

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: P776618

Luminaire Tested: HCDJBS4050CSD-HCD4TRMW-5000lm-4000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776618
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-HCD4TRMW-5000lm-4000K
Description: 4 INCH ROUND MEDIUM MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

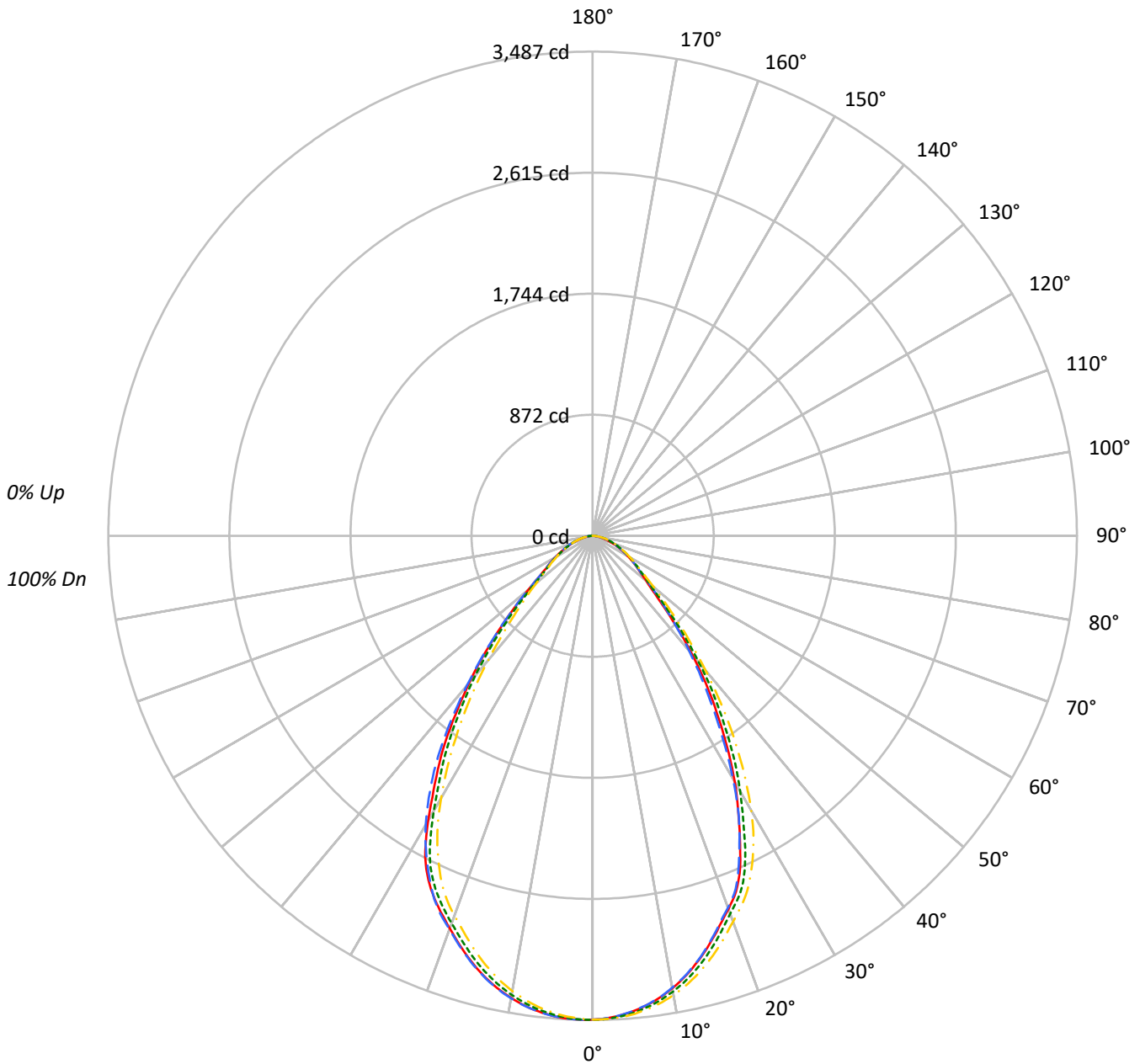
Lumens per Lamp: N/A
Luminaire Lumens: 4861.1 lumens
Efficiency: N/A
Efficacy: 101.3 lumens/watt
Spacing Criteria (0/90/45): 1.03 / 1.03 / 1.02
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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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CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMW-5000lm-4000K

Luminous Intensity Polar Plot





TEST NUMBER: P776618

CATALOG NUMBER: HCDJBLS4050CSD-HCD4TRMW-5000lm-4000K

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	108	105	102	109	106	103	100	102	99	97	98	96	94	95	93	92	90								
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80								
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	76	73	72								
4	91	82	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	65								
5	85	75	68	62	83	74	67	62	72	66	61	70	65	61	68	64	60	58								
6	80	69	62	56	78	68	61	56	66	60	56	65	60	55	64	59	55	53								
7	75	64	57	51	74	63	56	51	62	56	51	60	55	51	59	54	50	49								
8	71	59	52	47	69	59	52	47	57	51	47	56	51	47	55	50	46	45								
9	67	55	48	44	65	55	48	43	54	48	43	53	47	43	52	47	43	41								
10	63	52	45	40	62	51	45	40	50	44	40	49	44	40	49	44	40	38								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	438587	438587	438587	438587
5°	433857	435487	437899	436573
10°	422861	425915	431909	429033
15°	404705	409499	419975	415545
20°	383150	388079	402931	397615
25°	349371	360800	385433	378463
30°	297380	308773	344086	332068
35°	240115	252974	288464	276342
40°	182669	195877	227141	215756
45°	129034	140265	167264	156692
50°	98403	104218	117610	109543
55°	83837	87414	90354	86141
60°	73320	77272	78480	75107
65°	62654	68223	67091	65513
70°	53133	60713	57181	58064
75°	42790	54168	47895	51153
80°	29787	47108	36744	43702
85°	10397	37254	16606	31767

