

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: P776508

Luminaire Tested: HCDJBL3040CSD-HCD8TRMW-4000lm-4000K

Issue Date: 2/7/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776508  
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: HCDJBL3040CSD-HCD8TRMW-4000lm-4000K  
Description: 8 INCH ROUND MEDIUM MATTE WHITE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

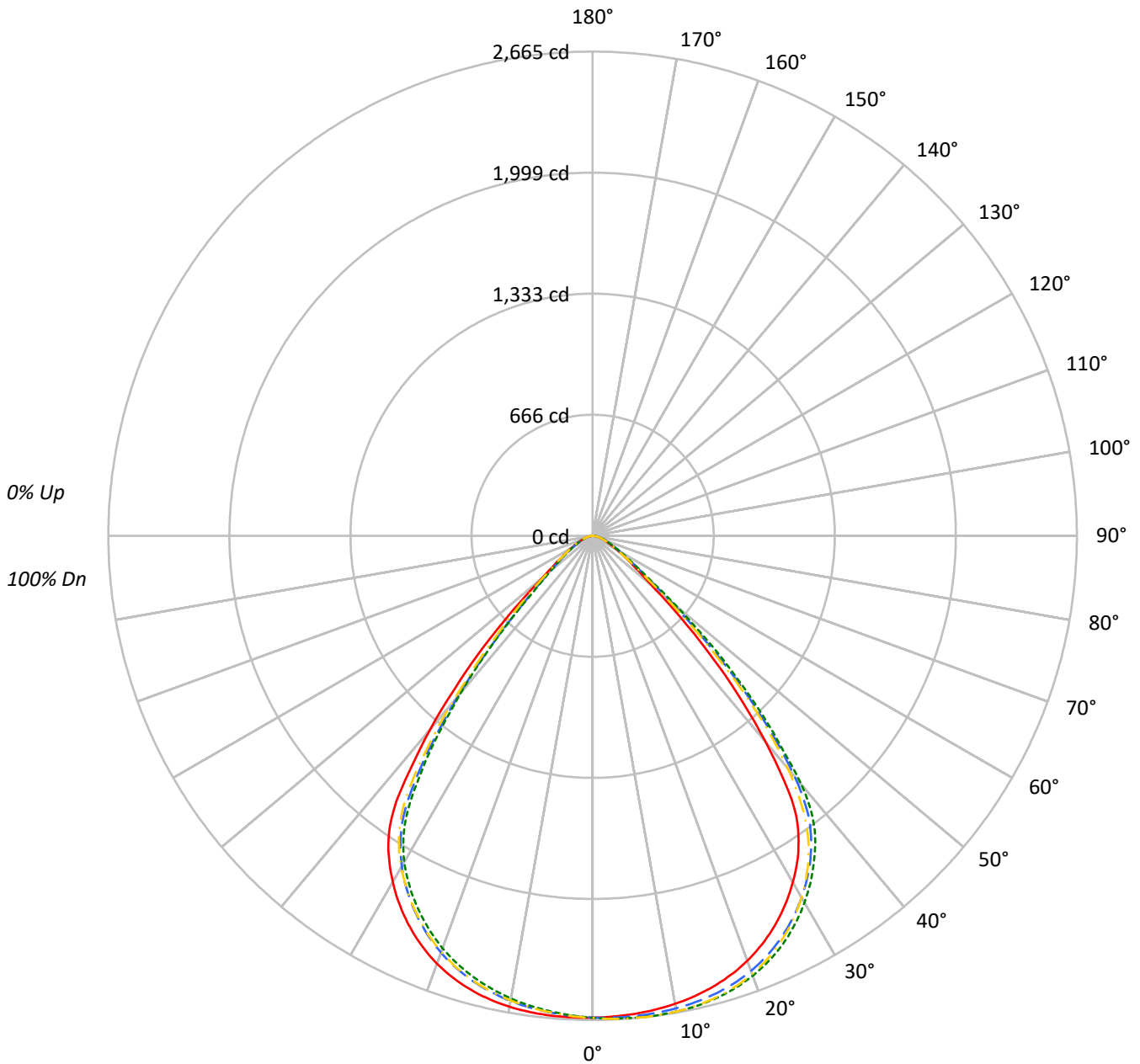
Lumens per Lamp: N/A  
Luminaire Lumens: 4296.9 lumens  
Efficiency: N/A  
Efficacy: 111.6 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.22 / 1.18  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

Input Watts (W): 38.5  
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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### 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	112	109	106	103	110	107	104	102	103	100	98	99	97	95	95	94	93	91
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	84	82
3	98	91	85	80	96	89	84	79	86	82	78	84	80	77	81	78	75	74
4	92	83	76	71	90	82	75	71	79	74	70	77	73	69	75	71	68	66
5	86	76	69	64	84	75	68	64	73	67	63	71	66	62	70	65	62	60
6	81	70	63	58	79	69	62	58	68	62	57	66	61	57	65	60	56	55
7	76	65	58	53	74	64	57	52	63	56	52	61	56	52	60	55	51	50
8	71	60	53	48	70	59	53	48	58	52	48	57	51	47	56	51	47	46
9	67	56	49	44	66	55	48	44	54	48	44	53	48	44	52	47	43	42
10	63	52	45	41	62	51	45	41	51	45	40	50	44	40	49	44	40	39

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

	0°	90°	180°	270°
0°	80991	80991	80991	80991
5°	80954	81619	81239	80558
10°	81102	82439	81614	80166
15°	81186	83260	81784	79568
20°	80873	83739	81396	78479
25°	79823	83485	80106	76445
30°	77684	82186	77557	73084
35°	73464	79457	72428	63871
40°	58989	71252	55374	44860
45°	38284	50214	34247	24943
50°	20281	28527	17640	14425
55°	13232	15159	11258	10076
60°	9495	10551	8139	7578
65°	7361	8149	6343	6025
70°	5936	6722	5106	4856
75°	4895	5745	4081	3845
80°	3903	5028	3042	2831
85°	2837	4659	1681	1401

