

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: P776303

Luminaire Tested: HCDJBS3040CSD-HCD4TRMB-4000lm-4000K

Issue Date: 2/7/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776303  
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-HCD4TRMB-4000lm-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: 2553.1 lumens  
Efficiency: N/A  
Efficacy: 66.3 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

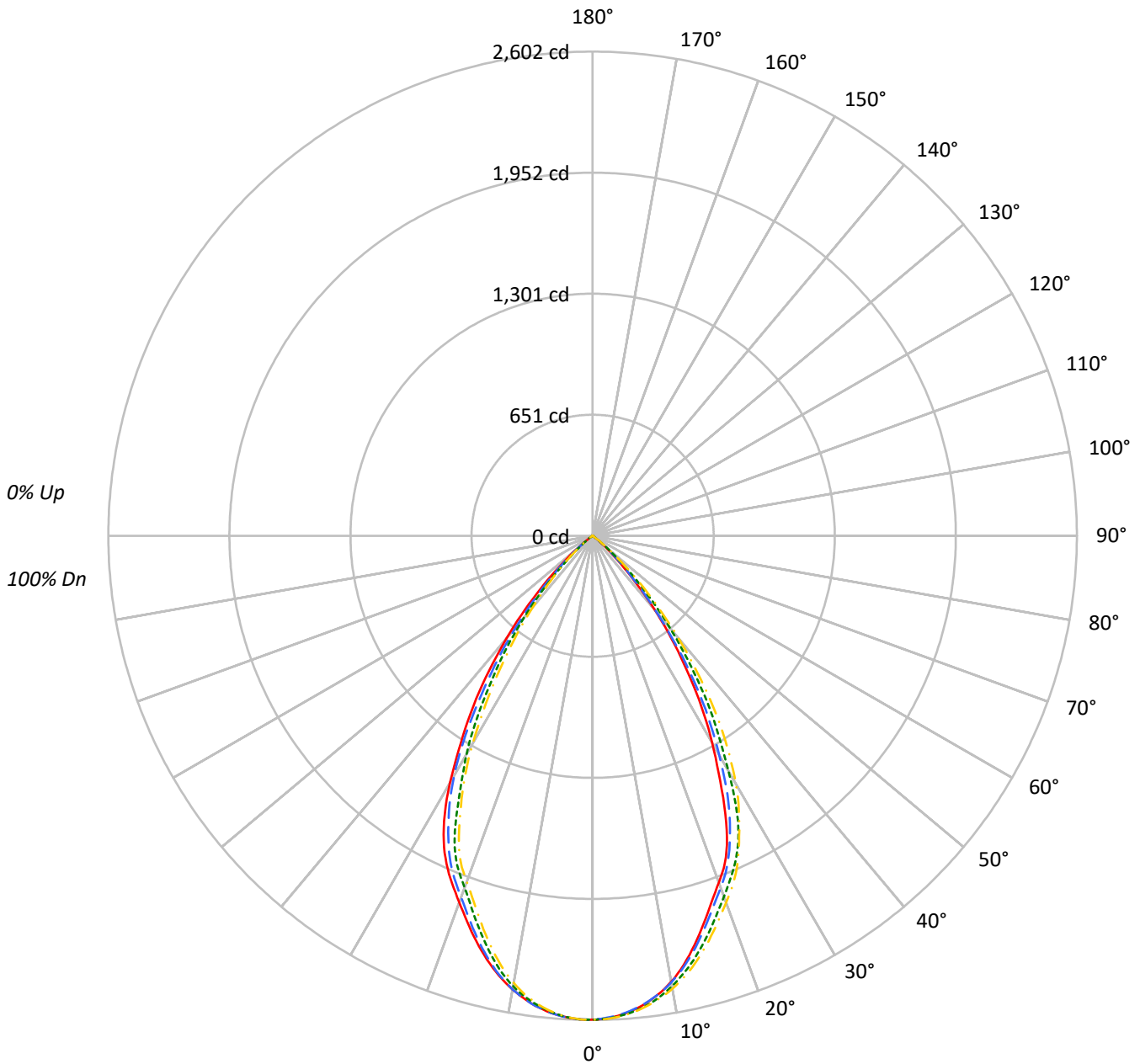
Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	50	30	10	0		
RCR	0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100		
	1	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93	93	93	93	93	93		
	2	108	103	98	95	105	101	97	94	98	95	92	95	92	90	92	90	88	86	86	86	86	86	86		
	3	102	95	90	86	100	94	89	85	91	87	84	89	86	83	87	84	82	80	80	80	80	80	80		
	4	97	89	83	79	95	88	82	78	85	81	77	83	80	76	82	78	76	74	74	74	74	74	74		
	5	91	83	77	72	90	82	76	72	80	75	71	78	74	71	77	73	70	69	69	69	69	69	69		
	6	87	77	71	67	85	77	71	67	75	70	66	74	69	66	72	68	65	64	64	64	64	64	64		
	7	82	72	66	62	81	72	66	62	70	65	61	69	65	61	68	64	61	59	59	59	59	59	59		
	8	78	68	62	58	77	67	62	57	66	61	57	65	60	57	64	60	57	55	55	55	55	55	55		
	9	74	64	58	54	73	63	58	54	62	57	53	62	57	53	61	56	53	52	52	52	52	52	52		
	10	70	60	54	50	69	60	54	50	59	54	50	58	53	50	57	53	50	48	48	48	48	48	48		

