

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: P776819

Luminaire Tested: HCDJBS4050CSD-HCD8TRMW-5000lm-5000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776819
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2310613A001)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD8TRMW-5000lm-5000K
Description: 8 INCH ROUND MEDIUM MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

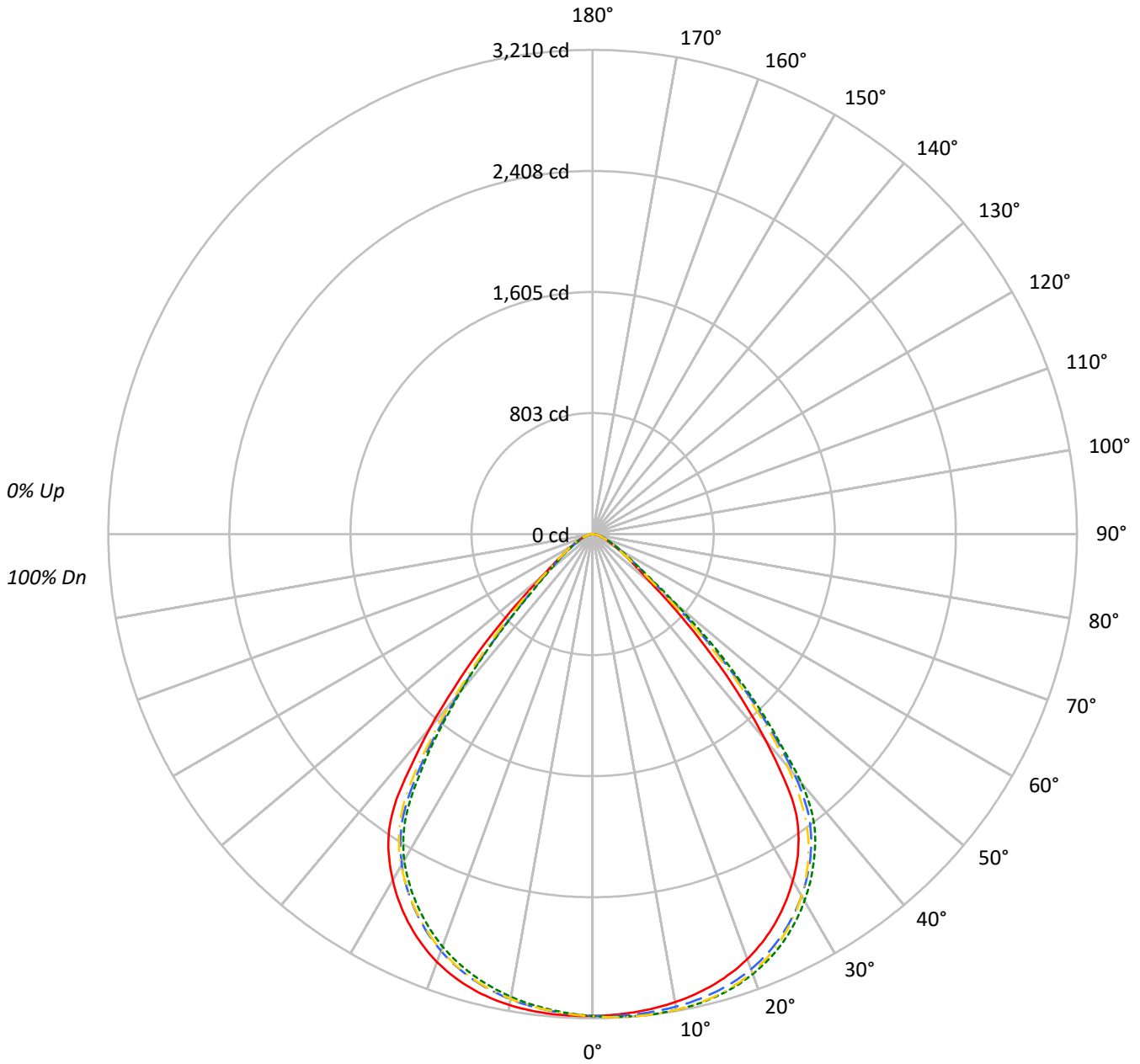
Lumens per Lamp: N/A
Luminaire Lumens: 5175.6 lumens
Efficiency: N/A
Efficacy: 107.8 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.22 / 1.18
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

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	100	100	100	100	100		
	1	112	109	106	103	110	107	104	102	103	100	98	99	97	95	95	94	93	91	91	91	91	91	91		
	2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	84	82	82	82	82	82	82		
	3	98	91	85	80	96	89	84	79	86	82	78	84	80	77	81	78	75	74	74	74	74	74	74		
	4	92	83	76	71	90	82	75	71	79	74	70	77	73	69	75	71	68	66	66	66	66	66	66		
	5	86	76	69	64	84	75	68	64	73	67	63	71	66	62	70	65	62	60	60	60	60	60	60		
	6	81	70	63	58	79	69	62	58	68	62	57	66	61	57	65	60	56	55	55	55	55	55	55		
	7	76	65	58	53	74	64	57	52	63	56	52	61	56	52	60	55	51	50	50	50	50	50	50		
	8	71	60	53	48	70	59	53	48	58	52	48	57	51	47	56	51	47	46	46	46	46	46	46		
	9	67	56	49	44	66	55	48	44	54	48	44	53	48	44	52	47	43	42	42	42	42	42	42		
	10	63	52	45	41	62	51	45	41	51	45	40	50	44	40	49	44	40	39	39	39	39	39	39		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	97553	97553	97553	97553
5°	97509	98312	97849	97031
10°	97688	99297	98305	96560
15°	97787	100287	98510	95840
20°	97414	100864	98044	94529
25°	96144	100561	96488	92075
30°	93569	98991	93418	88028
35°	88488	95707	87243	76934
40°	71049	85827	66700	54031
45°	46112	60486	41251	30042
50°	24428	34364	21250	17379
55°	15936	18262	13557	12141
60°	11437	12713	9806	9129
65°	8871	9818	7643	7253
70°	7150	8096	6150	5847
75°	5898	6924	4919	4636
80°	4694	6066	3675	3411
85°	3398	5605	2032	1716

