

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: P776509

Luminaire Tested: HCDJBL3040CSD-HCD8TRMW-4000lm-5000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776509
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-5000K
Description: 8 INCH ROUND MEDIUM MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

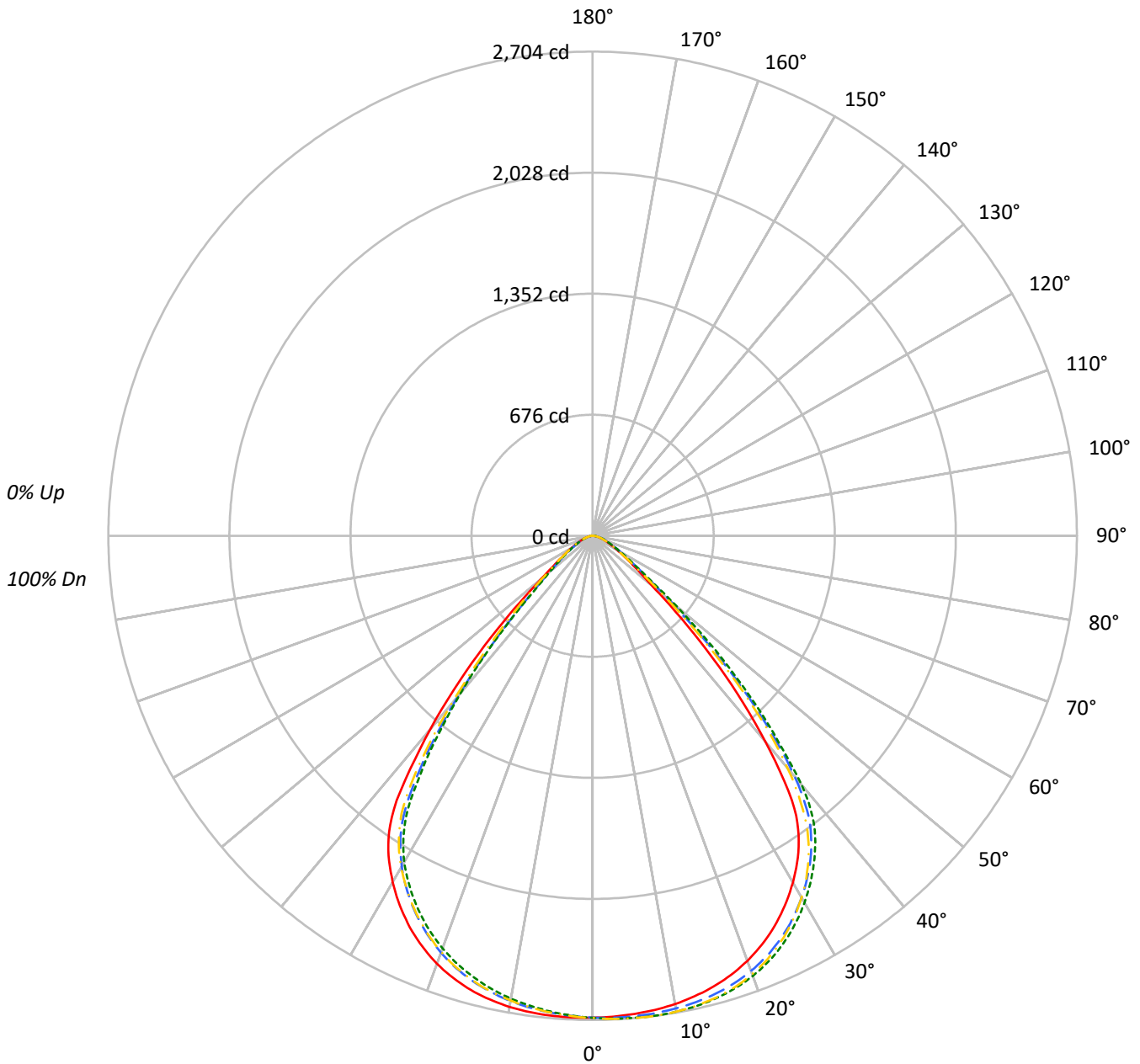
Lumens per Lamp: N/A
Luminaire Lumens: 4360.5 lumens
Efficiency: N/A
Efficacy: 113.3 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.22 / 1.18
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

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										
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	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°	82188	82188	82188	82188
5°	82152	82829	82440	81751
10°	82302	83660	82823	81354
15°	82388	84493	82994	80747
20°	82072	84980	82602	79642
25°	81006	84721	81292	77576
30°	78833	83402	78703	74166
35°	74552	80631	73501	64817
40°	59861	72308	56195	45522
45°	38850	50957	34757	25310
50°	20580	28949	17901	14638
55°	13424	15383	11423	10225
60°	9635	10710	8261	7688
65°	7470	8272	6437	6112
70°	6025	6820	5186	4927
75°	4966	5839	4152	3904
80°	3956	5099	3094	2883
85°	2872	4729	1716	1436