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 51259 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	251.9	5.9
10°-20°	727.1	16.9
20°-30°	1090.7	25.4
30°-40°	1180.6	27.5
40°-50°	672.4	15.6
50°-60°	223.2	5.2
60°-70°	98.5	2.3
70°-80°	43.0	1.0
80°-90°	9.5	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°	2069.7	48.2
0°-40°	3250.3	75.6
0°-60°	4145.9	96.5
0°-90°	4296.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4296.9	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2653	2653	2653	2653	2653	
5°	2642	2663	2651	2629	2642	251
15°	2569	2634	2588	2517	2569	725
25°	2370	2478	2378	2269	2370	1089
35°	1971	2132	1943	1714	1971	1200
45°	887	1163	793	578	887	690
55°	249	285	212	189	249	232
65°	102	113	88	83	102	104
75°	42	49	35	33	42	45
85°	8	13	5	4	8	10
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°	2652.8	2652.8	2652.8	2652.8	2652.8	2652.8	2652.8	2652.8	2652.8	2652.8	2652.8
0.5°	2651.6	2652.4	2652.4	2652.8	2654.4	2655.6	2656.8	2655.2	2652.8	2651.6	2650.3
1°	2651.2	2652.4	2652.8	2653.6	2656.0	2657.2	2658.0	2656.0	2653.2	2651.2	2649.1
1.5°	2650.3	2652.0	2653.6	2654.8	2657.2	2658.8	2659.2	2656.8	2653.2	2650.8	2647.9
2°	2649.5	2652.0	2654.0	2656.0	2658.4	2660.4	2660.4	2657.6	2653.2	2649.9	2646.3
2.5°	2648.7	2651.6	2654.4	2656.8	2659.6	2661.2	2661.2	2658.0	2653.2	2649.1	2644.7
3°	2647.5	2651.2	2654.4	2657.6	2660.8	2662.8	2662.0	2658.4	2653.2	2647.9	2643.1
3.5°	2645.9	2650.8	2654.4	2658.4	2661.6	2663.6	2663.2	2658.4	2652.4	2647.1	2641.1
4°	2644.7	2649.9	2654.4	2658.8	2662.4	2664.4	2663.6	2658.8	2652.0	2645.9	2639.1
4.5°	2643.5	2648.7	2654.0	2659.2	2662.8	2665.3	2664.0	2658.8	2651.6	2644.3	2637.1
5°	2641.5	2647.5	2653.6	2659.2	2663.2	2665.7	2664.4	2658.4	2650.8	2642.7	2634.6
5.5°	2639.9	2646.7	2653.2	2659.6	2663.2	2666.1	2664.4	2658.0	2649.9	2641.1	2632.2
6°	2637.9	2645.1	2652.4	2659.6	2663.6	2666.5	2664.9	2657.6	2648.7	2639.1	2629.4
6.5°	2635.8	2643.9	2651.6	2659.2	2663.6	2666.5	2664.9	2656.8	2647.5	2637.1	2626.6
7°	2633.8	2641.9	2650.8	2658.8	2663.6	2666.5	2664.4	2656.0	2645.9	2634.6	2623.4
7.5°	2631.4	2640.3	2649.5	2658.4	2663.2	2666.5	2664.0	2655.2	2644.3	2632.2	2620.1
8°	2628.6	2638.3	2648.3	2657.6	2662.8	2666.1	2663.2	2654.0	2642.3	2629.8	2616.5
8.5°	2625.8	2636.2	2646.7	2656.8	2662.0	2665.7	2662.4	2652.4	2640.3	2626.6	2612.9
9°	2623.0	2633.8	2645.1	2655.6	2661.2	2665.3	2661.6	2650.8	2637.9	2623.8	2608.9
9.5°	2619.7	2631.0	2643.5	2654.8	2660.4	2664.0	2660.4	2648.7	2635.4	2620.1	2604.4
10°	2616.1	2628.2	2641.1	2653.2	2659.2	2663.2	2658.8	2646.7	2632.6	2616.5	2599.6
10.5°	2612.5	2625.4	2639.1	2652.0	2657.6	2661.6	2657.2	2644.3	2629.4	2612.5	2595.2
11°	2608.9	2622.2	2636.7	2649.9	2656.0	2660.0	2655.2	2641.9	2625.8	2608.1	2590.3
11.5°	2604.4	2618.5	2634.2	2648.3	2654.4	2658.4	2653.2	2639.1	2622.2	2604.0	2585.1
12°	2600.0	2614.9	2631.4	2646.3	2652.4	2656.4	2650.8	2635.8	2618.1	2599.2	2579.0
12.5°	2595.6	2611.3	2628.2	2643.9	2649.9	2654.4	2647.9	2632.2	2613.7	2594.0	2573.4
13°	2590.3	2606.8	2625.0	2641.1	2647.5	2652.0	2645.1	2628.2	2609.3	2588.3	2567.0
13.5°	2585.5	2602.4	2621.3	2638.7	2644.3	2649.1	2641.5	2624.2	2604.4	2582.7	2560.5
14°	2580.3	2597.6	2617.7	2635.4	2641.5	2645.9	2637.9	2619.7	2599.2	2576.6	2553.3
14.5°	2574.6	2592.7	2613.7	2632.2	2637.9	2642.7	2634.2	2614.9	2593.5	2570.2	2546.4
15°	2568.6	2587.9	2609.7	2628.6	2634.2	2639.1	2630.2	2609.7	2587.5	2562.9	2538.8
15.5°	2562.1	2582.3	2604.8	2624.6	2629.8	2635.0	2625.8	2604.4	2581.1	2555.7	2530.7
16°	2555.3	2576.6	2600.0	2620.1	2625.8	2630.6	2620.9	2598.4	2574.2	2548.0	2522.2
16.5°	2548.4	2570.6	2594.8	2615.7	2620.9	2626.2	2615.3	2591.9	2567.0	2540.0	2513.8
17°	2540.8	2564.1	2589.5	2610.9	2615.7	2621.3	2609.7	2585.1	2559.7	2531.5	2504.1
17.5°	2533.5	2557.3	2583.5	2605.6	2610.5	2616.1	2603.6	2577.8	2551.7	2523.0	2494.8
18°	2525.5	2550.4	2577.4	2599.6	2604.8	2610.5	2597.2	2570.2	2543.2	2513.4	2484.8
18.5°	2517.0	2542.8	2570.6	2594.0	2598.4	2604.0	2589.9	2562.5	2534.3	2503.7	2474.7
19°	2507.7	2535.1	2563.7	2587.5	2591.5	2597.2	2582.7	2554.1	2525.5	2493.6	2463.8
19.5°	2498.5	2527.1	2556.5	2580.7	2584.7	2590.7	2575.4	2545.2	2515.4	2483.2	2452.1
20°	2489.2	2518.2	2548.0	2573.4	2577.4	2583.1	2567.4	2535.5	2505.3	2471.9	2440.5
20.5°	2479.1	2509.4	2540.4	2565.8	2569.4	2575.0	2558.5	2525.9	2494.8	2460.6	2428.8
21°	2468.7	2500.1	2531.9	2558.1	2561.3	2566.6	2549.2	2515.4	2483.6	2448.5	2415.5