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°

Vertical Angle: 45°

Luminance: 61742 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	303.4	5.9
10°-20°	875.8	16.9
20°-30°	1313.8	25.4
30°-40°	1422.0	27.5
40°-50°	809.9	15.6
50°-60°	268.9	5.2
60°-70°	118.6	2.3
70°-80°	51.8	1.0
80°-90°	11.5	0.2
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°	2493.0	48.2
0°-40°	3915.0	75.6
0°-60°	4993.7	96.5
0°-90°	5175.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5175.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3195	3195	3195	3195	3195	
5°	3182	3208	3193	3166	3182	303
15°	3094	3173	3117	3032	3094	873
25°	2854	2985	2864	2733	2854	1312
35°	2374	2568	2341	2064	2374	1445
45°	1068	1401	955	696	1068	831
55°	299	343	255	228	299	279
65°	123	136	106	100	123	125
75°	50	59	42	39	50	54
85°	10	16	6	5	10	12
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°	3195.3	3195.3	3195.3	3195.3	3195.3	3195.3	3195.3	3195.3	3195.3	3195.3	3195.3
0.5°	3193.8	3194.8	3194.8	3195.3	3197.2	3198.7	3200.1	3198.2	3195.3	3193.8	3192.3
1°	3193.3	3194.8	3195.3	3196.2	3199.1	3200.6	3201.6	3199.1	3195.7	3193.3	3190.9
1.5°	3192.3	3194.3	3196.2	3197.7	3200.6	3202.5	3203.0	3200.1	3195.7	3192.8	3189.4
2°	3191.4	3194.3	3196.7	3199.1	3202.1	3204.5	3204.5	3201.1	3195.7	3191.9	3187.5
2.5°	3190.4	3193.8	3197.2	3200.1	3203.5	3205.5	3205.5	3201.6	3195.7	3190.9	3185.6
3°	3189.0	3193.3	3197.2	3201.1	3205.0	3207.4	3206.4	3202.1	3195.7	3189.4	3183.6
3.5°	3187.0	3192.8	3197.2	3202.1	3205.9	3208.4	3207.9	3202.1	3194.8	3188.5	3181.2
4°	3185.6	3191.9	3197.2	3202.5	3206.9	3209.3	3208.4	3202.5	3194.3	3187.0	3178.8
4.5°	3184.1	3190.4	3196.7	3203.0	3207.4	3210.3	3208.8	3202.5	3193.8	3185.1	3176.3
5°	3181.7	3189.0	3196.2	3203.0	3207.9	3210.8	3209.3	3202.1	3192.8	3183.1	3173.4
5.5°	3179.7	3188.0	3195.7	3203.5	3207.9	3211.3	3209.3	3201.6	3191.9	3181.2	3170.5
6°	3177.3	3186.0	3194.8	3203.5	3208.4	3211.8	3209.8	3201.1	3190.4	3178.8	3167.1
6.5°	3174.9	3184.6	3193.8	3203.0	3208.4	3211.8	3209.8	3200.1	3189.0	3176.3	3163.7
7°	3172.5	3182.2	3192.8	3202.5	3208.4	3211.8	3209.3	3199.1	3187.0	3173.4	3159.8
7.5°	3169.5	3180.2	3191.4	3202.1	3207.9	3211.8	3208.8	3198.2	3185.1	3170.5	3156.0
8°	3166.1	3177.8	3189.9	3201.1	3207.4	3211.3	3207.9	3196.7	3182.6	3167.6	3151.6
8.5°	3162.8	3175.4	3188.0	3200.1	3206.4	3210.8	3206.9	3194.8	3180.2	3163.7	3147.2
9°	3159.4	3172.5	3186.0	3198.7	3205.5	3210.3	3205.9	3192.8	3177.3	3160.3	3142.4
9.5°	3155.5	3169.1	3184.1	3197.7	3204.5	3208.8	3204.5	3190.4	3174.4	3156.0	3137.0
10°	3151.1	3165.7	3181.2	3195.7	3203.0	3207.9	3202.5	3188.0	3171.0	3151.6	3131.2
10.5°	3146.7	3162.3	3178.8	3194.3	3201.1	3205.9	3200.6	3185.1	3167.1	3146.7	3125.9
11°	3142.4	3158.4	3175.9	3191.9	3199.1	3204.0	3198.2	3182.2	3162.8	3141.4	3120.1
11.5°	3137.0	3154.0	3172.9	3189.9	3197.2	3202.1	3195.7	3178.8	3158.4	3136.5	3113.7
12°	3131.7	3149.6	3169.5	3187.5	3194.8	3199.6	3192.8	3174.9	3153.5	3130.7	3106.5
12.5°	3126.4	3145.3	3165.7	3184.6	3191.9	3197.2	3189.4	3170.5	3148.2	3124.4	3099.7
13°	3120.1	3139.9	3161.8	3181.2	3189.0	3194.3	3186.0	3165.7	3142.9	3117.6	3091.9
13.5°	3114.2	3134.6	3157.4	3178.3	3185.1	3190.9	3181.7	3160.8	3137.0	3110.8	3084.1
14°	3107.9	3128.8	3153.0	3174.4	3181.7	3187.0	3177.3	3155.5	3130.7	3103.6	3075.4
14.5°	3101.1	3123.0	3148.2	3170.5	3177.3	3183.1	3172.9	3149.6	3123.9	3095.8	3067.2
15°	3093.8	3117.1	3143.3	3166.1	3172.9	3178.8	3168.1	3143.3	3116.7	3087.1	3057.9
15.5°	3086.1	3110.3	3137.5	3161.3	3167.6	3173.9	3162.8	3137.0	3108.9	3078.3	3048.2
16°	3077.8	3103.6	3131.7	3156.0	3162.8	3168.6	3156.9	3129.8	3100.6	3069.1	3038.0
16.5°	3069.6	3096.3	3125.4	3150.6	3156.9	3163.2	3150.1	3122.0	3091.9	3059.4	3027.9
17°	3060.4	3088.5	3119.1	3144.8	3150.6	3157.4	3143.3	3113.7	3083.2	3049.2	3016.2
17.5°	3051.6	3080.3	3111.8	3138.5	3144.3	3151.1	3136.1	3105.0	3073.5	3039.0	3005.0
18°	3041.9	3072.0	3104.5	3131.2	3137.5	3144.3	3128.3	3095.8	3063.3	3027.4	2992.9
18.5°	3031.7	3062.8	3096.3	3124.4	3129.8	3136.5	3119.6	3086.6	3052.6	3015.7	2980.8
19°	3020.6	3053.6	3088.0	3116.7	3121.5	3128.3	3110.8	3076.4	3041.9	3003.6	2967.7
19.5°	3009.4	3043.9	3079.3	3108.4	3113.3	3120.5	3102.1	3065.7	3029.8	2991.0	2953.6
20°	2998.3	3033.2	3069.1	3099.7	3104.5	3111.3	3092.4	3054.1	3017.7	2977.4	2939.5
20.5°	2986.1	3022.5	3059.9	3090.5	3094.8	3101.6	3081.7	3042.4	3005.0	2963.8	2925.5
21°	2973.5	3011.4	3049.7	3081.2	3085.1	3091.4	3070.6	3029.8	2991.5	2949.2	2909.5