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

	0°	90°	180°	270°
0°	327298	327298	327298	327298
5°	323002	324126	325086	324480
10°	310916	314009	316373	314111
15°	288734	296721	300708	293359
20°	265576	276264	280643	269460
25°	235826	256099	261140	243116
30°	186618	211759	222599	196645
35°	135659	161193	171656	144524
40°	84919	106457	118105	93330
45°	38390	57060	65727	43854
50°	11140	17445	22731	13098
55°	1777	1777	2392	2216
60°	705	705	805	705
65°	476	476	476	476
70°	294	442	442	442
75°	194	389	194	389
80°	0	290	290	290
85°	0	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 180°  
 Vertical Angle: 45°  
 Luminance: 65727 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	241.4	9.5
10°-20°	633.3	24.8
20°-30°	808.2	31.7
30°-40°	617.9	24.2
40°-50°	230.9	9.0
50°-60°	18.8	0.7
60°-70°	1.7	0.1
70°-80°	0.7	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°	1683.0	65.9
0°-40°	2300.9	90.1
0°-60°	2550.7	99.9
0°-90°	2553.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2553.1	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2601	2601	2601	2601	2601	
5°	2557	2566	2573	2568	2557	240
15°	2216	2277	2308	2252	2216	620
25°	1698	1844	1881	1751	1698	764
35°	883	1049	1117	941	883	550
45°	216	321	369	246	216	181
55°	8	8	11	10	8	13
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	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7
0.5°	2599.9	2597.9	2597.9	2597.9	2599.9	2600.3	2601.5	2602.3	2601.1	2599.9	2599.9
1°	2598.3	2596.3	2595.9	2596.3	2598.3	2599.1	2600.3	2601.1	2600.7	2599.9	2599.5
1.5°	2595.9	2593.5	2593.1	2593.5	2596.3	2597.5	2598.7	2599.9	2599.1	2598.7	2599.1
2°	2592.7	2590.3	2589.4	2590.3	2593.9	2595.1	2596.3	2597.5	2597.5	2597.1	2597.5
2.5°	2588.6	2585.8	2585.4	2586.6	2590.7	2591.9	2593.1	2594.7	2595.1	2594.7	2595.1
3°	2583.8	2581.0	2580.6	2582.2	2586.6	2588.2	2589.4	2591.1	2591.9	2591.9	2592.3
3.5°	2578.2	2574.9	2575.3	2577.3	2582.2	2583.8	2585.4	2587.0	2588.2	2588.6	2588.6
4°	2571.7	2568.9	2568.9	2571.3	2577.3	2579.0	2580.2	2582.2	2583.8	2584.6	2584.6
4.5°	2564.4	2561.6	2562.0	2565.3	2572.1	2573.7	2574.9	2576.9	2579.0	2579.8	2579.8
5°	2556.8	2553.6	2554.0	2558.0	2565.7	2567.3	2568.5	2570.9	2573.3	2574.5	2574.1
5.5°	2547.9	2544.3	2545.9	2549.9	2558.4	2560.0	2561.6	2564.0	2566.9	2568.1	2567.3
6°	2538.6	2535.0	2536.6	2541.5	2550.7	2552.3	2554.0	2556.8	2560.0	2561.2	2560.0
6.5°	2528.6	2525.3	2527.3	2532.2	2541.9	2544.3	2545.9	2548.7	2552.3	2553.6	2552.3
