

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: P776343

Luminaire Tested: HCDJBL3040CSD-HCD61TRH-4000lm-4000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776343
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B036)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD61TRH-4000lm-4000K
Description: 6 INCH ROUND SHALLOW-WIDE HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

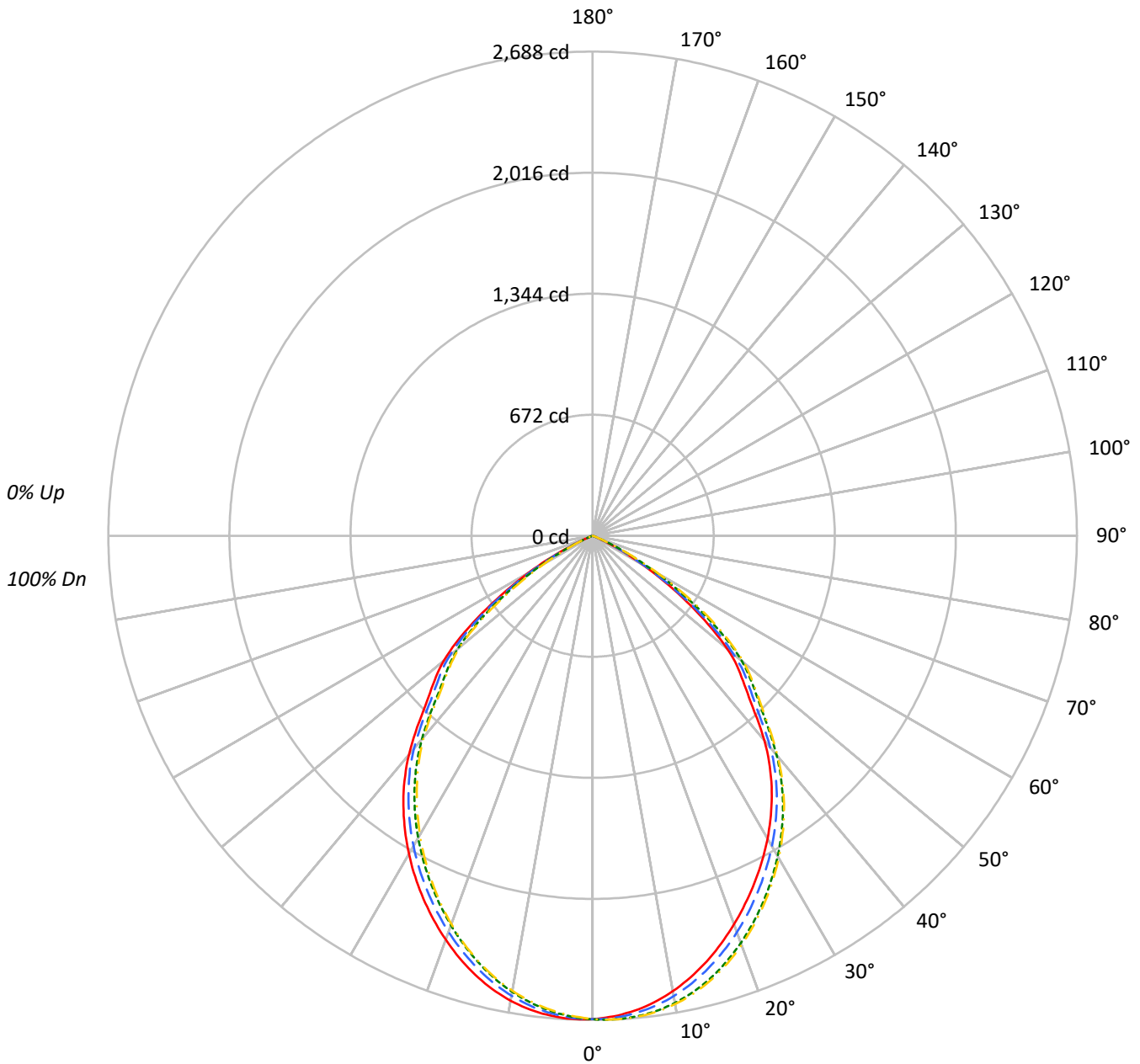
Lumens per Lamp: N/A
Luminaire Lumens: 4792.2 lumens
Efficiency: N/A
Efficacy: 124.5 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 1.12 / 1.2
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

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



TEST NUMBER: P776343
CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-4000K