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 202.5°

Vertical Angle: 45°

Luminance: 169560 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	326.0	6.7
10°-20°	887.9	18.3
20°-30°	1203.8	24.8
30°-40°	1069.1	22.0
40°-50°	654.6	13.5
50°-60°	363.0	7.5
60°-70°	222.8	4.6
70°-80°	110.1	2.3
80°-90°	23.9	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°	2417.6	49.7
0°-40°	3486.7	71.7
0°-60°	4504.3	92.7
0°-90°	4861.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4861.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3485	3485	3485	3485	3485	
5°	3434	3447	3466	3456	3434	324
15°	3106	3143	3223	3189	3106	871
25°	2516	2598	2776	2726	2516	1143
35°	1563	1647	1878	1799	1563	974
45°	725	788	940	880	725	578
55°	382	398	412	393	382	345
65°	210	229	225	220	210	211
75°	88	111	98	105	88	94
85°	7	26	12	22	7	13
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°	3485.0	3485.0	3485.0	3485.0	3485.0	3485.0	3485.0	3485.0	3485.0	3485.0	3485.0
0.5°	3483.5	3484.0	3483.1	3481.1	3485.9	3484.5	3484.5	3485.4	3486.4	3487.4	3486.4
1°	3481.1	3481.6	3480.7	3478.8	3484.5	3484.0	3484.0	3485.9	3486.9	3487.8	3486.9
1.5°	3477.8	3477.8	3476.8	3475.4	3482.1	3482.6	3482.6	3485.4	3486.9	3487.8	3486.9
2°	3474.0	3473.5	3472.5	3471.6	3479.2	3480.2	3481.1	3483.5	3485.9	3487.4	3485.9
2.5°	3469.2	3468.7	3467.8	3466.8	3475.4	3477.3	3478.8	3482.1	3484.5	3485.9	3484.5
3°	3463.4	3463.4	3462.5	3461.5	3471.1	3473.5	3475.9	3479.7	3482.1	3483.5	3482.1
3.5°	3457.2	3457.2	3455.8	3455.8	3466.3	3469.2	3472.1	3476.4	3479.2	3480.7	3479.2
4°	3450.5	3450.1	3448.6	3449.1	3460.6	3464.4	3467.3	3472.5	3475.9	3477.3	3475.9
4.5°	3443.4	3442.4	3441.0	3441.9	3454.4	3458.2	3462.0	3467.8	3471.6	3473.5	3471.6
5°	3434.3	3433.8	3432.8	3433.8	3447.2	3452.0	3456.3	3462.5	3466.3	3468.7	3466.8
5.5°	3425.2	3424.2	3423.3	3424.7	3438.6	3444.3	3449.1	3456.8	3460.6	3463.0	3461.5
6°	3415.6	3414.2	3413.2	3414.7	3430.0	3436.7	3442.4	3450.1	3454.4	3456.8	3455.8
6.5°	3404.6	3403.2	3403.2	3404.6	3420.4	3427.6	3434.3	3442.4	3447.7	3450.1	3449.1
7°	3393.6	3392.2	3391.7	3393.6	3410.4	3418.0	3425.7	3434.3	3440.5	3442.9	3441.4
7.5°	3381.2	3379.3	3378.8	3381.7	3399.4	3408.0	3416.1	3425.7	3431.9	3434.8	3433.3
8°	3368.8	3366.8	3365.9	3368.8	3386.9	3397.0	3406.1	3416.1	3422.3	3425.7	3424.2
8.5°	3354.9	3353.0	3352.0	3354.9	3375.0	3385.5	3395.1	3406.1	3412.8	3415.6	3415.1
9°	3340.5	3338.1	3337.2	3341.0	3361.6	3373.1	3383.6	3394.6	3402.7	3406.1	3405.1
9.5°	3324.8	3321.9	3321.4	3325.7	3347.2	3360.1	3371.1	3383.6	3391.7	3395.1	3394.1
10°	3309.0	3305.6	3305.1	3309.5	3332.9	3346.3	3358.2	3371.1	3379.8	3384.1	3382.6
10.5°	3292.2	3288.9	3288.4	3292.7	3317.6	3331.9	3344.4	3358.2	3366.8	3371.6	3370.7
11°	3274.5	3271.2	3270.2	3275.5	3300.4	3316.1	3329.5	3344.8	3353.9	3358.7	3357.8
11.5°	3255.9	3251.6	3251.6	3257.3	3284.1	3299.9	3314.7	3329.5	3340.5	3344.8	3344.4
12°	3236.8	3232.9	3232.5	3238.2	3266.4	3283.1	3298.5	3314.7	3326.2	3331.0	3329.5
12.5°	3216.7	3212.4	3212.4	3217.6	3246.8	3265.0	3281.2	3298.9	3310.4	3315.7	3314.2
13°	3196.1	3191.8	3190.8	3197.5	3227.7	3246.8	3264.0	3282.7	3294.6	3300.4	3298.9
13.5°	3173.6	3168.8	3169.8	3176.0	3208.1	3227.2	3245.8	3265.5	3277.9	3283.6	3282.7
14°	3152.6	3147.3	3146.8	3153.5	3187.0	3207.1	3226.2	3246.8	3260.7	3266.4	3264.5
14.5°	3129.6	3124.4	3123.9	3131.5	3165.0	3186.5	3207.1	3228.2	3243.0	3248.2	3246.3
15°	3106.2	3100.0	3099.5	3107.6	3143.0	3165.0	3187.0	3208.5	3223.4	3229.6	3227.7
15.5°	3081.8	3076.1	3076.1	3083.7	3119.6	3143.0	3165.5	3188.9	3203.8	3210.5	3209.0
16°	3056.9	3051.2	3050.7	3058.9	3096.2	3120.5	3144.0	3168.8	3184.2	3190.8	3188.9
16.5°	3032.1	3025.4	3025.4	3034.5	3072.2	3097.1	3122.0	3147.3	3163.6	3170.3	3168.4
17°	3007.2	2999.6	3000.0	3009.1	3047.4	3073.2	3099.5	3125.8	3142.1	3149.2	3147.8
17.5°	2981.9	2973.7	2973.7	2983.3	3022.0	3049.3	3076.1	3103.3	3120.5	3128.2	3125.8
18°	2955.1	2947.4	2946.9	2957.0	2997.2	3024.4	3052.6	3080.4	3098.5	3106.2	3104.3
18.5°	2930.2	2921.6	2920.6	2931.2	2971.3	2999.1	3028.2	3057.4	3076.1	3083.7	3081.8
19°	2906.3	2897.2	2895.8	2905.8	2945.5	2974.7	3003.9	3034.0	3053.6	3061.7	3059.3
19.5°	2883.3	2873.8	2872.3	2882.4	2921.1	2950.3	2979.5	3011.0	3030.2	3039.2	3037.3
20°	2860.9	2850.8	2849.9	2859.4	2897.7	2927.3	2957.5	2988.1	3008.6	3017.2	3016.3
20.5°	2836.9	2826.9	2825.9	2836.0	2874.7	2904.4	2934.5	2965.6	2986.2	2996.2	2995.2
21°	2813.0	2803.0	2802.5	2813.0	2851.8	2882.9	2912.5	2943.1	2964.6	2975.6	2974.7



