

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: P776613

Luminaire Tested: HCDJBS4050CSD-HCD4TRMB-5000lm-4000K

Issue Date: 2/7/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776613  
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-HCD4TRMB-5000lm-4000K  
Description: 4 INCH ROUND MEDIUM MATTE BLACK TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3030.5 lumens  
Efficiency: N/A  
Efficacy: 63.1 lumens/watt  
Spacing Criteria (0/90/45): 0.95 / 0.95 / 0.94  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

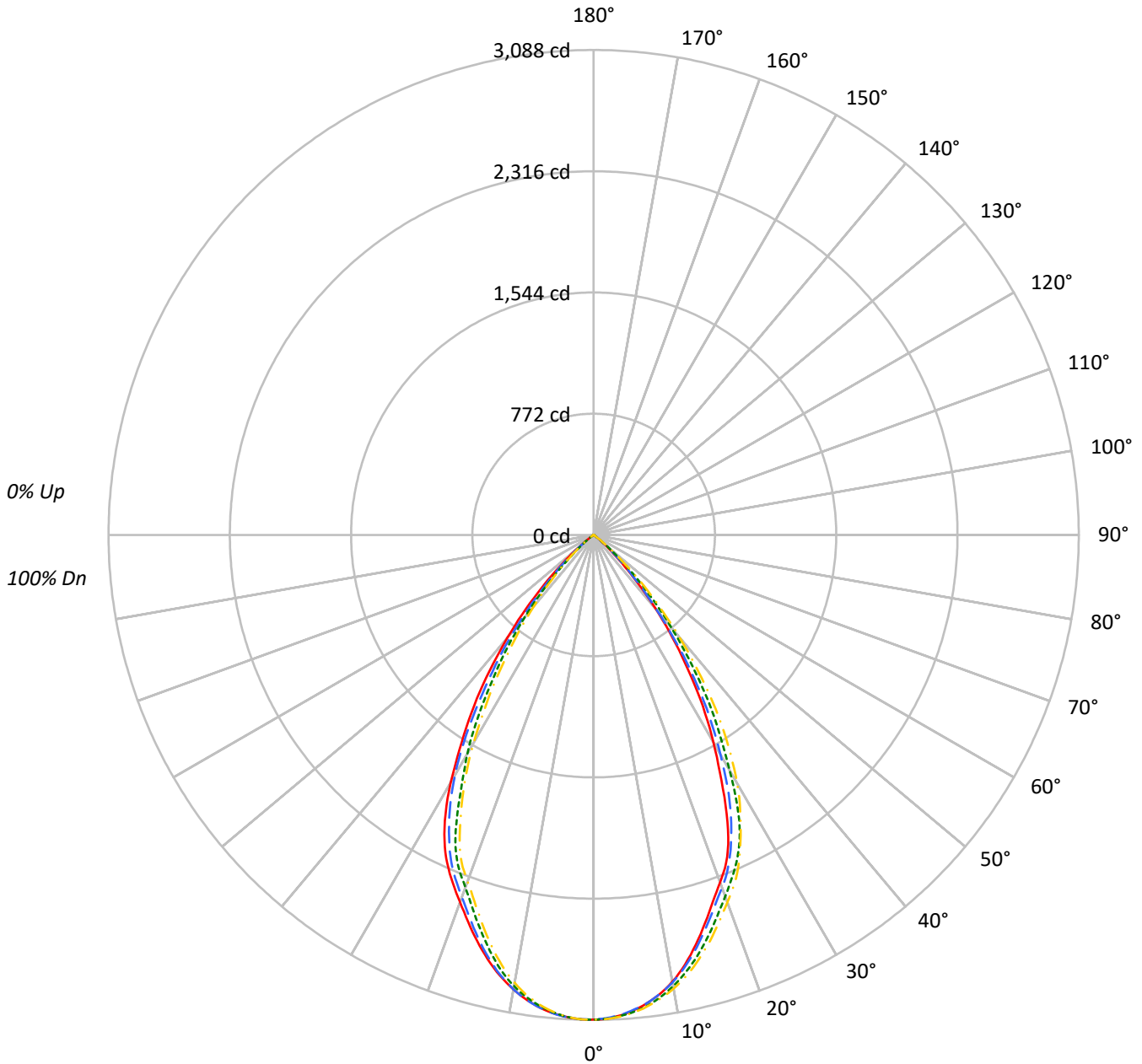
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				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	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100			
1	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93			
2	108	103	98	95	105	101	97	94	98	95	92	95	92	90	92	90	88	86			
3	102	95	90	86	100	94	89	85	91	87	84	89	86	83	87	84	82	80			
4	97	89	83	79	95	88	82	78	85	81	77	83	80	76	82	78	76	74			
5	91	83	77	72	90	82	76	72	80	75	71	78	74	71	77	73	70	69			
6	87	77	71	67	85	77	71	67	75	70	66	74	69	66	72	68	65	64			
7	82	72	66	62	81	72	66	62	70	65	61	69	65	61	68	64	61	59			
8	78	68	62	58	77	67	62	57	66	61	57	65	60	57	64	60	57	55			
9	74	64	58	54	73	63	58	54	62	57	53	62	57	53	61	56	53	52			
10	70	60	54	50	69	60	54	50	59	54	50	58	53	50	57	53	50	48			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	388486	388486	388486	388486
5°	383375	384702	385851	385131
10°	369036	372703	375515	372831
15°	342700	352185	356914	348185
20°	315223	327906	333102	319830
25°	279914	303978	309949	288551
30°	221509	251343	264204	233397
35°	161024	191321	203750	171533
40°	100789	126352	140185	110778
45°	45562	67721	78026	52041
50°	13216	20714	26980	15546
55°	2106	2106	2830	2633
60°	856	856	956	856
65°	566	566	566	566
70°	368	515	515	515
75°	243	486	243	486
80°	0	362	362	362
85°	0	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 180°  
 Vertical Angle: 45°  
 Luminance: 78026 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	286.6	9.5
10°-20°	751.7	24.8