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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°	2932.8	2974.0	3015.2	3048.7	3051.6	3058.4	3034.2	2989.5	2948.3	2903.2	2860.9
23°	2918.2	2960.9	3003.1	3037.1	3040.0	3045.8	3021.1	2974.5	2932.8	2886.2	2843.0
23.5°	2902.7	2947.3	2990.0	3024.9	3027.4	3033.7	3006.5	2959.4	2915.8	2868.7	2825.0
24°	2887.1	2932.8	2975.9	3011.8	3013.8	3020.1	2992.4	2943.4	2899.3	2850.7	2806.6
24.5°	2870.6	2918.2	2962.8	2998.3	2999.7	3006.0	2977.4	2926.9	2882.3	2832.8	2787.2
25°	2854.1	2902.2	2947.8	2984.2	2985.2	2991.5	2961.9	2909.9	2864.3	2813.4	2767.3
25.5°	2836.7	2886.2	2932.8	2969.6	2970.1	2976.4	2945.4	2892.0	2845.4	2793.0	2746.9
26°	2818.2	2869.7	2916.3	2954.6	2955.1	2960.9	2928.4	2873.6	2825.5	2772.6	2725.6
26.5°	2799.8	2852.2	2900.7	2938.6	2938.1	2944.4	2910.4	2854.1	2806.1	2752.7	2704.7
27°	2780.9	2834.7	2883.7	2922.6	2921.6	2926.9	2892.5	2834.7	2785.7	2730.9	2681.9
27.5°	2761.5	2815.8	2865.8	2905.6	2904.1	2909.5	2873.6	2814.4	2764.9	2709.1	2659.1
28°	2741.6	2797.4	2848.3	2888.1	2886.2	2891.0	2854.1	2794.0	2743.0	2687.2	2635.3
28.5°	2720.2	2777.5	2828.9	2869.7	2867.2	2872.6	2833.8	2772.1	2720.7	2663.4	2611.5
29°	2698.9	2757.6	2810.0	2851.2	2848.3	2852.7	2812.4	2749.8	2697.9	2639.7	2585.8
29.5°	2676.5	2736.2	2789.6	2832.3	2828.4	2832.3	2791.1	2726.5	2674.1	2614.9	2558.6
30°	2654.2	2715.4	2769.7	2811.9	2808.0	2811.4	2768.7	2703.2	2649.9	2590.2	2530.5
30.5°	2630.0	2693.5	2747.9	2792.0	2786.7	2790.1	2746.4	2679.5	2624.1	2563.0	2500.9
31°	2606.2	2670.7	2726.5	2770.7	2764.9	2768.3	2722.6	2653.7	2599.4	2535.3	2470.8
31.5°	2581.9	2646.0	2704.2	2748.8	2742.1	2745.0	2698.4	2627.1	2571.7	2507.2	2438.8
32°	2556.7	2623.2	2680.9	2726.0	2720.7	2722.2	2672.7	2599.4	2544.1	2478.1	2405.3
32.5°	2530.0	2597.9	2657.1	2703.7	2696.4	2697.9	2645.5	2570.8	2515.4	2446.1	2369.4
33°	2502.3	2572.2	2633.4	2680.4	2672.2	2672.7	2617.3	2541.7	2485.9	2412.1	2330.6
33.5°	2472.3	2546.0	2608.6	2656.2	2646.9	2646.9	2589.2	2510.1	2453.3	2375.2	2287.4
34°	2442.2	2517.9	2582.4	2631.9	2621.7	2619.8	2558.2	2477.6	2419.4	2335.9	2238.9
34.5°	2409.2	2487.3	2554.3	2606.2	2595.0	2591.1	2527.6	2443.1	2382.5	2287.4	2185.5
35°	2374.2	2456.3	2526.1	2580.0	2567.9	2562.0	2494.6	2406.3	2340.8	2236.4	2126.8
35.5°	2334.9	2422.3	2495.1	2552.3	2539.7	2531.9	2460.1	2364.1	2292.7	2181.1	2062.2
36°	2294.7	2386.4	2463.5	2523.7	2511.1	2500.9	2421.8	2317.5	2241.3	2118.0	1993.8
36.5°	2248.6	2348.5	2429.1	2494.6	2479.5	2466.4	2381.0	2268.5	2182.6	2049.6	1923.5
37°	2195.2	2304.4	2393.2	2462.6	2446.5	2429.1	2337.4	2217.5	2115.1	1977.8	1851.7
37.5°	2132.1	2255.4	2353.4	2427.1	2408.7	2387.8	2289.3	2159.8	2040.4	1902.6	1776.0
38°	2064.2	2200.0	2307.8	2387.8	2367.9	2344.6	2238.9	2101.1	1963.3	1824.0	1698.8
38.5°	1993.3	2137.5	2257.3	2344.6	2322.3	2296.6	2187.4	2037.5	1885.6	1744.4	1620.2
39°	1922.5	2069.0	2203.9	2296.1	2273.3	2246.6	2131.1	1973.4	1813.8	1664.8	1542.1
39.5°	1852.6	2000.1	2145.7	2245.7	2217.0	2189.4	2072.4	1902.1	1743.9	1587.7	1463.9
40°	1782.7	1933.2	2083.1	2188.4	2153.5	2131.6	2008.4	1831.3	1673.6	1512.5	1385.3
40.5°	1709.5	1868.6	2015.2	2126.8	2077.3	2067.6	1944.3	1755.6	1600.3	1436.8	1308.2
41°	1636.7	1800.7	1943.8	2060.3	1999.2	2004.0	1877.9	1680.4	1524.1	1359.1	1232.0
41.5°	1563.4	1731.3	1871.1	1989.5	1919.1	1935.1	1810.4	1604.7	1448.9	1282.0	1158.7
42°	1490.2	1658.5	1797.8	1913.3	1843.9	1862.3	1740.5	1532.4	1374.2	1210.2	1084.0
42.5°	1417.4	1581.9	1722.6	1834.2	1774.5	1786.6	1665.3	1456.2	1301.4	1138.4	1012.2
43°	1347.0	1505.7	1644.5	1752.2	1704.1	1711.9	1586.7	1381.5	1231.5	1070.4	945.7
43.5°	1277.1	1430.5	1568.3	1672.6	1630.4	1635.7	1509.1	1306.2	1163.1	1004.9	880.2