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 45°
 Luminance: 52019 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	255.6	5.9
10°-20°	737.9	16.9
20°-30°	1106.9	25.4
30°-40°	1198.0	27.5
40°-50°	682.4	15.6
50°-60°	226.5	5.2
60°-70°	100.0	2.3
70°-80°	43.6	1.0
80°-90°	9.7	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°	2100.4	48.2
0°-40°	3298.4	75.6
0°-60°	4207.3	96.5
0°-90°	4360.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4360.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2692	2692	2692	2692	2692	
5°	2681	2703	2690	2668	2681	255
15°	2607	2673	2626	2555	2607	735
25°	2405	2515	2413	2303	2405	1105
35°	2000	2163	1972	1739	2000	1218
45°	900	1180	805	586	900	700
55°	252	289	215	192	252	235
65°	103	114	89	85	103	105
75°	42	50	35	33	42	45
85°	8	14	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°	2692.0	2692.0	2692.0	2692.0	2692.0	2692.0	2692.0	2692.0	2692.0	2692.0	2692.0
0.5°	2690.8	2691.6	2691.6	2692.0	2693.7	2694.9	2696.1	2694.5	2692.0	2690.8	2689.6
1°	2690.4	2691.6	2692.0	2692.9	2695.3	2696.5	2697.4	2695.3	2692.5	2690.4	2688.4
1.5°	2689.6	2691.2	2692.9	2694.1	2696.5	2698.2	2698.6	2696.1	2692.5	2690.0	2687.1
2°	2688.8	2691.2	2693.3	2695.3	2697.8	2699.8	2699.8	2697.0	2692.5	2689.2	2685.5
2.5°	2688.0	2690.8	2693.7	2696.1	2699.0	2700.6	2700.6	2697.4	2692.5	2688.4	2683.9
3°	2686.7	2690.4	2693.7	2697.0	2700.2	2702.3	2701.5	2697.8	2692.5	2687.1	2682.2
3.5°	2685.1	2690.0	2693.7	2697.8	2701.0	2703.1	2702.7	2697.8	2691.6	2686.3	2680.2
4°	2683.9	2689.2	2693.7	2698.2	2701.9	2703.9	2703.1	2698.2	2691.2	2685.1	2678.1
4.5°	2682.6	2688.0	2693.3	2698.6	2702.3	2704.7	2703.5	2698.2	2690.8	2683.5	2676.1
5°	2680.6	2686.7	2692.9	2698.6	2702.7	2705.1	2703.9	2697.8	2690.0	2681.8	2673.7
5.5°	2679.0	2685.9	2692.5	2699.0	2702.7	2705.5	2703.9	2697.4	2689.2	2680.2	2671.2
6°	2676.9	2684.3	2691.6	2699.0	2703.1	2705.9	2704.3	2697.0	2688.0	2678.1	2668.3
6.5°	2674.9	2683.1	2690.8	2698.6	2703.1	2705.9	2704.3	2696.1	2686.7	2676.1	2665.5
7°	2672.8	2681.0	2690.0	2698.2	2703.1	2705.9	2703.9	2695.3	2685.1	2673.7	2662.2
7.5°	2670.4	2679.4	2688.8	2697.8	2702.7	2705.9	2703.5	2694.5	2683.5	2671.2	2658.9
8°	2667.5	2677.3	2687.6	2697.0	2702.3	2705.5	2702.7	2693.3	2681.4	2668.7	2655.3
8.5°	2664.7	2675.3	2685.9	2696.1	2701.5	2705.1	2701.9	2691.6	2679.4	2665.5	2651.6
9°	2661.8	2672.8	2684.3	2694.9	2700.6	2704.7	2701.0	2690.0	2676.9	2662.6	2647.5
9.5°	2658.5	2670.0	2682.6	2694.1	2699.8	2703.5	2699.8	2688.0	2674.5	2658.9	2643.0
10°	2654.8	2667.1	2680.2	2692.5	2698.6	2702.7	2698.2	2685.9	2671.6	2655.3	2638.1
10.5°	2651.2	2664.2	2678.1	2691.2	2697.0	2701.0	2696.5	2683.5	2668.3	2651.2	2633.6
11°	2647.5	2661.0	2675.7	2689.2	2695.3	2699.4	2694.5	2681.0	2664.7	2646.7	2628.7
11.5°	2643.0	2657.3	2673.2	2687.6	2693.7	2697.8	2692.5	2678.1	2661.0	2642.6	2623.4
12°	2638.5	2653.6	2670.4	2685.5	2691.6	2695.7	2690.0	2674.9	2656.9	2637.7	2617.2
12.5°	2634.0	2649.9	2667.1	2683.1	2689.2	2693.7	2687.1	2671.2	2652.4	2632.4	2611.5
13°	2628.7	2645.4	2663.8	2680.2	2686.7	2691.2	2684.3	2667.1	2647.9	2626.6	2605.0
13.5°	2623.8	2640.9	2660.2	2677.7	2683.5	2688.4	2680.6	2663.0	2643.0	2620.9	2598.4
14°	2618.5	2636.0	2656.5	2674.5	2680.6	2685.1	2676.9	2658.5	2637.7	2614.8	2591.1
14.5°	2612.7	2631.1	2652.4	2671.2	2676.9	2681.8	2673.2	2653.6	2632.0	2608.2	2584.1
15°	2606.6	2626.2	2648.3	2667.5	2673.2	2678.1	2669.2	2648.3	2625.8	2600.9	2576.4
15.5°	2600.1	2620.5	2643.4	2663.4	2668.7	2674.1	2664.7	2643.0	2619.3	2593.5	2568.2
16°	2593.1	2614.8	2638.5	2658.9	2664.7	2669.6	2659.8	2636.9	2612.3	2585.8	2559.6
16.5°	2586.2	2608.6	2633.2	2654.4	2659.8	2665.1	2654.0	2630.3	2605.0	2577.6	2551.0
17°	2578.4	2602.1	2627.9	2649.5	2654.4	2660.2	2648.3	2623.4	2597.6	2569.0	2541.2
17.5°	2571.0	2595.2	2621.7	2644.2	2649.1	2654.8	2642.2	2616.0	2589.4	2560.4	2531.8
18°	2562.9	2588.2	2615.6	2638.1	2643.4	2649.1	2635.6	2608.2	2580.8	2550.6	2521.6
18.5°	2554.3	2580.4	2608.6	2632.4	2636.9	2642.6	2628.3	2600.5	2571.9	2540.8	2511.4
19°	2544.9	2572.7	2601.7	2625.8	2629.9	2635.6	2620.9	2591.9	2562.9	2530.6	2500.3
19.5°	2535.5	2564.5	2594.3	2618.9	2623.0	2629.1	2613.6	2582.9	2552.6	2519.9	2488.5
20°	2526.1	2555.5	2585.8	2611.5	2615.6	2621.3	2605.4	2573.1	2542.4	2508.5	2476.6
20.5°	2515.8	2546.5	2578.0	2603.7	2607.4	2613.1	2596.4	2563.3	2531.8	2497.0	2464.7
21°	2505.2	2537.1	2569.4	2596.0	2599.2	2604.6	2587.0	2552.6	2520.3	2484.8	2451.3