20°-30°	959.3	31.7
30°-40°	733.5	24.2
40°-50°	274.1	9.0
50°-60°	22.3	0.7
60°-70°	2.1	0.1
70°-80°	0.8	0.0
80°-90°	0.1	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1997.6	65.9
0°-40°	2731.1	90.1
0°-60°	3027.5	99.9
0°-90°	3030.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3030.5	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	3087	3087	3087	3087	3087	
5°	3035	3045	3054	3049	3035	285
15°	2630	2703	2739	2672	2630	736
25°	2016	2189	2232	2078	2016	907
35°	1048	1245	1326	1116	1048	653
45°	256	380	438	292	256	215
55°	10	10	13	12	10	16
65°	2	2	2	2	2	2
75°	0	1	0	1	0	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	3086.9	3086.9	3086.9	3086.9	3086.9	3086.9	3086.9	3086.9	3086.9	3086.9	3086.9
0.5°	3085.9	3083.5	3083.5	3083.5	3085.9	3086.4	3087.8	3088.8	3087.4	3085.9	3085.9
1°	3084.0	3081.6	3081.1	3081.6	3084.0	3085.0	3086.4	3087.4	3086.9	3085.9	3085.4
1.5°	3081.1	3078.3	3077.8	3078.3	3081.6	3083.1	3084.5	3085.9	3085.0	3084.5	3085.0
2°	3077.3	3074.4	3073.5	3074.4	3078.7	3080.2	3081.6	3083.1	3083.1	3082.6	3083.1
2.5°	3072.5	3069.2	3068.7	3070.1	3074.9	3076.4	3077.8	3079.7	3080.2	3079.7	3080.2
3°	3066.8	3063.4	3063.0	3064.9	3070.1	3072.0	3073.5	3075.4	3076.4	3076.4	3076.8
3.5°	3060.1	3056.3	3056.7	3059.1	3064.9	3066.8	3068.7	3070.6	3072.0	3072.5	3072.5
4°	3052.4	3049.1	3049.1	3051.9	3059.1	3061.0	3062.5	3064.9	3066.8	3067.7	3067.7
4.5°	3043.8	3040.5	3040.9	3044.8	3052.9	3054.8	3056.3	3058.6	3061.0	3062.0	3062.0
5°	3034.7	3030.9	3031.4	3036.1	3045.2	3047.2	3048.6	3051.5	3054.3	3055.8	3055.3
5.5°	3024.2	3019.9	3021.8	3026.6	3036.6	3038.5	3040.5	3043.3	3046.7	3048.1	3047.2
6°	3013.2	3008.9	3010.8	3016.5	3027.5	3029.4	3031.4	3034.7	3038.5	3040.0	3038.5
6.5°	3001.2	2997.4	2999.8	3005.5	3017.0	3019.9	3021.8	3025.1	3029.4	3030.9	3029.4
7°	2988.3	2984.5	2987.3	2993.1	3005.5	3008.9	3011.3	3015.1	3018.9	3020.8	3019.4
7.5°	2974.4	2971.1	2973.5	2979.7	2993.1	2996.9	3000.3	3003.6	3007.4	3009.8	3008.4
8°	2959.6	2956.7	2959.1	2965.8	2979.7	2984.0	2988.3	2992.1	2995.9	2997.4	2995.9
8.5°	2943.3	2941.4	2944.3	2950.5	2965.3	2970.1	2975.8	2979.2	2982.5	2984.9	2983.0