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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°	2727.0	2712.6	2711.6	2727.9	2779.6	2812.1	2843.6	2876.2	2898.2	2909.6	2908.2
23°	2691.6	2676.7	2673.4	2693.0	2750.9	2784.3	2816.9	2852.7	2875.7	2886.2	2882.4
23.5°	2653.8	2638.5	2632.3	2656.2	2717.9	2753.7	2789.1	2828.3	2852.3	2860.4	2855.6
24°	2611.2	2596.4	2588.3	2616.0	2681.0	2721.2	2759.0	2802.0	2827.9	2833.6	2826.4
24.5°	2565.3	2553.3	2544.3	2573.4	2641.8	2686.3	2727.0	2774.8	2802.0	2804.9	2796.3
25°	2516.0	2507.9	2499.3	2529.0	2598.3	2649.0	2693.5	2745.1	2775.7	2774.8	2764.3
25.5°	2467.7	2460.1	2455.8	2482.6	2552.9	2607.4	2658.1	2714.5	2747.5	2742.7	2730.3
26°	2419.0	2411.3	2412.7	2434.7	2505.5	2564.3	2622.2	2681.5	2716.4	2709.7	2696.3
26.5°	2370.2	2359.7	2369.2	2386.0	2454.8	2519.4	2584.0	2645.6	2683.0	2673.9	2661.4
27°	2321.9	2309.4	2324.3	2337.2	2405.1	2473.0	2546.7	2608.8	2647.6	2638.0	2627.5
27.5°	2276.0	2258.7	2278.4	2286.5	2357.3	2426.1	2507.9	2570.6	2608.8	2600.7	2593.0
28°	2230.5	2207.1	2229.1	2236.8	2309.4	2377.8	2467.3	2529.9	2566.7	2564.3	2556.7
28.5°	2185.6	2158.3	2178.4	2188.0	2263.1	2332.4	2424.7	2488.8	2520.3	2525.6	2520.8
29°	2138.7	2109.5	2126.3	2138.7	2217.1	2287.9	2378.8	2444.8	2471.6	2485.9	2484.0
29.5°	2093.3	2061.2	2074.1	2089.5	2171.2	2243.9	2331.9	2398.9	2420.9	2444.8	2444.8
30°	2046.4	2012.5	2021.1	2040.2	2124.8	2199.9	2283.1	2351.1	2367.8	2402.7	2404.6
30.5°	1999.1	1965.1	1967.0	1990.5	2079.4	2156.4	2233.9	2298.9	2313.7	2356.8	2361.1
31°	1949.8	1915.8	1914.4	1940.7	2033.5	2111.5	2182.7	2245.8	2260.2	2311.4	2317.6
31.5°	1901.0	1867.1	1862.3	1891.9	1985.7	2066.0	2131.1	2190.4	2208.5	2264.0	2271.2
32°	1849.4	1819.2	1809.7	1843.2	1938.8	2020.1	2081.3	2134.4	2159.8	2215.2	2225.8
32.5°	1799.6	1770.0	1757.1	1793.9	1891.5	1973.2	2031.6	2078.9	2111.9	2163.6	2180.3
33°	1750.9	1721.2	1706.4	1746.1	1841.2	1924.0	1979.0	2023.0	2064.6	2111.0	2134.9
33.5°	1702.6	1674.8	1655.7	1698.7	1791.5	1874.7	1926.4	1969.4	2017.7	2058.8	2086.6
34°	1655.7	1626.0	1605.5	1650.9	1742.2	1824.0	1873.8	1919.7	1972.3	2007.7	2040.2
34.5°	1608.8	1578.2	1556.2	1603.1	1694.4	1771.9	1822.1	1867.5	1924.9	1956.0	1989.0
35°	1562.9	1529.4	1506.5	1555.7	1646.6	1719.8	1770.0	1814.9	1877.6	1906.8	1938.3
35.5°	1517.9	1484.0	1459.6	1508.4	1601.2	1670.0	1718.8	1764.7	1827.9	1858.5	1885.2
36°	1473.5	1435.7	1414.6	1460.6	1553.8	1618.9	1665.7	1714.0	1776.2	1810.2	1833.1
36.5°	1428.0	1388.8	1370.6	1411.8	1509.3	1569.6	1615.5	1663.3	1725.0	1761.4	1779.1
37°	1382.1	1343.9	1327.6	1364.9	1463.9	1519.9	1562.4	1611.7	1672.9	1712.1	1725.0
37.5°	1336.2	1298.9	1284.6	1318.0	1419.0	1472.0	1511.3	1560.5	1621.2	1664.8	1671.9
38°	1290.3	1254.9	1242.0	1272.1	1374.5	1424.2	1459.1	1510.3	1572.0	1614.6	1618.4
38.5°	1244.4	1210.4	1199.4	1229.6	1329.5	1377.3	1409.4	1461.0	1525.6	1565.3	1563.9
39°	1200.4	1169.3	1158.8	1187.5	1280.7	1330.5	1359.6	1411.8	1476.3	1515.1	1511.3
39.5°	1155.4	1128.2	1118.6	1146.4	1236.3	1283.6	1313.3	1365.4	1430.0	1465.3	1458.6
40°	1111.9	1087.5	1078.0	1105.2	1192.3	1236.7	1264.0	1319.0	1382.6	1415.1	1407.0
40.5°	1069.8	1047.8	1040.2	1066.0	1146.4	1188.0	1217.1	1274.5	1340.0	1365.9	1355.3
41°	1029.2	1009.1	1003.8	1027.3	1102.8	1141.6	1170.7	1230.0	1293.2	1317.6	1306.6
41.5°	988.1	970.8	968.0	990.0	1060.7	1096.1	1127.2	1187.5	1245.3	1269.7	1258.7
42°	947.4	934.5	935.0	953.1	1020.6	1051.7	1083.7	1146.4	1198.5	1222.4	1211.9