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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°	2470.9	2505.6	2540.4	2568.6	2571.0	2576.8	2556.3	2518.7	2484.0	2445.9	2410.4
23°	2458.6	2494.6	2530.2	2558.8	2561.2	2566.1	2545.3	2506.0	2470.9	2431.6	2395.2
23.5°	2445.5	2483.1	2519.1	2548.6	2550.6	2555.9	2533.0	2493.4	2456.6	2416.9	2380.1
24°	2432.5	2470.9	2507.3	2537.5	2539.2	2544.5	2521.2	2479.9	2442.7	2401.8	2364.6
24.5°	2418.6	2458.6	2496.2	2526.1	2527.3	2532.6	2508.5	2466.0	2428.4	2386.7	2348.2
25°	2404.7	2445.1	2483.6	2514.2	2515.0	2520.3	2495.4	2451.7	2413.2	2370.3	2331.5
25.5°	2389.9	2431.6	2470.9	2501.9	2502.4	2507.7	2481.5	2436.5	2397.3	2353.1	2314.3
26°	2374.4	2417.7	2457.0	2489.3	2489.7	2494.6	2467.2	2421.0	2380.5	2336.0	2296.3
26.5°	2358.9	2403.0	2443.9	2475.8	2475.4	2480.7	2452.1	2404.7	2364.2	2319.2	2278.7
27°	2342.9	2388.3	2429.6	2462.3	2461.5	2466.0	2436.9	2388.3	2347.0	2300.8	2259.5
27.5°	2326.6	2372.4	2414.5	2448.0	2446.8	2451.3	2421.0	2371.1	2329.4	2282.4	2240.3
28°	2309.8	2356.8	2399.7	2433.3	2431.6	2435.7	2404.7	2354.0	2311.0	2264.0	2220.3
28.5°	2291.8	2340.1	2383.4	2417.7	2415.7	2420.2	2387.5	2335.6	2292.2	2244.0	2200.2
29°	2273.8	2323.3	2367.4	2402.2	2399.7	2403.4	2369.5	2316.8	2273.0	2224.0	2178.6
29.5°	2255.0	2305.3	2350.3	2386.3	2383.0	2386.3	2351.5	2297.1	2253.0	2203.1	2155.7
30°	2236.2	2287.7	2333.5	2369.1	2365.8	2368.7	2332.7	2277.5	2232.5	2182.3	2132.0
30.5°	2215.8	2269.3	2315.1	2352.3	2347.8	2350.7	2313.9	2257.5	2210.9	2159.4	2107.0
31°	2195.7	2250.1	2297.1	2334.3	2329.4	2332.3	2293.9	2235.8	2190.0	2136.1	2081.7
31.5°	2175.3	2229.3	2278.3	2315.9	2310.2	2312.7	2273.4	2213.3	2166.7	2112.3	2054.7
32°	2154.0	2210.1	2258.7	2296.7	2292.2	2293.5	2251.8	2190.0	2143.4	2087.8	2026.5
32.5°	2131.6	2188.8	2238.7	2277.9	2271.8	2273.0	2228.9	2165.9	2119.3	2060.8	1996.2
33°	2108.3	2167.1	2218.6	2258.3	2251.3	2251.8	2205.1	2141.4	2094.4	2032.2	1963.5
33.5°	2082.9	2145.1	2197.8	2237.9	2230.1	2230.1	2181.4	2114.8	2067.0	2001.2	1927.2
34°	2057.6	2121.3	2175.7	2217.4	2208.8	2207.2	2155.3	2087.4	2038.4	1968.0	1886.3
34.5°	2029.8	2095.6	2152.0	2195.7	2186.3	2183.1	2129.5	2058.4	2007.3	1927.2	1841.3
35°	2000.3	2069.4	2128.3	2173.7	2163.4	2158.5	2101.7	2027.3	1972.1	1884.2	1791.8
35.5°	1967.2	2040.8	2102.1	2150.4	2139.7	2133.2	2072.7	1991.7	1931.7	1837.6	1737.5
36°	1933.3	2010.6	2075.6	2126.2	2115.6	2107.0	2040.4	1952.5	1888.3	1784.5	1679.8
36.5°	1894.4	1978.7	2046.5	2101.7	2089.0	2078.0	2006.1	1911.2	1838.9	1726.8	1620.5
37°	1849.5	1941.5	2016.3	2074.7	2061.2	2046.5	1969.3	1868.3	1782.0	1666.3	1560.0
37.5°	1796.3	1900.2	1982.8	2044.9	2029.4	2011.8	1928.8	1819.6	1719.1	1603.0	1496.3
38°	1739.1	1853.6	1944.3	2011.8	1995.0	1975.4	1886.3	1770.2	1654.1	1536.7	1431.3
38.5°	1679.4	1800.8	1901.8	1975.4	1956.6	1934.9	1842.9	1716.6	1588.7	1469.7	1365.0
39°	1619.7	1743.2	1856.8	1934.5	1915.3	1892.8	1795.5	1662.7	1528.2	1402.6	1299.2
39.5°	1560.9	1685.1	1807.8	1892.0	1867.9	1844.6	1746.0	1602.6	1469.3	1337.6	1233.4
40°	1502.0	1628.7	1755.0	1843.8	1814.3	1795.9	1692.1	1542.9	1410.0	1274.3	1167.2
40.5°	1440.3	1574.3	1697.8	1791.8	1750.1	1742.0	1638.1	1479.1	1348.3	1210.5	1102.2
41°	1378.9	1517.1	1637.7	1735.8	1684.3	1688.4	1582.1	1415.7	1284.1	1145.1	1038.0
41.5°	1317.2	1458.7	1576.4	1676.1	1616.9	1630.4	1525.3	1352.0	1220.7	1080.1	976.3
42°	1255.5	1397.3	1514.7	1612.0	1553.5	1569.0	1466.4	1291.0	1157.8	1019.6	913.3
