

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: P776815

Luminaire Tested: HCDJBS4050CSD-HCD8TRMW-5000lm-2700K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776815
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-2700K
Description: 8 INCH ROUND MEDIUM MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

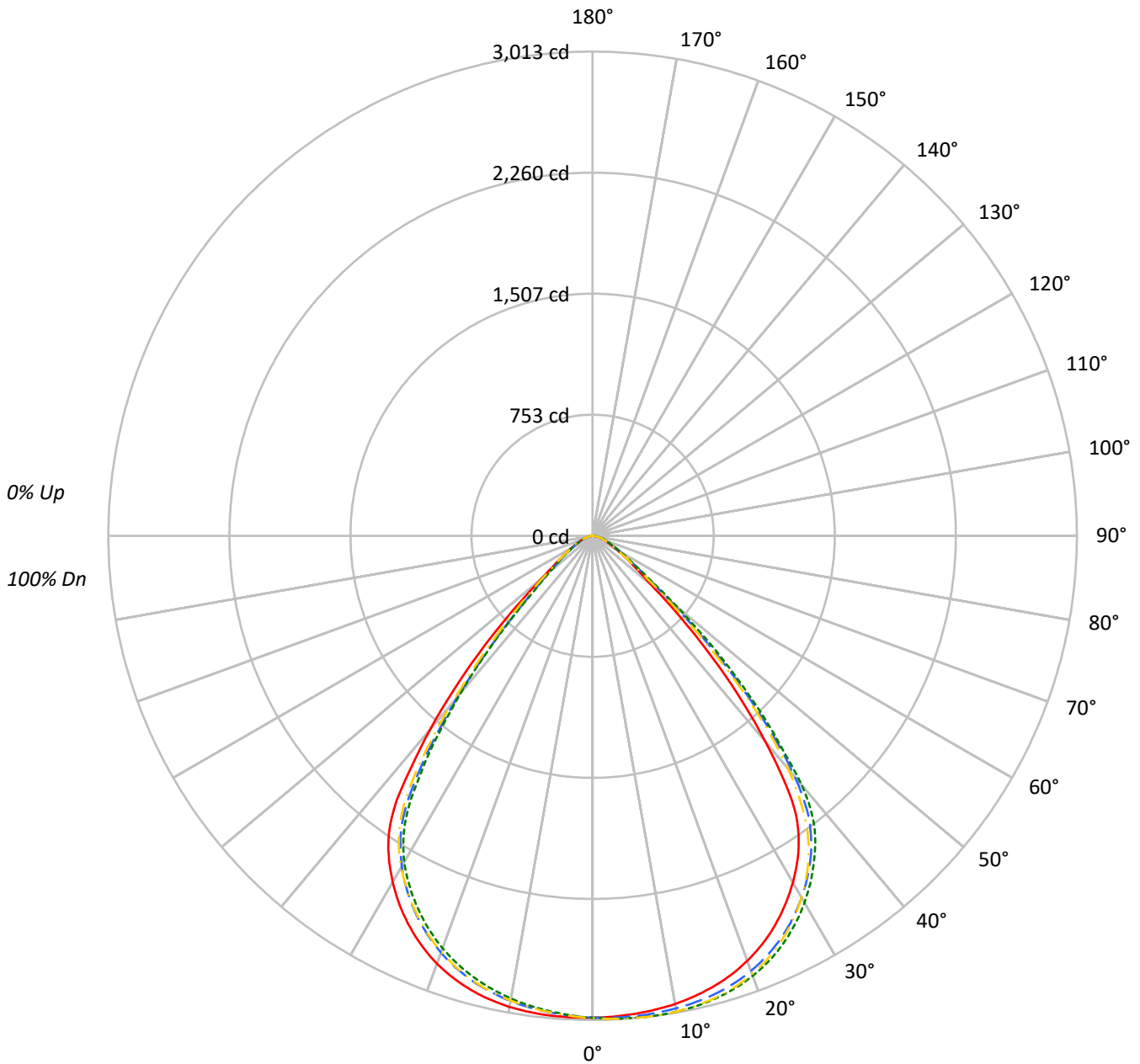
Lumens per Lamp: N/A
Luminaire Lumens: 4858.4 lumens
Efficiency: N/A
Efficacy: 101.2 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.22 / 1.18
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

Input Watts (W): 48
Input Voltage (V): NR
Input Current (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



TEST NUMBER: P776815
CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMW-5000lm-2700K

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°	91573	91573	91573	91573
5°	91533	92287	91855	91086
10°	91702	93211	92281	90641
15°	91794	94142	92473	89967
20°	91442	94685	92033	88736
25°	90253	94396	90576	86433
30°	87837	92928	87693	82634
35°	83065	89841	81895	72219
40°	66696	80566	62611	50723
45°	43284	56777	38725	28203
50°	22931	32255	19949	16310
55°	14957	17139	12727	11396
60°	10734	11931	9208	8567
65°	8322	9211	7174	6812
70°	6713	7605	5775	5490
75°	5532	6500	4624	4353
80°	4413	5679	3446	3200
85°	3188	5254	1927	1611

