

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: P776784

Luminaire Tested: HCDJBS4050CSD-HCD82TRH-HCD82TRLWW-5000lm-5000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776784
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B068)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD82TRH-HCD82TRLWW-5000lm-5000K
Description: 8 INCH ROUND NARROW LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5403.6 lumens
Efficiency: N/A
Efficacy: 112.6 lumens/watt
Spacing Criteria (0/90/45): 1.11 / 1.08 / 1.13
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

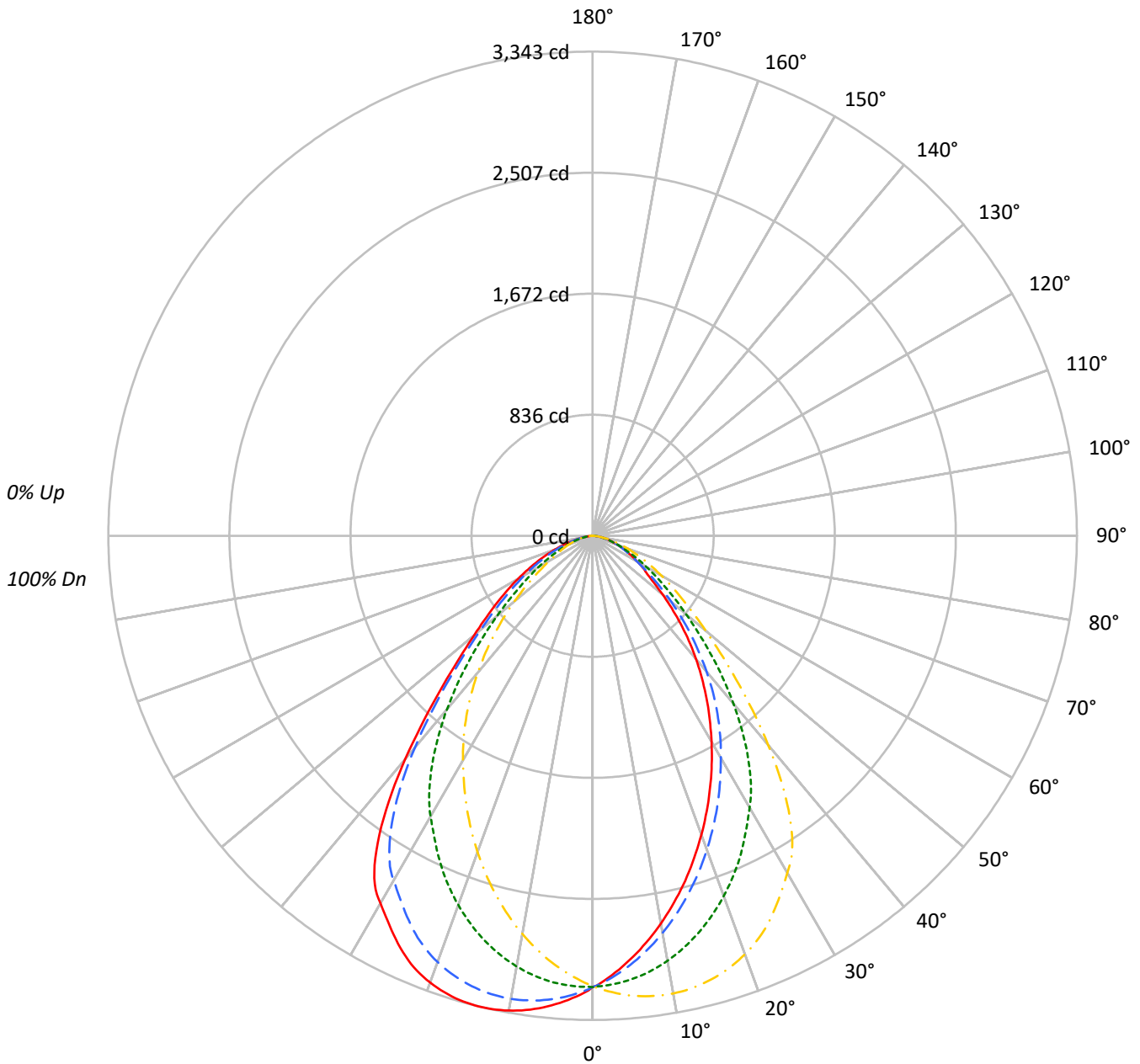
Input Watts (W): 48
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89								
2	103	96	91	86	101	95	90	85	91	87	83	88	85	82	85	82	80	78								
3	96	87	80	75	93	85	79	74	83	77	73	80	75	72	78	74	71	69								
4	89	79	71	66	87	77	71	65	75	69	64	73	68	64	71	66	63	61								
5	83	72	64	58	81	71	63	58	69	62	57	67	61	57	65	60	56	54								
6	77	66	58	52	75	65	57	52	63	56	52	61	56	51	60	55	51	49								
7	72	60	52	47	71	59	52	47	58	51	47	57	51	46	55	50	46	44								
8	68	56	48	43	66	55	48	43	54	47	42	52	47	42	51	46	42	40								
9	64	51	44	39	62	51	44	39	50	43	39	49	43	39	48	42	39	37								
10	60	48	41	36	59	47	41	36	46	40	36	46	40	36	45	39	35	34								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	95151	95151	95151	95151
5°	90102	94206	99756	94861
10°	84252	92362	103197	93611
15°	77950	89594	105549	91345
20°	71373	86010	106667	88122
25°	64634	81575	105759	83862
30°	57886	76436	103303	78883
35°	51068	69722	96423	71999
40°	44242	60260	80163	62348
45°	37054	49731	62934	51367
50°	29899	39997	50717	40876
55°	24517	32267	42785	32474
60°	21841	26109	36307	26171
65°	18862	21109	30363	21000
70°	16335	16853	24521	16728
75°	14025	13400	18661	13223
80°	11604	10760	12026	10320
85°	8162	8162	3573	7496