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								
1	112	108	105	103	109	106	103	101	102	100	98	98	97	95	95	93	92	90								
2	104	98	93	89	102	96	91	87	93	89	86	90	87	84	87	84	82	80								
3	97	89	82	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71								
4	90	80	73	68	88	79	72	67	77	71	66	74	70	65	72	68	65	63								
5	84	73	65	60	82	72	65	60	70	64	59	68	63	58	66	62	58	56								
6	78	67	59	53	76	66	58	53	64	58	53	62	57	52	61	56	52	50								
7	73	61	53	48	71	60	53	48	59	52	48	57	52	47	56	51	47	45								
8	68	56	49	43	67	55	48	43	54	48	43	53	47	43	52	47	43	41								
9	64	52	45	40	63	51	44	39	50	44	39	49	43	39	48	43	39	37								
10	60	48	41	36	59	48	41	36	47	40	36	46	40	36	45	40	36	34								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	147104	147104	147104	147104
5°	145669	147512	147177	145757
10°	142889	146590	145895	143134
15°	138820	144150	143145	139161
20°	133904	140345	139143	134208
25°	128596	135570	134445	128669
30°	122918	130090	129089	122588
35°	116004	123212	122563	115362
40°	106142	113634	113463	105533
45°	93397	101235	100894	92738
50°	83076	92116	91775	83460
55°	61245	70917	71414	62908
60°	34997	43703	44766	37563
65°	10092	16422	15475	13127
70°	256	385	256	769
75°	169	169	169	169
80°	126	126	126	126
85°	252	0	0	252

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 135°
 Vertical Angle: 45°
 Luminance: 102204 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	252.1	5.3
10°-20°	700.4	14.6
20°-30°	1002.0	20.9
30°-40°	1109.1	23.1
40°-50°	974.5	20.3
50°-60°	620.5	12.9
60°-70°	132.1	2.8
70°-80°	1.1	0.0
80°-90°	0.5	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°	1954.5	40.8
0°-40°	3063.6	63.9
0°-60°	4658.6	97.2
0°-90°	4792.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4792.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2683	2683	2683	2683	2683	
5°	2647	2681	2674	2649	2647	250
15°	2446	2540	2522	2452	2446	688
25°	2126	2241	2223	2127	2126	978
35°	1733	1841	1831	1724	1733	1079
45°	1205	1306	1301	1196	1205	936
55°	641	742	747	658	641	571
65°	78	127	119	101	78	104
75°	1	1	1	1	1	1
85°	0	0	0	0	0	0
90°	0	0	0	2	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°	2683.4	2683.4	2683.4	2683.4	2683.4	2683.4	2683.4	2683.4	2683.4	2683.4	2683.4
0.5°	2681.4	2682.6	2683.8	2683.4	2686.2	2685.8	2684.6	2684.2	2684.2	2684.2	2683.8
1°	2679.4	2681.0	2683.4	2683.4	2687.0	2687.0	2685.8	2685.4	2685.0	2684.2	2683.0
1.5°	2676.9	2679.4	2682.2	2683.4	2687.8	2688.2	2687.0	2686.2	2685.0	2683.8	2681.8
2°	2673.7	2676.9	2680.6	2682.6	2687.8	2688.6	2687.8	2686.6	2685.0	2682.6	2680.2
2.5°	2670.5	2674.1	2678.6	2681.4	2687.8	2689.0	2687.8	2686.6	2684.2	2681.4	2678.2
3°	2666.9	2670.9	2676.1	2680.2	2687.0	2688.6	2687.8	2685.8	2683.4	2679.8	2675.7
3.5°	2662.4	2667.3	2673.3	2678.2	2686.2	2687.8	2687.4	2685.0	2681.8	2677.3	2672.5