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 45°
 Luminance: 57956 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	284.8	5.9
10°-20°	822.1	16.9
20°-30°	1233.3	25.4
30°-40°	1334.8	27.5
40°-50°	760.3	15.6
50°-60°	252.4	5.2
60°-70°	111.4	2.3
70°-80°	48.6	1.0
80°-90°	10.8	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°	2340.2	48.2
0°-40°	3675.1	75.6
0°-60°	4687.7	96.5
0°-90°	4858.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4858.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2999	2999	2999	2999	2999	
5°	2987	3011	2997	2972	2987	284
15°	2904	2978	2926	2846	2904	819
25°	2679	2802	2689	2566	2679	1231
35°	2229	2410	2197	1938	2229	1357
45°	1002	1315	897	653	1002	780
55°	281	322	239	214	281	262
65°	115	128	99	94	115	117
75°	47	55	39	37	47	50
85°	9	15	6	5	9	11
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°	2999.4	2999.4	2999.4	2999.4	2999.4	2999.4	2999.4	2999.4	2999.4	2999.4	2999.4
0.5°	2998.1	2999.0	2999.0	2999.4	3001.3	3002.6	3004.0	3002.2	2999.4	2998.1	2996.7
1°	2997.6	2999.0	2999.4	3000.4	3003.1	3004.5	3005.4	3003.1	2999.9	2997.6	2995.3
1.5°	2996.7	2998.5	3000.4	3001.7	3004.5	3006.3	3006.7	3004.0	2999.9	2997.2	2994.0
2°	2995.8	2998.5	3000.8	3003.1	3005.8	3008.1	3008.1	3004.9	2999.9	2996.3	2992.2
2.5°	2994.9	2998.1	3001.3	3004.0	3007.2	3009.0	3009.0	3005.4	2999.9	2995.3	2990.3
3°	2993.5	2997.6	3001.3	3004.9	3008.6	3010.8	3009.9	3005.8	2999.9	2994.0	2988.5
3.5°	2991.7	2997.2	3001.3	3005.8	3009.5	3011.7	3011.3	3005.8	2999.0	2993.1	2986.2
4°	2990.3	2996.3	3001.3	3006.3	3010.4	3012.7	3011.7	3006.3	2998.5	2991.7	2984.0
4.5°	2989.0	2994.9	3000.8	3006.7	3010.8	3013.6	3012.2	3006.3	2998.1	2989.9	2981.7
5°	2986.7	2993.5	3000.4	3006.7	3011.3	3014.0	3012.7	3005.8	2997.2	2988.1	2978.9
5.5°	2984.9	2992.6	2999.9	3007.2	3011.3	3014.5	3012.7	3005.4	2996.3	2986.2	2976.2
6°	2982.6	2990.8	2999.0	3007.2	3011.7	3014.9	3013.1	3004.9	2994.9	2984.0	2973.0
6.5°	2980.3	2989.4	2998.1	3006.7	3011.7	3014.9	3013.1	3004.0	2993.5	2981.7	2969.8
7°	2978.0	2987.1	2997.2	3006.3	3011.7	3014.9	3012.7	3003.1	2991.7	2978.9	2966.2
7.5°	2975.3	2985.3	2995.8	3005.8	3011.3	3014.9	3012.2	3002.2	2989.9	2976.2	2962.5
8°	2972.1	2983.0	2994.4	3004.9	3010.8	3014.5	3011.3	3000.8	2987.6	2973.5	2958.4
8.5°	2968.9	2980.8	2992.6	3004.0	3009.9	3014.0	3010.4	2999.0	2985.3	2969.8	2954.3
9°	2965.7	2978.0	2990.8	3002.6	3009.0	3013.6	3009.5	2997.2	2982.6	2966.6	2949.8
9.5°	2962.1	2974.8	2989.0	3001.7	3008.1	3012.2	3008.1	2994.9	2979.9	2962.5	2944.8
10°	2958.0	2971.7	2986.2	2999.9	3006.7	3011.3	3006.3	2992.6	2976.7	2958.4	2939.3
10.5°	2953.9	2968.5	2984.0	2998.5	3004.9	3009.5	3004.5	2989.9	2973.0	2953.9	2934.3
11°	2949.8	2964.8	2981.2	2996.3	3003.1	3007.6	3002.2	2987.1	2968.9	2948.9	2928.8
11.5°	2944.8	2960.7	2978.5	2994.4	3001.3	3005.8	2999.9	2984.0	2964.8	2944.3	2922.9
12°	2939.8	2956.6	2975.3	2992.2	2999.0	3003.5	2997.2	2980.3	2960.3	2938.9	2916.1
12.5°	2934.8	2952.5	2971.7	2989.4	2996.3	3001.3	2994.0	2976.2	2955.3	2932.9	2909.7
13°	2928.8	2947.5	2968.0	2986.2	2993.5	2998.5	2990.8	2971.7	2950.2	2926.6	2902.4
13.5°	2923.4	2942.5	2963.9	2983.5	2989.9	2995.3	2986.7	2967.1	2944.8	2920.2	2895.1
14°	2917.5	2937.0	2959.8	2979.9	2986.7	2991.7	2982.6	2962.1	2938.9	2913.4	2886.9
14.5°	2911.1	2931.6	2955.3	2976.2	2982.6	2988.1	2978.5	2956.6	2932.5	2906.1	2879.2
15°	2904.2	2926.1	2950.7	2972.1	2978.5	2984.0	2973.9	2950.7	2925.7	2897.9	2870.5
15.5°	2897.0	2919.7	2945.2	2967.6	2973.5	2979.4	2968.9	2944.8	2918.4	2889.7	2861.4
16°	2889.2	2913.4	2939.8	2962.5	2968.9	2974.4	2963.5	2938.0	2910.6	2881.0	2851.9
16.5°	2881.5	2906.5	2933.9	2957.5	2963.5	2969.4	2957.1	2930.7	2902.4	2871.9	2842.3
17°	2872.8	2899.2	2927.9	2952.1	2957.5	2963.9	2950.7	2922.9	2894.2	2862.3	2831.4
17.5°	2864.6	2891.5	2921.1	2946.1	2951.6	2958.0	2943.9	2914.7	2885.1	2852.8	2820.9
18°	2855.5	2883.7	2914.3	2939.3	2945.2	2951.6	2936.6	2906.1	2875.5	2841.8	2809.5
18.5°	2845.9	2875.1	2906.5	2932.9	2938.0	2944.3	2928.4	2897.4	2865.5	2830.9	2798.1
19°	2835.5	2866.4	2898.8	2925.7	2930.2	2936.6	2920.2	2887.8	2855.5	2819.5	2785.8
19.5°	2825.0	2857.3	2890.6	2917.9	2922.5	2929.3	2912.0	2877.8	2844.1	2807.7	2772.6
20°	2814.5	2847.3	2881.0	2909.7	2914.3	2920.6	2902.9	2866.9	2832.7	2794.9	2759.4
20.5°	2803.1	2837.3	2872.4	2901.1	2905.2	2911.5	2892.9	2856.0	2820.9	2782.2	2746.2
21°	2791.3	2826.8	2862.8	2892.4	2896.0	2902.0	2882.4	2844.1	2808.1	2768.5	2731.2