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 180°
 Vertical Angle: 45°
 Luminance: 62934 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	292.4	5.4
10°-20°	810.1	15.0
20°-30°	1144.7	21.2
30°-40°	1203.3	22.3
40°-50°	907.3	16.8
50°-60°	562.3	10.4
60°-70°	316.3	5.9
70°-80°	139.6	2.6
80°-90°	27.7	0.5
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°	2247.2	41.6
0°-40°	3450.5	63.9
0°-60°	4920.1	91.1
0°-90°	5403.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5403.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3117	3117	3117	3117	3117	
5°	2940	3074	3255	3095	2940	274
15°	2466	2835	3339	2890	2466	690
25°	1919	2422	3140	2490	1919	880
35°	1370	1871	2587	1932	1370	855
45°	858	1152	1458	1190	858	662
55°	461	606	804	610	461	423
65°	261	292	420	291	261	261
75°	119	114	158	112	119	127
85°	23	23	10	21	23	29
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°	3116.6	3116.6	3116.6	3116.6	3116.6	3116.6	3116.6	3116.6	3116.6	3116.6	3116.6
0.5°	3106.4	3107.9	3107.4	3107.4	3112.3	3115.7	3119.1	3135.1	3138.5	3138.5	3131.7
1°	3089.9	3092.4	3094.8	3099.7	3110.3	3120.0	3128.8	3148.7	3153.0	3152.6	3142.4
1.5°	3073.0	3075.9	3081.7	3091.4	3107.9	3123.9	3138.5	3161.8	3168.1	3166.6	3153.5
2°	3055.0	3058.9	3067.6	3082.2	3105.0	3127.3	3147.2	3173.9	3182.2	3179.7	3163.2
2.5°	3037.0	3041.4	3053.5	3072.5	3101.1	3129.7	3155.0	3185.6	3195.3	3192.4	3173.4
3°	3018.6	3023.9	3038.0	3062.8	3096.7	3131.7	3162.7	3196.2	3208.9	3204.5	3181.7
3.5°	2999.7	3006.0	3023.4	3052.1	3092.4	3133.1	3170.0	3207.4	3221.0	3216.1	3189.9
4°	2980.2	2987.0	3007.4	3041.4	3086.5	3134.1	3176.3	3217.1	3232.6	3227.3	3197.7
4.5°	2960.3	2967.6	2990.9	3029.8	3080.7	3134.6	3182.7	3226.8	3243.8	3237.5	3205.5
5°	2940.0	2948.7	2973.9	3017.6	3073.9	3134.1	3187.5	3235.6	3255.0	3247.7	3211.8
5.5°	2919.6	2928.8	2957.4	3005.0	3067.1	3133.6	3192.4	3243.8	3265.2	3256.9	3218.1
6°	2898.7	2907.9	2939.5	2991.4	3059.4	3131.7	3196.7	3251.6	3274.4	3265.7	3223.4
6.5°	2877.3	2887.1	2921.5	2977.8	3051.1	3129.7	3200.1	3258.4	3283.1	3273.9	3228.8
7°	2855.0	2866.2	2902.6	2963.7	3042.9	3127.3	3203.0	3265.2	3291.9	3281.2	3232.6
7.5°	2833.7	2845.3	2884.1	2949.2	3033.2	3124.4	3205.5	3271.0	3299.6	3288.5	3236.5
8°	2810.8	2823.0	2864.7	2934.1	3023.4	3120.0	3207.4	3276.3	3306.9	3294.8	3239.4
8.5°	2788.0	2801.1	2845.3	2918.6	3013.3	3116.2	3208.4	3280.7	3313.2	3300.6	3241.9
9°	2764.3	2778.3	2824.4	2902.6	3002.1	3111.3	3208.9	3285.1	3319.0	3305.5	3244.3
9.5°	2741.4	2755.5	2804.5	2886.1	2990.9	3106.0	3208.9	3288.5	3324.4	3309.8	3245.3
10°	2717.7	2732.2	2783.7	2868.6	2979.3	3099.7	3208.4	3290.9	3328.8	3313.7	3246.2
10.5°	2693.4	2708.9	2762.3	2852.1	2966.7	3092.9	3207.4	3293.3	3332.6	3317.1	3246.2
11°	2669.1	2685.1	2740.5	2834.1	2953.6	3086.1	3205.5	3294.8	3336.0	3319.5	3245.8
11.5°	2644.8	2661.4	2719.1	2815.7	2940.4	3078.3	3203.5	3295.7	3338.9	3322.0	3244.3
12°	2620.1	2636.6	2696.8	2796.8	2926.9	3070.5	3200.6	3295.7	3340.9	3322.9	3242.8
12.5°	2594.4	2612.3	2674.0	2778.3	2912.3	3061.8	3196.7	3295.7	3342.3	3323.9	3240.4
13°	2568.6	2587.1	2651.2	2758.4	2897.7	3052.6	3192.8	3294.8	3343.3	3323.9	3237.5
13.5°	2543.9	2561.8	2628.3	2739.5	2883.2	3042.9	3188.0	3293.3	3343.3	3323.4	3234.1
14°	2518.2	2537.1	2605.0	2719.1	2866.7	3032.7	3182.7	3290.9	3342.8	3322.0	3229.7
14.5°	2492.0	2511.4	2581.3	2698.7	2850.6	3021.5	3176.8	3288.5	3341.4	3320.0	3224.9
15°	2466.2	2486.1	2557.0	2677.9	2834.6	3010.3	3170.5	3284.6	3339.4	3317.6	3219.5
15.5°	2439.0	2459.9	2532.7	2656.5	2817.6	2998.2	3163.2	3280.7	3337.0	3314.7	3213.7
16°	2412.8	2433.7	2508.5	2635.1	2800.2	2986.1	3156.0	3275.8	3333.6	3310.8	3206.9
16.5°	2386.1	2407.5	2484.2	2613.8	2782.2	2973.0	3147.7	3270.5	3330.2	3306.4	3199.6
17°	2359.4	2381.8	2459.9	2591.5	2764.3	2959.9	3139.0	3264.7	3325.4	3301.1	3191.9
17.5°	2332.3	2355.1	2434.2	2569.6	2745.8	2946.3	3129.7	3257.9	3320.0	3295.3	3183.1
18°	2305.1	2328.4	2409.4	2546.3	2726.9	2931.7	3120.0	3250.6	3314.2	3288.5	3174.4
18.5°	2277.9	2301.2	2383.7	2524.0	2707.0	2917.1	3109.4	3242.4	3307.4	3281.2	3164.7
19°	2251.2	2274.5	2358.5	2500.7	2687.6	2901.6	3098.2	3233.6	3300.1	3273.4	3154.0
19.5°	2223.1	2247.3	2332.7	2477.4	2667.7	2886.1	3086.5	3224.4	3292.3	3264.7	3142.8
20°	2196.8	2220.6	2306.5	2454.1	2647.3	2869.6	3074.4	3214.2	3283.1	3254.5	3131.2
20.5°	2168.7	2193.9	2280.8	2429.8	2625.9	2853.1	3061.8	3203.5	3273.4	3244.3	3119.1
21°	2141.5	2166.7	2254.6	2405.6	2605.0	2835.6	3047.7	3191.9	3262.7	3233.6	3105.5