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CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1068.0	1209.7	1333.9	1430.0	1400.9	1412.5	1271.3	1088.4	955.4	821.0	709.9
45.5°	1001.0	1136.9	1254.8	1354.8	1326.6	1338.8	1190.8	1017.5	889.9	762.3	659.4
46°	935.0	1064.6	1175.2	1276.6	1255.3	1264.0	1118.9	948.1	826.4	708.4	614.8
46.5°	871.5	993.8	1100.0	1204.3	1184.9	1189.3	1042.8	880.2	766.7	654.1	572.6
47°	809.4	924.9	1025.3	1132.5	1114.6	1116.0	972.9	816.2	710.9	606.1	534.2
47.5°	747.3	856.9	958.3	1064.1	1043.3	1043.3	905.4	753.6	656.0	561.9	498.8
48°	692.4	793.8	892.3	997.6	972.9	973.4	841.9	694.9	604.6	521.6	467.3
48.5°	640.0	733.7	829.3	935.0	905.4	905.0	777.3	638.6	556.6	483.8	443.0
49°	592.5	676.9	771.5	871.5	841.4	837.0	718.6	587.6	512.9	456.6	418.3
49.5°	549.3	627.4	717.2	811.8	781.2	772.5	663.8	541.5	474.1	429.4	393.5
50°	514.3	580.3	667.2	753.1	723.5	709.4	612.8	500.3	447.4	402.3	368.8
50.5°	482.8	539.6	619.2	696.8	667.7	652.6	562.9	463.9	420.7	375.1	344.0
51°	454.2	503.2	576.0	644.9	611.9	598.8	519.7	436.2	394.0	348.4	328.5
51.5°	428.0	472.6	536.2	596.8	564.3	552.7	479.9	408.1	367.3	331.9	313.9
52°	405.2	444.0	499.8	552.2	518.7	509.5	451.8	379.9	341.1	317.3	299.9
52.5°	383.3	419.2	467.8	511.9	478.0	471.2	423.6	352.3	325.6	303.3	285.3
53°	362.5	396.0	437.2	476.0	450.8	442.0	396.0	334.3	311.0	288.7	271.7
53.5°	343.5	374.6	410.0	443.5	424.1	413.4	367.8	319.3	296.5	274.6	258.6
54°	329.0	354.2	384.3	412.9	396.9	384.3	340.1	304.7	282.4	261.1	246.5
54.5°	314.4	337.7	362.0	386.7	369.7	355.7	324.1	289.7	268.3	248.4	234.9
55°	299.4	322.2	342.6	362.5	343.1	337.7	309.1	275.1	254.7	236.3	223.7
55.5°	285.3	307.6	327.0	342.6	326.6	322.7	294.1	261.5	242.1	225.1	214.0
56°	271.7	293.1	311.5	326.6	312.0	307.2	279.0	248.0	231.0	215.0	204.3
56.5°	258.6	279.0	297.4	311.5	296.5	292.1	264.9	235.8	220.3	205.3	195.5
57°	246.0	265.4	282.4	296.5	281.4	277.6	251.8	224.7	209.6	196.5	187.3
57.5°	234.9	252.3	268.8	281.9	267.4	263.0	239.2	214.5	200.4	188.3	179.5
58°	223.7	240.2	255.2	267.4	253.8	249.9	227.6	204.3	191.7	180.0	172.3
58.5°	214.0	229.0	243.1	254.3	241.2	237.8	216.9	195.1	183.4	172.7	165.0
59°	204.3	218.8	231.5	241.6	229.5	226.1	206.7	186.3	175.7	165.5	158.2
59.5°	196.0	209.1	220.8	230.0	218.4	215.4	197.0	178.6	167.9	158.7	151.9
60°	187.3	199.9	210.6	219.3	208.2	205.3	188.3	171.3	160.6	152.4	146.1
60.5°	179.1	191.2	201.4	209.1	198.9	196.0	180.5	164.0	154.3	146.1	140.2
61°	172.3	183.4	192.6	199.4	190.2	187.3	172.7	157.2	147.5	140.2	134.9
61.5°	165.5	175.2	184.4	190.7	182.0	179.5	165.5	150.9	141.2	134.9	129.6
62°	158.7	168.9	176.6	182.4	174.2	171.3	158.7	144.6	135.4	129.1	124.7
62.5°	151.9	162.1	170.3	174.2	166.9	164.5	151.9	138.8	130.0	124.2	119.9
63°	145.1	155.8	163.5	167.9	159.6	157.2	146.1	133.4	124.7	119.4	115.0
63.5°	139.3	149.0	157.2	161.1	153.3	150.9	140.2	128.1	119.9	114.5	110.6
64°	133.4	142.7	150.4	154.8	147.0	145.1	134.4	122.8	114.5	109.7	106.3
64.5°	128.1	136.8	143.6	148.5	141.2	139.3	129.6	117.9	110.1	105.8	101.9
65°	122.8	131.0	138.3	142.2	135.9	133.9	124.2	113.1	105.8	100.9	98.0
65.5°	117.4	126.2	132.5	136.8	130.0	128.6	119.4	108.7	101.4	97.0	94.1
66°	113.1	120.8	127.6	131.5	125.2	123.7	114.5	104.3	97.0	93.2	90.3