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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°	2753.0	2791.7	2830.5	2861.9	2864.6	2871.0	2848.2	2806.3	2767.6	2725.2	2685.6
23°	2739.4	2779.4	2819.1	2851.0	2853.7	2859.1	2835.9	2792.2	2753.0	2709.3	2668.8
23.5°	2724.8	2766.7	2806.8	2839.6	2841.8	2847.8	2822.3	2778.1	2737.1	2692.9	2651.9
24°	2710.2	2753.0	2793.6	2827.3	2829.1	2835.0	2809.0	2763.0	2721.6	2676.0	2634.6
24.5°	2694.7	2739.4	2781.3	2814.5	2815.9	2821.8	2794.9	2747.6	2705.6	2659.2	2616.4
25°	2679.2	2724.3	2767.1	2801.3	2802.2	2808.1	2780.3	2731.6	2688.8	2641.0	2597.7
25.5°	2662.8	2709.3	2753.0	2787.6	2788.1	2794.0	2764.9	2714.8	2671.0	2621.8	2578.6
26°	2645.5	2693.8	2737.5	2773.5	2774.0	2779.4	2748.9	2697.4	2652.4	2602.7	2558.5
26.5°	2628.2	2677.4	2723.0	2758.5	2758.0	2764.0	2732.1	2679.2	2634.1	2584.0	2538.9
27°	2610.4	2661.0	2707.0	2743.5	2742.5	2747.6	2715.2	2661.0	2615.0	2563.5	2517.5
27.5°	2592.2	2643.2	2690.2	2727.5	2726.1	2731.2	2697.4	2641.9	2595.4	2543.0	2496.1
28°	2573.6	2625.9	2673.8	2711.1	2709.3	2713.8	2679.2	2622.7	2574.9	2522.5	2473.8
28.5°	2553.5	2607.3	2655.5	2693.8	2691.5	2696.5	2660.1	2602.3	2554.0	2500.2	2451.5
29°	2533.5	2588.6	2637.8	2676.5	2673.8	2677.9	2640.1	2581.3	2532.6	2477.9	2427.3
29.5°	2512.5	2568.5	2618.6	2658.7	2655.1	2658.7	2620.0	2559.4	2510.2	2454.7	2401.8
30°	2491.6	2549.0	2600.0	2639.6	2636.0	2639.1	2599.1	2537.6	2487.5	2431.4	2375.4
30.5°	2468.8	2528.5	2579.5	2620.9	2615.9	2619.1	2578.1	2515.3	2463.3	2405.9	2347.6
31°	2446.5	2507.1	2559.4	2600.9	2595.4	2598.6	2555.8	2491.1	2440.1	2380.0	2319.4
31.5°	2423.7	2483.8	2538.5	2580.4	2574.0	2576.7	2533.0	2466.1	2414.1	2353.5	2289.3
32°	2400.0	2462.4	2516.6	2559.0	2554.0	2555.3	2508.9	2440.1	2388.2	2326.2	2257.9
32.5°	2375.0	2438.7	2494.3	2538.0	2531.2	2532.6	2483.4	2413.2	2361.3	2296.2	2224.2
33°	2349.0	2414.6	2472.0	2516.2	2508.4	2508.9	2456.9	2385.9	2333.5	2264.3	2187.7
33.5°	2320.8	2390.0	2448.7	2493.4	2484.7	2484.7	2430.5	2356.3	2303.0	2229.7	2147.2
34°	2292.5	2363.6	2424.2	2470.6	2461.0	2459.2	2401.4	2325.8	2271.1	2192.8	2101.7
34.5°	2261.5	2334.9	2397.7	2446.5	2436.0	2432.3	2372.7	2293.4	2236.5	2147.2	2051.6
35°	2228.7	2305.7	2371.3	2421.9	2410.5	2405.0	2341.7	2258.8	2197.3	2099.4	1996.4
35.5°	2191.8	2273.8	2342.2	2395.9	2384.1	2376.8	2309.4	2219.2	2152.2	2047.5	1935.9
36°	2154.0	2240.1	2312.6	2369.0	2357.2	2347.6	2273.4	2175.5	2103.9	1988.2	1871.6
36.5°	2110.8	2204.6	2280.2	2341.7	2327.6	2315.3	2235.1	2129.4	2048.8	1924.0	1805.6
37°	2060.7	2163.2	2246.5	2311.6	2296.6	2280.2	2194.1	2081.6	1985.5	1856.6	1738.2
37.5°	2001.5	2117.1	2209.2	2278.4	2261.1	2241.5	2149.0	2027.4	1915.4	1786.0	1667.1
38°	1937.7	2065.2	2166.3	2241.5	2222.8	2201.0	2101.7	1972.3	1842.9	1712.2	1594.7
38.5°	1871.2	2006.5	2119.0	2201.0	2180.0	2155.9	2053.4	1912.6	1770.1	1637.5	1520.9
39°	1804.7	1942.2	2068.9	2155.4	2134.0	2108.9	2000.5	1852.5	1702.6	1562.8	1447.6
39.5°	1739.1	1877.6	2014.2	2108.0	2081.2	2055.2	1945.4	1785.5	1637.1	1490.4	1374.2
40°	1673.5	1814.7	1955.4	2054.3	2021.5	2001.0	1885.3	1719.0	1571.0	1419.8	1300.4
40.5°	1604.7	1754.1	1891.7	1996.4	1950.0	1940.9	1825.2	1648.0	1502.2	1348.7	1228.0
41°	1536.4	1690.3	1824.7	1934.0	1876.6	1881.2	1762.8	1577.4	1430.7	1275.8	1156.5
41.5°	1467.6	1625.2	1756.4	1867.5	1801.5	1816.5	1699.5	1506.3	1360.1	1203.4	1087.7
42°	1398.8	1556.9	1687.6	1796.0	1730.9	1748.2	1633.9	1438.5	1290.0	1136.0	1017.6