42.5°	1194.1	1332.7	1451.3	1545.3	1495.0	1505.3	1403.1	1226.9	1096.4	959.1	852.8
43°	1134.9	1268.6	1385.5	1476.2	1435.8	1442.3	1336.8	1163.9	1037.6	901.8	796.8
43.5°	1076.0	1205.2	1321.3	1409.2	1373.6	1378.1	1271.4	1100.5	979.9	846.7	741.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	899.8	1019.2	1123.8	1204.8	1180.2	1190.1	1071.1	917.0	805.0	691.7	598.1
45.5°	843.4	957.9	1057.2	1141.4	1117.7	1127.9	1003.2	857.3	749.8	642.2	555.6
46°	787.8	896.9	990.2	1075.6	1057.6	1065.0	942.7	798.8	696.2	596.9	518.0
46.5°	734.2	837.3	926.8	1014.7	998.3	1002.0	878.5	741.6	645.9	551.1	482.4
47°	681.9	779.2	863.8	954.2	939.0	940.3	819.7	687.6	598.9	510.6	450.1
47.5°	629.6	722.0	807.4	896.5	879.0	879.0	762.8	634.9	552.7	473.4	420.3
48°	583.4	668.8	751.8	840.5	819.7	820.1	709.3	585.4	509.4	439.5	393.7
48.5°	539.2	618.1	698.7	787.8	762.8	762.4	654.9	538.0	468.9	407.6	373.2
49°	499.2	570.3	650.0	734.2	708.9	705.2	605.5	495.1	432.1	384.7	352.4
49.5°	462.8	528.6	604.2	683.9	658.2	650.8	559.3	456.2	399.4	361.8	331.5
50°	433.3	488.9	562.1	634.5	609.5	597.7	516.3	421.5	376.9	338.9	310.7
50.5°	406.8	454.6	521.6	587.1	562.5	549.9	474.2	390.8	354.4	316.0	289.8
51°	382.7	423.9	485.3	543.3	515.5	504.5	437.8	367.5	332.0	293.5	276.8
51.5°	360.6	398.2	451.7	502.8	475.5	465.6	404.3	343.8	309.5	279.6	264.5
52°	341.4	374.1	421.1	465.2	437.0	429.3	380.6	320.1	287.4	267.4	252.6
52.5°	323.0	353.2	394.1	431.3	402.7	397.0	356.9	296.8	274.3	255.5	240.4
53°	305.4	333.6	368.3	401.0	379.8	372.4	333.6	281.7	262.1	243.2	228.9
53.5°	289.4	315.6	345.4	373.7	357.3	348.3	309.9	269.0	249.8	231.4	217.9
54°	277.2	298.4	323.8	347.9	334.4	323.8	286.6	256.7	237.9	219.9	207.7
54.5°	264.9	284.5	305.0	325.8	311.5	299.7	273.1	244.1	226.1	209.3	197.9
55°	252.2	271.5	288.6	305.4	289.0	284.5	260.4	231.8	214.6	199.1	188.5
55.5°	240.4	259.2	275.5	288.6	275.1	271.9	247.7	220.4	204.0	189.7	180.3
56°	228.9	246.9	262.5	275.1	262.9	258.8	235.1	208.9	194.6	181.1	172.1
56.5°	217.9	235.1	250.6	262.5	249.8	246.1	223.2	198.7	185.6	172.9	164.8
57°	207.3	223.6	237.9	249.8	237.1	233.8	212.2	189.3	176.6	165.6	157.8
57.5°	197.9	212.6	226.5	237.5	225.3	221.6	201.5	180.7	168.8	158.6	151.3
58°	188.5	202.4	215.0	225.3	213.8	210.5	191.7	172.1	161.5	151.7	145.1
58.5°	180.3	193.0	204.8	214.2	203.2	200.3	182.7	164.3	154.5	145.5	139.0
59°	172.1	184.4	195.0	203.6	193.4	190.5	174.2	157.0	148.0	139.4	133.3
59.5°	165.2	176.2	186.0	193.8	184.0	181.5	166.0	150.4	141.5	133.7	128.0
60°	157.8	168.4	177.4	184.8	175.4	172.9	158.6	144.3	135.3	128.4	123.1
60.5°	150.9	161.1	169.7	176.2	167.6	165.2	152.1	138.2	130.0	123.1	118.1
61°	145.1	154.5	162.3	168.0	160.3	157.8	145.5	132.5	124.3	118.1	113.7
61.5°	139.4	147.6	155.3	160.7	153.3	151.3	139.4	127.1	119.0	113.7	109.2
62°	133.7	142.3	148.8	153.7	146.8	144.3	133.7	121.8	114.1	108.7	105.1
62.5°	128.0	136.5	143.5	146.8	140.6	138.6	128.0	116.9	109.6	104.7	101.0
63°	122.2	131.2	137.8	141.5	134.5	132.5	123.1	112.4	105.1	100.6	96.9
63.5°	117.3	125.5	132.5	135.7	129.2	127.1	118.1	107.9	101.0	96.5	93.2
64°	112.4	120.2	126.7	130.4	123.9	122.2	113.2	103.4	96.5	92.4	89.5
64.5°	107.9	115.3	121.0	125.1	119.0	117.3	109.2	99.3	92.8	89.1	85.9
65°	103.4	110.4	116.5	119.8	114.5	112.8	104.7	95.3	89.1	85.0	82.6
65.5°	98.9	106.3	111.6	115.3	109.6	108.3	100.6	91.6	85.4	81.8	79.3
66°	95.3	101.8	107.5	110.8	105.5	104.2	96.5	87.9	81.8	78.5	76.0