4°	2657.6	2663.2	2670.1	2675.7	2684.6	2687.0	2686.2	2683.8	2679.8	2674.9	2668.9
4.5°	2652.4	2658.8	2666.1	2672.5	2683.0	2685.8	2685.0	2682.2	2677.3	2671.7	2665.3
5°	2647.1	2653.6	2661.6	2669.3	2680.6	2683.8	2683.0	2679.8	2674.5	2668.1	2661.2
5.5°	2641.1	2647.9	2656.8	2665.7	2678.2	2681.4	2681.0	2677.3	2670.9	2664.0	2656.4
6°	2634.2	2641.9	2652.0	2661.6	2674.9	2679.0	2678.2	2674.1	2667.3	2659.2	2650.7
6.5°	2627.8	2635.4	2646.3	2656.8	2671.3	2675.7	2674.9	2670.5	2663.2	2654.4	2645.5
7°	2620.5	2628.6	2640.3	2651.6	2667.3	2672.1	2671.3	2666.5	2658.8	2649.1	2639.5
7.5°	2612.5	2621.3	2633.8	2645.9	2662.4	2668.1	2667.3	2662.0	2653.6	2643.1	2632.6
8°	2604.4	2613.3	2626.6	2639.9	2658.0	2663.6	2662.8	2656.8	2647.9	2637.0	2625.8
8.5°	2595.5	2605.2	2619.3	2633.8	2652.4	2658.8	2658.0	2651.6	2641.9	2630.2	2618.1
9°	2586.7	2596.3	2611.7	2626.6	2646.3	2653.2	2652.4	2645.5	2635.0	2622.9	2610.0
9.5°	2577.0	2587.5	2603.2	2619.3	2639.9	2647.5	2646.3	2639.5	2628.2	2615.3	2602.0
10°	2566.9	2577.4	2594.3	2611.7	2633.4	2641.1	2640.3	2632.6	2620.9	2607.2	2593.1
10.5°	2556.4	2567.3	2585.5	2603.2	2626.2	2634.2	2633.4	2625.4	2613.3	2598.8	2583.8
11°	2545.6	2557.2	2575.8	2594.3	2618.5	2627.0	2626.2	2617.3	2604.4	2589.9	2574.2
11.5°	2534.3	2546.4	2565.7	2585.1	2610.0	2618.9	2618.1	2609.2	2595.5	2580.2	2564.1
12°	2523.0	2535.1	2555.6	2575.4	2601.6	2610.8	2610.0	2600.4	2586.7	2570.1	2553.6
12.5°	2510.9	2523.8	2544.7	2565.7	2592.3	2602.0	2601.2	2591.5	2577.0	2560.1	2542.7
13°	2498.4	2512.1	2533.5	2555.2	2582.6	2593.1	2591.9	2581.8	2566.5	2549.2	2531.4
13.5°	2485.9	2499.6	2521.8	2544.3	2572.6	2583.4	2582.2	2571.8	2556.4	2538.3	2520.2
14°	2473.0	2487.1	2510.1	2532.7	2562.1	2573.4	2572.2	2561.3	2545.2	2526.6	2508.1
14.5°	2459.7	2473.8	2497.6	2521.8	2551.2	2562.5	2561.3	2550.4	2533.5	2514.9	2495.2
15°	2446.0	2460.5	2485.1	2509.3	2539.9	2551.6	2550.4	2538.7	2522.2	2502.4	2482.7
15.5°	2432.3	2447.2	2471.8	2497.2	2528.2	2539.9	2538.7	2527.0	2510.1	2489.9	2469.8
16°	2417.8	2433.1	2458.5	2483.5	2516.1	2528.6	2526.6	2514.9	2496.8	2477.0	2456.1
16.5°	2403.7	2419.0	2445.2	2471.4	2503.2	2516.1	2514.1	2502.4	2484.3	2463.7	2442.4
17°	2388.4	2404.5	2431.1	2457.7	2490.3	2503.6	2501.6	2489.5	2471.0	2450.4	2428.7
17.5°	2373.5	2390.0	2416.6	2443.6	2477.0	2489.9	2488.7	2475.8	2457.7	2436.3	2414.6
18°	2358.1	2375.1	2402.5	2429.1	2463.3	2476.6	2474.6	2462.1	2443.6	2422.2	2399.3
18.5°	2342.8	2359.8	2387.6	2415.4	2449.2	2462.5	2460.9	2448.4	2429.1	2407.7	2385.1
19°	2327.1	2344.8	2372.7	2400.5	2434.7	2448.4	2446.8	2433.9	2415.0	2393.2	2369.8
19.5°	2311.8	2329.5	2357.3	2386.0	2420.2	2433.9	2432.3	2419.8	2400.1	2378.3	2354.9
20°	2295.3	2313.4	2341.6	2370.2	2405.7	2419.0	2417.4	2404.9	2385.1	2363.0	2339.2
20.5°	2279.1	2297.3	2325.9	2354.5	2390.0	2404.1	2402.5	2389.6	2370.2	2347.7	2323.9
21°	2262.6	2281.6	2310.2	2339.2	2374.7	2388.4	2386.8	2374.3	2354.5	2331.9	2307.4