7°	2517.7	2514.4	2516.9	2521.7	2532.2	2535.0	2537.0	2540.3	2543.5	2545.1	2543.9
7.5°	2506.0	2503.2	2505.2	2510.4	2521.7	2524.9	2527.8	2530.6	2533.8	2535.8	2534.6
8°	2493.5	2491.1	2493.1	2498.7	2510.4	2514.0	2517.7	2520.9	2524.1	2525.3	2524.1
8.5°	2479.8	2478.2	2480.6	2485.8	2498.3	2502.4	2507.2	2510.0	2512.8	2514.8	2513.2
9°	2465.3	2464.0	2466.9	2472.1	2485.4	2490.7	2495.9	2498.7	2501.5	2502.8	2501.5
9.5°	2449.1	2449.1	2452.4	2458.0	2471.7	2477.8	2483.8	2487.4	2489.0	2490.3	2489.0
10°	2433.0	2433.0	2436.6	2442.7	2457.2	2464.4	2470.9	2474.5	2475.7	2476.5	2475.3
10.5°	2416.1	2416.1	2420.1	2426.9	2443.1	2449.9	2457.2	2461.2	2462.0	2462.4	2460.8
11°	2396.7	2397.5	2402.8	2409.6	2426.9	2435.0	2443.1	2447.1	2447.9	2447.5	2445.5
11.5°	2377.0	2378.6	2384.6	2391.9	2410.4	2419.7	2428.6	2432.2	2432.2	2431.8	2429.0
12°	2356.0	2358.4	2365.3	2373.3	2393.9	2403.6	2412.8	2416.9	2416.9	2415.3	2412.4
12.5°	2334.2	2337.0	2344.7	2354.4	2375.7	2386.2	2396.3	2400.7	2400.3	2397.9	2394.7
13°	2311.6	2315.3	2324.1	2334.6	2357.2	2368.5	2379.8	2384.2	2383.0	2379.8	2374.9
13.5°	2288.2	2293.1	2302.4	2313.6	2338.6	2350.3	2361.6	2366.1	2365.3	2361.6	2356.0
14°	2264.5	2270.1	2281.0	2293.1	2318.1	2331.8	2343.1	2348.3	2346.7	2341.9	2335.4
14.5°	2240.3	2246.7	2258.4	2271.7	2297.9	2312.4	2323.7	2329.0	2327.4	2322.1	2314.0
15°	2216.1	2222.9	2235.4	2249.5	2277.4	2292.3	2304.4	2309.6	2308.0	2301.5	2292.7
15.5°	2191.1	2199.1	2212.0	2227.8	2256.8	2271.7	2284.6	2289.5	2287.8	2281.0	2270.5
16°	2166.1	2174.9	2189.5	2205.2	2235.0	2251.6	2264.5	2269.3	2267.3	2259.6	2248.3
16.5°	2141.9	2151.6	2166.5	2183.0	2213.6	2230.6	2243.1	2249.5	2246.7	2238.2	2225.7
17°	2117.7	2127.4	2143.1	2160.8	2191.9	2209.2	2222.5	2228.2	2225.3	2216.1	2203.2
17.5°	2093.5	2103.6	2120.1	2138.7	2169.7	2187.4	2200.7	2206.0	2203.6	2193.9	2179.8
18°	2069.3	2080.2	2097.1	2116.1	2147.9	2166.1	2179.4	2185.4	2181.8	2171.7	2157.2
18.5°	2045.9	2058.0	2074.5	2093.9	2125.7	2144.7	2158.4	2163.7	2159.6	2149.1	2133.8
19°	2024.1	2036.6	2054.0	2072.5	2104.4	2123.7	2137.0	2142.3	2137.8	2127.0	2110.8
19.5°	2003.6	2016.5	2033.0	2052.0	2083.8	2102.8	2116.9	2121.7	2117.3	2104.8	2088.2
20°	1983.0	1996.3	2012.8	2031.8	2062.8	2082.2	2097.5	2101.6	2095.5	2083.8	2066.9
20.5°	1962.8	1975.8	1992.7	2011.2	2042.7	2062.4	2077.4	2081.8	2075.7	2062.8	2045.9
21°	1942.3	1955.6	1971.7	1990.7	2022.5	2042.7	2056.8	2062.0	2055.6	2042.7	2025.3