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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°	2058.0	2084.2	2175.5	2332.3	2539.5	2780.3	3003.5	3151.6	3224.9	3194.3	3060.8
23°	2030.4	2057.0	2148.8	2307.0	2516.7	2760.9	2987.0	3136.1	3210.3	3179.3	3044.3
23.5°	2002.7	2028.9	2121.6	2281.8	2493.4	2741.0	2969.6	3120.0	3194.3	3163.2	3026.8
24°	1975.0	2001.7	2095.9	2256.5	2470.1	2720.1	2951.6	3101.6	3177.3	3145.3	3007.9
24.5°	1946.9	1974.0	2068.2	2230.8	2446.3	2698.2	2932.2	3082.7	3158.9	3126.8	2988.0
25°	1918.7	1946.4	2041.5	2204.6	2421.6	2675.9	2911.8	3062.8	3139.5	3106.9	2967.1
25.5°	1891.0	1918.2	2014.3	2178.4	2395.8	2652.1	2890.5	3042.9	3119.6	3087.5	2945.8
26°	1863.4	1891.5	1987.2	2152.2	2371.1	2628.3	2868.6	3021.0	3099.2	3065.7	2923.5
26.5°	1835.7	1863.9	1960.0	2126.0	2344.9	2603.6	2845.8	2999.2	3078.3	3044.8	2901.6
27°	1808.5	1836.2	1933.3	2099.3	2318.7	2579.8	2823.5	2977.8	3056.9	3023.9	2878.8
27.5°	1780.4	1808.5	1906.1	2072.1	2293.4	2555.5	2800.7	2956.9	3035.6	3002.1	2856.5
28°	1752.2	1781.4	1878.4	2045.4	2267.7	2531.3	2778.3	2934.6	3013.7	2980.2	2834.1
28.5°	1724.1	1753.2	1851.2	2018.7	2242.5	2506.5	2754.5	2913.3	2992.9	2959.4	2812.3
29°	1696.9	1726.0	1825.0	1992.5	2217.2	2482.7	2732.2	2891.4	2971.0	2937.5	2789.5
29.5°	1669.7	1698.4	1797.9	1966.3	2192.5	2458.9	2709.4	2870.5	2950.2	2916.2	2767.6
30°	1642.0	1671.2	1770.7	1941.0	2168.2	2435.6	2687.6	2850.2	2930.3	2896.3	2747.3
30.5°	1613.9	1644.0	1744.0	1914.8	2143.0	2412.3	2666.2	2830.7	2911.3	2877.3	2726.9
31°	1586.7	1616.8	1718.3	1889.6	2118.2	2389.5	2645.8	2809.4	2890.5	2855.5	2703.6
31.5°	1559.5	1589.6	1692.0	1862.9	2091.0	2363.3	2621.5	2783.2	2865.7	2830.3	2676.9
32°	1532.4	1562.9	1665.3	1836.7	2062.9	2335.7	2594.4	2753.1	2836.6	2800.7	2645.8
32.5°	1504.2	1535.3	1639.1	1808.5	2032.8	2304.1	2563.8	2721.1	2803.6	2767.2	2612.8
33°	1477.5	1509.1	1612.0	1781.4	2002.2	2272.1	2530.8	2683.7	2766.2	2730.3	2577.4
33.5°	1451.3	1482.8	1585.7	1752.2	1969.7	2237.1	2494.4	2644.4	2725.9	2690.5	2538.5
34°	1424.1	1456.1	1558.1	1722.1	1937.2	2201.7	2456.5	2600.7	2682.2	2648.2	2498.7
34.5°	1397.4	1429.9	1530.4	1692.5	1904.2	2164.8	2415.7	2556.0	2636.1	2603.1	2457.0
35°	1370.2	1403.2	1502.7	1662.9	1870.7	2126.0	2374.0	2507.0	2587.1	2554.6	2414.3
35.5°	1343.5	1376.5	1475.1	1632.3	1835.7	2087.6	2329.3	2457.0	2535.2	2506.0	2369.2
36°	1317.8	1349.8	1447.4	1601.8	1801.3	2048.3	2284.7	2404.6	2481.3	2454.1	2321.6
36.5°	1291.1	1323.6	1419.7	1570.7	1765.3	2007.5	2239.1	2352.2	2425.9	2400.2	2273.0
37°	1265.4	1297.4	1392.1	1540.6	1729.9	1965.8	2189.6	2295.9	2369.2	2344.9	2224.0
37.5°	1238.7	1270.7	1363.4	1509.5	1694.0	1924.5	2141.0	2239.6	2311.4	2287.6	2173.1
38°	1213.0	1244.5	1335.8	1478.0	1657.1	1881.8	2090.1	2183.2	2252.7	2230.3	2121.6
38.5°	1186.8	1217.3	1307.6	1446.0	1621.2	1840.1	2039.6	2128.9	2193.4	2172.6	2068.7
39°	1161.0	1191.6	1279.5	1414.9	1586.2	1796.9	1989.1	2069.7	2132.3	2113.8	2015.8
39.5°	1135.8	1165.4	1251.8	1383.8	1549.3	1753.2	1937.6	2012.9	2071.6	2053.7	1962.4
40°	1110.1	1139.2	1222.7	1352.3	1512.0	1709.5	1886.2	1954.6	2011.4	1994.4	1908.5
40.5°	1084.3	1113.0	1195.0	1319.8	1475.6	1666.3	1833.8	1899.3	1950.8	1935.7	1854.2
41°	1059.1	1087.3	1166.9	1288.7	1438.7	1622.6	1783.3	1842.0	1892.5	1877.5	1800.8
41.5°	1033.4	1061.5	1139.7	1257.6	1402.8	1578.5	1732.8	1785.2	1832.3	1819.2	1747.4
42°	1007.7	1035.8	1112.0	1226.6	1365.9	1535.3	1682.8	1730.9	1775.5	1761.5	1695.0