42.5°	908.7	899.6	902.0	917.3	979.4	1007.7	1042.6	1105.2	1155.0	1176.5	1166.4
43°	869.9	865.6	869.9	882.8	939.8	966.1	1002.4	1064.1	1108.6	1129.6	1120.5
43.5°	831.7	832.1	837.9	849.4	900.1	925.9	964.6	1024.9	1064.1	1084.2	1076.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	725.0	740.8	750.4	757.1	788.1	815.4	853.2	907.7	939.8	952.7	948.8
45.5°	694.4	712.6	723.1	728.8	753.7	781.5	820.2	870.4	901.5	911.1	908.2
46°	665.7	685.8	697.8	702.1	720.7	748.0	787.2	834.1	863.2	870.4	869.0
46.5°	638.5	660.0	671.9	675.8	689.6	717.8	755.1	799.1	826.9	830.7	831.2
47°	613.6	635.1	648.5	650.4	661.4	687.7	725.0	765.7	791.0	791.5	794.4
47.5°	591.1	611.2	625.1	626.5	635.1	659.5	696.3	732.7	756.1	755.6	759.9
48°	571.0	589.7	602.6	604.0	610.2	633.7	669.5	702.1	723.1	721.2	725.5
48.5°	551.9	568.6	581.1	582.5	587.8	609.3	643.7	672.9	690.6	688.7	693.0
49°	534.7	549.0	561.9	561.9	567.7	587.3	618.4	644.7	659.0	657.1	661.4
49.5°	517.9	530.4	542.3	542.3	549.0	565.8	595.4	618.4	629.4	627.9	632.2
50°	502.6	512.7	523.7	523.7	532.3	546.2	572.9	593.0	600.7	600.2	603.5
50.5°	488.3	495.9	505.0	506.5	515.5	528.0	551.9	569.1	574.9	574.9	576.8
51°	474.4	480.6	488.8	489.7	499.8	511.2	531.8	546.6	550.5	550.9	551.9
51.5°	460.5	465.3	472.5	474.4	485.4	495.5	512.7	525.6	528.0	528.9	528.0
52°	447.6	451.0	457.2	459.1	472.0	480.2	495.0	506.0	506.9	507.9	506.0
52.5°	434.7	437.1	442.4	445.2	458.2	465.8	477.8	486.9	487.8	488.3	485.4
53°	422.3	424.7	428.5	431.4	444.8	451.9	462.0	469.2	470.6	470.1	466.3
53.5°	410.8	412.7	415.6	418.5	431.9	438.6	446.7	453.4	453.9	453.4	449.5
54°	400.3	401.7	403.6	406.5	419.9	426.6	432.3	438.1	438.6	437.6	434.2
54.5°	391.2	392.2	393.6	396.5	407.9	413.7	418.9	423.7	424.7	422.8	419.9
55°	382.1	383.1	384.5	386.9	398.4	404.1	408.4	410.8	411.8	410.3	409.4
55.5°	373.0	374.0	375.4	377.8	388.8	394.1	398.4	400.8	401.7	400.3	398.9
56°	363.9	364.9	366.3	368.2	379.2	384.5	388.3	390.7	391.2	389.8	388.3
56.5°	354.4	355.8	357.2	359.6	369.7	374.5	377.8	380.7	380.7	379.7	378.3
57°	345.3	346.7	348.2	350.1	361.1	364.9	367.8	370.2	370.2	369.2	367.8
57.5°	336.2	337.6	338.6	341.0	351.5	355.3	358.2	360.6	361.6	359.6	357.7
58°	327.1	328.6	329.5	331.9	342.4	346.2	348.6	351.0	351.5	350.1	347.7
58.5°	318.0	319.5	320.9	323.3	333.3	336.7	339.1	341.9	341.5	340.5	338.1
59°	309.4	310.9	312.3	314.7	324.2	327.6	330.0	332.4	331.4	330.5	328.6
59.5°	300.3	302.3	303.7	305.6	315.6	318.5	320.4	322.8	321.9	320.9	319.0
60°	291.3	294.1	295.1	297.5	307.0	310.4	311.8	313.7	311.8	311.8	309.9
60.5°	282.6	285.5	286.9	288.9	298.9	301.3	303.2	304.6	302.3	302.3	300.8
61°	274.0	276.9	278.8	280.7	290.3	293.2	294.6	296.0	293.2	293.2	292.2
61.5°	265.9	268.8	271.2	273.1	282.2	285.0	286.0	287.4	284.1	284.1	283.6
62°	257.3	260.6	263.5	264.9	274.0	276.9	277.9	279.3	275.0	275.5	275.5
62.5°	249.2	253.0	255.4	257.3	265.9	268.8	270.2	270.7	266.4	266.9	267.3
63°	241.0	244.9	248.2	250.1	258.3	261.1	262.1	262.6	257.8	258.3	259.2
63.5°	233.4	237.2	240.6	242.5	250.6	253.5	254.4	253.9	249.2	250.1	251.6
64°	225.7	229.6	233.9	235.3	243.4	245.8	246.8	245.8	241.0	242.0	243.9
64.5°	218.1	222.4	226.7	228.6	236.3	238.6	239.6	238.2	232.9	234.3	236.7
65°	210.4	214.7	220.0	221.4	229.1	231.5	232.4	230.5	225.3	226.7	229.1
65.5°	203.3	207.6	212.8	214.7	222.4	224.3	225.7	222.9	217.1	219.0	221.9
66°	196.1	200.9	206.1	208.0	215.2	217.6	218.6	215.7	209.9	211.9	215.2