TEST NUMBER: P776509

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	83.8	89.9	95.3	98.1	93.6	92.4	85.9	77.7	72.0	69.1	67.0
68°	80.1	86.3	91.6	94.4	89.9	88.7	82.6	74.4	69.1	66.2	64.2
68.5°	76.9	82.6	87.9	90.8	86.3	85.0	78.9	71.1	66.2	63.4	61.7
69°	73.6	79.3	84.2	87.1	83.0	81.8	76.0	68.3	63.4	60.5	58.9
69.5°	70.7	76.0	80.9	83.4	79.7	78.5	72.8	65.4	60.5	58.1	56.4
70°	67.5	72.8	77.7	80.1	76.4	75.2	69.9	62.5	58.1	55.2	54.0
70.5°	64.6	69.9	74.4	76.9	73.2	72.4	67.0	59.7	55.2	52.7	51.5
71°	61.7	66.6	71.5	74.0	70.3	69.5	64.2	57.2	52.7	50.3	49.1
71.5°	58.9	63.8	68.7	70.7	67.5	66.6	61.7	54.8	50.3	47.8	46.6
72°	56.4	61.3	65.8	67.9	64.6	63.8	58.9	52.3	47.8	45.4	44.6
72.5°	54.0	58.5	63.0	65.0	62.1	60.9	56.4	49.9	45.8	43.3	42.1
73°	51.5	56.0	60.1	62.5	59.3	58.5	54.0	47.4	43.3	41.3	40.1
73.5°	49.1	53.1	57.6	59.7	56.8	56.0	51.5	45.4	41.3	38.8	38.0
74°	46.6	50.7	55.2	57.2	54.4	53.6	49.1	42.9	39.2	36.8	36.0
74.5°	44.2	48.2	52.3	54.8	51.9	51.1	47.0	40.9	37.2	34.7	34.3
75°	42.1	46.2	50.3	52.3	49.5	48.6	44.6	38.8	35.2	33.1	32.3
75.5°	39.7	43.7	47.8	49.9	47.4	46.6	42.5	36.8	33.1	31.1	30.3
76°	37.6	41.3	45.4	47.8	45.0	44.6	40.5	34.7	31.1	29.0	28.6
76.5°	35.6	39.2	43.3	45.4	42.9	42.1	38.4	32.7	29.4	27.4	26.6
77°	33.5	37.2	40.9	43.3	40.9	40.1	36.4	31.1	27.4	25.3	24.9
77.5°	31.5	35.2	38.8	40.9	38.8	38.0	34.3	29.0	25.8	23.7	22.9
78°	29.8	33.1	36.8	38.8	36.8	36.0	32.3	27.0	23.7	22.1	21.3
78.5°	27.8	31.1	34.7	37.2	34.7	34.3	30.7	25.3	22.1	20.4	19.6
79°	26.2	29.4	33.1	35.2	32.7	32.3	28.6	23.7	20.4	18.8	18.4
79.5°	24.1	27.4	31.1	33.1	31.1	30.7	26.6	22.1	19.2	17.2	16.8
80°	22.5	25.8	29.0	31.1	29.0	28.6	24.9	20.4	17.6	15.5	15.1
80.5°	20.8	23.7	27.4	29.4	27.4	26.6	23.3	18.8	15.9	14.3	13.9
81°	19.2	22.1	25.3	27.4	25.8	25.3	21.7	17.2	14.7	12.7	12.3
81.5°	17.6	20.4	23.7	25.8	23.7	23.3	20.0	15.5	13.1	11.4	11.0
82°	16.4	18.8	22.1	24.1	22.1	21.7	18.8	14.3	11.9	10.2	9.8
82.5°	14.7	17.2	20.4	22.5	20.8	20.4	17.2	12.7	10.6	9.0	8.6
83°	13.5	15.9	18.8	20.8	19.2	18.8	15.5	11.4	9.4	7.8	7.4
83.5°	11.9	14.3	17.6	19.2	17.6	17.2	14.3	10.2	8.2	6.5	6.5
84°	10.6	13.1	15.9	18.0	16.4	15.9	13.1	9.0	6.9	5.3	5.3
84.5°	9.4	11.4	14.7	16.4	14.7	14.3	11.9	7.8	5.7	4.1	4.5
85°	8.2	10.2	13.1	15.1	13.5	13.1	10.2	6.5	4.9	3.3	3.3
85.5°	6.9	9.0	11.9	13.9	12.3	11.9	9.0	5.3	3.7	2.5	2.5
86°	5.7	7.8	10.2	12.3	11.0	10.6	8.2	4.5	2.9	2.0	1.6
86.5°	4.5	6.5	9.0	11.0	9.8	9.4	6.9	3.7	2.0	1.2	0.8
87°	3.7	5.3	8.2	9.8	8.6	8.2	5.7	2.9	1.6	0.8	0.0
87.5°	2.9	4.1	6.9	8.6	7.4	6.9	4.9	2.0	0.8	0.4	0.0
88°	2.0	3.3	5.7	7.4	6.1	6.1	4.1	1.6	0.4	0.0	0.0
88.5°	1.2	2.5	4.9	6.1	5.3	4.9	2.9	0.8	0.0	0.0	0.0