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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°	1870.1	1882.6	1898.3	1923.3	1961.2	1981.0	1993.9	1999.9	1995.1	1981.8	1962.4
23°	1841.1	1854.0	1870.5	1899.9	1939.9	1958.8	1970.1	1977.4	1974.5	1960.4	1939.5
23.5°	1809.6	1823.3	1841.5	1873.3	1917.7	1935.0	1943.9	1952.0	1952.4	1938.7	1914.9
24°	1774.5	1789.1	1810.8	1845.5	1895.1	1909.6	1916.1	1926.2	1929.4	1916.1	1889.1
24.5°	1737.5	1752.0	1778.2	1816.1	1870.5	1883.8	1888.3	1898.3	1905.6	1891.9	1860.8
25°	1698.3	1712.5	1746.3	1786.2	1844.3	1856.0	1858.8	1869.7	1880.6	1867.3	1831.8
25.5°	1657.2	1672.1	1712.9	1753.6	1816.9	1826.6	1827.4	1839.5	1854.0	1840.7	1801.6
26°	1614.5	1631.0	1679.4	1722.1	1787.0	1795.5	1796.7	1808.8	1825.4	1812.9	1770.9
26.5°	1570.9	1589.9	1643.1	1689.1	1754.4	1763.3	1766.5	1777.8	1794.7	1782.6	1738.3
27°	1527.0	1549.6	1606.4	1654.8	1719.3	1730.6	1736.2	1746.7	1762.0	1749.5	1705.6
27.5°	1485.0	1509.6	1568.1	1619.7	1680.6	1697.1	1705.6	1715.3	1728.6	1715.3	1673.3
28°	1442.7	1471.7	1527.8	1582.2	1639.9	1662.9	1674.1	1683.8	1691.5	1678.6	1638.7
28.5°	1401.6	1435.0	1486.7	1542.7	1595.5	1626.6	1642.7	1651.6	1654.0	1641.1	1603.6
29°	1362.1	1398.8	1445.1	1502.4	1550.4	1589.9	1610.4	1618.9	1615.7	1600.0	1566.9
29.5°	1322.9	1362.1	1402.4	1459.6	1504.0	1551.6	1575.4	1583.8	1573.7	1558.0	1528.2
30°	1284.2	1324.6	1360.0	1414.9	1457.2	1511.2	1539.1	1548.7	1531.8	1514.5	1487.1
30.5°	1245.9	1285.9	1319.3	1368.1	1412.9	1469.7	1500.8	1510.8	1487.1	1468.9	1445.9
31°	1206.8	1245.9	1277.8	1322.5	1369.7	1427.0	1463.3	1473.7	1443.5	1423.3	1403.2
31.5°	1167.7	1204.8	1237.9	1274.6	1328.2	1383.8	1424.2	1433.4	1400.0	1377.4	1360.4
32°	1128.2	1163.3	1196.7	1227.8	1289.1	1339.9	1385.8	1393.1	1358.4	1333.0	1315.3
32.5°	1088.7	1119.3	1156.0	1182.2	1249.2	1296.7	1347.1	1350.8	1316.5	1289.9	1272.1
33°	1047.6	1076.2	1114.5	1135.5	1211.3	1254.0	1307.6	1309.2	1276.6	1247.1	1226.2
33.5°	1005.6	1033.0	1072.6	1089.5	1170.9	1211.7	1266.5	1267.3	1235.4	1205.2	1179.8
34°	964.1	991.9	1029.4	1044.7	1130.6	1171.3	1225.8	1225.4	1197.1	1163.7	1132.6
34.5°	923.8	949.2	986.7	1001.2	1089.1	1131.8	1183.4	1181.8	1156.8	1123.4	1087.9
35°	883.0	909.2	943.9	958.0	1049.2	1093.9	1141.1	1139.9	1117.3	1083.4	1041.5
35.5°	844.7	870.9	900.0	916.1	1004.8	1054.4	1096.3	1097.6	1077.0	1043.1	998.0
36°	806.8	832.2	856.0	875.4	962.1	1014.5	1052.4	1055.2	1038.3	1002.4	955.6
36.5°	769.7	794.3	813.3	835.5	920.1	975.4	1007.6	1012.5	996.7	960.9	914.5
37°	733.0	755.6	768.5	795.9	879.0	936.3	963.7	968.9	955.6	918.5	873.0
37.5°	696.8	718.1	725.4	757.2	837.9	895.5	919.3	927.8	914.1	876.6	834.3
38°	660.5	679.4	683.0	718.1	799.2	854.4	878.2	887.1	873.4	834.7	794.7
38.5°	624.2	641.1	643.5	680.2	760.5	812.9	835.9	847.2	833.8	793.5	755.6
39°	588.7	603.6	605.6	643.1	723.8	772.6	794.3	807.2	795.1	756.0	716.9
39.5°	552.0	564.5	567.7	608.5	685.1	732.2	753.2	767.7	756.4	715.3	679.0
40°	516.9	527.0	530.6	572.2	648.0	693.5	712.1	727.4	718.9	677.8	641.1
40.5°	481.8	490.3	496.8	538.3	611.7	655.2	671.4	688.3	681.0	641.9	603.6