42.5°	982.9	1010.6	1084.3	1196.5	1329.5	1492.1	1633.8	1677.5	1718.7	1705.1	1643.0
43°	957.7	985.3	1058.1	1165.9	1293.5	1450.3	1584.3	1625.1	1663.4	1651.3	1591.6
43.5°	932.9	960.1	1031.4	1135.8	1257.1	1408.1	1536.2	1573.6	1609.0	1596.4	1540.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	858.2	885.8	952.3	1046.5	1151.8	1285.3	1398.9	1427.5	1457.6	1446.4	1397.9
45.5°	833.9	860.6	926.6	1017.8	1117.8	1246.5	1355.2	1382.4	1410.5	1398.4	1351.8
46°	810.1	836.8	900.9	989.7	1084.3	1208.6	1313.0	1338.2	1365.4	1353.7	1307.1
46.5°	786.8	813.5	876.6	961.5	1051.8	1170.3	1271.7	1295.0	1321.7	1309.6	1263.9
47°	763.0	789.2	850.9	932.4	1019.3	1132.9	1231.4	1255.2	1280.4	1267.8	1223.6
47.5°	739.7	766.9	826.1	906.2	987.8	1097.4	1192.6	1216.4	1241.6	1228.0	1183.8
48°	716.9	744.1	801.9	878.5	957.7	1064.0	1155.2	1179.0	1203.7	1190.6	1145.5
48.5°	694.6	721.8	777.6	851.8	928.5	1030.0	1119.8	1143.1	1166.9	1153.3	1108.1
49°	671.8	700.4	754.3	825.6	898.9	996.5	1084.3	1109.1	1133.4	1119.3	1073.7
49.5°	651.4	679.0	730.5	800.4	869.8	965.9	1051.3	1075.6	1099.9	1084.3	1038.7
50°	629.5	657.7	707.7	774.7	842.1	935.3	1018.8	1044.1	1067.8	1052.8	1006.2
50.5°	608.7	637.8	684.9	749.4	815.4	905.2	986.8	1013.0	1036.8	1021.2	974.6
51°	588.8	616.9	663.0	725.2	789.2	876.1	956.7	983.9	1007.2	991.2	944.6
51.5°	569.8	597.5	641.2	701.9	764.0	848.4	928.1	955.2	979.0	963.0	915.4
52°	550.9	577.6	619.3	679.0	739.2	821.3	899.4	928.5	951.3	934.8	887.3
52.5°	532.9	559.2	599.0	656.2	715.5	796.0	872.2	901.4	925.1	907.7	859.6
53°	516.4	540.7	578.6	633.9	692.2	770.3	845.5	876.1	899.4	881.9	833.4
53.5°	500.4	522.8	558.7	612.6	669.8	745.5	820.3	851.4	874.7	856.7	807.7
54°	485.9	505.3	539.3	591.7	648.0	721.3	795.5	827.1	850.9	832.4	783.9
54.5°	472.8	488.8	520.3	572.3	627.1	699.0	771.3	803.8	827.1	808.6	760.1
55°	460.6	473.2	502.4	552.4	606.2	676.1	748.5	781.0	803.8	785.8	736.8
55.5°	449.5	457.7	484.9	533.9	586.3	654.3	726.1	758.7	781.5	763.5	714.5
56°	439.3	443.6	467.9	515.0	566.4	633.4	703.8	737.3	759.1	742.1	692.6
56.5°	431.5	430.0	451.9	497.5	547.5	612.6	682.4	715.9	737.3	719.8	671.3
57°	422.3	417.4	435.9	480.0	528.6	592.2	661.6	695.1	715.9	699.0	650.9
57.5°	411.6	405.8	420.8	463.1	510.6	572.8	641.2	675.2	695.1	679.0	631.0
58°	400.9	396.1	406.3	446.6	493.1	554.3	621.3	654.8	674.2	659.1	611.6
58.5°	390.2	386.4	392.2	431.0	476.2	535.9	602.4	634.9	653.3	638.8	591.7
59°	379.6	376.7	378.6	415.5	459.7	517.9	582.9	615.5	633.4	618.9	573.2
59.5°	368.4	366.5	366.0	400.4	443.6	500.4	564.5	596.0	613.5	599.4	554.8
60°	357.7	356.8	353.4	385.9	427.6	483.4	546.5	577.6	594.6	581.0	536.8
60.5°	347.0	346.6	341.7	371.8	413.1	467.4	528.1	559.2	575.2	562.1	519.4
61°	336.9	336.4	330.1	357.7	398.5	450.9	510.6	541.2	556.7	544.1	501.9
61.5°	326.7	326.7	318.9	344.6	383.5	434.9	493.6	523.2	538.3	526.6	485.4
62°	317.0	317.0	308.7	331.5	368.9	420.3	477.6	505.8	520.3	509.7	468.9
62.5°	306.8	307.2	298.5	318.9	355.8	405.3	461.1	488.3	502.9	491.2	452.9
63°	297.5	298.0	288.8	306.8	342.2	390.7	445.1	471.8	485.4	474.7	437.3
63.5°	287.8	288.8	279.6	295.1	329.1	376.2	429.6	455.8	468.4	458.2	422.3
64°	279.1	279.6	271.3	283.9	316.5	361.6	414.5	439.3	451.9	442.2	407.2
64.5°	269.9	270.8	263.1	273.3	303.8	348.0	399.5	424.2	435.9	426.7	392.7
65°	261.1	262.6	255.3	262.6	292.2	334.9	384.4	409.2	420.3	411.6	377.6
65.5°	252.9	253.9	247.5	252.4	280.6	321.8	369.9	394.1	404.8	396.6	362.6
66°	244.1	245.6	239.8	242.7	268.9	308.7	356.3	379.1	389.8	381.5	349.0