9°	2926.1	2924.6	2928.0	2934.2	2950.0	2956.2	2962.4	2965.8	2969.1	2970.6	2969.1
9.5°	2906.9	2906.9	2910.8	2917.5	2933.7	2940.9	2948.1	2952.4	2954.3	2955.7	2954.3
10°	2887.8	2887.8	2892.1	2899.3	2916.5	2925.1	2932.8	2937.1	2938.5	2939.5	2938.0
10.5°	2867.7	2867.7	2872.5	2880.6	2899.8	2907.9	2916.5	2921.3	2922.2	2922.7	2920.8
11°	2844.7	2845.7	2851.9	2860.0	2880.6	2890.2	2899.8	2904.5	2905.5	2905.0	2902.6
11.5°	2821.3	2823.2	2830.4	2839.0	2861.0	2872.0	2882.5	2886.8	2886.8	2886.4	2883.0
12°	2796.4	2799.2	2807.4	2817.0	2841.4	2852.9	2863.9	2868.6	2868.6	2866.7	2863.4
12.5°	2770.5	2773.9	2783.0	2794.5	2819.8	2832.3	2844.2	2849.5	2849.0	2846.2	2842.3
13°	2743.7	2748.0	2758.6	2771.0	2797.8	2811.2	2824.6	2829.9	2828.4	2824.6	2818.9
13.5°	2716.0	2721.7	2732.7	2746.1	2775.8	2789.7	2803.1	2808.3	2807.4	2803.1	2796.4
14°	2687.7	2694.4	2707.4	2721.7	2751.4	2767.7	2781.1	2787.3	2785.4	2779.6	2772.0
14.5°	2659.0	2666.7	2680.6	2696.4	2727.5	2744.7	2758.1	2764.3	2762.4	2756.2	2746.6
15°	2630.3	2638.4	2653.3	2670.0	2703.1	2720.8	2735.1	2741.3	2739.4	2731.8	2721.2
15.5°	2600.6	2610.2	2625.5	2644.2	2678.6	2696.4	2711.7	2717.4	2715.5	2707.4	2694.9
16°	2571.0	2581.5	2598.7	2617.4	2652.8	2672.4	2687.7	2693.5	2691.1	2682.0	2668.6
16.5°	2542.2	2553.7	2571.4	2591.1	2627.4	2647.5	2662.4	2670.0	2666.7	2656.6	2641.8
17°	2513.5	2525.0	2543.7	2564.7	2601.6	2622.2	2638.0	2644.7	2641.3	2630.3	2615.0
17.5°	2484.8	2496.8	2516.4	2538.4	2575.3	2596.3	2612.1	2618.3	2615.5	2604.0	2587.2
18°	2456.1	2469.0	2489.1	2511.6	2549.4	2571.0	2586.8	2593.9	2589.6	2577.7	2560.4
18.5°	2428.3	2442.7	2462.3	2485.3	2523.1	2545.6	2561.9	2568.1	2563.3	2550.9	2532.7
19°	2402.5	2417.3	2437.9	2459.9	2497.7	2520.7	2536.5	2542.7	2537.5	2524.5	2505.4
19.5°	2378.1	2393.4	2413.0	2435.5	2473.3	2495.8	2512.6	2518.3	2513.1	2498.2	2478.6
20°	2353.7	2369.5	2389.1	2411.6	2448.4	2471.4	2489.6	2494.4	2487.2	2473.3	2453.2
20.5°	2329.8	2345.1	2365.2	2387.2	2424.5	2448.0	2465.7	2470.9	2463.8	2448.4	2428.3
21°	2305.3	2321.1	2340.3	2362.8	2400.6	2424.5	2441.3	2447.5	2439.8	2424.5	2403.9