TEST NUMBER: P776509
CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMW-4000lm-5000K

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	3.3	2.0	2.0	0.4	0.0	0.0	0.0	0.0



TEST NUMBER: P776509

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2692.0	2692.0	2692.0	2692.0	2692.0	2692.0
0.5°	2688.8	2690.8	2691.2	2692.9	2692.5	2690.8
1°	2687.1	2688.8	2689.2	2691.2	2691.2	2690.4
1.5°	2685.1	2686.3	2687.1	2689.2	2689.6	2689.6
2°	2683.1	2684.3	2684.7	2687.1	2688.4	2688.8
2.5°	2680.6	2681.8	2682.2	2685.1	2686.7	2688.0
3°	2678.6	2679.4	2679.8	2682.6	2684.7	2686.7
3.5°	2675.7	2676.5	2676.9	2680.6	2683.1	2685.1
4°	2673.2	2673.7	2674.5	2678.1	2681.4	2683.9
4.5°	2670.4	2670.8	2671.2	2675.7	2679.4	2682.6
5°	2667.1	2667.5	2667.9	2672.8	2677.3	2680.6
5.5°	2663.8	2664.2	2664.7	2670.4	2674.9	2679.0
6°	2660.2	2660.2	2661.0	2667.1	2672.4	2676.9
6.5°	2656.5	2656.9	2657.3	2663.8	2669.6	2674.9
7°	2652.4	2652.8	2653.6	2660.6	2667.1	2672.8
7.5°	2648.3	2648.7	2649.1	2657.3	2664.2	2670.4
8°	2644.2	2643.8	2645.0	2653.2	2661.0	2667.5
8.5°	2639.3	2639.3	2640.5	2649.5	2657.7	2664.7
9°	2634.8	2634.4	2635.6	2645.4	2654.4	2661.8
9.5°	2629.5	2629.9	2630.3	2640.5	2650.8	2658.5
10°	2624.2	2624.2	2625.4	2636.0	2646.7	2654.8
10.5°	2618.9	2618.5	2619.7	2631.1	2642.6	2651.2
11°	2612.7	2612.7	2614.0	2626.2	2638.1	2647.5
11.5°	2606.6	2606.6	2607.4	2620.9	2633.6	2643.0
12°	2600.1	2600.1	2601.3	2615.2	2628.7	2638.5
12.5°	2593.5	2593.1	2594.3	2609.1	2623.0	2634.0
13°	2586.6	2586.2	2587.0	2602.5	2617.6	2628.7
13.5°	2579.2	2578.8	2580.0	2596.0	2611.9	2623.8
14°	2571.4	2571.0	2572.3	2589.0	2605.8	2618.5
14.5°	2563.3	2563.3	2564.1	2581.7	2599.2	2612.7
15°	2555.1	2554.7	2555.9	2573.9	2592.3	2606.6
15.5°	2546.5	2545.7	2546.9	2565.3	2585.3	2600.1
16°	2537.1	2537.1	2537.5	2556.7	2577.6	2593.1
16.5°	2527.7	2527.7	2528.1	2547.7	2569.8	2586.2
17°	2517.5	2517.9	2518.3	2538.3	2561.2	2578.4
17.5°	2507.7	2507.7	2507.7	2528.9	2552.6	2571.0
18°	2496.6	2497.5	2497.0	2518.3	2543.2	2562.9
18.5°	2485.6	2486.0	2485.6	2507.7	2533.8	2554.3
19°	2474.1	2474.6	2474.1	2496.2	2523.6	2544.9
19.5°	2461.9	2463.5	2462.3	2485.2	2513.0	2535.5
20°	2449.6	2451.3	2449.2	2472.5	2501.9	2526.1
20.5°	2436.9	2438.2	2436.5	2460.7	2490.9	2515.8
21°	2423.5	2425.1	2423.0	2447.6	2479.5	2505.2