41°	447.6	454.8	462.9	504.8	576.2	618.5	632.2	648.8	645.9	608.0	565.7
41.5°	413.7	420.6	430.2	471.8	539.5	581.4	594.3	608.9	609.7	572.2	529.8
42°	382.7	386.7	398.4	438.3	503.6	546.0	556.8	570.5	572.2	539.1	493.9
42.5°	351.6	355.2	368.5	408.1	469.7	510.5	520.1	533.9	536.3	505.6	460.1
43°	322.6	324.6	338.7	377.8	437.1	475.0	484.3	498.0	501.6	474.6	427.4
43.5°	293.5	295.2	311.3	348.0	405.6	439.1	450.8	462.9	466.5	440.7	396.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	215.7	213.7	234.3	265.3	320.6	340.7	356.8	366.9	369.3	353.2	311.3
45.5°	192.3	189.9	212.1	240.3	292.3	308.5	326.6	336.7	339.1	324.6	283.1
46°	170.6	168.1	190.7	216.5	264.1	276.2	296.4	306.4	308.9	296.0	257.7
46.5°	149.6	147.6	171.0	194.8	237.9	248.0	266.5	276.6	278.6	267.7	233.9
47°	134.7	133.1	151.6	173.8	212.5	221.4	239.5	248.4	250.4	241.5	210.9
47.5°	120.2	118.1	136.7	153.6	188.3	196.4	213.7	222.2	225.0	217.3	189.5
48°	105.6	103.2	121.8	134.7	165.3	173.4	190.3	197.2	200.4	194.3	169.8
48.5°	91.1	88.7	106.9	118.1	143.9	151.6	167.7	174.2	177.4	171.0	151.2
49°	76.6	73.8	91.9	104.0	123.8	132.3	146.4	152.0	155.2	150.0	133.5
49.5°	66.5	64.1	77.0	91.1	105.2	114.1	126.6	131.9	135.1	130.6	117.3
50°	56.9	54.8	65.3	78.2	89.1	97.6	108.1	113.7	116.1	112.5	102.4
50.5°	48.4	46.8	54.8	65.3	74.6	82.7	91.5	97.2	99.2	96.4	88.3
51°	40.7	39.1	45.2	52.4	61.7	68.9	76.2	81.9	83.5	81.0	75.8
51.5°	33.5	32.3	36.7	42.7	53.6	56.9	62.9	67.7	69.4	68.1	64.1
52°	27.4	26.2	29.0	33.9	45.6	48.4	53.6	55.6	56.9	56.5	53.6
52.5°	21.8	20.6	22.6	25.8	37.5	40.3	44.4	47.6	48.4	48.4	46.0
53°	16.5	15.7	16.9	19.4	29.4	31.9	35.5	39.1	40.3	39.9	38.3
53.5°	14.5	13.7	14.9	14.1	21.4	23.4	26.2	31.0	31.9	31.9	30.6
54°	12.5	11.3	12.5	11.7	13.3	15.3	17.3	22.6	23.4	23.8	22.6
54.5°	10.5	8.9	10.5	10.1	9.7	10.9	12.1	14.5	15.3	15.3	15.3
55°	8.1	6.9	8.1	8.1	8.1	8.5	9.3	10.5	10.9	11.3	11.3
55.5°	6.0	6.0	6.0	6.5	6.9	7.3	7.7	8.1	8.5	8.9	8.5
56°	5.6	5.2	5.2	5.6	6.0	6.5	6.5	6.9	7.3	7.3	7.3
56.5°	4.8	4.8	4.8	4.8	5.2	5.6	6.0	6.0	6.5	6.5	6.5
57°	4.4	4.4	4.4	4.4	4.8	4.8	5.2	5.6	5.6	5.6	5.6
57.5°	4.0	4.0	4.0	4.0	4.4	4.4	4.8	4.8	5.2	5.2	5.2
58°	3.6	3.6	3.6	3.6	4.0	4.0	4.0	4.4	4.4	4.4	4.4
58.5°	3.2	3.2	3.2	3.2	3.6	3.6	3.6	4.0	4.0	4.0	4.0
59°	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.6	3.6	3.6
59.5°	2.8	2.8	2.8	2.8	2.8	3.2	3.2	3.2	3.2	3.2	3.2
60°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.2	3.2	3.2	3.2
60.5°	2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8	2.8	2.8	2.8
61°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
61.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
62°	2.0	2.0	2.0	2.0	2.0	2.4	2.4	2.4	2.4	2.4	2.4
62.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.4	2.4
63°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
63.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
64°	1.6	1.6	1.6	1.6	1.6	2.0	2.0	2.0	2.0	2.0	2.0
64.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.0
65°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
65.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
66°	1.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6