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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°	2434.8	2469.1	2503.3	2531.1	2533.5	2539.2	2519.0	2482.0	2447.7	2410.3	2375.2
23°	2422.7	2458.2	2493.2	2521.4	2523.9	2528.7	2508.1	2469.5	2434.8	2396.2	2360.3
23.5°	2409.8	2446.9	2482.4	2511.4	2513.4	2518.6	2496.1	2457.0	2420.7	2381.6	2345.4
24°	2397.0	2434.8	2470.7	2500.5	2502.1	2507.3	2484.4	2443.7	2407.0	2366.7	2330.1
24.5°	2383.3	2422.7	2459.8	2489.2	2490.4	2495.7	2471.9	2430.0	2392.9	2351.8	2314.0
25°	2369.6	2409.4	2447.3	2477.5	2478.3	2483.6	2459.0	2415.9	2378.0	2335.7	2297.5
25.5°	2355.1	2396.2	2434.8	2465.4	2465.8	2471.1	2445.3	2401.0	2362.3	2318.8	2280.5
26°	2339.8	2382.5	2421.1	2453.0	2453.4	2458.2	2431.2	2385.7	2345.8	2301.9	2262.8
26.5°	2324.4	2368.0	2408.2	2439.7	2439.3	2444.5	2416.3	2369.6	2329.7	2285.4	2245.5
27°	2308.7	2353.4	2394.1	2426.4	2425.6	2430.0	2401.4	2353.4	2312.8	2267.2	2226.6
27.5°	2292.6	2337.7	2379.2	2412.3	2411.1	2415.5	2385.7	2336.5	2295.4	2249.1	2207.6
28°	2276.1	2322.4	2364.7	2397.8	2396.2	2400.2	2369.6	2319.6	2277.3	2231.0	2187.9
28.5°	2258.4	2305.9	2348.6	2382.5	2380.4	2384.9	2352.6	2301.5	2258.8	2211.2	2168.1
29°	2240.7	2289.4	2332.9	2367.1	2364.7	2368.4	2334.9	2283.0	2239.8	2191.5	2146.8
29.5°	2222.1	2271.7	2316.0	2351.4	2348.2	2351.4	2317.2	2263.6	2220.1	2171.0	2124.2
30°	2203.6	2254.3	2299.5	2334.5	2331.3	2334.1	2298.7	2244.3	2200.0	2150.4	2100.9
30.5°	2183.4	2236.2	2281.3	2318.0	2313.6	2316.4	2280.1	2224.5	2178.6	2127.9	2076.3
31°	2163.7	2217.3	2263.6	2300.3	2295.4	2298.3	2260.4	2203.2	2158.1	2104.9	2051.3
31.5°	2143.6	2196.7	2245.1	2282.1	2276.5	2278.9	2240.2	2181.0	2135.1	2081.5	2024.7
32°	2122.6	2177.8	2225.7	2263.2	2258.8	2260.0	2218.9	2158.1	2112.1	2057.4	1996.9
32.5°	2100.5	2156.9	2206.0	2244.7	2238.6	2239.8	2196.3	2134.3	2088.4	2030.8	1967.1
33°	2077.5	2135.5	2186.3	2225.3	2218.5	2218.9	2173.0	2110.1	2063.8	2002.6	1934.9
33.5°	2052.5	2113.8	2165.7	2205.2	2197.5	2197.5	2149.6	2083.9	2036.8	1972.0	1899.0
34°	2027.5	2090.4	2144.0	2185.1	2176.6	2175.0	2123.8	2057.0	2008.6	1939.3	1858.7
34.5°	2000.1	2065.0	2120.6	2163.7	2154.4	2151.2	2098.4	2028.3	1978.0	1899.0	1814.4
35°	1971.1	2039.2	2097.2	2142.0	2131.9	2127.0	2071.1	1997.7	1943.3	1856.7	1765.7
35.5°	1938.5	2011.0	2071.5	2119.0	2108.5	2102.1	2042.4	1962.7	1903.5	1810.8	1712.1
36°	1905.1	1981.2	2045.3	2095.2	2084.7	2076.3	2010.6	1924.0	1860.8	1758.4	1655.3
36.5°	1866.8	1949.8	2016.7	2071.1	2058.6	2047.7	1976.8	1883.3	1812.0	1701.6	1596.9
37°	1822.5	1913.1	1986.9	2044.5	2031.2	2016.7	1940.5	1841.0	1756.0	1642.0	1537.3
37.5°	1770.1	1872.4	1953.8	2015.1	1999.7	1982.4	1900.6	1793.1	1694.0	1579.6	1474.4
38°	1713.7	1826.5	1916.0	1982.4	1965.9	1946.6	1858.7	1744.3	1629.9	1514.3	1410.4
38.5°	1654.9	1774.6	1874.1	1946.6	1928.0	1906.7	1816.0	1691.6	1565.5	1448.2	1345.1
39°	1596.1	1717.8	1829.7	1906.3	1887.4	1865.2	1769.3	1638.4	1505.9	1382.2	1280.3
39.5°	1538.1	1660.5	1781.4	1864.4	1840.6	1817.7	1720.6	1579.2	1447.8	1318.1	1215.4
40°	1480.1	1605.0	1729.4	1816.9	1787.8	1769.7	1667.4	1520.4	1389.4	1255.7	1150.1
40.5°	1419.2	1551.4	1673.0	1765.7	1724.6	1716.5	1614.2	1457.5	1328.6	1192.8	1086.1
41°	1358.8	1495.0	1613.8	1710.5	1659.7	1663.8	1559.0	1395.1	1265.4	1128.4	1022.8
41.5°	1298.0	1437.4	1553.4	1651.7	1593.3	1606.6	1503.0	1332.2	1202.9	1064.3	962.0
42°	1237.2	1376.9	1492.6	1588.4	1530.8	1546.1	1445.0	1272.2	1140.9	1004.7	900.0
42.5°	1176.7	1313.3	1430.1	1522.8	1473.2	1483.3	1382.6	1209.0	1080.4	945.1	840.3
43°	1118.3	1250.0	1365.3	1454.7	1414.8	1421.3	1317.3	1146.9	1022.4	888.7	785.2
43.5°	1060.3	1187.6	1302.0	1388.6	1353.6	1358.0	1252.9	1084.5	965.6	834.3	730.8