TEST NUMBER: P776618

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	175.5	180.3	186.5	188.9	195.6	197.5	198.5	194.2	188.4	190.3	194.6
68°	169.3	173.6	180.3	182.7	189.4	191.3	192.3	187.5	181.7	183.6	188.0
68.5°	163.1	167.9	174.6	176.5	183.2	185.1	185.6	180.8	174.6	177.0	181.7
69°	156.9	161.6	168.3	170.7	177.0	178.9	179.3	174.1	168.3	170.7	175.5
69.5°	150.6	155.4	162.6	165.0	171.2	173.1	173.1	167.9	161.6	164.5	169.3
70°	144.4	149.2	156.9	159.7	165.0	166.9	167.4	161.6	155.4	158.3	163.1
70.5°	138.2	143.0	151.1	154.0	159.7	161.2	161.6	155.4	149.2	152.1	157.3
71°	132.5	137.3	145.4	148.3	154.0	155.4	155.4	149.2	143.5	145.9	151.6
71.5°	126.7	131.5	139.6	143.0	148.3	150.2	149.7	143.0	137.3	140.1	145.9
72°	120.5	125.8	133.9	137.3	142.5	144.4	144.0	137.3	131.5	134.4	140.1
72.5°	114.8	120.0	128.6	132.0	137.3	139.2	138.7	131.5	125.8	128.6	134.9
73°	109.0	114.3	122.9	126.7	132.0	133.4	133.0	125.8	120.0	122.9	129.1
73.5°	103.8	108.6	117.6	121.5	126.7	128.2	127.2	120.0	114.3	117.2	123.9
74°	98.5	103.3	112.4	116.7	121.5	123.4	122.4	114.8	109.0	111.9	118.6
74.5°	93.3	98.0	107.1	111.4	116.2	118.1	116.7	109.5	103.8	106.6	113.3
75°	88.0	92.8	101.9	106.6	111.4	112.9	111.9	103.8	98.5	101.4	108.1
75.5°	82.7	87.5	97.1	101.4	106.6	108.1	106.6	99.0	93.3	96.1	103.3
76°	78.0	82.7	91.8	97.1	101.4	103.3	101.4	93.3	88.0	90.9	98.5
76.5°	73.2	77.5	87.0	91.8	96.6	98.5	96.6	88.5	83.2	86.1	93.3
77°	68.4	72.7	82.3	87.5	91.8	93.7	91.8	83.2	78.0	80.8	88.5
77.5°	63.6	67.9	77.5	82.7	87.5	89.4	87.0	78.4	73.2	76.0	83.7
78°	58.8	63.1	73.2	78.4	82.7	84.6	82.3	73.6	68.4	71.7	78.9
78.5°	54.0	58.3	68.4	73.6	78.4	79.9	77.5	68.9	64.1	67.0	74.6
79°	49.7	53.6	64.1	69.3	73.6	75.6	73.2	64.1	59.3	62.2	70.3
79.5°	45.4	49.3	59.3	65.0	69.3	71.3	68.9	59.8	55.0	57.4	65.5
80°	41.1	45.0	55.0	60.7	65.0	67.0	64.1	55.0	50.7	53.1	61.2
80.5°	36.8	40.7	51.2	56.9	61.2	62.7	60.3	50.7	46.4	48.8	56.9
81°	32.5	36.3	46.9	52.6	56.9	58.3	56.0	46.4	42.1	45.0	53.1
81.5°	28.7	32.0	43.0	48.3	52.6	54.5	51.7	42.6	38.3	40.7	48.8
82°	24.4	28.2	39.2	44.5	48.8	50.2	47.8	38.7	34.0	36.3	45.0
82.5°	20.6	24.4	35.4	40.7	44.5	46.4	44.0	34.9	30.1	32.5	41.6
83°	16.7	21.0	32.0	36.8	41.1	42.6	40.7	31.1	25.8	28.2	38.3
83.5°	14.3	17.7	28.2	33.0	37.3	38.7	36.8	26.8	22.0	24.9	34.4
84°	12.0	15.8	25.3	29.7	33.5	34.9	33.0	23.4	18.2	21.5	31.1
84.5°	9.6	13.9	22.0	25.8	29.7	31.1	29.7	20.6	14.8	18.2	27.7
85°	7.2	11.5	18.7	22.0	25.8	27.3	25.8	17.7	11.5	15.8	24.4
85.5°	5.7	9.6	15.8	18.7	22.0	23.9	23.0	15.3	9.6	13.9	21.0
86°	4.3	7.7	12.9	15.3	18.7	20.6	19.6	13.4	8.1	12.0	18.2
86.5°	3.3	5.7	10.0	12.0	15.3	16.7	16.7	11.0	6.7	10.0	15.3
87°	1.9	3.8	6.7	8.6	12.0	13.4	13.4	9.1	5.3	8.1	12.4
87.5°	1.0	2.4	3.8	5.3	8.6	10.5	10.5	7.2	4.3	6.2	9.6
88°	0.5	1.0	1.4	2.4	5.7	7.2	7.7	5.3	2.9	4.8	6.7
88.5°	0.0	0.5	0.5	1.0	2.9	3.8	4.8	3.3	1.9	2.9	3.8