42.5°	1330.5	1484.9	1617.0	1721.8	1665.7	1677.1	1563.3	1366.9	1221.6	1068.6	950.2
43°	1264.5	1413.4	1543.7	1644.8	1599.7	1607.0	1489.5	1296.8	1156.0	1004.8	887.8
43.5°	1198.9	1342.8	1472.2	1570.1	1530.5	1535.5	1416.6	1226.2	1091.8	943.3	826.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1002.5	1135.6	1252.2	1342.3	1315.0	1325.9	1193.4	1021.7	896.9	770.7	666.4
45.5°	939.7	1067.2	1177.9	1271.7	1245.3	1256.7	1117.8	955.2	835.4	715.6	619.0
46°	877.7	999.4	1103.2	1198.4	1178.4	1186.6	1050.4	890.0	775.7	665.0	577.1
46.5°	818.1	932.9	1032.6	1130.5	1112.3	1116.4	978.9	826.3	719.7	614.0	537.5
47°	759.8	868.2	962.5	1063.1	1046.3	1047.6	913.3	766.1	667.3	568.9	501.5
47.5°	701.5	804.4	899.6	998.9	979.3	979.3	850.0	707.4	615.8	527.5	468.3
48°	650.0	745.2	837.7	936.5	913.3	913.7	790.3	652.3	567.5	489.7	438.6
48.5°	600.8	688.7	778.4	877.7	850.0	849.5	729.7	599.4	522.5	454.1	415.9
49°	556.2	635.4	724.2	818.1	789.8	785.7	674.6	551.6	481.5	428.6	392.6
49.5°	515.6	589.0	673.2	762.0	733.3	725.2	623.1	508.3	445.0	403.1	369.4
50°	482.8	544.8	626.3	706.9	679.1	665.9	575.3	469.6	420.0	377.6	346.2
50.5°	453.2	506.5	581.2	654.1	626.8	612.6	528.4	435.5	394.9	352.1	322.9
51°	426.3	472.3	540.7	605.4	574.4	562.1	487.8	409.5	369.9	327.0	308.4
51.5°	401.7	443.7	503.3	560.3	529.7	518.8	450.5	383.1	344.8	311.6	294.7
52°	380.3	416.8	469.2	518.4	486.9	478.3	424.1	356.7	320.2	297.9	281.5
52.5°	359.8	393.5	439.1	480.5	448.7	442.3	397.6	330.7	305.6	284.7	267.8
53°	340.3	371.7	410.4	446.8	423.2	415.0	371.7	313.8	292.0	271.0	255.1
53.5°	322.5	351.6	384.9	416.3	398.1	388.1	345.3	299.7	278.3	257.8	242.8
54°	308.8	332.5	360.8	387.6	372.6	360.8	319.3	286.1	265.1	245.1	231.4
54.5°	295.2	317.0	339.8	363.0	347.1	333.9	304.3	271.9	251.9	233.2	220.5
55°	281.0	302.4	321.6	340.3	322.0	317.0	290.2	258.3	239.1	221.8	210.0
55.5°	267.8	288.8	307.0	321.6	306.5	302.9	276.0	245.5	227.3	211.4	200.9
56°	255.1	275.1	292.4	306.5	292.9	288.3	261.9	232.8	216.8	201.8	191.8
56.5°	242.8	261.9	279.2	292.4	278.3	274.2	248.7	221.4	206.8	192.7	183.6
57°	230.9	249.2	265.1	278.3	264.2	260.5	236.4	210.9	196.8	184.5	175.8
57.5°	220.5	236.9	252.3	264.6	251.0	246.9	224.6	201.3	188.1	176.7	168.5
58°	210.0	225.5	239.6	251.0	238.2	234.6	213.6	191.8	179.9	169.0	161.7
58.5°	200.9	215.0	228.2	238.7	226.4	223.2	203.6	183.1	172.2	162.2	154.9
59°	191.8	205.4	217.3	226.8	215.4	212.3	194.0	174.9	164.9	155.3	148.5
59.5°	184.0	196.3	207.3	215.9	205.0	202.2	184.9	167.6	157.6	148.9	142.6
60°	175.8	187.7	197.7	205.9	195.4	192.7	176.7	160.8	150.8	143.0	137.1
60.5°	168.1	179.5	189.0	196.3	186.8	184.0	169.4	154.0	144.8	137.1	131.6
61°	161.7	172.2	180.8	187.2	178.6	175.8	162.2	147.6	138.5	131.6	126.6
61.5°	155.3	164.4	173.1	179.0	170.8	168.5	155.3	141.7	132.5	126.6	121.6
62°	148.9	158.5	165.8	171.3	163.5	160.8	148.9	135.7	127.1	121.2	117.1
62.5°	142.6	152.1	159.9	163.5	156.7	154.4	142.6	130.3	122.1	116.6	112.5
63°	136.2	146.2	153.5	157.6	149.9	147.6	137.1	125.3	117.1	112.1	108.0
63.5°	130.7	139.8	147.6	151.2	143.9	141.7	131.6	120.3	112.5	107.5	103.9
64°	125.3	133.9	141.2	145.3	138.0	136.2	126.2	115.2	107.5	102.9	99.8
64.5°	120.3	128.4	134.8	139.4	132.5	130.7	121.6	110.7	103.4	99.3	95.7
65°	115.2	123.0	129.8	133.5	127.5	125.7	116.6	106.1	99.3	94.7	92.0
65.5°	110.2	118.4	124.4	128.4	122.1	120.7	112.1	102.0	95.2	91.1	88.4
66°	106.1	113.4	119.8	123.4	117.5	116.2	107.5	97.9	91.1	87.5	84.7