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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°	2219.7	2234.5	2253.2	2282.9	2327.8	2351.3	2366.6	2373.8	2368.0	2352.3	2329.3
23°	2185.2	2200.5	2220.2	2255.1	2302.5	2325.0	2338.4	2347.0	2343.6	2326.9	2302.0
23.5°	2147.9	2164.2	2185.7	2223.5	2276.2	2296.7	2307.3	2316.8	2317.3	2301.0	2272.8
24°	2106.3	2123.5	2149.3	2190.5	2249.4	2266.6	2274.2	2286.2	2290.0	2274.2	2242.2
24.5°	2062.2	2079.5	2110.6	2155.6	2220.2	2236.0	2241.2	2253.2	2261.8	2245.5	2208.7
25°	2015.8	2032.6	2072.8	2120.1	2189.1	2202.9	2206.3	2219.2	2232.1	2216.3	2174.2
25.5°	1967.0	1984.7	2033.0	2081.4	2156.5	2168.0	2169.0	2183.3	2200.5	2184.7	2138.3
26°	1916.3	1935.9	1993.3	2044.0	2121.1	2131.1	2132.6	2146.9	2166.6	2151.7	2101.9
26.5°	1864.6	1887.1	1950.2	2004.8	2082.3	2092.9	2096.7	2110.1	2130.2	2115.8	2063.2
27°	1812.4	1839.2	1906.7	1964.1	2040.7	2054.1	2060.8	2073.2	2091.4	2076.6	2024.4
27.5°	1762.6	1791.8	1861.2	1922.5	1994.7	2014.4	2024.4	2035.9	2051.7	2035.9	1986.1
28°	1712.4	1746.8	1813.4	1878.0	1946.4	1973.7	1987.1	1998.6	2007.7	1992.4	1945.0
28.5°	1663.6	1703.3	1764.5	1831.1	1893.8	1930.6	1949.8	1960.3	1963.2	1947.8	1903.3
29°	1616.7	1660.2	1715.3	1783.2	1840.2	1887.1	1911.5	1921.5	1917.7	1899.0	1859.8
29.5°	1570.2	1616.7	1664.5	1732.5	1785.1	1841.6	1869.8	1879.9	1867.9	1849.3	1813.8
30°	1524.3	1572.2	1614.3	1679.4	1729.6	1793.7	1826.8	1838.2	1818.1	1797.6	1765.0
30.5°	1478.8	1526.2	1565.9	1623.8	1677.0	1744.4	1781.3	1793.3	1765.0	1743.5	1716.2
31°	1432.4	1478.8	1516.6	1569.8	1625.8	1693.7	1736.8	1749.2	1713.3	1689.4	1665.5
31.5°	1386.0	1430.0	1469.3	1512.8	1576.5	1642.5	1690.4	1701.4	1661.7	1634.8	1614.7
32°	1339.1	1380.7	1420.4	1457.3	1530.0	1590.3	1644.9	1653.5	1612.4	1582.2	1561.1
32.5°	1292.2	1328.6	1372.1	1403.2	1482.7	1539.1	1599.0	1603.3	1562.6	1531.0	1509.9
33°	1243.4	1277.3	1322.8	1347.7	1437.7	1488.4	1552.1	1554.0	1515.2	1480.3	1455.4
33.5°	1193.6	1226.1	1273.0	1293.1	1389.8	1438.2	1503.2	1504.2	1466.4	1430.5	1400.3
34°	1144.3	1177.3	1221.8	1240.0	1342.0	1390.3	1454.9	1454.4	1420.9	1381.2	1344.3
34.5°	1096.4	1126.6	1171.1	1188.3	1292.7	1343.4	1404.6	1402.7	1373.1	1333.3	1291.2
35°	1048.1	1079.2	1120.4	1137.1	1245.3	1298.4	1354.4	1353.0	1326.2	1286.0	1236.2
35.5°	1002.6	1033.7	1068.2	1087.3	1192.6	1251.5	1301.3	1302.7	1278.3	1238.1	1184.5
36°	957.7	987.8	1016.0	1039.0	1141.9	1204.1	1249.1	1252.5	1232.4	1189.8	1134.2
36.5°	913.6	942.8	965.3	991.6	1092.1	1157.7	1196.0	1201.7	1183.1	1140.5	1085.4
37°	870.1	896.9	912.2	944.7	1043.3	1111.3	1143.8	1150.0	1134.2	1090.2	1036.1
37.5°	827.0	852.4	861.0	898.8	994.5	1062.9	1091.2	1101.2	1085.0	1040.4	990.2
38°	783.9	806.4	810.7	852.4	948.6	1014.1	1042.4	1052.9	1036.6	990.7	943.3
38.5°	740.9	761.0	763.8	807.4	902.6	964.8	992.1	1005.5	989.7	941.9	896.9
39°	698.7	716.4	718.8	763.3	859.1	917.0	942.8	958.1	943.8	897.3	850.9
39.5°	655.2	670.0	673.8	722.2	813.1	869.1	894.0	911.2	897.8	849.0	805.9
40°	613.5	625.5	629.8	679.1	769.1	823.2	845.2	863.4	853.3	804.5	761.0
40.5°	571.9	582.0	589.6	638.9	726.0	777.7	796.8	816.9	808.3	761.9	716.4