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	886.7	1004.3	1107.4	1187.2	1163.0	1172.7	1055.5	903.6	793.2	681.6	589.4
45.5°	831.1	943.9	1041.8	1124.8	1101.4	1111.5	988.6	844.8	738.8	632.9	547.5
46°	776.3	883.9	975.7	1059.9	1042.2	1049.4	929.0	787.2	686.1	588.2	510.4
46.5°	723.5	825.0	913.3	999.9	983.8	987.4	865.7	730.8	636.5	543.0	475.4
47°	672.0	767.8	851.2	940.3	925.3	926.6	807.7	677.6	590.2	503.2	443.5
47.5°	620.4	711.4	795.6	883.4	866.1	866.1	751.7	625.6	544.7	466.5	414.1
48°	574.9	659.1	740.8	828.3	807.7	808.1	698.9	576.9	502.0	433.1	387.9
48.5°	531.4	609.1	688.5	776.3	751.7	751.3	645.4	530.2	462.1	401.6	367.8
49°	491.9	562.0	640.5	723.5	698.5	694.9	596.6	487.9	425.8	379.1	347.3
49.5°	456.0	520.9	595.4	674.0	648.6	641.3	551.1	449.6	393.6	356.5	326.7
50°	427.0	481.8	553.9	625.2	600.6	589.0	508.8	415.3	371.4	334.0	306.2
50.5°	400.8	448.0	514.0	578.5	554.3	541.8	467.3	385.1	349.3	311.4	285.6
51°	377.1	417.8	478.2	535.4	508.0	497.1	431.5	362.2	327.1	289.2	272.7
51.5°	355.3	392.4	445.1	495.5	468.5	458.8	398.4	338.8	305.0	275.5	260.6
52°	336.4	368.6	414.9	458.4	430.6	423.0	375.1	315.4	283.2	263.5	249.0
52.5°	318.3	348.1	388.3	425.0	396.8	391.2	351.7	292.5	270.3	251.8	236.9
53°	300.9	328.7	363.0	395.2	374.2	367.0	328.7	277.6	258.2	239.7	225.6
53.5°	285.2	311.0	340.4	368.2	352.1	343.2	305.4	265.1	246.1	228.0	214.7
54°	273.1	294.1	319.1	342.8	329.5	319.1	282.4	253.0	234.5	216.7	204.6
54.5°	261.0	280.4	300.5	321.1	307.0	295.3	269.1	240.5	222.8	206.3	195.0
55°	248.6	267.5	284.4	300.9	284.8	280.4	256.6	228.4	211.5	196.2	185.7
55.5°	236.9	255.4	271.5	284.4	271.1	267.9	244.1	217.1	201.0	186.9	177.7
56°	225.6	243.3	258.6	271.1	259.0	255.0	231.6	205.9	191.8	178.5	169.6
56.5°	214.7	231.6	246.9	258.6	246.1	242.5	220.0	195.8	182.9	170.4	162.3
57°	204.2	220.4	234.5	246.1	233.7	230.4	209.1	186.5	174.0	163.2	155.5
57.5°	195.0	209.5	223.2	234.1	222.0	218.3	198.6	178.1	166.4	156.3	149.1
58°	185.7	199.4	211.9	222.0	210.7	207.5	188.9	169.6	159.1	149.5	143.0
58.5°	177.7	190.1	201.8	211.1	200.2	197.4	180.1	161.9	152.3	143.4	137.0
59°	169.6	181.7	192.2	200.6	190.5	187.7	171.6	154.7	145.8	137.4	131.3
59.5°	162.8	173.6	183.3	191.0	181.3	178.9	163.6	148.2	139.4	131.7	126.1
60°	155.5	166.0	174.8	182.1	172.8	170.4	156.3	142.2	133.3	126.5	121.3
60.5°	148.7	158.7	167.2	173.6	165.2	162.8	149.9	136.2	128.1	121.3	116.4
61°	143.0	152.3	159.9	165.6	157.9	155.5	143.4	130.5	122.5	116.4	112.0
61.5°	137.4	145.4	153.1	158.3	151.1	149.1	137.4	125.3	117.2	112.0	107.6
62°	131.7	140.2	146.6	151.5	144.6	142.2	131.7	120.0	112.4	107.2	103.5
62.5°	126.1	134.6	141.4	144.6	138.6	136.6	126.1	115.2	108.0	103.1	99.5
63°	120.5	129.3	135.8	139.4	132.5	130.5	121.3	110.8	103.5	99.1	95.5
63.5°	115.6	123.7	130.5	133.7	127.3	125.3	116.4	106.4	99.5	95.1	91.8
64°	110.8	118.4	124.9	128.5	122.1	120.5	111.6	101.9	95.1	91.0	88.2
64.5°	106.4	113.6	119.2	123.3	117.2	115.6	107.6	97.9	91.4	87.8	84.6
65°	101.9	108.8	114.8	118.0	112.8	111.2	103.1	93.9	87.8	83.8	81.4
65.5°	97.5	104.7	110.0	113.6	108.0	106.8	99.1	90.2	84.2	80.6	78.2
66°	93.9	100.3	105.9	109.2	103.9	102.7	95.1	86.6	80.6	77.3	74.9