TEST NUMBER: P776819

CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	99.5	106.8	113.1	116.5	111.1	109.7	101.9	92.2	85.4	82.0	79.6
68°	95.1	102.4	108.7	112.1	106.8	105.3	98.0	88.3	82.0	78.6	76.2
68.5°	91.2	98.0	104.3	107.7	102.4	100.9	93.7	84.4	78.6	75.2	73.3
69°	87.3	94.1	100.0	103.4	98.5	97.0	90.3	81.0	75.2	71.8	69.9
69.5°	83.9	90.3	96.1	99.0	94.6	93.2	86.4	77.6	71.8	68.9	67.0
70°	80.1	86.4	92.2	95.1	90.7	89.3	83.0	74.2	68.9	65.5	64.1
70.5°	76.7	83.0	88.3	91.2	86.9	85.9	79.6	70.8	65.5	62.6	61.1
71°	73.3	79.1	84.9	87.8	83.5	82.5	76.2	67.9	62.6	59.7	58.2
71.5°	69.9	75.7	81.5	83.9	80.1	79.1	73.3	65.0	59.7	56.8	55.3
72°	67.0	72.8	78.1	80.5	76.7	75.7	69.9	62.1	56.8	53.9	52.9
72.5°	64.1	69.4	74.7	77.2	73.8	72.3	67.0	59.2	54.3	51.4	50.0
73°	61.1	66.5	71.3	74.2	70.4	69.4	64.1	56.3	51.4	49.0	47.6
73.5°	58.2	63.1	68.4	70.8	67.4	66.5	61.1	53.9	49.0	46.1	45.1
74°	55.3	60.2	65.5	67.9	64.5	63.6	58.2	50.9	46.6	43.7	42.7
74.5°	52.4	57.3	62.1	65.0	61.6	60.7	55.8	48.5	44.2	41.2	40.8
75°	50.0	54.8	59.7	62.1	58.7	57.7	52.9	46.1	41.7	39.3	38.3
75.5°	47.1	51.9	56.8	59.2	56.3	55.3	50.5	43.7	39.3	36.9	35.9
76°	44.6	49.0	53.9	56.8	53.4	52.9	48.0	41.2	36.9	34.5	34.0
76.5°	42.2	46.6	51.4	53.9	50.9	50.0	45.6	38.8	34.9	32.5	31.5
77°	39.8	44.2	48.5	51.4	48.5	47.6	43.2	36.9	32.5	30.1	29.6
77.5°	37.4	41.7	46.1	48.5	46.1	45.1	40.8	34.5	30.6	28.1	27.2
78°	35.4	39.3	43.7	46.1	43.7	42.7	38.3	32.0	28.1	26.2	25.2
78.5°	33.0	36.9	41.2	44.2	41.2	40.8	36.4	30.1	26.2	24.3	23.3
79°	31.1	34.9	39.3	41.7	38.8	38.3	34.0	28.1	24.3	22.3	21.8
79.5°	28.6	32.5	36.9	39.3	36.9	36.4	31.5	26.2	22.8	20.4	19.9
80°	26.7	30.6	34.5	36.9	34.5	34.0	29.6	24.3	20.9	18.4	18.0
80.5°	24.7	28.1	32.5	34.9	32.5	31.5	27.7	22.3	18.9	17.0	16.5
81°	22.8	26.2	30.1	32.5	30.6	30.1	25.7	20.4	17.5	15.0	14.6
81.5°	20.9	24.3	28.1	30.6	28.1	27.7	23.8	18.4	15.5	13.6	13.1
82°	19.4	22.3	26.2	28.6	26.2	25.7	22.3	17.0	14.1	12.1	11.6
82.5°	17.5	20.4	24.3	26.7	24.7	24.3	20.4	15.0	12.6	10.7	10.2
83°	16.0	18.9	22.3	24.7	22.8	22.3	18.4	13.6	11.2	9.2	8.7
83.5°	14.1	17.0	20.9	22.8	20.9	20.4	17.0	12.1	9.7	7.8	7.8
84°	12.6	15.5	18.9	21.4	19.4	18.9	15.5	10.7	8.2	6.3	6.3
84.5°	11.2	13.6	17.5	19.4	17.5	17.0	14.1	9.2	6.8	4.9	5.3
85°	9.7	12.1	15.5	18.0	16.0	15.5	12.1	7.8	5.8	3.9	3.9
85.5°	8.2	10.7	14.1	16.5	14.6	14.1	10.7	6.3	4.4	2.9	2.9
86°	6.8	9.2	12.1	14.6	13.1	12.6	9.7	5.3	3.4	2.4	1.9
86.5°	5.3	7.8	10.7	13.1	11.6	11.2	8.2	4.4	2.4	1.5	1.0
87°	4.4	6.3	9.7	11.6	10.2	9.7	6.8	3.4	1.9	1.0	0.0
87.5°	3.4	4.9	8.2	10.2	8.7	8.2	5.8	2.4	1.0	0.5	0.0
88°	2.4	3.9	6.8	8.7	7.3	7.3	4.9	1.9	0.5	0.0	0.0
88.5°	1.5	2.9	5.8	7.3	6.3	5.8	3.4	1.0	0.0	0.0	0.0