TEST NUMBER: P776784

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	219.9	221.8	217.0	215.0	236.9	272.8	316.0	335.4	343.7	337.3	308.7
68°	212.6	214.1	210.2	206.8	226.2	261.1	302.9	321.3	329.1	323.3	295.6
68.5°	204.8	206.3	202.9	198.5	216.5	250.0	289.8	308.2	315.5	310.2	283.5
69°	197.6	199.0	195.6	190.8	207.3	238.8	277.6	294.6	301.4	296.6	270.8
69.5°	189.8	191.7	188.8	183.0	198.0	228.6	265.5	282.0	288.3	283.5	259.2
70°	183.0	184.4	182.0	175.2	188.8	218.4	253.9	269.4	274.7	270.8	247.5
70.5°	175.7	177.6	174.7	168.4	180.6	208.2	242.2	257.3	262.1	259.2	236.4
71°	168.9	170.9	168.4	162.1	171.8	198.5	231.5	245.1	249.5	246.6	224.7
71.5°	162.6	164.5	162.6	155.8	164.1	188.8	220.4	234.0	237.4	234.9	214.1
72°	156.3	158.2	156.3	149.5	155.8	179.6	209.7	221.8	224.7	223.3	203.4
72.5°	149.5	151.4	150.5	142.7	148.0	170.9	199.0	211.1	213.1	211.6	192.7
73°	143.2	145.1	144.2	136.9	140.8	162.1	188.8	200.0	201.4	200.9	182.5
73.5°	136.9	138.8	137.8	131.1	133.5	153.4	178.6	189.3	190.3	190.3	173.3
74°	131.1	132.5	132.0	125.7	126.7	145.1	169.4	179.1	179.6	180.1	163.6
74.5°	124.7	126.7	126.2	119.9	119.9	137.4	159.7	169.4	168.4	169.9	153.9
75°	118.9	120.9	120.9	114.6	113.6	129.6	150.5	159.2	158.2	159.7	145.1
75.5°	113.1	115.0	115.0	109.7	107.8	122.3	141.7	150.0	148.0	150.5	136.4
76°	107.8	109.2	109.7	104.4	101.4	115.0	133.0	140.8	137.8	141.2	127.7
76.5°	101.9	103.9	104.4	99.5	96.1	107.8	124.7	131.5	128.1	132.0	119.4
77°	96.6	98.0	99.0	94.6	90.3	101.4	117.0	122.8	118.9	123.3	111.6
77.5°	91.3	92.7	93.7	89.8	84.9	94.6	108.7	114.6	109.7	115.0	103.9
78°	85.9	87.9	88.8	84.9	80.1	88.8	101.4	106.3	101.0	106.8	96.1
78.5°	81.1	82.5	83.5	80.6	74.7	82.5	94.2	98.5	92.2	98.5	89.3
79°	75.7	77.7	78.6	75.7	70.4	76.7	86.9	90.8	84.0	91.3	82.0
79.5°	70.9	72.8	73.8	71.4	65.5	71.4	80.1	83.5	76.2	83.5	75.7
80°	66.0	67.5	68.9	67.0	61.2	66.0	73.3	76.2	68.4	76.7	68.9
80.5°	61.6	62.6	64.6	62.6	56.8	60.7	67.5	68.9	61.2	69.4	62.6
81°	56.8	58.2	60.2	58.7	52.4	55.8	61.2	62.1	53.9	62.6	56.8
81.5°	52.4	53.9	55.8	54.4	48.5	51.0	55.3	55.3	47.6	56.3	51.0
82°	48.1	49.0	51.5	50.5	44.7	46.1	50.0	49.5	41.3	50.5	46.1
82.5°	43.7	44.7	47.1	46.1	40.8	42.2	45.1	43.7	35.4	44.7	41.3
83°	39.3	40.8	43.2	42.2	37.4	38.3	40.3	37.9	29.1	38.8	35.9
83.5°	34.9	36.4	38.8	38.8	34.0	34.0	35.4	32.0	22.8	33.0	31.1
84°	31.1	32.0	34.9	34.9	30.1	30.1	30.6	26.2	18.0	27.2	26.2
84.5°	27.2	28.2	31.1	31.1	26.7	26.2	25.7	20.9	13.6	21.4	22.3
85°	23.3	24.3	27.2	27.7	23.3	22.8	21.8	16.5	10.2	16.5	18.4
85.5°	19.4	19.9	23.8	23.8	19.9	19.4	18.4	13.1	7.8	13.1	15.0
86°	16.5	17.5	20.4	20.4	17.0	16.0	15.0	9.7	6.3	9.7	11.6
86.5°	13.6	14.6	17.0	17.5	14.1	13.1	11.6	6.8	4.9	6.8	8.7
87°	10.7	11.6	14.1	14.1	11.2	10.2	8.7	4.4	3.4	4.4	6.3
87.5°	7.8	8.7	11.2	11.2	8.3	7.3	6.3	2.4	2.4	2.4	3.9
88°	5.3	6.3	8.3	7.8	5.8	4.9	3.9	1.0	1.0	1.0	1.9
88.5°	3.4	3.9	4.9	4.9	2.9	2.4	1.9	0.5	0.5	0.5	0.5