TEST NUMBER: P776815

CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	93.4	100.2	106.1	109.3	104.3	102.9	95.7	86.5	80.2	77.0	74.7
68°	89.3	96.1	102.0	105.2	100.2	98.8	92.0	82.9	77.0	73.8	71.5
68.5°	85.6	92.0	97.9	101.1	96.1	94.7	87.9	79.3	73.8	70.6	68.8
69°	82.0	88.4	93.8	97.0	92.5	91.1	84.7	76.1	70.6	67.4	65.6
69.5°	78.8	84.7	90.2	92.9	88.8	87.5	81.1	72.9	67.4	64.7	62.9
70°	75.2	81.1	86.5	89.3	85.2	83.8	77.9	69.7	64.7	61.5	60.1
70.5°	72.0	77.9	82.9	85.6	81.5	80.6	74.7	66.5	61.5	58.8	57.4
71°	68.8	74.2	79.7	82.4	78.3	77.4	71.5	63.8	58.8	56.0	54.7
71.5°	65.6	71.1	76.5	78.8	75.2	74.2	68.8	61.0	56.0	53.3	51.9
72°	62.9	68.3	73.3	75.6	72.0	71.1	65.6	58.3	53.3	50.6	49.6
72.5°	60.1	65.1	70.1	72.4	69.2	67.9	62.9	55.6	51.0	48.3	46.9
73°	57.4	62.4	67.0	69.7	66.0	65.1	60.1	52.8	48.3	46.0	44.6
73.5°	54.7	59.2	64.2	66.5	63.3	62.4	57.4	50.6	46.0	43.3	42.4
74°	51.9	56.5	61.5	63.8	60.6	59.7	54.7	47.8	43.7	41.0	40.1
74.5°	49.2	53.7	58.3	61.0	57.8	56.9	52.4	45.5	41.5	38.7	38.3
75°	46.9	51.5	56.0	58.3	55.1	54.2	49.6	43.3	39.2	36.9	36.0
75.5°	44.2	48.7	53.3	55.6	52.8	51.9	47.4	41.0	36.9	34.6	33.7
76°	41.9	46.0	50.6	53.3	50.1	49.6	45.1	38.7	34.6	32.3	31.9
76.5°	39.6	43.7	48.3	50.6	47.8	46.9	42.8	36.4	32.8	30.5	29.6
77°	37.4	41.5	45.5	48.3	45.5	44.6	40.5	34.6	30.5	28.2	27.8
77.5°	35.1	39.2	43.3	45.5	43.3	42.4	38.3	32.3	28.7	26.4	25.5
78°	33.3	36.9	41.0	43.3	41.0	40.1	36.0	30.1	26.4	24.6	23.7
78.5°	31.0	34.6	38.7	41.5	38.7	38.3	34.2	28.2	24.6	22.8	21.9
79°	29.2	32.8	36.9	39.2	36.4	36.0	31.9	26.4	22.8	21.0	20.5
79.5°	26.9	30.5	34.6	36.9	34.6	34.2	29.6	24.6	21.4	19.1	18.7
80°	25.1	28.7	32.3	34.6	32.3	31.9	27.8	22.8	19.6	17.3	16.9
80.5°	23.2	26.4	30.5	32.8	30.5	29.6	26.0	21.0	17.8	15.9	15.5
81°	21.4	24.6	28.2	30.5	28.7	28.2	24.1	19.1	16.4	14.1	13.7
81.5°	19.6	22.8	26.4	28.7	26.4	26.0	22.3	17.3	14.6	12.8	12.3
82°	18.2	21.0	24.6	26.9	24.6	24.1	21.0	15.9	13.2	11.4	10.9
82.5°	16.4	19.1	22.8	25.1	23.2	22.8	19.1	14.1	11.8	10.0	9.6
83°	15.0	17.8	21.0	23.2	21.4	21.0	17.3	12.8	10.5	8.7	8.2
83.5°	13.2	15.9	19.6	21.4	19.6	19.1	15.9	11.4	9.1	7.3	7.3
84°	11.8	14.6	17.8	20.0	18.2	17.8	14.6	10.0	7.7	5.9	5.9
84.5°	10.5	12.8	16.4	18.2	16.4	15.9	13.2	8.7	6.4	4.6	5.0
85°	9.1	11.4	14.6	16.9	15.0	14.6	11.4	7.3	5.5	3.6	3.6
85.5°	7.7	10.0	13.2	15.5	13.7	13.2	10.0	5.9	4.1	2.7	2.7
86°	6.4	8.7	11.4	13.7	12.3	11.8	9.1	5.0	3.2	2.3	1.8
86.5°	5.0	7.3	10.0	12.3	10.9	10.5	7.7	4.1	2.3	1.4	0.9
87°	4.1	5.9	9.1	10.9	9.6	9.1	6.4	3.2	1.8	0.9	0.0
87.5°	3.2	4.6	7.7	9.6	8.2	7.7	5.5	2.3	0.9	0.5	0.0
88°	2.3	3.6	6.4	8.2	6.8	6.8	4.6	1.8	0.5	0.0	0.0
88.5°	1.4	2.7	5.5	6.8	5.9	5.5	3.2	0.9	0.0	0.0	0.0