TEST NUMBER: P776508

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMW-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	82.6	88.6	93.9	96.7	92.3	91.0	84.6	76.5	70.9	68.1	66.1
68°	79.0	85.0	90.2	93.1	88.6	87.4	81.4	73.3	68.1	65.3	63.2
68.5°	75.7	81.4	86.6	89.4	85.0	83.8	77.8	70.1	65.3	62.4	60.8
69°	72.5	78.2	83.0	85.8	81.8	80.6	74.9	67.3	62.4	59.6	58.0
69.5°	69.7	74.9	79.8	82.2	78.6	77.3	71.7	64.5	59.6	57.2	55.6
70°	66.5	71.7	76.5	79.0	75.3	74.1	68.9	61.6	57.2	54.4	53.2
70.5°	63.7	68.9	73.3	75.7	72.1	71.3	66.1	58.8	54.4	52.0	50.8
71°	60.8	65.7	70.5	72.9	69.3	68.5	63.2	56.4	52.0	49.6	48.3
71.5°	58.0	62.8	67.7	69.7	66.5	65.7	60.8	54.0	49.6	47.1	45.9
72°	55.6	60.4	64.9	66.9	63.7	62.8	58.0	51.6	47.1	44.7	43.9
72.5°	53.2	57.6	62.0	64.1	61.2	60.0	55.6	49.1	45.1	42.7	41.5
73°	50.8	55.2	59.2	61.6	58.4	57.6	53.2	46.7	42.7	40.7	39.5
73.5°	48.3	52.4	56.8	58.8	56.0	55.2	50.8	44.7	40.7	38.3	37.5
74°	45.9	50.0	54.4	56.4	53.6	52.8	48.3	42.3	38.7	36.3	35.5
74.5°	43.5	47.5	51.6	54.0	51.2	50.4	46.3	40.3	36.7	34.2	33.8
75°	41.5	45.5	49.6	51.6	48.7	47.9	43.9	38.3	34.6	32.6	31.8
75.5°	39.1	43.1	47.1	49.1	46.7	45.9	41.9	36.3	32.6	30.6	29.8
76°	37.1	40.7	44.7	47.1	44.3	43.9	39.9	34.2	30.6	28.6	28.2
76.5°	35.0	38.7	42.7	44.7	42.3	41.5	37.9	32.2	29.0	27.0	26.2
77°	33.0	36.7	40.3	42.7	40.3	39.5	35.9	30.6	27.0	25.0	24.6
77.5°	31.0	34.6	38.3	40.3	38.3	37.5	33.8	28.6	25.4	23.4	22.6
78°	29.4	32.6	36.3	38.3	36.3	35.5	31.8	26.6	23.4	21.8	20.9
78.5°	27.4	30.6	34.2	36.7	34.2	33.8	30.2	25.0	21.8	20.1	19.3
79°	25.8	29.0	32.6	34.6	32.2	31.8	28.2	23.4	20.1	18.5	18.1
79.5°	23.8	27.0	30.6	32.6	30.6	30.2	26.2	21.8	18.9	16.9	16.5
80°	22.2	25.4	28.6	30.6	28.6	28.2	24.6	20.1	17.3	15.3	14.9
80.5°	20.5	23.4	27.0	29.0	27.0	26.2	23.0	18.5	15.7	14.1	13.7
81°	18.9	21.8	25.0	27.0	25.4	25.0	21.4	16.9	14.5	12.5	12.1
81.5°	17.3	20.1	23.4	25.4	23.4	23.0	19.7	15.3	12.9	11.3	10.9
82°	16.1	18.5	21.8	23.8	21.8	21.4	18.5	14.1	11.7	10.1	9.7
82.5°	14.5	16.9	20.1	22.2	20.5	20.1	16.9	12.5	10.5	8.9	8.5
83°	13.3	15.7	18.5	20.5	18.9	18.5	15.3	11.3	9.3	7.7	7.3
83.5°	11.7	14.1	17.3	18.9	17.3	16.9	14.1	10.1	8.1	6.4	6.4
84°	10.5	12.9	15.7	17.7	16.1	15.7	12.9	8.9	6.8	5.2	5.2
84.5°	9.3	11.3	14.5	16.1	14.5	14.1	11.7	7.7	5.6	4.0	4.4
85°	8.1	10.1	12.9	14.9	13.3	12.9	10.1	6.4	4.8	3.2	3.2
85.5°	6.8	8.9	11.7	13.7	12.1	11.7	8.9	5.2	3.6	2.4	2.4
86°	5.6	7.7	10.1	12.1	10.9	10.5	8.1	4.4	2.8	2.0	1.6
86.5°	4.4	6.4	8.9	10.9	9.7	9.3	6.8	3.6	2.0	1.2	0.8
87°	3.6	5.2	8.1	9.7	8.5	8.1	5.6	2.8	1.6	0.8	0.0
87.5°	2.8	4.0	6.8	8.5	7.3	6.8	4.8	2.0	0.8	0.4	0.0
88°	2.0	3.2	5.6	7.3	6.0	6.0	4.0	1.6	0.4	0.0	0.0
88.5°	1.2	2.4	4.8	6.0	5.2	4.8	2.8	0.8	0.0	0.0	0.0