TEST NUMBER: P776784

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776784

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3116.6	3116.6	3116.6	3116.6	3116.6	3116.6
0.5°	3121.5	3114.7	3105.5	3097.2	3106.9	3106.4
1°	3127.3	3114.7	3099.2	3086.1	3091.9	3089.9
1.5°	3132.7	3114.7	3092.4	3073.9	3076.4	3073.0
2°	3138.0	3113.2	3085.1	3060.8	3060.3	3055.0
2.5°	3142.4	3111.8	3076.8	3047.2	3043.8	3037.0
3°	3146.2	3109.4	3068.6	3034.1	3026.8	3018.6
3.5°	3149.2	3106.4	3059.4	3020.0	3009.9	2999.7
4°	3152.1	3103.5	3050.1	3005.5	2991.9	2980.2
4.5°	3154.0	3099.7	3039.9	2990.0	2973.5	2960.3
5°	3155.0	3095.3	3029.8	2973.9	2955.0	2940.0
5.5°	3156.0	3090.4	3018.1	2957.9	2935.6	2919.6
6°	3156.4	3084.6	3006.9	2941.4	2916.2	2898.7
6.5°	3156.0	3078.3	2994.8	2923.9	2896.3	2877.3
7°	3155.0	3072.0	2981.7	2907.0	2875.4	2855.0
7.5°	3153.5	3064.2	2968.6	2888.0	2855.0	2833.7
8°	3151.6	3056.5	2955.0	2870.1	2833.7	2810.8
8.5°	3149.2	3048.2	2940.4	2850.6	2812.3	2788.0
9°	3145.8	3039.0	2925.4	2831.7	2790.0	2764.3
9.5°	3141.9	3029.3	2909.9	2811.3	2767.6	2741.4
10°	3137.5	3019.6	2894.3	2791.9	2745.3	2717.7
10.5°	3132.7	3008.9	2878.3	2771.0	2722.5	2693.4
11°	3126.8	2997.2	2861.8	2750.7	2699.2	2669.1
11.5°	3121.0	2985.6	2844.3	2728.8	2675.4	2644.8
12°	3113.7	2973.5	2826.9	2707.5	2651.6	2620.1
12.5°	3106.9	2960.8	2808.9	2685.6	2627.4	2594.4
13°	3098.7	2947.7	2790.9	2663.3	2603.1	2568.6
13.5°	3090.4	2934.1	2772.0	2641.0	2578.8	2543.9
14°	3081.2	2920.1	2752.6	2617.7	2553.6	2518.2
14.5°	3072.0	2905.5	2732.7	2594.4	2528.8	2492.0
15°	3061.8	2890.0	2713.3	2571.6	2503.1	2466.2
15.5°	3051.1	2874.4	2692.4	2546.8	2477.4	2439.0
16°	3039.9	2857.9	2672.0	2523.0	2451.7	2412.8
16.5°	3028.3	2841.9	2651.2	2498.3	2425.5	2386.1
17°	3015.7	2824.4	2629.3	2474.5	2399.7	2359.4
17.5°	3003.1	2807.0	2608.0	2450.2	2373.5	2332.3
18°	2989.5	2789.0	2585.6	2424.5	2347.3	2305.1
18.5°	2975.9	2770.6	2563.3	2399.2	2320.6	2277.9
19°	2960.8	2751.6	2540.5	2374.5	2293.4	2251.2
19.5°	2945.8	2732.7	2517.7	2349.2	2266.7	2223.1
20°	2930.3	2712.3	2494.4	2323.5	2240.0	2196.8
20.5°	2913.7	2692.9	2471.1	2297.3	2213.3	2168.7
21°	2897.2	2672.0	2446.8	2271.6	2186.2	2141.5