TEST NUMBER: P776618
CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMW-5000lm-4000K

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	0.5	0.0	0.5	0.0



TEST NUMBER: P776618

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3485.0	3485.0	3485.0	3485.0	3485.0	3485.0
0.5°	3484.0	3486.4	3484.5	3482.6	3483.1	3483.5
1°	3484.5	3485.9	3483.1	3480.7	3480.7	3481.1
1.5°	3483.5	3484.5	3481.1	3478.3	3477.8	3477.8
2°	3482.6	3482.6	3478.8	3474.9	3474.0	3474.0
2.5°	3480.7	3479.7	3475.9	3471.6	3469.7	3469.2
3°	3478.3	3476.4	3471.6	3467.3	3464.4	3463.4
3.5°	3475.4	3472.5	3467.3	3462.0	3458.7	3457.2
4°	3471.6	3468.2	3461.5	3456.8	3452.4	3450.5
4.5°	3467.3	3462.0	3455.8	3449.6	3445.3	3443.4
5°	3462.5	3455.8	3448.6	3442.4	3437.1	3434.3
5.5°	3456.3	3449.1	3441.4	3434.3	3428.5	3425.2
6°	3449.6	3441.9	3432.8	3425.7	3419.4	3415.6
6.5°	3442.9	3434.3	3424.2	3416.6	3408.9	3404.6
7°	3435.2	3425.2	3414.7	3406.1	3397.9	3393.6
7.5°	3427.1	3415.1	3404.6	3395.1	3386.5	3381.2
8°	3417.5	3405.6	3393.6	3383.1	3374.0	3368.8
8.5°	3408.0	3394.6	3382.1	3371.1	3361.1	3354.9
9°	3397.5	3382.6	3369.7	3357.3	3346.3	3340.5
9.5°	3386.5	3370.7	3356.8	3343.9	3331.9	3324.8
10°	3374.5	3357.3	3342.9	3329.5	3316.6	3309.0
10.5°	3362.1	3343.9	3328.1	3314.2	3300.8	3292.2
11°	3348.2	3329.5	3312.8	3298.0	3283.6	3274.5
11.5°	3334.3	3314.7	3297.0	3281.2	3265.0	3255.9
12°	3319.5	3298.5	3280.3	3262.6	3246.8	3236.8
12.5°	3304.2	3281.7	3262.6	3243.9	3227.2	3216.7
13°	3287.9	3264.5	3244.9	3225.3	3207.6	3196.1
13.5°	3271.2	3247.3	3225.8	3205.7	3186.1	3173.6
14°	3253.5	3228.6	3206.6	3185.1	3164.1	3152.6
14.5°	3235.3	3209.5	3186.5	3164.1	3142.1	3129.6
15°	3216.2	3189.4	3165.5	3141.6	3119.1	3106.2
15.5°	3196.6	3168.4	3144.0	3119.6	3096.2	3081.8
16°	3176.5	3147.8	3122.0	3096.6	3072.7	3056.9
16.5°	3155.9	3126.3	3099.5	3073.7	3047.9	3032.1
17°	3134.4	3103.3	3076.5	3050.2	3023.5	3007.2
17.5°	3112.9	3081.8	3053.1	3025.4	2998.1	2981.9
18°	3090.9	3058.9	3030.2	3001.5	2973.2	2955.1
18.5°	3068.4	3035.4	3006.7	2977.6	2948.9	2930.2
19°	3045.0	3013.9	2983.8	2954.6	2925.9	2906.3
19.5°	3023.5	2990.9	2961.3	2932.6	2903.4	2883.3
20°	3002.4	2968.9	2940.2	2910.1	2880.9	2860.9
20.5°	2981.4	2947.9	2917.3	2887.6	2857.5	2836.9
21°	2959.9	2925.4	2895.3	2864.7	2834.1	2813.0