TEST NUMBER: P776508  
CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMW-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.4	2.0	3.2	2.0	2.0	0.4	0.0	0.0	0.0	0.0



TEST NUMBER: P776508

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMW-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2652.8	2652.8	2652.8	2652.8	2652.8	2652.8
0.5°	2649.5	2651.6	2652.0	2653.6	2653.2	2651.6
1°	2647.9	2649.5	2649.9	2652.0	2652.0	2651.2
1.5°	2645.9	2647.1	2647.9	2649.9	2650.3	2650.3
2°	2643.9	2645.1	2645.5	2647.9	2649.1	2649.5
2.5°	2641.5	2642.7	2643.1	2645.9	2647.5	2648.7
3°	2639.5	2640.3	2640.7	2643.5	2645.5	2647.5
3.5°	2636.7	2637.5	2637.9	2641.5	2643.9	2645.9
4°	2634.2	2634.6	2635.4	2639.1	2642.3	2644.7
4.5°	2631.4	2631.8	2632.2	2636.7	2640.3	2643.5
5°	2628.2	2628.6	2629.0	2633.8	2638.3	2641.5
5.5°	2625.0	2625.4	2625.8	2631.4	2635.8	2639.9
6°	2621.3	2621.3	2622.2	2628.2	2633.4	2637.9
6.5°	2617.7	2618.1	2618.5	2625.0	2630.6	2635.8
7°	2613.7	2614.1	2614.9	2621.7	2628.2	2633.8
7.5°	2609.7	2610.1	2610.5	2618.5	2625.4	2631.4
8°	2605.6	2605.2	2606.4	2614.5	2622.2	2628.6
8.5°	2600.8	2600.8	2602.0	2610.9	2618.9	2625.8
9°	2596.4	2596.0	2597.2	2606.8	2615.7	2623.0
9.5°	2591.1	2591.5	2591.9	2602.0	2612.1	2619.7
10°	2585.9	2585.9	2587.1	2597.6	2608.1	2616.1
10.5°	2580.7	2580.3	2581.5	2592.7	2604.0	2612.5
11°	2574.6	2574.6	2575.8	2587.9	2599.6	2608.9
11.5°	2568.6	2568.6	2569.4	2582.7	2595.2	2604.4
12°	2562.1	2562.1	2563.3	2577.0	2590.3	2600.0
12.5°	2555.7	2555.3	2556.5	2571.0	2584.7	2595.6
13°	2548.8	2548.4	2549.2	2564.5	2579.4	2590.3
13.5°	2541.6	2541.2	2542.4	2558.1	2573.8	2585.5
14°	2533.9	2533.5	2534.7	2551.2	2567.8	2580.3
14.5°	2525.9	2525.9	2526.7	2544.0	2561.3	2574.6
15°	2517.8	2517.4	2518.6	2536.3	2554.5	2568.6
15.5°	2509.4	2508.5	2509.8	2527.9	2547.6	2562.1
16°	2500.1	2500.1	2500.5	2519.4	2540.0	2555.3
16.5°	2490.8	2490.8	2491.2	2510.6	2532.3	2548.4
17°	2480.7	2481.2	2481.6	2501.3	2523.9	2540.8
17.5°	2471.1	2471.1	2471.1	2492.0	2515.4	2533.5
18°	2460.2	2461.0	2460.6	2481.6	2506.1	2525.5
18.5°	2449.3	2449.7	2449.3	2471.1	2496.9	2517.0
19°	2438.0	2438.5	2438.0	2459.8	2486.8	2507.7
19.5°	2426.0	2427.6	2426.4	2448.9	2476.3	2498.5
20°	2413.9	2415.5	2413.5	2436.4	2465.4	2489.2
20.5°	2401.4	2402.6	2401.0	2424.8	2454.6	2479.1
21°	2388.1	2389.7	2387.7	2411.9	2443.3	2468.7