41°	531.2	539.8	549.4	599.2	683.9	734.2	750.4	770.0	766.7	721.7	671.5
41.5°	491.0	499.2	510.7	559.9	640.3	690.1	705.4	722.7	723.6	679.1	628.9
42°	454.2	459.0	472.8	520.2	597.8	648.0	660.9	677.2	679.1	639.9	586.3
42.5°	417.3	421.6	437.4	484.3	557.6	605.9	617.4	633.6	636.5	600.1	546.1
43°	382.9	385.3	402.0	448.4	518.8	563.8	574.8	591.1	595.4	563.3	507.3
43.5°	348.4	350.3	369.5	413.0	481.5	521.2	535.1	549.4	553.7	523.1	470.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	256.0	253.7	278.1	314.9	380.5	404.4	423.5	435.5	438.4	419.2	369.5
45.5°	228.3	225.4	251.7	285.2	347.0	366.1	387.7	399.6	402.5	385.3	336.0
46°	202.4	199.6	226.4	257.0	313.5	327.8	351.8	363.7	366.6	351.3	305.8
46.5°	177.6	175.2	202.9	231.2	282.4	294.3	316.3	328.3	330.7	317.8	277.6
47°	159.8	157.9	179.9	206.3	252.2	262.7	284.3	294.8	297.2	286.7	250.3
47.5°	142.6	140.2	162.2	182.3	223.5	233.1	253.7	263.7	267.1	258.0	224.9
48°	125.4	122.5	144.5	159.8	196.2	205.8	225.9	234.0	237.9	230.7	201.5
48.5°	108.2	105.3	126.8	140.2	170.9	179.9	199.1	206.7	210.6	202.9	179.5
49°	90.9	87.6	109.1	123.5	146.9	157.0	173.7	180.4	184.3	178.0	158.4
49.5°	79.0	76.1	91.4	108.2	124.9	135.4	150.3	156.5	160.3	155.1	139.3
50°	67.5	65.1	77.5	92.8	105.8	115.8	128.3	135.0	137.8	133.5	121.6
50.5°	57.4	55.5	65.1	77.5	88.5	98.1	108.6	115.3	117.7	114.4	104.8
51°	48.3	46.4	53.6	62.2	73.2	81.8	90.5	97.2	99.1	96.2	90.0
51.5°	39.7	38.3	43.6	50.7	63.7	67.5	74.7	80.4	82.3	80.9	76.1
52°	32.5	31.1	34.5	40.2	54.1	57.4	63.7	66.0	67.5	67.0	63.7
52.5°	25.8	24.4	26.8	30.6	44.5	47.9	52.6	56.5	57.4	57.4	54.6
53°	19.6	18.7	20.1	23.0	34.9	37.8	42.1	46.4	47.9	47.4	45.5
53.5°	17.2	16.3	17.7	16.8	25.4	27.8	31.1	36.9	37.8	37.8	36.4
54°	14.8	13.4	14.8	13.9	15.8	18.2	20.6	26.8	27.8	28.2	26.8
54.5°	12.4	10.5	12.4	12.0	11.5	12.9	14.4	17.2	18.2	18.2	18.2
55°	9.6	8.1	9.6	9.6	9.6	10.1	11.0	12.4	12.9	13.4	13.4
55.5°	7.2	7.2	7.2	7.7	8.1	8.6	9.1	9.6	10.1	10.5	10.1
56°	6.7	6.2	6.2	6.7	7.2	7.7	7.7	8.1	8.6	8.6	8.6
56.5°	5.7	5.7	5.7	5.7	6.2	6.7	7.2	7.2	7.7	7.7	7.7
57°	5.3	5.3	5.3	5.3	5.7	5.7	6.2	6.7	6.7	6.7	6.7
57.5°	4.8	4.8	4.8	4.8	5.3	5.3	5.7	5.7	6.2	6.2	6.2
58°	4.3	4.3	4.3	4.3	4.8	4.8	4.8	5.3	5.3	5.3	5.3
58.5°	3.8	3.8	3.8	3.8	4.3	4.3	4.3	4.8	4.8	4.8	4.8
59°	3.8	3.8	3.8	3.8	3.8	3.8	4.3	4.3	4.3	4.3	4.3
59.5°	3.4	3.4	3.4	3.4	3.4	3.8	3.8	3.8	3.8	3.8	3.8
60°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.8	3.8	3.8	3.8
60.5°	2.9	2.9	2.9	2.9	3.4	3.4	3.4	3.4	3.4	3.4	3.4
61°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.4	3.4	3.4	3.4
61.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
62°	2.4	2.4	2.4	2.4	2.4	2.9	2.9	2.9	2.9	2.9	2.9
62.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.9	2.9
63°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
63.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
64°	1.9	1.9	1.9	1.9	1.9	2.4	2.4	2.4	2.4	2.4	2.4
64.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.4
65°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
65.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
66°	1.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9