TEST NUMBER: P776509

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2380.9	2382.6	2380.1	2405.9	2441.4	2470.9
23°	2365.4	2367.9	2364.6	2391.6	2427.5	2458.6
23.5°	2349.5	2352.3	2349.5	2376.0	2413.6	2445.5
24°	2333.1	2336.4	2333.1	2360.5	2398.9	2432.5
24.5°	2316.8	2320.0	2316.3	2345.0	2384.2	2418.6
25°	2299.2	2302.9	2299.2	2327.8	2368.7	2404.7
25.5°	2281.6	2285.7	2281.6	2311.0	2353.1	2389.9
26°	2262.8	2267.7	2264.0	2293.5	2336.8	2374.4
26.5°	2244.8	2249.7	2245.2	2275.9	2320.4	2358.9
27°	2225.2	2230.5	2226.0	2257.5	2302.9	2342.9
27.5°	2205.6	2210.9	2206.8	2238.7	2285.3	2326.6
28°	2185.1	2190.8	2186.3	2219.0	2267.3	2309.8
28.5°	2163.4	2170.8	2166.3	2199.4	2248.9	2291.8
29°	2139.7	2149.1	2145.1	2179.4	2229.7	2273.8
29.5°	2115.2	2127.1	2123.0	2159.0	2209.6	2255.0
30°	2090.3	2103.8	2099.3	2138.1	2190.0	2236.2
30.5°	2063.7	2078.4	2074.3	2116.0	2169.6	2215.8
31°	2035.9	2052.3	2047.3	2092.3	2148.7	2195.7
31.5°	2006.5	2023.6	2020.4	2067.8	2127.1	2175.3
32°	1974.6	1993.4	1991.7	2041.2	2103.4	2154.0
32.5°	1941.1	1961.1	1961.9	2013.8	2079.2	2131.6
33°	1904.7	1925.9	1930.0	1984.4	2053.5	2108.3
33.5°	1862.2	1888.7	1894.4	1953.7	2026.5	2082.9
34°	1813.9	1845.4	1854.8	1920.2	1998.3	2057.6
34.5°	1759.9	1795.5	1806.1	1883.0	1967.6	2029.8
35°	1703.9	1739.1	1750.5	1840.1	1935.3	2000.3
35.5°	1645.9	1680.6	1690.9	1791.4	1899.4	1967.2
36°	1586.2	1624.6	1627.5	1738.7	1857.2	1933.3
36.5°	1529.0	1570.7	1563.3	1681.5	1809.8	1894.4
37°	1471.7	1514.3	1500.4	1622.6	1756.7	1849.5
37.5°	1413.7	1452.1	1439.8	1558.8	1698.2	1796.3
38°	1354.0	1387.5	1381.0	1493.0	1637.7	1739.1
38.5°	1289.4	1322.1	1318.4	1428.0	1575.6	1679.4
39°	1225.6	1259.6	1256.7	1362.6	1513.0	1619.7
39.5°	1160.2	1200.3	1194.1	1298.0	1447.6	1560.9
40°	1097.3	1142.2	1133.2	1230.5	1383.8	1502.0
40.5°	1033.1	1085.0	1072.3	1164.7	1319.7	1440.3
41°	970.9	1025.3	1014.7	1100.1	1257.1	1378.9
41.5°	910.4	965.2	957.4	1041.3	1196.6	1317.2
42°	849.9	905.5	899.8	981.2	1135.3	1255.5
42.5°	789.8	848.7	844.6	924.3	1071.1	1194.1
43°	732.2	794.7	791.5	869.5	1011.0	1134.9
43.5°	679.5	740.4	739.1	817.2	952.5	1076.0

TEST NUMBER: P776509

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	542.5	586.2	600.1	675.0	787.4	899.8
45.5°	504.1	540.0	559.3	632.8	737.5	843.4
46°	468.9	498.8	521.2	593.2	689.7	787.8
46.5°	438.2	463.6	486.1	556.0	645.9	734.2
47°	411.3	433.3	453.8	520.8	603.0	681.9
47.5°	386.3	406.8	424.8	487.3	563.8	629.6
48°	367.1	383.9	398.6	456.2	526.6	583.4
48.5°	348.3	363.4	375.3	428.0	493.0	539.2
49°	329.1	344.6	353.2	401.5	461.1	499.2
49.5°	309.9	325.8	333.2	376.9	431.3	462.8
50°	291.1	308.2	314.4	353.2	404.3	433.3
50.5°	278.4	292.7	297.6	332.0	379.4	406.8
51°	266.1	279.6	283.3	312.3	356.5	382.7
51.5°	254.3	267.8	271.0	294.8	334.8	360.6
52°	242.4	255.9	259.2	280.9	315.2	341.4
52.5°	231.0	244.1	247.3	269.0	298.0	323.0
53°	219.9	232.2	235.5	256.7	283.7	305.4
53.5°	209.3	221.6	224.0	244.5	271.5	289.4
54°	199.9	210.9	213.4	232.6	258.8	277.2
54.5°	190.9	201.1	204.0	221.6	246.5	264.9
55°	182.3	192.1	194.6	210.9	234.7	252.2
55.5°	174.6	183.6	186.0	201.5	223.6	240.4
56°	166.8	175.4	177.4	192.1	213.0	228.9
56.5°	159.8	168.0	170.1	183.6	203.2	217.9
57°	153.3	160.7	162.7	175.8	193.8	207.3
57.5°	147.2	154.1	155.8	168.0	185.2	197.9
58°	140.6	147.6	149.6	161.1	177.0	188.5
58.5°	135.3	141.9	144.3	154.1	169.2	180.3
59°	129.6	136.5	138.6	147.6	161.9	172.1
59.5°	124.7	131.2	133.3	142.3	155.3	165.2
60°	119.8	125.9	128.0	137.0	148.8	157.8
60.5°	114.9	121.0	122.2	131.6	143.5	150.9
61°	110.4	116.1	117.3	126.3	138.2	145.1
61.5°	106.3	111.6	112.8	121.0	132.5	139.4
62°	102.2	107.5	108.7	116.5	127.1	133.7
62.5°	98.1	103.0	104.2	112.0	121.8	128.0
63°	94.0	98.9	100.2	107.5	116.9	122.2
63.5°	90.3	95.3	96.5	103.0	112.4	117.3
64°	87.1	91.6	92.4	99.3	107.5	112.4
64.5°	83.4	87.9	89.1	95.3	103.4	107.9
65°	80.1	84.6	85.4	91.6	99.3	103.4
65.5°	76.9	80.9	82.2	87.9	95.3	98.9
66°	74.0	77.7	78.5	84.6	91.6	95.3