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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°	2212.2	2232.0	2261.0	2290.0	2326.3	2340.0	2338.8	2325.9	2307.0	2283.6	2258.6
23°	2195.7	2215.5	2244.1	2273.5	2309.4	2323.5	2322.3	2309.8	2290.4	2267.1	2241.3
23.5°	2178.4	2198.5	2227.2	2256.6	2292.9	2307.0	2305.3	2293.3	2273.5	2250.5	2224.7
24°	2161.1	2181.2	2209.4	2239.2	2276.3	2290.0	2288.8	2275.9	2257.0	2233.6	2207.4
24.5°	2143.7	2163.9	2192.5	2222.3	2259.0	2271.9	2271.5	2258.6	2239.7	2215.9	2190.5
25°	2126.0	2146.6	2174.8	2204.2	2241.3	2254.6	2253.8	2241.3	2222.7	2198.9	2172.7
25.5°	2108.7	2129.2	2157.4	2186.9	2223.5	2236.8	2236.0	2223.9	2205.4	2181.2	2155.4
26°	2090.5	2111.9	2139.7	2169.1	2205.8	2218.3	2217.9	2206.6	2187.7	2163.5	2137.3
26.5°	2072.4	2093.8	2121.2	2151.0	2187.7	2200.6	2200.2	2188.5	2169.5	2145.3	2119.5
27°	2054.7	2076.0	2103.0	2132.8	2169.5	2181.6	2182.0	2169.5	2151.8	2127.2	2101.4
27.5°	2036.1	2057.9	2084.9	2113.5	2150.6	2163.1	2163.5	2151.4	2133.7	2109.1	2082.9
28°	2017.6	2039.3	2065.9	2095.0	2132.0	2144.9	2144.1	2133.3	2115.1	2090.5	2063.9
28.5°	1998.6	2020.4	2047.0	2075.6	2112.7	2124.8	2124.8	2114.3	2096.6	2071.6	2045.8
29°	1979.7	2002.3	2028.1	2056.7	2093.8	2105.4	2105.8	2094.6	2077.6	2052.6	2026.9
29.5°	1960.8	1982.9	2009.1	2036.9	2074.4	2085.7	2086.5	2075.2	2058.7	2033.7	2007.9
30°	1941.8	1964.0	1989.8	2017.6	2055.1	2066.8	2066.3	2056.3	2039.3	2014.4	1988.2
30.5°	1921.7	1944.6	1970.0	1998.2	2034.1	2045.8	2045.8	2036.5	2019.2	1994.6	1968.4
31°	1901.5	1924.9	1950.3	1977.7	2014.4	2025.2	2026.0	2015.6	1999.8	1975.3	1949.1
31.5°	1881.8	1905.1	1929.7	1957.1	1993.4	2004.7	2005.1	1995.8	1979.3	1955.1	1929.3
32°	1861.6	1885.4	1909.6	1936.6	1972.8	1984.5	1984.1	1975.3	1959.5	1934.6	1909.2
32.5°	1841.1	1864.4	1889.0	1916.0	1951.9	1962.8	1962.4	1954.7	1939.0	1914.4	1888.2
33°	1820.1	1843.9	1868.1	1895.1	1930.5	1941.0	1941.8	1933.3	1918.0	1893.8	1867.7
33.5°	1799.1	1822.5	1847.1	1873.3	1908.4	1919.2	1919.6	1912.0	1896.3	1873.3	1847.1
34°	1777.4	1801.6	1825.7	1852.3	1886.6	1897.9	1897.5	1890.2	1874.9	1851.5	1825.7
34.5°	1755.6	1780.2	1804.0	1829.4	1864.4	1874.1	1874.9	1867.7	1853.1	1829.8	1804.4
35°	1733.4	1758.0	1782.2	1807.2	1841.1	1851.9	1852.3	1845.1	1831.4	1808.4	1782.2
35.5°	1710.5	1735.9	1760.0	1784.2	1818.5	1828.2	1829.0	1822.5	1808.4	1786.6	1760.0
36°	1687.5	1713.7	1737.1	1761.3	1795.1	1805.2	1805.6	1799.5	1786.2	1764.5	1738.7
36.5°	1663.7	1689.9	1714.1	1737.5	1771.7	1780.2	1781.8	1775.4	1762.9	1741.1	1716.1
37°	1640.3	1666.1	1690.7	1713.7	1746.3	1756.0	1756.8	1751.2	1739.9	1718.1	1692.7
37.5°	1616.2	1641.6	1666.5	1689.5	1721.8	1730.2	1731.4	1726.6	1715.3	1695.2	1669.4
38°	1590.8	1617.4	1642.0	1663.7	1696.4	1704.8	1706.4	1701.2	1690.3	1671.0	1646.8
38.5°	1565.4	1592.0	1616.6	1637.9	1670.2	1679.0	1680.6	1675.0	1665.7	1646.4	1621.4
39°	1538.8	1566.2	1590.4	1612.1	1643.6	1651.6	1653.6	1648.8	1640.3	1621.4	1596.0
39.5°	1511.4	1537.6	1562.6	1583.9	1615.8	1624.2	1626.2	1621.8	1613.7	1594.8	1569.0
40°	1483.2	1509.4	1533.5	1555.3	1587.9	1596.4	1598.0	1594.4	1585.5	1567.8	1543.6
40.5°	1452.5	1479.5	1504.1	1525.9	1558.1	1567.0	1569.8	1565.8	1557.3	1539.6	1514.2
41°	1423.1	1449.7	1474.3	1496.5	1529.1	1538.0	1540.0	1536.4	1528.7	1510.2	1484.8
41.5°	1394.1	1419.9	1444.5	1467.0	1500.1	1508.6	1511.4	1506.9	1498.9	1479.9	1454.9
42°	1364.7	1390.1	1414.6	1437.2	1470.7	1480.7	1483.2	1479.1	1470.3	1451.7	1427.5