TEST NUMBER: P776618

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2893.9	2857.5	2824.0	2785.3	2749.9	2727.0
23°	2869.5	2834.1	2799.2	2756.1	2717.9	2691.6
23.5°	2843.6	2808.7	2771.9	2724.1	2682.0	2653.8
24°	2815.4	2783.9	2742.7	2690.6	2643.7	2611.2
24.5°	2786.3	2754.7	2712.1	2654.7	2603.1	2565.3
25°	2755.2	2725.5	2679.1	2618.4	2561.0	2516.0
25.5°	2722.6	2693.5	2644.7	2581.1	2516.5	2467.7
26°	2688.7	2660.5	2608.3	2543.8	2470.6	2419.0
26.5°	2651.9	2621.7	2569.1	2504.1	2423.3	2370.2
27°	2616.0	2582.5	2528.5	2463.0	2376.9	2321.9
27.5°	2579.7	2538.0	2486.4	2420.9	2330.0	2276.0
28°	2541.9	2491.2	2442.4	2376.4	2284.6	2230.5
28.5°	2503.1	2441.4	2396.0	2330.0	2239.6	2185.6
29°	2463.0	2391.2	2347.7	2281.7	2195.1	2138.7
29.5°	2422.8	2338.1	2297.5	2232.4	2151.1	2093.3
30°	2379.3	2285.1	2245.4	2182.2	2107.1	2046.4
30.5°	2334.3	2233.4	2190.8	2132.0	2061.7	1999.1
31°	2287.4	2182.7	2133.9	2081.3	2014.4	1949.8
31.5°	2239.1	2133.9	2079.4	2028.7	1967.5	1901.0
32°	2189.9	2086.1	2025.4	1977.1	1920.2	1849.4
32.5°	2138.7	2039.2	1972.3	1924.9	1871.4	1799.6
33°	2086.6	1992.8	1921.6	1873.3	1818.8	1750.9
33.5°	2034.0	1946.5	1869.9	1820.7	1768.1	1702.6
34°	1982.8	1899.6	1820.7	1769.0	1715.0	1655.7
34.5°	1932.1	1848.9	1770.5	1715.9	1662.9	1608.8
35°	1882.4	1798.7	1720.2	1663.8	1609.8	1562.9
35.5°	1833.6	1748.0	1669.6	1612.6	1560.5	1517.9
36°	1784.8	1696.8	1618.4	1562.4	1510.3	1473.5
36.5°	1736.0	1646.6	1567.7	1512.2	1462.0	1428.0
37°	1687.7	1594.9	1517.0	1460.6	1414.2	1382.1
37.5°	1637.5	1545.7	1467.3	1410.8	1368.7	1336.2
38°	1587.8	1497.9	1418.0	1361.1	1320.9	1290.3
38.5°	1538.5	1451.5	1369.7	1312.8	1274.5	1244.4
39°	1489.7	1405.6	1324.3	1264.0	1227.2	1200.4
39.5°	1439.0	1359.2	1278.8	1216.7	1179.4	1155.4
40°	1389.8	1313.3	1234.8	1169.8	1132.5	1111.9
40.5°	1340.0	1267.3	1191.8	1124.4	1086.6	1069.8
41°	1294.1	1220.5	1148.7	1079.9	1041.1	1029.2
41.5°	1245.3	1175.5	1107.1	1038.3	997.6	988.1
42°	1199.0	1129.6	1065.1	996.7	956.5	947.4
42.5°	1152.1	1085.1	1026.8	958.4	917.3	908.7
43°	1108.1	1041.1	985.7	920.1	879.0	869.9
43.5°	1061.7	999.5	946.4	882.8	842.2	831.7



TEST NUMBER: P776618

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	934.0	880.4	833.1	780.5	741.3	725.0
45.5°	891.9	843.1	798.2	749.4	711.1	694.4
46°	852.7	807.3	764.7	720.2	682.0	665.7
46.5°	813.5	771.4	731.7	691.5	654.7	638.5
47°	776.2	737.5	700.2	663.3	628.9	613.6
47.5°	740.8	704.0	671.0	637.5	605.0	591.1
48°	706.4	672.4	641.8	613.6	583.0	571.0
48.5°	675.3	641.3	615.0	590.6	561.9	551.9
49°	643.7	612.6	590.2	568.6	542.8	534.7
49.5°	615.5	585.4	566.2	547.6	525.1	517.9
50°	588.7	559.5	543.3	527.5	508.4	502.6
50.5°	563.4	535.2	521.8	508.9	492.6	488.3
51°	539.5	513.6	502.2	491.2	477.3	474.4
51.5°	517.9	493.5	483.5	474.9	462.9	460.5
52°	497.4	474.9	466.8	458.6	449.5	447.6
52.5°	478.2	458.2	450.5	443.8	436.2	434.7
53°	460.5	442.4	435.2	429.5	423.7	422.3
53.5°	443.8	428.0	420.9	416.6	411.8	410.8
54°	428.5	414.6	408.4	404.6	401.2	400.3
54.5°	415.1	403.2	397.9	394.6	391.7	391.2
55°	405.1	392.6	388.3	385.5	382.6	382.1
55.5°	394.6	383.6	378.8	375.9	373.0	373.0
56°	384.5	374.0	369.2	366.8	363.9	363.9
56.5°	374.5	364.4	360.1	357.2	354.4	354.4
57°	363.9	354.4	350.6	347.7	345.3	345.3
57.5°	354.4	344.3	340.5	338.1	336.2	336.2
58°	344.8	335.2	331.4	329.0	327.1	327.1
58.5°	335.2	325.7	321.9	319.9	318.0	318.0
59°	325.2	316.6	312.8	310.9	309.4	309.4
59.5°	316.1	307.0	303.7	302.3	300.8	300.3
60°	307.0	298.4	295.1	293.6	292.2	291.3
60.5°	297.9	289.3	286.5	285.5	284.1	282.6
61°	289.3	281.2	278.3	276.9	275.9	274.0
61.5°	280.7	273.1	270.2	268.8	267.3	265.9
62°	272.6	264.9	262.6	261.1	259.7	257.3
62.5°	264.5	256.8	253.9	253.5	251.6	249.2
63°	256.3	249.2	246.8	245.8	243.9	241.0
63.5°	249.2	241.5	239.1	238.6	236.3	233.4
64°	241.5	234.3	231.9	231.5	228.6	225.7
64.5°	233.9	227.2	224.8	224.3	221.4	218.1
65°	226.7	220.0	218.1	217.6	214.3	210.4
65.5°	219.5	213.3	211.4	210.4	207.1	203.3
66°	212.8	206.6	204.7	204.2	199.9	196.1



