6	1646.8	1706.5

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66.5°	30.1	24.3	28.2	38.9	50.0	48.1
67°	21.4	18.5	21.4	29.6	38.4	33.0

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

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Scaled Data Report



(END OF REPORT)