TEST NUMBER: P776819
CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMW-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	2.4	3.9	2.4	2.4	0.5	0.0	0.0	0.0	0.0



TEST NUMBER: P776819

CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3195.3	3195.3	3195.3	3195.3	3195.3	3195.3
0.5°	3191.4	3193.8	3194.3	3196.2	3195.7	3193.8
1°	3189.4	3191.4	3191.9	3194.3	3194.3	3193.3
1.5°	3187.0	3188.5	3189.4	3191.9	3192.3	3192.3
2°	3184.6	3186.0	3186.5	3189.4	3190.9	3191.4
2.5°	3181.7	3183.1	3183.6	3187.0	3189.0	3190.4
3°	3179.2	3180.2	3180.7	3184.1	3186.5	3189.0
3.5°	3175.9	3176.8	3177.3	3181.7	3184.6	3187.0
4°	3172.9	3173.4	3174.4	3178.8	3182.6	3185.6
4.5°	3169.5	3170.0	3170.5	3175.9	3180.2	3184.1
5°	3165.7	3166.1	3166.6	3172.5	3177.8	3181.7
5.5°	3161.8	3162.3	3162.8	3169.5	3174.9	3179.7
6°	3157.4	3157.4	3158.4	3165.7	3172.0	3177.3
6.5°	3153.0	3153.5	3154.0	3161.8	3168.6	3174.9
7°	3148.2	3148.7	3149.6	3157.9	3165.7	3172.5
7.5°	3143.3	3143.8	3144.3	3154.0	3162.3	3169.5
8°	3138.5	3138.0	3139.5	3149.2	3158.4	3166.1
8.5°	3132.7	3132.7	3134.1	3144.8	3154.5	3162.8
9°	3127.3	3126.8	3128.3	3139.9	3150.6	3159.4
9.5°	3121.0	3121.5	3122.0	3134.1	3146.3	3155.5
10°	3114.7	3114.7	3116.2	3128.8	3141.4	3151.1
10.5°	3108.4	3107.9	3109.4	3123.0	3136.5	3146.7
11°	3101.1	3101.1	3102.6	3117.1	3131.2	3142.4
11.5°	3093.8	3093.8	3094.8	3110.8	3125.9	3137.0
12°	3086.1	3086.1	3087.5	3104.0	3120.1	3131.7
12.5°	3078.3	3077.8	3079.3	3096.8	3113.3	3126.4
13°	3070.1	3069.6	3070.6	3089.0	3106.9	3120.1
13.5°	3061.3	3060.9	3062.3	3081.2	3100.2	3114.2
14°	3052.1	3051.6	3053.1	3073.0	3092.9	3107.9
14.5°	3042.4	3042.4	3043.4	3064.2	3085.1	3101.1
15°	3032.7	3032.2	3033.7	3055.0	3076.9	3093.8
15.5°	3022.5	3021.5	3023.0	3044.8	3068.6	3086.1
16°	3011.4	3011.4	3011.8	3034.6	3059.4	3077.8
16.5°	3000.2	3000.2	3000.7	3024.0	3050.2	3069.6
17°	2988.1	2988.6	2989.0	3012.8	3040.0	3060.4
17.5°	2976.4	2976.4	2976.4	3001.7	3029.8	3051.6
18°	2963.3	2964.3	2963.8	2989.0	3018.6	3041.9
18.5°	2950.2	2950.7	2950.2	2976.4	3007.5	3031.7
19°	2936.6	2937.1	2936.6	2962.8	2995.3	3020.6
19.5°	2922.1	2924.0	2922.6	2949.7	2982.7	3009.4
20°	2907.5	2909.5	2907.0	2934.7	2969.6	2998.3
20.5°	2892.5	2893.9	2892.0	2920.6	2956.5	2986.1
21°	2876.5	2878.4	2876.0	2905.1	2942.9	2973.5