TEST NUMBER: P776508

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMW-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2346.2	2347.8	2345.4	2370.8	2405.8	2434.8
23°	2330.9	2333.3	2330.1	2356.7	2392.1	2422.7
23.5°	2315.2	2318.0	2315.2	2341.4	2378.4	2409.8
24°	2299.1	2302.3	2299.1	2326.1	2363.9	2397.0
24.5°	2283.0	2286.2	2282.5	2310.7	2349.4	2383.3
25°	2265.6	2269.3	2265.6	2293.8	2334.1	2369.6
25.5°	2248.3	2252.3	2248.3	2277.3	2318.8	2355.1
26°	2229.8	2234.6	2231.0	2260.0	2302.7	2339.8
26.5°	2212.0	2216.9	2212.5	2242.7	2286.6	2324.4
27°	2192.7	2197.9	2193.5	2224.5	2269.3	2308.7
27.5°	2173.4	2178.6	2174.6	2206.0	2251.9	2292.6
28°	2153.2	2158.9	2154.4	2186.7	2234.2	2276.1
28.5°	2131.9	2139.1	2134.7	2167.3	2216.1	2258.4
29°	2108.5	2117.8	2113.8	2147.6	2197.1	2240.7
29.5°	2084.3	2096.0	2092.0	2127.5	2177.4	2222.1
30°	2059.8	2073.1	2068.6	2106.9	2158.1	2203.6
30.5°	2033.6	2048.1	2044.1	2085.2	2137.9	2183.4
31°	2006.2	2022.3	2017.5	2061.8	2117.4	2163.7
31.5°	1977.2	1994.1	1990.9	2037.6	2096.0	2143.6
32°	1945.8	1964.3	1962.7	2011.4	2072.7	2122.6
32.5°	1912.7	1932.5	1933.3	1984.4	2048.9	2100.5
33°	1876.9	1897.8	1901.9	1955.4	2023.5	2077.5
33.5°	1835.0	1861.2	1866.8	1925.2	1996.9	2052.5
34°	1787.4	1818.5	1827.7	1892.2	1969.1	2027.5
34.5°	1734.3	1769.3	1779.8	1855.5	1938.9	2000.1
35°	1679.1	1713.7	1725.0	1813.2	1907.1	1971.1
35.5°	1621.9	1656.1	1666.2	1765.3	1871.6	1938.5
36°	1563.1	1600.9	1603.7	1713.3	1830.1	1905.1
36.5°	1506.7	1547.7	1540.5	1656.9	1783.4	1866.8
37°	1450.3	1492.2	1478.5	1598.9	1731.0	1822.5
37.5°	1393.1	1430.9	1418.8	1536.1	1673.4	1770.1
38°	1334.2	1367.3	1360.8	1471.2	1613.8	1713.7
38.5°	1270.6	1302.8	1299.2	1407.2	1552.6	1654.9
39°	1207.7	1241.2	1238.4	1342.7	1490.9	1596.1
39.5°	1143.3	1182.8	1176.7	1279.0	1426.5	1538.1
40°	1081.2	1125.6	1116.7	1212.6	1363.6	1480.1
40.5°	1018.0	1069.2	1056.7	1147.7	1300.4	1419.2
41°	956.8	1010.3	999.9	1084.1	1238.8	1358.8
41.5°	897.1	951.1	943.5	1026.1	1179.1	1298.0
42°	837.5	892.3	886.7	966.8	1118.7	1237.2
42.5°	778.3	836.3	832.3	910.8	1055.5	1176.7
43°	721.5	783.1	779.9	856.9	996.2	1118.3
43.5°	669.5	729.6	728.4	805.3	938.6	1060.3



TEST NUMBER: P776508

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMW-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	534.6	577.7	591.4	665.1	775.9	886.7
45.5°	496.7	532.2	551.1	623.6	726.7	831.1
46°	462.1	491.5	513.6	584.5	679.6	776.3
46.5°	431.9	456.8	479.0	547.9	636.5	723.5
47°	405.3	427.0	447.2	513.2	594.2	672.0
47.5°	380.7	400.8	418.6	480.2	555.5	620.4
48°	361.8	378.3	392.8	449.6	518.9	574.9
48.5°	343.2	358.1	369.8	421.8	485.8	531.4
49°	324.3	339.6	348.1	395.6	454.4	491.9
49.5°	305.4	321.1	328.3	371.4	425.0	456.0
50°	286.8	303.7	309.8	348.1	398.4	427.0
50.5°	274.3	288.4	293.3	327.1	373.8	400.8
51°	262.3	275.5	279.2	307.8	351.3	377.1
51.5°	250.6	263.9	267.1	290.5	329.9	355.3
52°	238.9	252.2	255.4	276.8	310.6	336.4
52.5°	227.6	240.5	243.7	265.1	293.7	318.3
53°	216.7	228.8	232.0	253.0	279.6	300.9
53.5°	206.3	218.3	220.8	240.9	267.5	285.2
54°	197.0	207.9	210.3	229.2	255.0	273.1
54.5°	188.1	198.2	201.0	218.3	242.9	261.0
55°	179.7	189.3	191.8	207.9	231.2	248.6
55.5°	172.0	180.9	183.3	198.6	220.4	236.9
56°	164.4	172.8	174.8	189.3	209.9	225.6
56.5°	157.5	165.6	167.6	180.9	200.2	214.7
57°	151.1	158.3	160.3	173.2	191.0	204.2
57.5°	145.0	151.9	153.5	165.6	182.5	195.0
58°	138.6	145.4	147.4	158.7	174.4	185.7
58.5°	133.3	139.8	142.2	151.9	166.8	177.7
59°	127.7	134.6	136.6	145.4	159.5	169.6
59.5°	122.9	129.3	131.3	140.2	153.1	162.8
60°	118.0	124.1	126.1	135.0	146.6	155.5
60.5°	113.2	119.2	120.5	129.7	141.4	148.7
61°	108.8	114.4	115.6	124.5	136.2	143.0
61.5°	104.7	110.0	111.2	119.2	130.5	137.4
62°	100.7	105.9	107.2	114.8	125.3	131.7
62.5°	96.7	101.5	102.7	110.4	120.0	126.1
63°	92.7	97.5	98.7	105.9	115.2	120.5
63.5°	89.0	93.9	95.1	101.5	110.8	115.6
64°	85.8	90.2	91.0	97.9	105.9	110.8
64.5°	82.2	86.6	87.8	93.9	101.9	106.4
65°	79.0	83.4	84.2	90.2	97.9	101.9
65.5°	75.7	79.8	81.0	86.6	93.9	97.5
66°	72.9	76.5	77.3	83.4	90.2	93.9