TEST NUMBER: P776613

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMB-5000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
68°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
68.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
69°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
69.5°	1.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
70°	1.0	1.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
70.5°	1.0	1.0	1.0	1.0	1.4	1.4	1.4	1.0	1.0	1.0	1.4
71°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.4
71.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
72°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
72.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
73°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
73.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
74°	0.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
74.5°	0.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
75°	0.5	0.5	0.5	1.0	1.0	1.0	1.0	0.5	0.5	0.5	1.0
75.5°	0.5	0.5	0.5	0.5	1.0	1.0	1.0	0.5	0.5	0.5	1.0
76°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
76.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
77°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
77.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
78°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
78.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
79°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
79.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
80°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
80.5°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
81°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5
81.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5
82°	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.5
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776613

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMB-5000lm-4000K

**CANDELA DISTRIBUTION (continued):**

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



TEST NUMBER: P776613

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMB-5000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3086.9	3086.9	3086.9	3086.9	3086.9	3086.9
0.5°	3085.9	3086.9	3087.4	3087.8	3087.8	3085.9
1°	3085.9	3086.4	3086.4	3086.9	3086.4	3084.0
1.5°	3085.0	3085.0	3085.0	3085.0	3084.0	3081.1
2°	3083.1	3082.6	3082.6	3082.1	3080.2	3077.3
2.5°	3080.2	3079.2	3078.7	3078.3	3075.9	3072.5
3°	3076.8	3074.9	3074.4	3073.5	3071.1	3066.8
3.5°	3072.0	3069.7	3069.2	3067.7	3064.4	3060.1
4°	3066.3	3063.4	3063.0	3061.0	3057.2	3052.4
4.5°	3060.1	3056.3	3055.3	3053.4	3049.5	3043.8
5°	3053.4	3048.6	3046.7	3044.3	3040.5	3034.7
5.5°	3045.2	3039.5	3037.1	3034.7	3029.4	3024.2
6°	3036.1	3029.4	3027.1	3023.7	3018.9	3013.2
6.5°	3026.6	3018.9	3016.0	3012.2	3007.0	3001.2
7°	3016.0	3007.4	3003.6	2999.3	2993.1	2988.3
7.5°	3004.6	2995.0	2990.2	2984.9	2978.7	2974.4
8°	2992.6	2981.6	2975.8	2969.6	2964.4	2959.6
8.5°	2979.2	2967.2	2960.5	2953.4	2947.6	2943.3
9°	2964.8	2951.9	2943.8	2935.6	2929.9	2926.1
9.5°	2949.5	2935.2	2926.1	2916.5	2909.8	2906.9
10°	2933.3	2917.5	2906.9	2896.9	2890.7	2887.8
10.5°	2915.5	2898.8	2886.4	2875.3	2869.6	2867.7
11°	2897.4	2878.7	2864.8	2852.9	2846.6	2844.7
11.5°	2877.7	2856.7	2841.8	2828.9	2822.2	2821.3
12°	2856.2	2834.2	2817.4	2803.6	2796.9	2796.4
12.5°	2834.2	2809.3	2791.6	2777.2	2770.5	2770.5
13°	2811.2	2783.5	2765.3	2750.4	2743.3	2743.7
13.5°	2786.3	2757.1	2737.5	2721.7	2716.0	2716.0
14°	2760.5	2729.9	2709.3	2693.0	2685.8	2687.7
14.5°	2734.2	2701.1	2680.1	2664.3	2656.6	2659.0
15°	2707.4	2672.4	2650.4	2634.6	2627.4	2630.3
15.5°	2679.6	2643.7	2620.7	2604.9	2597.8	2600.6
16°	2651.8	2614.0	2591.1	2573.8	2568.1	2571.0
16.5°	2623.6	2585.3	2561.4	2544.2	2538.4	2542.2
17°	2594.9	2556.1	2530.8	2514.0	2508.3	2513.5
17.5°	2566.2	2526.5	2501.1	2484.8	2479.1	2484.8
18°	2537.9	2496.8	2471.9	2454.7	2450.4	2456.1
18.5°	2509.7	2468.5	2442.2	2425.5	2421.6	2428.3
19°	2481.5	2439.8	2414.0	2397.7	2394.8	2402.5
19.5°	2454.7	2413.5	2388.6	2372.4	2369.0	2378.1
20°	2428.8	2388.1	2362.3	2347.5	2344.1	2353.7
20.5°	2403.9	2363.7	2337.9	2322.6	2320.2	2329.8
21°	2379.1	2339.3	2312.5	2297.2	2296.3	2305.3