TEST NUMBER: P776819

CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2826.0	2827.9	2825.0	2855.6	2897.8	2932.8
23°	2807.6	2810.5	2806.6	2838.6	2881.3	2918.2
23.5°	2788.6	2792.0	2788.6	2820.2	2864.8	2902.7
24°	2769.2	2773.1	2769.2	2801.7	2847.3	2887.1
24.5°	2749.8	2753.7	2749.3	2783.3	2829.9	2870.6
25°	2729.0	2733.3	2729.0	2762.9	2811.4	2854.1
25.5°	2708.1	2712.9	2708.1	2743.0	2793.0	2836.7
26°	2685.8	2691.6	2687.2	2722.2	2773.6	2818.2
26.5°	2664.4	2670.2	2664.9	2701.3	2754.2	2799.8
27°	2641.1	2647.4	2642.1	2679.5	2733.3	2780.9
27.5°	2617.8	2624.1	2619.3	2657.1	2712.5	2761.5
28°	2593.6	2600.4	2595.0	2633.8	2691.1	2741.6
28.5°	2567.9	2576.6	2571.3	2610.6	2669.3	2720.2
29°	2539.7	2550.9	2546.0	2586.8	2646.5	2698.9
29.5°	2510.6	2524.7	2519.8	2562.5	2622.7	2676.5
30°	2481.0	2497.0	2491.7	2537.8	2599.4	2654.2
30.5°	2449.5	2466.9	2462.1	2511.6	2575.1	2630.0
31°	2416.5	2435.9	2430.0	2483.4	2550.4	2606.2
31.5°	2381.5	2401.9	2398.0	2454.3	2524.7	2581.9
32°	2343.7	2366.0	2364.1	2422.8	2496.5	2556.7
32.5°	2303.9	2327.7	2328.6	2390.3	2467.9	2530.0
33°	2260.7	2285.9	2290.8	2355.3	2437.3	2502.3
33.5°	2210.2	2241.8	2248.6	2318.9	2405.3	2472.3
34°	2153.0	2190.3	2201.5	2279.1	2371.8	2442.2
34.5°	2088.9	2131.1	2143.8	2235.0	2335.4	2409.2
35°	2022.5	2064.2	2077.8	2184.0	2297.1	2374.2
35.5°	1953.5	1994.8	2006.9	2126.3	2254.4	2334.9
36°	1882.7	1928.3	1931.7	2063.7	2204.4	2294.7
36.5°	1814.8	1864.3	1855.5	1995.8	2148.1	2248.6
37°	1746.8	1797.3	1780.8	1925.9	2085.0	2195.2
37.5°	1677.9	1723.5	1709.0	1850.2	2015.7	2132.1
38°	1607.1	1646.9	1639.1	1772.1	1943.8	2064.2
38.5°	1530.4	1569.2	1564.9	1694.9	1870.1	1993.3
39°	1454.7	1495.0	1491.6	1617.3	1795.8	1922.5
39.5°	1377.1	1424.6	1417.4	1540.6	1718.2	1852.6
40°	1302.4	1355.7	1345.1	1460.6	1642.5	1782.7
40.5°	1226.2	1287.8	1272.8	1382.4	1566.3	1709.5
41°	1152.4	1217.0	1204.3	1305.8	1492.1	1636.7
41.5°	1080.6	1145.6	1136.4	1235.9	1420.3	1563.4
42°	1008.8	1074.8	1068.0	1164.6	1347.5	1490.2
42.5°	937.5	1007.3	1002.5	1097.1	1271.3	1417.4
43°	869.1	943.3	939.4	1032.1	1200.0	1347.0
43.5°	806.5	878.8	877.3	970.0	1130.6	1277.1

TEST NUMBER: P776819

CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	643.9	695.8	712.3	801.1	934.6	1068.0
45.5°	598.3	641.0	663.8	751.1	875.4	1001.0
46°	556.6	592.0	618.7	704.1	818.6	935.0
46.5°	520.2	550.3	576.9	659.9	766.7	871.5
47°	488.1	514.3	538.6	618.2	715.7	809.4
47.5°	458.5	482.8	504.2	578.4	669.1	747.3
48°	435.7	455.6	473.1	541.5	625.0	692.4
48.5°	413.4	431.4	445.4	508.0	585.2	640.0
49°	390.6	409.1	419.2	476.5	547.3	592.5
49.5°	367.8	386.7	395.5	447.4	511.9	549.3
50°	345.5	365.9	373.1	419.2	479.9	514.3
50.5°	330.4	347.4	353.2	394.0	450.3	482.8
51°	315.9	331.9	336.3	370.7	423.1	454.2
51.5°	301.8	317.8	321.7	349.9	397.4	428.0
52°	287.7	303.8	307.6	333.4	374.1	405.2
52.5°	274.2	289.7	293.6	319.3	353.7	383.3
53°	261.1	275.6	279.5	304.7	336.8	362.5
53.5°	248.4	263.0	265.9	290.2	322.2	343.5
54°	237.3	250.4	253.3	276.1	307.2	329.0
54.5°	226.6	238.7	242.1	263.0	292.6	314.4
55°	216.4	228.1	231.0	250.4	278.5	299.4
55.5°	207.2	217.9	220.8	239.2	265.4	285.3
56°	198.0	208.2	210.6	228.1	252.8	271.7
56.5°	189.7	199.4	201.9	217.9	241.2	258.6
57°	182.0	190.7	193.1	208.7	230.0	246.0
57.5°	174.7	182.9	184.9	199.4	219.8	234.9
58°	166.9	175.2	177.6	191.2	210.1	223.7
58.5°	160.6	168.4	171.3	182.9	200.9	214.0
59°	153.8	162.1	164.5	175.2	192.2	204.3
59.5°	148.0	155.8	158.2	168.9	184.4	196.0
60°	142.2	149.5	151.9	162.6	176.6	187.3
60.5°	136.4	143.6	145.1	156.2	170.3	179.1
61°	131.0	137.8	139.3	149.9	164.0	172.3
61.5°	126.2	132.5	133.9	143.6	157.2	165.5
62°	121.3	127.6	129.1	138.3	150.9	158.7
62.5°	116.5	122.3	123.7	133.0	144.6	151.9
63°	111.6	117.4	118.9	127.6	138.8	145.1
63.5°	107.2	113.1	114.5	122.3	133.4	139.3
64°	103.4	108.7	109.7	117.9	127.6	133.4
64.5°	99.0	104.3	105.8	113.1	122.8	128.1
65°	95.1	100.4	101.4	108.7	117.9	122.8
65.5°	91.2	96.1	97.5	104.3	113.1	117.4
66°	87.8	92.2	93.2	100.4	108.7	113.1