TEST NUMBER: P776815
CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.5	2.3	3.6	2.3	2.3	0.5	0.0	0.0	0.0	0.0



TEST NUMBER: P776815

CATALOG NUMBER: HCDJBLS4050CSD-HCD8TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2999.4	2999.4	2999.4	2999.4	2999.4	2999.4
0.5°	2995.8	2998.1	2998.5	3000.4	2999.9	2998.1
1°	2994.0	2995.8	2996.3	2998.5	2998.5	2997.6
1.5°	2991.7	2993.1	2994.0	2996.3	2996.7	2996.7
2°	2989.4	2990.8	2991.2	2994.0	2995.3	2995.8
2.5°	2986.7	2988.1	2988.5	2991.7	2993.5	2994.9
3°	2984.4	2985.3	2985.8	2989.0	2991.2	2993.5
3.5°	2981.2	2982.1	2982.6	2986.7	2989.4	2991.7
4°	2978.5	2978.9	2979.9	2984.0	2987.6	2990.3
4.5°	2975.3	2975.8	2976.2	2981.2	2985.3	2989.0
5°	2971.7	2972.1	2972.6	2978.0	2983.0	2986.7
5.5°	2968.0	2968.5	2968.9	2975.3	2980.3	2984.9
6°	2963.9	2963.9	2964.8	2971.7	2977.6	2982.6
6.5°	2959.8	2960.3	2960.7	2968.0	2974.4	2980.3
7°	2955.3	2955.7	2956.6	2964.4	2971.7	2978.0
7.5°	2950.7	2951.2	2951.6	2960.7	2968.5	2975.3
8°	2946.1	2945.7	2947.1	2956.2	2964.8	2972.1
8.5°	2940.7	2940.7	2942.1	2952.1	2961.2	2968.9
9°	2935.7	2935.2	2936.6	2947.5	2957.5	2965.7
9.5°	2929.8	2930.2	2930.7	2942.1	2953.4	2962.1
10°	2923.8	2923.8	2925.2	2937.0	2948.9	2958.0
10.5°	2917.9	2917.5	2918.8	2931.6	2944.3	2953.9
11°	2911.1	2911.1	2912.4	2926.1	2939.3	2949.8
11.5°	2904.2	2904.2	2905.2	2920.2	2934.3	2944.8
12°	2897.0	2897.0	2898.3	2913.8	2928.8	2939.8
12.5°	2889.7	2889.2	2890.6	2907.0	2922.5	2934.8
13°	2881.9	2881.5	2882.4	2899.7	2916.5	2928.8
13.5°	2873.7	2873.3	2874.6	2892.4	2910.2	2923.4
14°	2865.1	2864.6	2866.0	2884.7	2903.3	2917.5
14.5°	2856.0	2856.0	2856.9	2876.5	2896.0	2911.1
15°	2846.9	2846.4	2847.8	2867.8	2888.3	2904.2
15.5°	2837.3	2836.4	2837.7	2858.2	2880.6	2897.0
16°	2826.8	2826.8	2827.3	2848.7	2871.9	2889.2
16.5°	2816.3	2816.3	2816.8	2838.7	2863.2	2881.5
17°	2804.9	2805.4	2805.9	2828.2	2853.7	2872.8
17.5°	2794.0	2794.0	2794.0	2817.7	2844.1	2864.6
18°	2781.7	2782.6	2782.2	2805.9	2833.6	2855.5
18.5°	2769.4	2769.9	2769.4	2794.0	2823.2	2845.9
19°	2756.7	2757.1	2756.7	2781.3	2811.8	2835.5
19.5°	2743.0	2744.8	2743.5	2769.0	2799.9	2825.0
20°	2729.3	2731.2	2728.9	2754.8	2787.6	2814.5
20.5°	2715.2	2716.6	2714.8	2741.6	2775.3	2803.1
21°	2700.2	2702.0	2699.7	2727.1	2762.6	2791.3