42.5°	1332.4	1358.6	1383.6	1406.6	1441.2	1450.9	1454.1	1450.5	1441.2	1422.7	1397.3
43°	1303.4	1329.2	1354.6	1377.2	1411.0	1421.1	1424.3	1419.9	1411.0	1391.7	1367.5
43.5°	1276.4	1301.8	1327.2	1349.8	1382.8	1392.9	1395.7	1390.5	1380.0	1360.6	1336.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1204.7	1229.7	1253.8	1275.2	1305.8	1315.5	1318.3	1312.7	1301.4	1281.6	1258.7
45.5°	1182.1	1207.5	1231.7	1252.6	1282.4	1291.7	1294.5	1288.9	1277.6	1258.7	1235.3
46°	1161.1	1186.5	1209.9	1230.9	1259.9	1268.7	1271.6	1265.9	1255.0	1236.1	1213.1
46.5°	1140.2	1165.6	1188.5	1209.1	1237.7	1247.0	1249.8	1244.6	1233.3	1214.3	1191.4
47°	1119.6	1144.6	1168.0	1188.1	1215.9	1225.2	1228.0	1222.8	1211.5	1193.4	1170.8
47.5°	1099.1	1124.1	1147.0	1167.2	1194.6	1204.3	1207.1	1201.0	1190.2	1172.4	1149.9
48°	1078.1	1103.1	1125.3	1146.2	1173.2	1183.3	1185.7	1180.1	1169.6	1151.9	1129.3
48.5°	1054.7	1079.3	1102.7	1124.1	1152.3	1162.3	1165.2	1159.9	1148.6	1130.9	1108.7
49°	1029.3	1052.3	1076.1	1099.5	1129.3	1140.2	1143.8	1138.2	1126.1	1107.5	1086.2
49.5°	1003.6	1025.3	1049.5	1073.7	1105.1	1116.8	1120.0	1113.6	1101.5	1082.1	1060.4
50°	974.1	995.1	1019.3	1045.5	1080.1	1093.0	1096.2	1089.4	1076.1	1056.8	1035.0
50.5°	943.1	964.5	989.4	1016.4	1052.7	1066.0	1068.8	1064.0	1049.5	1030.2	1006.8
51°	911.3	933.4	956.8	985.0	1023.3	1035.4	1039.8	1035.0	1021.3	1000.7	977.8
51.5°	879.0	900.8	924.6	952.0	992.3	1005.2	1010.8	1004.0	991.9	970.5	947.5
52°	846.0	867.3	890.7	917.3	958.4	973.7	979.4	972.9	960.0	939.1	916.5
52.5°	812.5	833.5	857.7	882.2	923.8	941.5	947.1	940.7	926.2	906.0	884.7
53°	778.3	799.2	821.8	845.6	887.9	908.0	915.3	906.8	890.3	871.4	852.4
53.5°	744.0	764.1	787.1	808.9	851.6	874.6	883.0	873.8	855.2	837.5	818.6
54°	709.3	729.1	750.4	771.4	814.9	839.1	849.2	837.5	819.4	802.0	784.3
54.5°	675.1	695.6	714.2	734.7	778.7	804.0	814.1	802.0	782.7	766.6	749.6
55°	640.8	660.2	677.1	697.6	742.0	769.8	780.3	767.4	747.2	731.1	715.8
55.5°	606.2	625.1	641.2	661.0	706.5	733.5	746.0	731.9	712.6	694.8	680.3
56°	572.3	589.6	605.0	623.5	669.8	697.2	709.7	694.8	676.7	658.2	645.3
56.5°	538.9	555.8	568.3	587.6	634.0	662.2	674.3	659.8	641.6	622.3	610.2
57°	505.8	520.7	532.0	551.8	598.1	625.1	638.4	624.7	606.6	587.2	575.9
57.5°	472.8	486.9	497.3	517.5	564.2	590.0	603.3	590.4	573.1	552.2	540.5
58°	440.5	453.0	463.5	482.8	530.0	554.2	567.1	555.4	538.9	517.1	506.6
58.5°	409.1	420.4	429.6	450.2	496.9	519.9	531.6	521.9	506.6	484.0	473.6
59°	378.0	387.3	396.6	417.5	463.5	485.3	496.1	487.7	473.2	451.4	440.1
59.5°	349.0	356.3	365.1	385.3	430.8	451.8	461.1	455.8	440.1	420.0	408.3
60°	319.2	324.4	334.1	354.7	398.6	418.3	427.2	422.0	408.3	390.5	378.0
60.5°	290.6	295.0	304.3	324.8	368.4	387.3	395.4	391.3	378.4	361.1	348.2
61°	263.2	266.0	274.9	294.6	338.5	356.3	363.5	361.1	348.6	331.7	318.4
61.5°	236.6	239.0	247.5	268.4	308.3	325.2	331.7	330.5	318.8	302.3	288.6
62°	210.4	212.0	221.7	241.0	278.1	294.2	299.9	299.9	289.0	272.9	258.7
62.5°	186.2	187.0	196.3	215.2	249.9	263.2	268.0	269.2	259.1	246.3	232.5
63°	162.4	162.8	172.9	191.0	222.9	235.0	239.4	241.0	228.5	220.9	207.2
63.5°	138.2	141.1	149.9	167.7	196.7	207.2	212.0	213.2	199.9	196.3	183.4
64°	118.1	123.3	132.2	145.1	172.1	181.8	186.2	187.4	172.1	172.5	160.8
64.5°	97.9	106.0	114.5	127.0	148.3	157.2	161.6	162.0	145.1	150.3	139.4
65°	77.8	89.1	96.7	108.8	126.6	133.8	138.6	138.6	119.3	128.6	119.7
65.5°	57.6	71.7	79.0	90.7	105.6	112.4	116.9	116.1	96.3	108.8	102.0
66°	42.3	54.4	61.3	72.5	86.2	92.3	96.7	95.1	75.0	89.9	84.2