TEST NUMBER: P776613

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMB-5000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2303.9	2263.2	2233.1	2213.9	2209.2	2219.7
23°	2274.2	2233.1	2200.5	2178.0	2173.3	2185.2
23.5°	2243.6	2200.1	2165.6	2139.3	2136.4	2147.9
24°	2210.1	2162.7	2125.4	2096.7	2094.8	2106.3
24.5°	2174.7	2122.1	2085.7	2052.7	2050.7	2062.2
25°	2136.9	2078.0	2041.6	2006.2	2005.3	2015.8
25.5°	2098.1	2030.6	1996.2	1960.8	1959.3	1967.0
26°	2057.0	1980.9	1947.4	1916.3	1910.5	1916.3
26.5°	2014.4	1928.7	1898.6	1871.3	1863.1	1864.6
27°	1970.8	1878.5	1846.4	1827.2	1814.8	1812.4
27.5°	1924.9	1828.7	1791.3	1780.3	1765.5	1762.6
28°	1878.0	1782.3	1738.2	1733.4	1716.7	1712.4
28.5°	1831.1	1736.8	1686.5	1684.6	1667.9	1663.6
29°	1782.7	1692.8	1636.8	1633.9	1617.1	1616.7
29.5°	1734.4	1650.2	1588.4	1581.2	1566.9	1570.2
30°	1687.5	1606.1	1540.6	1528.6	1515.2	1524.3
30.5°	1639.6	1560.7	1494.1	1474.0	1462.6	1478.8
31°	1593.2	1514.2	1447.7	1419.0	1410.9	1432.4
31.5°	1548.2	1465.0	1401.3	1366.8	1358.2	1386.0
32°	1502.3	1414.7	1353.9	1314.7	1308.5	1339.1
32.5°	1456.8	1364.0	1307.5	1263.5	1260.6	1292.2
33°	1411.4	1312.3	1259.6	1214.2	1213.2	1243.4
33.5°	1365.9	1260.6	1211.3	1163.9	1166.3	1193.6
34°	1317.5	1210.8	1163.0	1115.1	1119.4	1144.3
34.5°	1268.7	1163.4	1113.2	1066.3	1072.0	1096.4
35°	1217.5	1116.5	1064.9	1017.5	1024.7	1048.1
35.5°	1168.2	1072.5	1018.4	969.1	977.3	1002.6
36°	1113.7	1029.9	972.0	923.2	929.4	957.7
36.5°	1062.5	985.9	928.5	879.2	881.1	913.6
37°	1009.8	942.8	883.9	835.6	834.7	870.1
37.5°	960.0	899.3	840.4	793.0	789.7	827.0
38°	909.8	853.8	797.3	750.9	746.1	783.9
38.5°	862.9	808.3	754.7	709.7	704.5	740.9
39°	815.0	763.8	714.1	670.5	665.2	698.7
39.5°	768.6	718.8	671.5	630.3	626.5	655.2
40°	722.2	674.3	630.8	593.0	588.7	613.5
40.5°	678.6	631.3	591.1	555.2	551.3	571.9
41°	634.1	590.6	551.8	519.7	516.4	531.2
41.5°	591.5	549.9	514.0	485.8	481.0	491.0
42°	549.9	511.6	477.2	454.2	447.5	454.2
42.5°	509.2	473.3	441.7	422.1	414.9	417.3
43°	470.0	436.5	407.8	392.4	384.3	382.9
43.5°	435.0	398.2	375.7	362.8	353.7	348.4



TEST NUMBER: P776613

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMB-5000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	331.2	292.4	286.2	281.9	272.3	256.0
45.5°	300.6	260.4	258.9	257.0	247.4	228.3
46°	271.8	230.7	233.5	234.0	224.9	202.4
46.5°	244.6	202.9	209.1	212.0	202.4	177.6
47°	219.2	178.5	185.7	190.5	181.4	159.8
47.5°	195.7	160.8	164.2	170.9	164.2	142.6
48°	173.2	143.1	147.4	154.6	147.4	125.4
48.5°	153.1	125.9	130.2	138.3	130.2	108.2
49°	134.5	108.6	113.4	122.0	112.9	90.9
49.5°	117.3	91.4	96.7	105.8	95.7	79.0
50°	101.5	79.4	82.8	89.5	82.3	67.5
50.5°	87.6	68.9	70.8	76.1	68.9	57.4
51°	74.7	58.9	60.3	64.1	57.9	48.3
51.5°	63.7	50.3	50.3	53.1	47.9	39.7
52°	55.0	42.1	41.2	43.1	38.3	32.5
52.5°	46.9	34.5	33.5	34.0	30.2	25.8
53°	38.3	27.8	26.3	25.8	23.0	19.6
53.5°	30.2	21.5	20.1	19.1	16.8	17.2
54°	21.5	16.3	17.2	16.3	14.4	14.8
54.5°	16.3	13.9	14.8	13.4	12.0	12.4
55°	12.4	12.0	12.4	10.5	9.6	9.6
55.5°	9.6	9.6	9.6	7.7	7.7	7.2
56°	8.6	7.7	7.2	7.2	6.7	6.7
56.5°	7.2	6.7	6.2	6.2	6.2	5.7
57°	6.7	5.7	5.7	5.7	5.3	5.3
57.5°	5.7	5.3	5.3	5.3	4.8	4.8
58°	5.3	4.8	4.8	4.8	4.3	4.3
58.5°	4.8	4.3	4.3	4.3	4.3	3.8
59°	4.3	3.8	3.8	3.8	3.8	3.8
59.5°	3.8	3.8	3.8	3.8	3.4	3.4
60°	3.8	3.4	3.4	3.4	3.4	3.4
60.5°	3.4	3.4	3.4	3.4	3.4	2.9
61°	3.4	2.9	2.9	2.9	2.9	2.9
61.5°	2.9	2.9	2.9	2.9	2.9	2.9
62°	2.9	2.9	2.9	2.9	2.4	2.4
62.5°	2.9	2.4	2.4	2.4	2.4	2.4
63°	2.4	2.4	2.4	2.4	2.4	2.4
63.5°	2.4	2.4	2.4	2.4	2.4	2.4
64°	2.4	2.4	2.4	2.4	1.9	1.9
64.5°	2.4	1.9	1.9	1.9	1.9	1.9
65°	1.9	1.9	1.9	1.9	1.9	1.9
65.5°	1.9	1.9	1.9	1.9	1.9	1.9
66°	1.9	1.9	1.9	1.9	1.9	1.4