TEST NUMBER: P776303

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
68°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
68.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
69°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
69.5°	0.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
70°	0.8	0.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
70.5°	0.8	0.8	0.8	0.8	1.2	1.2	1.2	0.8	0.8	0.8	1.2
71°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.2
71.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
72°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
72.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
73°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
73.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
74°	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
74.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
75°	0.4	0.4	0.4	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.8
75.5°	0.4	0.4	0.4	0.4	0.8	0.8	0.8	0.4	0.4	0.4	0.8
76°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
76.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
77°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
78°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
78.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
81°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
81.5°	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
82°	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.4
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: P776303

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

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



TEST NUMBER: P776303

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7
0.5°	2599.9	2600.7	2601.1	2601.5	2601.5	2599.9
1°	2599.9	2600.3	2600.3	2600.7	2600.3	2598.3
1.5°	2599.1	2599.1	2599.1	2599.1	2598.3	2595.9
2°	2597.5	2597.1	2597.1	2596.7	2595.1	2592.7
2.5°	2595.1	2594.3	2593.9	2593.5	2591.5	2588.6
3°	2592.3	2590.7	2590.3	2589.4	2587.4	2583.8
3.5°	2588.2	2586.2	2585.8	2584.6	2581.8	2578.2
4°	2583.4	2581.0	2580.6	2579.0	2575.7	2571.7
4.5°	2578.2	2574.9	2574.1	2572.5	2569.3	2564.4
5°	2572.5	2568.5	2566.9	2564.8	2561.6	2556.8
5.5°	2565.7	2560.8	2558.8	2556.8	2552.3	2547.9
6°	2558.0	2552.3	2550.3	2547.5	2543.5	2538.6
6.5°	2549.9	2543.5	2541.1	2537.8	2533.4	2528.6
7°	2541.1	2533.8	2530.6	2526.9	2521.7	2517.7
7.5°	2531.4	2523.3	2519.3	2514.8	2509.6	2506.0
8°	2521.3	2512.0	2507.2	2501.9	2497.5	2493.5
8.5°	2510.0	2499.9	2494.3	2488.2	2483.4	2479.8
9°	2497.9	2487.0	2480.2	2473.3	2468.5	2465.3
9.5°	2485.0	2472.9	2465.3	2457.2	2451.5	2449.1
10°	2471.3	2458.0	2449.1	2440.7	2435.4	2433.0
10.5°	2456.4	2442.3	2431.8	2422.5	2417.7	2416.1
11°	2441.1	2425.3	2413.6	2403.6	2398.3	2396.7
11.5°	2424.5	2406.8	2394.3	2383.4	2377.8	2377.0
12°	2406.4	2387.8	2373.7	2362.0	2356.4	2356.0
12.5°	2387.8	2366.9	2352.0	2339.9	2334.2	2334.2
13°	2368.5	2345.1	2329.8	2317.3	2311.2	2311.6
13.5°	2347.5	2322.9	2306.4	2293.1	2288.2	2288.2
14°	2325.7	2299.9	2282.6	2268.9	2262.8	2264.5
14.5°	2303.6	2275.7	2258.0	2244.7	2238.2	2240.3
15°	2281.0	2251.6	2233.0	2219.7	2213.6	2216.1
15.5°	2257.6	2227.4	2208.0	2194.7	2188.6	2191.1
16°	2234.2	2202.4	2183.0	2168.5	2163.7	2166.1
16.5°	2210.4	2178.2	2158.0	2143.5	2138.7	2141.9
17°	2186.2	2153.6	2132.2	2118.1	2113.2	2117.7
17.5°	2162.0	2128.6	2107.2	2093.5	2088.7	2093.5
18°	2138.2	2103.6	2082.6	2068.1	2064.5	2069.3
18.5°	2114.5	2079.8	2057.6	2043.5	2040.3	2045.9
19°	2090.7	2055.6	2033.8	2020.1	2017.7	2024.1
19.5°	2068.1	2033.4	2012.4	1998.7	1995.9	2003.6
20°	2046.3	2012.0	1990.3	1977.8	1974.9	1983.0
20.5°	2025.3	1991.5	1969.7	1956.8	1954.8	1962.8
21°	2004.4	1970.9	1948.3	1935.4	1934.6	1942.3