TEST NUMBER: P776343

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	13.3	23.0	26.6	29.4	45.1	48.8	52.4	51.2	34.3	50.0	47.2
68°	10.5	15.7	18.5	19.7	33.5	36.3	39.1	38.7	20.6	38.3	36.7
68.5°	7.7	12.1	11.3	12.5	21.4	23.8	26.2	26.2	6.9	26.6	25.8
69°	4.8	8.9	8.9	9.7	9.7	11.7	13.3	13.7	3.2	15.3	15.3
69.5°	2.0	5.2	6.4	6.9	4.8	6.0	6.9	7.7	2.0	9.3	8.9
70°	1.6	2.0	4.0	4.0	2.4	2.8	3.2	3.6	1.6	4.8	4.8
70.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.0	1.6	2.4	2.4
71°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
71.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.6	1.6	1.6
72°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.6	1.6
72.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
73°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
73.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
74°	0.8	0.8	1.2	0.8	0.8	0.8	0.8	0.8	0.8	1.2	1.2
74.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.2
75°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
75.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
76°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
76.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4	0.8	0.8
78°	0.8	0.4	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.8	0.8
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°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
81°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
81.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
82°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
82.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
83°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
83.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
84°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.4	0.4
84.5°	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.4	0.4
85°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
85.5°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
86°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
86.5°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
87°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
87.5°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
88°	0.4	0.8	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
88.5°	0.4	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.4	0.4



TEST NUMBER: P776343

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.4	1.2	1.2	0.8	0.4	0.0	0.0	0.4	0.0	0.8	0.4



TEST NUMBER: P776343

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2683.4	2683.4	2683.4	2683.4	2683.4	2683.4
0.5°	2681.8	2683.0	2681.8	2680.2	2680.6	2681.4
1°	2680.6	2681.0	2679.4	2677.7	2678.2	2679.4
1.5°	2678.6	2678.2	2676.1	2674.5	2674.9	2676.9
2°	2676.5	2675.3	2672.9	2671.3	2672.1	2673.7
2.5°	2673.7	2671.7	2669.3	2667.3	2668.1	2670.5
3°	2670.5	2668.1	2665.3	2663.2	2664.0	2666.9
3.5°	2667.3	2663.6	2660.8	2658.8	2659.6	2662.4
4°	2663.2	2659.2	2656.0	2654.0	2654.8	2657.6
4.5°	2658.8	2654.0	2650.7	2648.3	2649.5	2652.4
5°	2654.0	2648.7	2645.5	2643.1	2643.9	2647.1
5.5°	2648.7	2642.7	2639.5	2636.6	2637.4	2641.1
6°	2643.1	2636.6	2633.0	2630.6	2631.0	2634.2
6.5°	2636.6	2630.2	2626.6	2623.7	2623.7	2627.8
7°	2630.2	2622.9	2619.3	2616.5	2616.9	2620.5
7.5°	2623.3	2615.3	2611.7	2608.8	2609.2	2612.5
8°	2615.7	2607.6	2603.6	2600.8	2600.8	2604.4
8.5°	2607.6	2599.2	2595.5	2592.3	2592.3	2595.5
9°	2599.2	2590.3	2586.7	2583.8	2583.0	2586.7
9.5°	2590.3	2581.0	2577.4	2574.6	2573.8	2577.0
10°	2581.0	2571.3	2567.7	2564.9	2563.7	2566.9
10.5°	2571.3	2561.3	2557.6	2554.8	2553.6	2556.4
11°	2560.9	2550.8	2547.2	2544.3	2542.7	2545.6
11.5°	2550.4	2539.5	2536.3	2533.5	2531.9	2534.3
12°	2539.9	2528.6	2525.0	2522.2	2520.2	2523.0
12.5°	2528.2	2516.5	2513.3	2510.5	2508.5	2510.9
13°	2516.5	2504.4	2501.6	2498.8	2496.0	2498.4
13.5°	2504.0	2491.5	2489.1	2485.9	2483.5	2485.9
14°	2491.5	2478.7	2476.2	2473.0	2470.6	2473.0
14.5°	2479.1	2465.8	2463.3	2460.1	2457.3	2459.7
15°	2465.4	2452.0	2449.6	2446.4	2443.2	2446.0
15.5°	2451.6	2438.3	2435.5	2432.7	2429.5	2432.3
16°	2437.9	2423.8	2421.0	2418.2	2415.4	2417.8
16.5°	2423.8	2409.3	2406.9	2404.1	2400.5	2403.7
17°	2409.7	2394.8	2392.0	2389.2	2386.0	2388.4
17.5°	2395.2	2379.5	2376.7	2373.9	2370.2	2373.5
18°	2379.9	2364.2	2361.4	2358.5	2354.9	2358.1
18.5°	2364.6	2348.5	2345.2	2342.8	2339.2	2342.8
19°	2348.9	2332.8	2329.5	2326.7	2323.5	2327.1
19.5°	2333.6	2317.0	2313.4	2310.6	2307.4	2311.8
20°	2317.8	2300.5	2296.5	2293.7	2290.8	2295.3
20.5°	2301.7	2284.0	2280.0	2277.1	2274.3	2279.1
21°	2285.6	2266.7	2263.0	2259.8	2257.4	2262.6