TEST NUMBER: P776613

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMB-5000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	1.4	1.4	1.4	1.4	1.4	1.4
68°	1.4	1.4	1.4	1.4	1.4	1.4
68.5°	1.4	1.4	1.4	1.4	1.4	1.4
69°	1.4	1.4	1.4	1.4	1.4	1.4
69.5°	1.4	1.4	1.4	1.4	1.4	1.0
70°	1.4	1.4	1.4	1.4	1.0	1.0
70.5°	1.4	1.4	1.4	1.0	1.0	1.0
71°	1.4	1.0	1.0	1.0	1.0	1.0
71.5°	1.0	1.0	1.0	1.0	1.0	1.0
72°	1.0	1.0	1.0	1.0	1.0	1.0
72.5°	1.0	1.0	1.0	1.0	1.0	1.0
73°	1.0	1.0	1.0	1.0	1.0	1.0
73.5°	1.0	1.0	1.0	1.0	1.0	1.0
74°	1.0	1.0	1.0	1.0	1.0	0.5
74.5°	1.0	1.0	1.0	1.0	0.5	0.5
75°	1.0	1.0	1.0	1.0	0.5	0.5
75.5°	1.0	1.0	1.0	0.5	0.5	0.5
76°	1.0	0.5	0.5	0.5	0.5	0.5
76.5°	0.5	0.5	0.5	0.5	0.5	0.5
77°	0.5	0.5	0.5	0.5	0.5	0.5
77.5°	0.5	0.5	0.5	0.5	0.5	0.5
78°	0.5	0.5	0.5	0.5	0.5	0.5
78.5°	0.5	0.5	0.5	0.5	0.5	0.5
79°	0.5	0.5	0.5	0.5	0.5	0.5
79.5°	0.5	0.5	0.5	0.5	0.5	0.5
80°	0.5	0.5	0.5	0.5	0.5	0.0
80.5°	0.5	0.5	0.5	0.5	0.0	0.0
81°	0.5	0.5	0.5	0.5	0.0	0.0
81.5°	0.5	0.5	0.5	0.5	0.0	0.0
82°	0.5	0.5	0.5	0.0	0.0	0.0
82.5°	0.5	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776613

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMB-5000lm-4000K

**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



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21.5°	2280.0	2295.3	2313.5	2337.9	2376.7	2401.5	2419.3	2424.0	2415.9	2399.6	2379.5
22°	2251.3	2266.1	2284.3	2312.0	2352.7	2376.7	2393.9	2400.1	2392.5	2375.7	2355.6



44°	316.8	316.3	336.9	378.1	448.0	480.5	495.3	508.7	513.0	487.2	436.5
44.5°	284.3	284.3	306.8	346.5	414.5	442.2	459.4	471.4	474.3	453.2	403.0



66.5°	1.4	1.4	1.4	1.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9
67°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.9



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



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21.5°	2354.6	2315.4	2289.1	2273.8	2269.9	2280.0
22°	2330.7	2290.0	2261.8	2245.5	2241.2	2251.3



44°	400.6	361.8	344.6	334.5	325.0	316.8
44.5°	365.6	326.4	314.9	307.3	298.2	284.3

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66.5°	1.9	1.9	1.9	1.9	1.4	1.4
67°	1.9	1.9	1.4	1.4	1.4	1.4

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

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Scaled Data Report



(END OF REPORT)