TEST NUMBER: P776509

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	65.0	68.7	69.5	74.8	80.5	83.8
68°	62.5	65.8	66.6	71.5	77.3	80.1
68.5°	59.7	63.0	63.8	68.7	74.0	76.9
69°	57.2	60.5	61.3	65.8	70.7	73.6
69.5°	54.8	57.6	58.5	63.0	67.9	70.7
70°	52.3	55.2	56.0	60.5	65.0	67.5
70.5°	49.9	52.7	53.6	57.6	62.1	64.6
71°	47.4	50.3	51.1	55.2	59.3	61.7
71.5°	45.4	48.2	48.6	52.7	56.8	58.9
72°	43.3	45.8	46.2	50.3	54.0	56.4
72.5°	40.9	43.7	44.2	47.8	51.5	54.0
73°	38.8	41.3	42.1	45.8	49.1	51.5
73.5°	37.2	39.2	39.7	43.3	46.6	49.1
74°	34.7	37.2	37.6	41.3	44.6	46.6
74.5°	33.1	35.2	35.6	38.8	42.1	44.2
75°	31.1	33.1	33.9	36.8	40.1	42.1
75.5°	29.4	31.5	31.9	34.7	37.6	39.7
76°	27.4	29.4	29.8	33.1	36.0	37.6
76.5°	25.8	27.8	28.2	31.1	33.9	35.6
77°	24.1	25.8	26.2	29.0	31.9	33.5
77.5°	22.1	24.1	24.5	27.4	29.8	31.5
78°	20.8	22.5	22.9	25.3	27.8	29.8
78.5°	19.2	20.8	21.3	23.7	26.2	27.8
79°	17.6	19.2	19.6	22.1	24.1	26.2
79.5°	16.4	18.0	18.0	20.4	22.5	24.1
80°	14.7	16.4	16.8	18.8	20.8	22.5
80.5°	13.5	15.1	15.1	17.2	19.2	20.8
81°	11.9	13.5	13.9	15.9	17.6	19.2
81.5°	10.6	12.3	12.7	14.3	15.9	17.6
82°	9.4	11.0	11.4	13.1	14.7	16.4
82.5°	8.2	9.8	10.2	11.9	13.1	14.7
83°	6.9	8.6	8.6	10.2	11.9	13.5
83.5°	6.1	7.4	7.4	9.0	10.2	11.9
84°	4.9	6.1	6.5	7.8	9.0	10.6
84.5°	3.7	4.9	5.3	6.9	7.8	9.4
85°	2.9	4.1	4.1	5.7	6.5	8.2
85.5°	1.6	2.9	3.3	4.5	5.3	6.9
86°	0.8	2.0	2.0	3.7	4.5	5.7
86.5°	0.0	0.8	0.8	2.5	3.7	4.5
87°	0.0	0.0	0.0	1.6	2.9	3.7
87.5°	0.0	0.0	0.0	0.8	2.0	2.9
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: P776509
CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.0	0.0



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Scaled Data Report





— 0°-180° - - 45°-225° - - - - 90°-270° - · - 135°-315°

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Scaled Data Report



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21.5°	2494.2	2526.9	2560.0	2587.4	2590.3	2595.6	2577.2	2542.0	2508.5	2472.5	2438.2
22°	2482.3	2516.7	2550.2	2578.4	2580.8	2586.6	2567.0	2530.2	2496.6	2459.0	2424.7



44°	1017.1	1142.6	1256.7	1340.1	1309.4	1316.0	1205.6	1040.0	921.9	795.6	690.9
44.5°	957.4	1080.9	1191.3	1274.7	1244.0	1254.2	1138.1	977.5	863.4	741.6	643.1



66.5°	91.2	97.7	103.4	106.3	101.4	99.8	92.8	84.2	78.5	75.2	73.2
67°	87.5	93.6	98.9	102.2	97.3	96.1	89.1	80.9	75.2	72.0	69.9



89°	0.4	2.0	3.7	5.3	4.1	4.1	2.0	0.4	0.0	0.0	0.0
89.5°	0.0	1.2	2.9	4.1	3.3	2.9	1.2	0.0	0.0	0.0	0.0

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21.5°	2410.0	2411.2	2409.1	2433.7	2467.2	2494.2
22°	2395.2	2397.3	2394.8	2420.6	2454.1	2482.3



44°	631.2	687.6	690.1	766.5	894.5	1017.1
44.5°	585.0	635.3	642.7	720.3	839.7	957.4



66.5°	70.7	74.8	75.6	80.9	87.5	91.2
67°	67.9	71.5	72.4	78.1	84.2	87.5

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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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(END OF REPORT)