TEST NUMBER: P776343

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2235.6	2215.9	2210.6	2207.4	2206.2	2212.2
23°	2218.7	2198.1	2192.9	2188.5	2188.9	2195.7
23.5°	2201.8	2180.4	2174.8	2171.1	2171.1	2178.4
24°	2184.4	2162.7	2156.2	2152.2	2153.4	2161.1
24.5°	2166.7	2144.9	2138.1	2134.1	2134.9	2143.7
25°	2149.4	2127.2	2119.1	2114.7	2116.7	2126.0
25.5°	2131.6	2109.1	2100.6	2096.6	2099.0	2108.7
26°	2113.5	2090.5	2081.3	2076.4	2080.5	2090.5
26.5°	2095.4	2071.6	2062.7	2057.9	2061.9	2072.4
27°	2077.2	2053.0	2043.0	2038.1	2043.0	2054.7
27.5°	2059.1	2034.1	2023.6	2018.4	2023.6	2036.1
28°	2040.6	2014.8	2003.9	1998.6	2004.3	2017.6
28.5°	2021.6	1995.4	1984.1	1978.5	1984.9	1998.6
29°	2002.7	1976.1	1964.0	1957.9	1965.6	1979.7
29.5°	1983.7	1956.3	1943.8	1937.8	1945.4	1960.8
30°	1964.4	1936.6	1922.9	1917.6	1925.3	1941.8
30.5°	1944.6	1916.4	1902.3	1896.7	1905.1	1921.7
31°	1925.3	1895.9	1881.4	1875.3	1884.6	1901.5
31.5°	1904.7	1875.3	1860.4	1854.4	1863.6	1881.8
32°	1884.2	1854.8	1838.6	1833.0	1843.1	1861.6
32.5°	1864.0	1833.8	1817.3	1811.6	1821.7	1841.1
33°	1843.1	1812.0	1795.9	1790.3	1800.3	1820.1
33.5°	1822.1	1790.3	1774.1	1768.1	1779.0	1799.1
34°	1800.3	1768.5	1752.4	1745.9	1757.2	1777.4
34.5°	1778.6	1746.3	1729.4	1723.8	1735.1	1755.6
35°	1756.8	1723.8	1706.8	1701.2	1712.5	1733.4
35.5°	1734.7	1700.8	1684.7	1678.6	1689.9	1710.5
36°	1712.5	1677.4	1661.3	1655.7	1666.9	1687.5
36.5°	1689.1	1654.0	1638.3	1632.3	1644.0	1663.7
37°	1665.3	1629.9	1614.1	1608.9	1620.2	1640.3
37.5°	1641.6	1605.3	1590.0	1585.1	1596.0	1616.2
38°	1617.0	1580.7	1565.8	1560.5	1571.4	1590.8
38.5°	1592.0	1554.9	1540.4	1535.6	1546.0	1565.4
39°	1565.8	1529.1	1515.4	1510.6	1521.0	1538.8
39.5°	1540.0	1502.1	1488.4	1484.4	1493.2	1511.4
40°	1513.0	1474.7	1460.6	1456.6	1465.0	1483.2
40.5°	1484.4	1446.1	1432.0	1427.9	1435.6	1452.5
41°	1454.9	1416.7	1403.0	1398.5	1407.0	1423.1
41.5°	1425.5	1387.2	1373.5	1369.9	1377.2	1394.1
42°	1397.3	1359.4	1345.3	1340.9	1348.9	1364.7
42.5°	1368.3	1330.4	1315.9	1310.3	1317.9	1332.4
43°	1338.9	1300.2	1286.1	1281.6	1288.5	1303.4
43.5°	1308.6	1270.8	1257.1	1252.6	1260.3	1276.4

TEST NUMBER: P776343

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1230.9	1196.2	1183.3	1179.7	1187.7	1204.7
45.5°	1207.9	1173.2	1160.3	1157.5	1165.6	1182.1
46°	1186.1	1151.9	1139.4	1136.1	1144.6	1161.1
46.5°	1164.4	1131.3	1118.4	1115.6	1123.7	1140.2
47°	1144.6	1111.2	1097.9	1095.0	1103.1	1119.6
47.5°	1123.7	1089.8	1077.7	1074.5	1082.9	1099.1
48°	1103.5	1070.5	1057.6	1054.3	1062.4	1078.1
48.5°	1083.4	1049.1	1037.4	1033.4	1041.0	1054.7
49°	1061.2	1027.7	1015.2	1010.8	1017.3	1029.3
49.5°	1036.6	1002.7	992.3	987.4	991.9	1003.6
50°	1011.2	978.6	967.3	962.4	964.9	974.1
50.5°	983.8	950.4	940.7	934.2	935.0	943.1
51°	954.0	921.3	910.9	904.0	904.4	911.3
51.5°	924.2	889.9	879.8	871.4	873.0	879.0
52°	893.9	858.5	846.8	837.9	838.7	846.0
52.5°	862.1	825.0	812.9	804.0	804.5	812.5
53°	829.8	792.0	778.7	769.0	769.8	778.3
53.5°	796.4	758.1	743.6	733.9	734.7	744.0
54°	763.3	724.7	708.9	698.9	699.7	709.3
54.5°	729.9	691.6	674.7	663.8	664.6	675.1
55°	697.2	658.2	639.6	628.3	629.9	640.8
55.5°	663.4	623.9	605.8	592.5	596.1	606.2
56°	629.1	590.8	571.5	557.8	562.2	572.3
56.5°	596.1	558.2	538.5	523.9	529.2	538.9
57°	561.8	526.0	504.6	490.1	495.7	505.8
57.5°	529.2	494.1	472.4	457.4	463.1	472.8
58°	496.5	462.7	440.9	426.0	431.2	440.5
58.5°	463.5	431.2	410.3	394.6	401.0	409.1
59°	431.2	401.0	380.5	364.7	369.6	378.0
59.5°	401.0	371.6	350.6	335.7	341.0	349.0
60°	371.2	342.6	322.0	307.5	312.8	319.2
60.5°	341.4	313.2	294.6	280.9	284.9	290.6
61°	311.5	285.8	267.6	255.5	257.5	263.2
61.5°	281.7	258.7	242.6	231.7	233.4	236.6
62°	253.9	232.1	218.0	207.6	208.8	210.4
62.5°	227.3	206.8	194.7	185.8	185.0	186.2
63°	201.5	182.6	172.5	164.4	162.4	162.4
63.5°	176.9	159.6	151.9	145.1	142.3	138.2
64°	153.6	137.4	134.6	129.0	125.7	118.1
64.5°	132.6	119.3	117.7	112.4	109.2	97.9
65°	112.0	101.2	100.8	96.3	92.3	77.8
65.5°	93.5	83.4	83.4	80.2	75.8	57.6
66°	76.6	65.3	66.5	64.1	58.8	42.3