TEST NUMBER: P776618

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	193.2	187.0	185.6	184.6	179.3	175.5
68°	186.5	180.8	179.3	178.9	172.2	169.3
68.5°	180.8	175.0	172.6	172.2	166.4	163.1
69°	174.6	169.3	167.4	166.4	160.7	156.9
69.5°	168.3	163.6	161.6	160.7	154.5	150.6
70°	162.6	157.8	156.4	155.4	148.7	144.4
70.5°	156.9	152.6	150.6	149.7	142.5	138.2
71°	151.6	146.8	144.9	144.0	136.8	132.5
71.5°	145.9	141.1	139.6	138.2	131.0	126.7
72°	140.6	135.8	134.4	133.0	125.3	120.5
72.5°	134.9	130.6	129.1	127.2	119.6	114.8
73°	129.6	125.3	123.9	122.0	114.3	109.0
73.5°	124.3	120.0	118.6	116.7	108.6	103.8
74°	119.6	115.3	113.8	111.4	103.3	98.5
74.5°	114.3	110.0	108.6	106.6	98.0	93.3
75°	109.5	105.2	103.8	101.4	92.8	88.0
75.5°	104.7	100.4	99.0	96.6	88.0	82.7
76°	100.0	95.6	94.2	91.3	82.7	78.0
76.5°	95.2	90.9	89.4	86.6	77.5	73.2
77°	90.4	86.6	85.1	81.8	72.7	68.4
77.5°	86.1	81.8	80.3	77.5	67.9	63.6
78°	81.3	77.5	76.0	72.7	63.1	58.8
78.5°	77.0	73.2	71.7	68.4	58.8	54.0
79°	72.7	68.9	67.4	63.6	54.0	49.7
79.5°	68.4	64.6	63.1	59.3	49.7	45.4
80°	64.1	60.3	58.8	55.5	45.4	41.1
80.5°	59.8	56.4	55.0	51.2	41.1	36.8
81°	56.0	52.1	50.7	46.9	36.8	32.5
81.5°	51.7	48.3	46.9	43.0	33.0	28.7
82°	47.8	44.5	43.0	39.2	29.2	24.4
82.5°	44.0	40.7	39.2	35.9	25.3	20.6
83°	40.7	36.8	35.4	32.0	22.0	16.7
83.5°	36.8	33.0	31.6	28.7	19.1	14.3
84°	33.0	29.2	27.7	25.3	16.7	12.0
84.5°	29.2	25.8	24.4	22.0	14.8	9.6
85°	25.8	22.0	21.0	18.7	12.4	7.2
85.5°	22.0	18.7	17.2	15.8	10.0	5.7
86°	18.7	15.8	14.3	12.4	8.1	4.3
86.5°	15.3	12.4	11.0	9.6	6.2	3.3
87°	12.4	9.1	7.7	6.2	4.3	1.9
87.5°	9.1	5.7	4.3	3.3	2.4	1.0
88°	5.7	2.9	1.9	1.4	1.0	0.5
88.5°	2.9	1.0	0.5	0.5	0.5	0.0



TEST NUMBER: P776618
CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMW-5000lm-4000K

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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Peachtree City, GA 30269

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°	2788.2	2775.3	2776.2	2787.7	2829.3	2859.9	2890.5	2921.1	2942.2	2953.6	2953.2
22°	2759.5	2745.1	2746.1	2759.0	2805.9	2837.4	2869.0	2898.6	2920.6	2932.6	2931.6



44°	794.4	800.6	808.2	817.8	861.3	888.1	925.9	984.7	1021.1	1039.7	1032.5
44.5°	759.5	770.0	777.6	787.2	824.5	851.3	888.1	946.4	980.9	995.2	990.0



66.5°	189.4	193.7	199.9	201.3	208.5	210.9	211.4	208.0	202.3	204.2	208.0
67°	182.2	187.0	193.2	195.1	202.3	204.2	205.2	201.3	195.6	197.5	201.3



89°	0.0	0.5	0.0	0.0	1.0	1.4	1.9	1.9	1.0	1.4	1.4
89.5°	0.0	0.5	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.5	0.5

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21.5°	2937.9	2902.5	2872.3	2840.3	2808.3	2788.2
22°	2916.8	2880.9	2848.9	2813.5	2780.5	2759.5



44°	1018.7	957.9	908.2	847.4	806.8	794.4
44.5°	975.1	918.7	870.9	813.0	773.3	759.5



66.5°	206.1	199.9	198.0	197.5	192.7	189.4
67°	199.4	193.2	191.8	191.3	186.0	182.2

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89°	1.0	0.0	0.0	0.0	0.5	0.0
89.5°	0.0	0.0	0.0	0.0	0.5	0.0

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(END OF REPORT)