TEST NUMBER: P776303

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1941.1	1906.8	1881.4	1865.3	1861.2	1870.1
23°	1916.1	1881.4	1854.0	1835.0	1831.0	1841.1
23.5°	1890.3	1853.6	1824.5	1802.4	1800.0	1809.6
24°	1862.0	1822.1	1790.7	1766.5	1764.9	1774.5
24.5°	1832.2	1787.9	1757.2	1729.4	1727.8	1737.5
25°	1800.4	1750.8	1720.1	1690.3	1689.5	1698.3
25.5°	1767.7	1710.8	1681.8	1652.0	1650.8	1657.2
26°	1733.0	1668.9	1640.7	1614.5	1609.6	1614.5
26.5°	1697.1	1625.0	1599.6	1576.6	1569.7	1570.9
27°	1660.4	1582.6	1555.6	1539.5	1529.0	1527.0
27.5°	1621.7	1540.7	1509.2	1500.0	1487.5	1485.0
28°	1582.2	1501.6	1464.5	1460.4	1446.3	1442.7
28.5°	1542.7	1463.3	1420.9	1419.3	1405.2	1401.6
29°	1502.0	1426.2	1379.0	1376.6	1362.5	1362.1
29.5°	1461.3	1390.3	1338.3	1332.2	1320.1	1322.9
30°	1421.7	1353.2	1297.9	1287.9	1276.6	1284.2
30.5°	1381.4	1314.9	1258.8	1241.9	1232.2	1245.9
31°	1342.3	1275.8	1219.7	1195.5	1188.7	1206.8
31.5°	1304.4	1234.2	1180.6	1151.6	1144.3	1167.7
32°	1265.7	1191.9	1140.7	1107.6	1102.4	1128.2
32.5°	1227.4	1149.2	1101.6	1064.5	1062.1	1088.7
33°	1189.1	1105.6	1061.3	1023.0	1022.1	1047.6
33.5°	1150.8	1062.1	1020.5	980.6	982.6	1005.6
34°	1110.1	1020.1	979.8	939.5	943.1	964.1
34.5°	1068.9	980.2	937.9	898.4	903.2	923.8
35°	1025.8	940.7	897.2	857.2	863.3	883.0
35.5°	984.2	903.6	858.0	816.5	823.4	844.7
36°	938.3	867.7	818.9	777.8	783.0	806.8
36.5°	895.1	830.6	782.2	740.7	742.3	769.7
37°	850.8	794.3	744.7	704.0	703.2	733.0
37.5°	808.8	757.6	708.0	668.1	665.3	696.8
38°	766.5	719.3	671.8	632.6	628.6	660.5
38.5°	727.0	681.0	635.9	598.0	593.5	624.2
39°	686.7	643.5	601.6	564.9	560.5	588.7
39.5°	647.6	605.6	565.7	531.0	527.8	552.0
40°	608.5	568.1	531.4	499.6	496.0	516.9
40.5°	571.8	531.8	498.0	467.7	464.5	481.8
41°	534.3	497.6	464.9	437.9	435.1	447.6
41.5°	498.4	463.3	433.1	409.3	405.2	413.7
42°	463.3	431.0	402.0	382.7	377.0	382.7
42.5°	429.0	398.8	372.2	355.6	349.6	351.6
43°	396.0	367.7	343.5	330.6	323.8	322.6
43.5°	366.5	335.5	316.5	305.6	298.0	293.5



TEST NUMBER: P776303

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	279.0	246.4	241.1	237.5	229.4	215.7
45.5°	253.2	219.3	218.1	216.5	208.5	192.3
46°	229.0	194.3	196.8	197.2	189.5	170.6
46.5°	206.0	171.0	176.2	178.6	170.6	149.6
47°	184.7	150.4	156.4	160.5	152.8	134.7
47.5°	164.9	135.5	138.3	143.9	138.3	120.2
48°	146.0	120.6	124.2	130.2	124.2	105.6
48.5°	129.0	106.0	109.7	116.5	109.7	91.1
49°	113.3	91.5	95.6	102.8	95.2	76.6
49.5°	98.8	77.0	81.4	89.1	80.6	66.5
50°	85.5	66.9	69.8	75.4	69.4	56.9
50.5°	73.8	58.1	59.7	64.1	58.1	48.4
51°	62.9	49.6	50.8	54.0	48.8	40.7
51.5°	53.6	42.3	42.3	44.8	40.3	33.5
52°	46.4	35.5	34.7	36.3	32.3	27.4
52.5°	39.5	29.0	28.2	28.6	25.4	21.8
53°	32.3	23.4	22.2	21.8	19.4	16.5
53.5°	25.4	18.1	16.9	16.1	14.1	14.5
54°	18.1	13.7	14.5	13.7	12.1	12.5
54.5°	13.7	11.7	12.5	11.3	10.1	10.5
55°	10.5	10.1	10.5	8.9	8.1	8.1
55.5°	8.1	8.1	8.1	6.5	6.5	6.0
56°	7.3	6.5	6.0	6.0	5.6	5.6
56.5°	6.0	5.6	5.2	5.2	5.2	4.8
57°	5.6	4.8	4.8	4.8	4.4	4.4
57.5°	4.8	4.4	4.4	4.4	4.0	4.0
58°	4.4	4.0	4.0	4.0	3.6	3.6
58.5°	4.0	3.6	3.6	3.6	3.6	3.2
59°	3.6	3.2	3.2	3.2	3.2	3.2
59.5°	3.2	3.2	3.2	3.2	2.8	2.8
60°	3.2	2.8	2.8	2.8	2.8	2.8
60.5°	2.8	2.8	2.8	2.8	2.8	2.4
61°	2.8	2.4	2.4	2.4	2.4	2.4
61.5°	2.4	2.4	2.4	2.4	2.4	2.4
62°	2.4	2.4	2.4	2.4	2.0	2.0
62.5°	2.4	2.0	2.0	2.0	2.0	2.0
63°	2.0	2.0	2.0	2.0	2.0	2.0
63.5°	2.0	2.0	2.0	2.0	2.0	2.0
64°	2.0	2.0	2.0	2.0	1.6	1.6
64.5°	2.0	1.6	1.6	1.6	1.6	1.6
65°	1.6	1.6	1.6	1.6	1.6	1.6
65.5°	1.6	1.6	1.6	1.6	1.6	1.6
66°	1.6	1.6	1.6	1.6	1.6	1.2