TEST NUMBER: P776508

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMW-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	64.1	67.7	68.5	73.7	79.4	82.6
68°	61.6	64.9	65.7	70.5	76.1	79.0
68.5°	58.8	62.0	62.8	67.7	72.9	75.7
69°	56.4	59.6	60.4	64.9	69.7	72.5
69.5°	54.0	56.8	57.6	62.0	66.9	69.7
70°	51.6	54.4	55.2	59.6	64.1	66.5
70.5°	49.1	52.0	52.8	56.8	61.2	63.7
71°	46.7	49.6	50.4	54.4	58.4	60.8
71.5°	44.7	47.5	47.9	52.0	56.0	58.0
72°	42.7	45.1	45.5	49.6	53.2	55.6
72.5°	40.3	43.1	43.5	47.1	50.8	53.2
73°	38.3	40.7	41.5	45.1	48.3	50.8
73.5°	36.7	38.7	39.1	42.7	45.9	48.3
74°	34.2	36.7	37.1	40.7	43.9	45.9
74.5°	32.6	34.6	35.0	38.3	41.5	43.5
75°	30.6	32.6	33.4	36.3	39.5	41.5
75.5°	29.0	31.0	31.4	34.2	37.1	39.1
76°	27.0	29.0	29.4	32.6	35.5	37.1
76.5°	25.4	27.4	27.8	30.6	33.4	35.0
77°	23.8	25.4	25.8	28.6	31.4	33.0
77.5°	21.8	23.8	24.2	27.0	29.4	31.0
78°	20.5	22.2	22.6	25.0	27.4	29.4
78.5°	18.9	20.5	20.9	23.4	25.8	27.4
79°	17.3	18.9	19.3	21.8	23.8	25.8
79.5°	16.1	17.7	17.7	20.1	22.2	23.8
80°	14.5	16.1	16.5	18.5	20.5	22.2
80.5°	13.3	14.9	14.9	16.9	18.9	20.5
81°	11.7	13.3	13.7	15.7	17.3	18.9
81.5°	10.5	12.1	12.5	14.1	15.7	17.3
82°	9.3	10.9	11.3	12.9	14.5	16.1
82.5°	8.1	9.7	10.1	11.7	12.9	14.5
83°	6.8	8.5	8.5	10.1	11.7	13.3
83.5°	6.0	7.3	7.3	8.9	10.1	11.7
84°	4.8	6.0	6.4	7.7	8.9	10.5
84.5°	3.6	4.8	5.2	6.8	7.7	9.3
85°	2.8	4.0	4.0	5.6	6.4	8.1
85.5°	1.6	2.8	3.2	4.4	5.2	6.8
86°	0.8	2.0	2.0	3.6	4.4	5.6
86.5°	0.0	0.8	0.8	2.4	3.6	4.4
87°	0.0	0.0	0.0	1.6	2.8	3.6
87.5°	0.0	0.0	0.0	0.8	2.0	2.8
88°	0.0	0.0	0.0	0.0	1.2	2.0
88.5°	0.0	0.0	0.0	0.0	0.8	1.2



TEST NUMBER: P776508  
CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMW-4000lm-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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Scaled Data Report





21.5°	2457.8	2490.0	2522.6	2549.6	2552.5	2557.7	2539.6	2504.9	2471.9	2436.4	2402.6
22°	2446.1	2479.9	2513.0	2540.8	2543.2	2548.8	2529.5	2493.2	2460.2	2423.1	2389.3



44°	1002.3	1126.0	1238.4	1320.5	1290.3	1296.8	1188.0	1024.9	908.4	783.9	680.8
44.5°	943.5	1065.1	1173.9	1256.1	1225.9	1235.9	1121.5	963.2	850.8	730.8	633.7



66.5°	89.8	96.3	101.9	104.7	99.9	98.3	91.4	83.0	77.3	74.1	72.1
67°	86.2	92.3	97.5	100.7	95.9	94.7	87.8	79.8	74.1	70.9	68.9



89°	0.4	2.0	3.6	5.2	4.0	4.0	2.0	0.4	0.0	0.0	0.0
89.5°	0.0	1.2	2.8	4.0	3.2	2.8	1.2	0.0	0.0	0.0	0.0



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21.5°	2374.8	2376.0	2374.0	2398.2	2431.2	2457.8
22°	2360.3	2362.3	2359.9	2385.3	2418.3	2446.1

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44°	622.0	677.6	680.0	755.3	881.4	1002.3
44.5°	576.5	626.0	633.3	709.8	827.5	943.5



66.5°	69.7	73.7	74.5	79.8	86.2	89.8
67°	66.9	70.5	71.3	76.9	83.0	86.2

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89°	0.0	0.0	0.0	0.0	0.0	0.4
89.5°	0.0	0.0	0.0	0.0	0.0	0.0

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Scaled Data Report



(END OF REPORT)