TEST NUMBER: P776815

CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2652.8	2654.6	2651.9	2680.6	2720.2	2753.0
23°	2635.5	2638.2	2634.6	2664.7	2704.7	2739.4
23.5°	2617.7	2620.9	2617.7	2647.3	2689.2	2724.8
24°	2599.5	2603.2	2599.5	2630.0	2672.9	2710.2
24.5°	2581.3	2584.9	2580.8	2612.7	2656.5	2694.7
25°	2561.7	2565.8	2561.7	2593.6	2639.1	2679.2
25.5°	2542.1	2546.7	2542.1	2574.9	2621.8	2662.8
26°	2521.2	2526.6	2522.5	2555.3	2603.6	2645.5
26.5°	2501.1	2506.6	2501.6	2535.7	2585.4	2628.2
27°	2479.3	2485.2	2480.2	2515.3	2565.8	2610.4
27.5°	2457.4	2463.3	2458.8	2494.3	2546.2	2592.2
28°	2434.6	2441.0	2436.0	2472.4	2526.2	2573.6
28.5°	2410.5	2418.7	2413.7	2450.6	2505.7	2553.5
29°	2384.1	2394.5	2390.0	2428.3	2484.3	2533.5
29.5°	2356.7	2369.9	2365.4	2405.5	2462.0	2512.5
30°	2329.0	2344.0	2339.0	2382.2	2440.1	2491.6
30.5°	2299.3	2315.7	2311.2	2357.6	2417.3	2468.8
31°	2268.4	2286.6	2281.1	2331.2	2394.1	2446.5
31.5°	2235.6	2254.7	2251.1	2303.9	2369.9	2423.7
32°	2200.0	2221.0	2219.2	2274.3	2343.5	2400.0
32.5°	2162.7	2185.0	2185.9	2243.8	2316.7	2375.0
33°	2122.2	2145.8	2150.4	2211.0	2288.0	2349.0
33.5°	2074.8	2104.4	2110.8	2176.8	2257.9	2320.8
34°	2021.0	2056.1	2066.6	2139.5	2226.5	2292.5
34.5°	1960.9	2000.5	2012.4	2098.0	2192.3	2261.5
35°	1898.5	1937.7	1950.4	2050.2	2156.3	2228.7
35.5°	1833.8	1872.5	1883.9	1996.0	2116.2	2191.8
36°	1767.3	1810.1	1813.3	1937.2	2069.3	2154.0
36.5°	1703.6	1750.0	1741.8	1873.5	2016.5	2110.8
37°	1639.8	1687.2	1671.7	1807.9	1957.3	2060.7
37.5°	1575.1	1617.9	1604.3	1736.8	1892.1	2001.5
38°	1508.6	1546.0	1538.7	1663.5	1824.7	1937.7
38.5°	1436.6	1473.1	1469.0	1591.0	1755.5	1871.2
39°	1365.6	1403.4	1400.2	1518.2	1685.8	1804.7
39.5°	1292.7	1337.3	1330.5	1446.2	1612.9	1739.1
40°	1222.6	1272.7	1262.6	1371.0	1541.9	1673.5
40.5°	1151.0	1208.9	1194.8	1297.7	1470.3	1604.7
41°	1081.8	1142.4	1130.5	1225.7	1400.7	1536.4
41.5°	1014.4	1075.4	1066.8	1160.1	1333.2	1467.6
42°	947.0	1008.9	1002.5	1093.2	1264.9	1398.8
42.5°	880.0	945.6	941.1	1029.9	1193.4	1330.5
43°	815.8	885.5	881.8	968.8	1126.4	1264.5
43.5°	757.0	824.9	823.5	910.5	1061.3	1198.9

TEST NUMBER: P776815

CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	604.4	653.2	668.7	752.0	877.3	1002.5
45.5°	561.6	601.7	623.1	705.1	821.7	939.7
46°	522.5	555.7	580.8	660.9	768.4	877.7
46.5°	488.3	516.5	541.6	619.5	719.7	818.1
47°	458.2	482.8	505.6	580.3	671.9	759.8
47.5°	430.4	453.2	473.3	543.0	628.1	701.5
48°	409.0	427.7	444.1	508.3	586.7	650.0
48.5°	388.1	404.9	418.1	476.9	549.3	600.8
49°	366.7	384.0	393.5	447.3	513.8	556.2
49.5°	345.3	363.0	371.2	420.0	480.5	515.6
50°	324.3	343.4	350.3	393.5	450.5	482.8
50.5°	310.2	326.1	331.6	369.9	422.7	453.2
51°	296.5	311.6	315.7	348.0	397.2	426.3
51.5°	283.3	298.4	302.0	328.4	373.1	401.7
52°	270.1	285.1	288.8	312.9	351.2	380.3
52.5°	257.4	271.9	275.6	299.7	332.1	359.8
53°	245.1	258.7	262.4	286.1	316.1	340.3
53.5°	233.2	246.9	249.6	272.4	302.4	322.5
54°	222.7	235.0	237.8	259.2	288.3	308.8
54.5°	212.7	224.1	227.3	246.9	274.7	295.2
55°	203.2	214.1	216.8	235.0	261.5	281.0
55.5°	194.5	204.5	207.3	224.6	249.2	267.8
56°	185.8	195.4	197.7	214.1	237.3	255.1
56.5°	178.1	187.2	189.5	204.5	226.4	242.8
57°	170.8	179.0	181.3	195.9	215.9	230.9
57.5°	164.0	171.7	173.5	187.2	206.3	220.5
58°	156.7	164.4	166.7	179.5	197.2	210.0
58.5°	150.8	158.1	160.8	171.7	188.6	200.9
59°	144.4	152.1	154.4	164.4	180.4	191.8
59.5°	138.9	146.2	148.5	158.5	173.1	184.0
60°	133.5	140.3	142.6	152.6	165.8	175.8
60.5°	128.0	134.8	136.2	146.7	159.9	168.1
61°	123.0	129.4	130.7	140.7	154.0	161.7
61.5°	118.4	124.4	125.7	134.8	147.6	155.3
62°	113.9	119.8	121.2	129.8	141.7	148.9
62.5°	109.3	114.8	116.2	124.8	135.7	142.6
63°	104.8	110.2	111.6	119.8	130.3	136.2
63.5°	100.7	106.1	107.5	114.8	125.3	130.7
64°	97.0	102.0	102.9	110.7	119.8	125.3
64.5°	92.9	97.9	99.3	106.1	115.2	120.3
65°	89.3	94.3	95.2	102.0	110.7	115.2
65.5°	85.6	90.2	91.6	97.9	106.1	110.2
66°	82.4	86.5	87.5	94.3	102.0	106.1