TEST NUMBER: P776303

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	1.2	1.2	1.2	1.2	1.2	1.2
68°	1.2	1.2	1.2	1.2	1.2	1.2
68.5°	1.2	1.2	1.2	1.2	1.2	1.2
69°	1.2	1.2	1.2	1.2	1.2	1.2
69.5°	1.2	1.2	1.2	1.2	1.2	0.8
70°	1.2	1.2	1.2	1.2	0.8	0.8
70.5°	1.2	1.2	1.2	0.8	0.8	0.8
71°	1.2	0.8	0.8	0.8	0.8	0.8
71.5°	0.8	0.8	0.8	0.8	0.8	0.8
72°	0.8	0.8	0.8	0.8	0.8	0.8
72.5°	0.8	0.8	0.8	0.8	0.8	0.8
73°	0.8	0.8	0.8	0.8	0.8	0.8
73.5°	0.8	0.8	0.8	0.8	0.8	0.8
74°	0.8	0.8	0.8	0.8	0.8	0.4
74.5°	0.8	0.8	0.8	0.8	0.4	0.4
75°	0.8	0.8	0.8	0.8	0.4	0.4
75.5°	0.8	0.8	0.8	0.4	0.4	0.4
76°	0.8	0.4	0.4	0.4	0.4	0.4
76.5°	0.4	0.4	0.4	0.4	0.4	0.4
77°	0.4	0.4	0.4	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	0.4	0.4
78°	0.4	0.4	0.4	0.4	0.4	0.4
78.5°	0.4	0.4	0.4	0.4	0.4	0.4
79°	0.4	0.4	0.4	0.4	0.4	0.4
79.5°	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.4	0.4	0.4	0.4	0.4	0.0
80.5°	0.4	0.4	0.4	0.4	0.0	0.0
81°	0.4	0.4	0.4	0.4	0.0	0.0
81.5°	0.4	0.4	0.4	0.4	0.0	0.0
82°	0.4	0.4	0.4	0.0	0.0	0.0
82.5°	0.4	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: P776303

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-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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21.5°	1920.9	1933.8	1949.1	1969.7	2002.4	2023.3	2038.3	2042.3	2035.4	2021.7	2004.8
22°	1896.7	1909.2	1924.5	1947.9	1982.2	2002.4	2016.9	2022.1	2015.7	2001.6	1984.6



44°	266.9	266.5	283.9	318.5	377.4	404.8	417.3	428.6	432.2	410.5	367.7
44.5°	239.5	239.5	258.5	291.9	349.2	372.6	387.1	397.2	399.6	381.8	339.5



66.5°	1.2	1.2	1.2	1.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6
67°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.6



89°	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



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21.5°	1983.8	1950.8	1928.6	1915.7	1912.4	1920.9
22°	1963.7	1929.4	1905.6	1891.9	1888.3	1896.7



44°	337.5	304.8	290.3	281.8	273.8	266.9
44.5°	308.1	275.0	265.3	258.9	251.2	239.5

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66.5°	1.6	1.6	1.6	1.6	1.2	1.2
67°	1.6	1.6	1.2	1.2	1.2	1.2

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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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(END OF REPORT)