TEST NUMBER: P776819

CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	77.2	81.5	82.5	88.8	95.6	99.5
68°	74.2	78.1	79.1	84.9	91.7	95.1
68.5°	70.8	74.7	75.7	81.5	87.8	91.2
69°	67.9	71.8	72.8	78.1	83.9	87.3
69.5°	65.0	68.4	69.4	74.7	80.5	83.9
70°	62.1	65.5	66.5	71.8	77.2	80.1
70.5°	59.2	62.6	63.6	68.4	73.8	76.7
71°	56.3	59.7	60.7	65.5	70.4	73.3
71.5°	53.9	57.3	57.7	62.6	67.4	69.9
72°	51.4	54.3	54.8	59.7	64.1	67.0
72.5°	48.5	51.9	52.4	56.8	61.1	64.1
73°	46.1	49.0	50.0	54.3	58.2	61.1
73.5°	44.2	46.6	47.1	51.4	55.3	58.2
74°	41.2	44.2	44.6	49.0	52.9	55.3
74.5°	39.3	41.7	42.2	46.1	50.0	52.4
75°	36.9	39.3	40.3	43.7	47.6	50.0
75.5°	34.9	37.4	37.8	41.2	44.6	47.1
76°	32.5	34.9	35.4	39.3	42.7	44.6
76.5°	30.6	33.0	33.5	36.9	40.3	42.2
77°	28.6	30.6	31.1	34.5	37.8	39.8
77.5°	26.2	28.6	29.1	32.5	35.4	37.4
78°	24.7	26.7	27.2	30.1	33.0	35.4
78.5°	22.8	24.7	25.2	28.1	31.1	33.0
79°	20.9	22.8	23.3	26.2	28.6	31.1
79.5°	19.4	21.4	21.4	24.3	26.7	28.6
80°	17.5	19.4	19.9	22.3	24.7	26.7
80.5°	16.0	18.0	18.0	20.4	22.8	24.7
81°	14.1	16.0	16.5	18.9	20.9	22.8
81.5°	12.6	14.6	15.0	17.0	18.9	20.9
82°	11.2	13.1	13.6	15.5	17.5	19.4
82.5°	9.7	11.6	12.1	14.1	15.5	17.5
83°	8.2	10.2	10.2	12.1	14.1	16.0
83.5°	7.3	8.7	8.7	10.7	12.1	14.1
84°	5.8	7.3	7.8	9.2	10.7	12.6
84.5°	4.4	5.8	6.3	8.2	9.2	11.2
85°	3.4	4.9	4.9	6.8	7.8	9.7
85.5°	1.9	3.4	3.9	5.3	6.3	8.2
86°	1.0	2.4	2.4	4.4	5.3	6.8
86.5°	0.0	1.0	1.0	2.9	4.4	5.3
87°	0.0	0.0	0.0	1.9	3.4	4.4
87.5°	0.0	0.0	0.0	1.0	2.4	3.4
88°	0.0	0.0	0.0	0.0	1.5	2.4
88.5°	0.0	0.0	0.0	0.0	1.0	1.5



TEST NUMBER: P776819
CATALOG NUMBER: HCDJBS4050CSD-HCD8TRMW-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	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°	2960.4	2999.2	3038.5	3071.0	3074.4	3080.7	3058.9	3017.2	2977.4	2934.7	2893.9
22°	2946.3	2987.1	3026.9	3060.4	3063.3	3070.1	3046.8	3003.1	2963.3	2918.7	2877.9



44°	1207.3	1356.2	1491.6	1590.6	1554.2	1562.0	1431.0	1234.4	1094.2	944.3	820.0
44.5°	1136.4	1283.0	1414.0	1513.0	1476.6	1488.7	1350.9	1160.2	1024.8	880.2	763.3



66.5°	108.2	116.0	122.8	126.2	120.3	118.4	110.1	100.0	93.2	89.3	86.9
67°	103.8	111.1	117.4	121.3	115.5	114.0	105.8	96.1	89.3	85.4	83.0



89°	0.5	2.4	4.4	6.3	4.9	4.9	2.4	0.5	0.0	0.0	0.0
89.5°	0.0	1.5	3.4	4.9	3.9	3.4	1.5	0.0	0.0	0.0	0.0

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21.5°	2860.5	2861.9	2859.5	2888.6	2928.4	2960.4
22°	2843.0	2845.4	2842.5	2873.1	2912.9	2946.3



44°	749.2	816.2	819.1	909.8	1061.7	1207.3
44.5°	694.4	754.1	762.8	855.0	996.7	1136.4

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66.5°	83.9	88.8	89.8	96.1	103.8	108.2
67°	80.5	84.9	85.9	92.7	100.0	103.8

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89°	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

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(END OF REPORT)