TEST NUMBER: P776784

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2843.4	2608.0	2374.0	2193.0	2104.6	2058.0
23°	2824.0	2585.1	2348.8	2166.3	2076.5	2030.4
23.5°	2803.1	2562.3	2323.5	2140.0	2049.8	2002.7
24°	2782.2	2539.0	2297.8	2112.4	2022.6	1975.0
24.5°	2759.9	2514.8	2272.1	2086.7	1994.4	1946.9
25°	2736.6	2489.5	2245.9	2059.0	1966.8	1918.7
25.5°	2713.3	2464.8	2219.7	2031.8	1939.6	1891.0
26°	2689.0	2439.5	2193.0	2005.1	1911.9	1863.4
26.5°	2665.2	2413.3	2166.3	1978.4	1884.3	1835.7
27°	2641.4	2387.1	2139.1	1950.8	1857.1	1808.5
27.5°	2617.2	2361.9	2112.4	1923.1	1828.9	1780.4
28°	2592.9	2336.6	2085.7	1895.9	1801.7	1752.2
28.5°	2569.1	2310.9	2060.0	1869.7	1773.6	1724.1
29°	2545.8	2286.1	2033.8	1842.5	1746.9	1696.9
29.5°	2523.0	2261.9	2008.5	1816.3	1719.2	1669.7
30°	2500.7	2237.6	1982.8	1789.1	1692.0	1642.0
30.5°	2477.4	2213.3	1956.6	1762.9	1664.9	1613.9
31°	2451.2	2187.1	1929.9	1736.7	1638.2	1586.7
31.5°	2423.5	2160.0	1903.7	1710.0	1611.0	1559.5
32°	2392.4	2129.9	1875.5	1683.3	1583.8	1532.4
32.5°	2359.4	2098.8	1846.9	1656.1	1556.6	1504.2
33°	2324.5	2067.7	1817.8	1628.9	1530.4	1477.5
33.5°	2288.6	2034.2	1788.1	1601.8	1503.7	1451.3
34°	2251.2	2000.7	1757.6	1574.1	1477.0	1424.1
34.5°	2213.3	1966.8	1726.5	1545.9	1450.3	1397.4
35°	2174.5	1931.8	1695.4	1517.8	1424.1	1370.2
35.5°	2134.2	1896.9	1664.4	1489.2	1396.9	1343.5
36°	2093.5	1861.0	1632.8	1461.5	1370.7	1317.8
36.5°	2051.2	1825.5	1601.3	1432.8	1344.0	1291.1
37°	2008.5	1788.6	1568.8	1403.7	1317.3	1265.4
37.5°	1965.3	1752.2	1537.2	1375.1	1290.6	1238.7
38°	1921.6	1714.4	1504.7	1346.4	1263.9	1213.0
38.5°	1877.9	1677.5	1472.6	1317.8	1237.2	1186.8
39°	1833.8	1639.6	1441.1	1289.7	1210.5	1161.0
39.5°	1789.1	1602.2	1408.1	1261.0	1184.3	1135.8
40°	1742.5	1564.4	1376.1	1232.4	1158.1	1110.1
40.5°	1696.9	1526.0	1344.0	1204.2	1131.4	1084.3
41°	1652.2	1487.7	1312.0	1176.1	1105.2	1059.1
41.5°	1606.6	1449.8	1280.0	1147.4	1078.5	1033.4
42°	1561.5	1412.5	1248.4	1120.3	1052.8	1007.7
42.5°	1515.4	1373.6	1217.3	1093.1	1027.1	982.9
43°	1470.7	1336.7	1185.8	1064.9	1001.8	957.7
43.5°	1426.5	1299.4	1153.8	1037.3	976.6	932.9

TEST NUMBER: P776784

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1298.4	1189.7	1062.0	956.7	900.4	858.2
45.5°	1256.2	1153.3	1031.4	930.0	876.1	833.9
46°	1216.9	1118.3	1001.8	904.3	851.4	810.1
46.5°	1176.1	1083.4	972.2	878.5	827.6	786.8
47°	1137.7	1049.9	943.1	852.3	803.8	763.0
47.5°	1100.4	1015.9	914.0	826.6	780.5	739.7
48°	1064.9	983.4	886.3	801.9	757.7	716.9
48.5°	1029.0	951.3	858.2	776.6	734.4	694.6
49°	994.5	920.8	831.0	752.8	712.5	671.8
49.5°	962.0	890.7	803.8	728.6	690.7	651.4
50°	930.5	860.6	777.6	704.8	668.9	629.5
50.5°	898.9	831.5	751.4	681.0	648.0	608.7
51°	869.8	803.8	726.6	658.7	626.1	588.8
51.5°	841.7	777.1	701.9	635.9	606.2	569.8
52°	814.0	750.9	678.1	615.0	586.3	550.9
52.5°	786.8	725.6	654.8	593.1	566.4	532.9
53°	761.1	700.9	632.0	572.3	547.0	516.4
53.5°	735.8	677.1	610.1	551.9	528.1	500.4
54°	712.5	654.3	588.3	532.5	509.7	485.9
54.5°	689.2	632.5	567.9	513.0	492.2	472.8
55°	666.4	610.1	548.0	494.6	475.7	460.6
55.5°	645.1	589.7	528.6	476.6	459.7	449.5
56°	623.7	569.8	509.7	459.7	444.1	439.3
56.5°	603.3	549.9	491.2	443.2	429.6	431.5
57°	583.4	530.5	473.7	426.7	416.5	422.3
57.5°	564.0	512.6	456.7	411.6	403.4	411.6
58°	545.6	495.1	440.2	397.0	391.7	400.9
58.5°	527.1	477.6	424.2	383.0	381.0	390.2
59°	509.2	460.1	408.7	369.4	371.3	379.6
59.5°	492.2	444.6	393.6	355.8	362.1	368.4
60°	475.2	428.6	379.1	343.7	352.4	357.7
60.5°	458.7	413.1	365.0	331.5	342.7	347.0
61°	442.7	397.0	351.4	319.9	333.0	336.9
61.5°	427.6	383.0	337.8	308.7	323.3	326.7
62°	412.6	368.9	324.7	298.5	314.0	317.0
62.5°	398.0	355.3	312.6	287.8	304.3	306.8
63°	383.0	341.2	300.5	278.1	295.1	297.5
63.5°	368.4	328.1	288.8	268.9	286.4	287.8
64°	354.3	315.5	277.2	259.7	277.2	279.1
64.5°	341.2	302.9	266.5	250.9	268.9	269.9
65°	327.1	290.7	255.8	243.2	260.2	261.1
65.5°	314.5	279.1	245.6	235.4	251.9	252.9
66°	301.9	267.4	235.9	228.1	243.7	244.1