TEST NUMBER: P776815

CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	72.4	76.5	77.4	83.4	89.7	93.4
68°	69.7	73.3	74.2	79.7	86.1	89.3
68.5°	66.5	70.1	71.1	76.5	82.4	85.6
69°	63.8	67.4	68.3	73.3	78.8	82.0
69.5°	61.0	64.2	65.1	70.1	75.6	78.8
70°	58.3	61.5	62.4	67.4	72.4	75.2
70.5°	55.6	58.8	59.7	64.2	69.2	72.0
71°	52.8	56.0	56.9	61.5	66.0	68.8
71.5°	50.6	53.7	54.2	58.8	63.3	65.6
72°	48.3	51.0	51.5	56.0	60.1	62.9
72.5°	45.5	48.7	49.2	53.3	57.4	60.1
73°	43.3	46.0	46.9	51.0	54.7	57.4
73.5°	41.5	43.7	44.2	48.3	51.9	54.7
74°	38.7	41.5	41.9	46.0	49.6	51.9
74.5°	36.9	39.2	39.6	43.3	46.9	49.2
75°	34.6	36.9	37.8	41.0	44.6	46.9
75.5°	32.8	35.1	35.5	38.7	41.9	44.2
76°	30.5	32.8	33.3	36.9	40.1	41.9
76.5°	28.7	31.0	31.4	34.6	37.8	39.6
77°	26.9	28.7	29.2	32.3	35.5	37.4
77.5°	24.6	26.9	27.3	30.5	33.3	35.1
78°	23.2	25.1	25.5	28.2	31.0	33.3
78.5°	21.4	23.2	23.7	26.4	29.2	31.0
79°	19.6	21.4	21.9	24.6	26.9	29.2
79.5°	18.2	20.0	20.0	22.8	25.1	26.9
80°	16.4	18.2	18.7	21.0	23.2	25.1
80.5°	15.0	16.9	16.9	19.1	21.4	23.2
81°	13.2	15.0	15.5	17.8	19.6	21.4
81.5°	11.8	13.7	14.1	15.9	17.8	19.6
82°	10.5	12.3	12.8	14.6	16.4	18.2
82.5°	9.1	10.9	11.4	13.2	14.6	16.4
83°	7.7	9.6	9.6	11.4	13.2	15.0
83.5°	6.8	8.2	8.2	10.0	11.4	13.2
84°	5.5	6.8	7.3	8.7	10.0	11.8
84.5°	4.1	5.5	5.9	7.7	8.7	10.5
85°	3.2	4.6	4.6	6.4	7.3	9.1
85.5°	1.8	3.2	3.6	5.0	5.9	7.7
86°	0.9	2.3	2.3	4.1	5.0	6.4
86.5°	0.0	0.9	0.9	2.7	4.1	5.0
87°	0.0	0.0	0.0	1.8	3.2	4.1
87.5°	0.0	0.0	0.0	0.9	2.3	3.2
88°	0.0	0.0	0.0	0.0	1.4	2.3
88.5°	0.0	0.0	0.0	0.0	0.9	1.4



TEST NUMBER: P776815
CATALOG NUMBER: HCDJBL54050CSD-HCD8TRMW-5000lm-2700K

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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Scaled Data Report





21.5°	2779.0	2815.4	2852.3	2882.8	2886.0	2891.9	2871.4	2832.3	2794.9	2754.8	2716.6
22°	2765.8	2804.0	2841.4	2872.8	2875.5	2881.9	2860.1	2819.1	2781.7	2739.8	2701.5



44°	1133.3	1273.1	1400.2	1493.1	1459.0	1466.2	1343.3	1158.8	1027.1	886.4	769.8
44.5°	1066.8	1204.3	1327.3	1420.2	1386.1	1397.5	1268.1	1089.1	962.0	826.3	716.5



66.5°	101.6	108.9	115.2	118.4	113.0	111.1	103.4	93.8	87.5	83.8	81.5
67°	97.5	104.3	110.2	113.9	108.4	107.0	99.3	90.2	83.8	80.2	77.9



89°	0.5	2.3	4.1	5.9	4.6	4.6	2.3	0.5	0.0	0.0	0.0
89.5°	0.0	1.4	3.2	4.6	3.6	3.2	1.4	0.0	0.0	0.0	0.0

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21.5°	2685.2	2686.5	2684.2	2711.6	2748.9	2779.0
22°	2668.8	2671.0	2668.3	2697.0	2734.3	2765.8



44°	703.3	766.1	768.9	854.1	996.6	1133.3
44.5°	651.8	707.8	716.0	802.6	935.6	1066.8



66.5°	78.8	83.4	84.3	90.2	97.5	101.6
67°	75.6	79.7	80.6	87.0	93.8	97.5

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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)