TEST NUMBER: P776784

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	266.0	235.4	208.2	206.3	219.4	219.9
68°	254.8	225.2	199.5	199.5	212.1	212.6
68.5°	243.7	215.0	191.2	192.7	204.3	204.8
69°	233.0	205.8	183.5	185.4	197.6	197.6
69.5°	222.3	196.6	175.7	179.1	190.3	189.8
70°	212.1	187.4	168.9	172.8	183.0	183.0
70.5°	201.9	178.6	162.1	166.5	176.2	175.7
71°	192.2	170.9	155.3	160.7	169.9	168.9
71.5°	183.0	163.1	148.5	154.4	163.1	162.6
72°	173.8	155.3	141.2	148.0	156.8	156.3
72.5°	165.0	147.6	135.4	141.7	150.5	149.5
73°	156.3	139.3	129.1	135.9	144.2	143.2
73.5°	148.0	132.5	123.3	130.1	137.8	136.9
74°	139.8	125.2	117.9	124.7	131.5	131.1
74.5°	132.0	118.4	112.1	118.9	125.7	124.7
75°	124.3	112.1	106.8	113.1	119.9	118.9
75.5°	117.0	105.8	101.9	107.8	114.1	113.1
76°	109.7	100.0	96.6	102.4	108.2	107.8
76.5°	102.9	94.2	91.7	97.6	102.9	101.9
77°	96.6	88.3	86.9	92.2	97.6	96.6
77.5°	90.3	83.0	82.5	87.4	91.7	91.3
78°	84.0	77.7	78.1	82.5	86.9	85.9
78.5°	78.1	72.8	73.3	77.7	81.5	81.1
79°	72.3	68.0	69.4	72.8	76.7	75.7
79.5°	67.0	63.1	65.0	68.4	71.8	70.9
80°	61.2	58.7	60.7	63.6	67.0	66.0
80.5°	56.3	54.4	56.8	59.2	62.1	61.6
81°	51.5	50.0	52.9	54.8	57.8	56.8
81.5°	46.6	46.1	48.5	50.5	52.9	52.4
82°	42.7	42.2	44.7	46.6	48.5	48.1
82.5°	38.3	38.3	40.8	42.2	44.2	43.7
83°	34.5	34.5	37.4	38.3	39.8	39.3
83.5°	30.1	31.1	33.5	34.5	35.9	34.9
84°	26.2	27.7	30.1	30.6	31.5	31.1
84.5°	22.3	24.3	26.7	27.2	27.7	27.2
85°	18.9	21.4	23.3	23.8	23.8	23.3
85.5°	15.5	18.0	19.9	20.4	19.9	19.4
86°	12.6	15.0	16.5	17.0	17.0	16.5
86.5°	9.7	12.1	13.6	14.1	14.6	13.6
87°	7.3	9.2	10.7	11.2	11.6	10.7
87.5°	4.4	6.8	7.8	7.8	8.7	7.8
88°	2.4	3.9	4.4	4.9	6.3	5.3
88.5°	0.5	1.5	1.9	2.4	3.9	3.4



TEST NUMBER: P776784

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-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°	2113.4	2139.1	2227.4	2381.3	2583.7	2817.6	3033.6	3179.3	3251.1	3221.0	3090.9
22°	2085.7	2111.4	2201.7	2357.0	2561.8	2799.2	3019.1	3165.7	3238.5	3208.4	3076.4



44°	907.7	934.8	1005.2	1104.7	1221.7	1366.4	1489.6	1523.1	1556.1	1545.0	1491.1
44.5°	882.9	910.1	978.5	1076.6	1186.8	1325.1	1444.0	1474.6	1506.1	1493.5	1443.5



66.5°	235.9	237.4	232.0	233.0	257.7	296.1	342.7	364.0	374.2	366.5	335.4
67°	228.1	229.6	224.7	223.8	247.1	284.4	329.1	349.5	358.7	351.4	321.8



89°	1.5	1.9	2.4	1.9	1.0	0.5	0.5	0.0	0.0	0.0	0.0
89.5°	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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21.5°	2879.3	2651.2	2423.0	2245.4	2159.0	2113.4
22°	2861.3	2628.8	2398.3	2219.2	2131.8	2085.7



44°	1382.9	1262.0	1123.2	1010.6	950.4	907.7
44.5°	1340.6	1225.1	1092.6	983.4	925.6	882.9

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66.5°	289.8	256.8	226.2	220.8	235.4	235.9
67°	277.6	246.1	217.0	213.6	227.6	228.1

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89°	0.0	0.5	0.5	0.5	1.9	1.5
89.5°	0.0	0.0	0.0	0.0	0.5	0.5

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Scaled Data Report



(END OF REPORT)