TEST NUMBER: P776343

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	41.9	29.4	31.0	30.6	25.4	13.3
68°	32.2	21.0	22.6	21.8	17.7	10.5
68.5°	22.6	14.5	14.9	14.5	14.5	7.7
69°	12.9	11.3	11.7	11.3	11.3	4.8
69.5°	7.7	8.1	8.5	8.1	8.1	2.0
70°	4.0	4.8	4.8	4.8	4.8	1.6
70.5°	2.0	1.6	1.6	1.6	1.6	1.6
71°	1.6	1.6	1.6	1.6	1.6	1.6
71.5°	1.6	1.2	1.2	1.2	1.2	1.2
72°	1.2	1.2	1.2	1.2	1.2	1.2
72.5°	1.2	1.2	1.2	1.2	1.2	1.2
73°	1.2	1.2	1.2	1.2	1.2	1.2
73.5°	1.2	1.2	1.2	1.2	1.2	1.2
74°	1.2	1.2	1.2	1.2	0.8	0.8
74.5°	0.8	0.8	0.8	0.8	0.8	0.8
75°	0.8	0.8	0.8	0.8	0.8	0.8
75.5°	0.8	0.8	0.8	0.8	0.8	0.8
76°	0.8	0.8	0.8	0.8	0.8	0.8
76.5°	0.8	0.8	0.8	0.8	0.8	0.8
77°	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.8	0.8	0.8	0.8	0.8	0.8
78°	0.8	0.8	0.8	0.8	0.8	0.8
78.5°	0.4	0.8	0.8	0.8	0.8	0.4
79°	0.4	0.4	0.8	0.8	0.8	0.4
79.5°	0.4	0.4	0.8	0.8	0.4	0.4
80°	0.4	0.4	0.8	0.8	0.4	0.4
80.5°	0.4	0.4	0.8	0.8	0.4	0.4
81°	0.4	0.4	0.8	0.8	0.4	0.4
81.5°	0.4	0.4	0.8	0.8	0.4	0.4
82°	0.4	0.4	0.8	0.8	0.4	0.4
82.5°	0.4	0.4	0.8	0.8	0.4	0.4
83°	0.4	0.4	0.8	0.8	0.4	0.4
83.5°	0.4	0.4	0.8	0.8	0.4	0.4
84°	0.4	0.4	0.8	0.8	0.4	0.4
84.5°	0.4	0.4	0.8	0.8	0.4	0.4
85°	0.4	0.4	0.8	0.8	0.8	0.4
85.5°	0.4	0.4	0.8	0.8	0.8	0.4
86°	0.4	0.4	0.8	0.8	0.8	0.4
86.5°	0.4	0.4	0.8	1.2	0.8	0.4
87°	0.4	0.4	1.2	1.2	1.2	0.4
87.5°	0.4	0.8	1.2	1.6	1.2	0.4
88°	0.4	0.8	1.6	2.0	1.6	0.4
88.5°	0.4	0.8	2.0	2.4	2.0	0.4



TEST NUMBER: P776343

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.4	1.6	2.8	2.0	2.8	0.4



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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°	2246.1	2265.0	2293.7	2322.7	2358.9	2372.2	2370.6	2358.1	2338.4	2316.2	2291.2
22°	2229.2	2248.5	2277.1	2307.0	2342.8	2356.5	2354.9	2342.0	2322.7	2300.1	2274.7



44°	1251.0	1276.8	1301.4	1324.0	1356.2	1366.3	1368.7	1363.1	1351.8	1332.0	1309.0
44.5°	1227.2	1252.6	1277.2	1299.0	1330.4	1340.1	1342.5	1337.7	1326.0	1306.2	1282.0



66.5°	30.6	41.9	48.0	54.4	68.9	73.8	78.2	76.2	61.3	72.9	68.9
67°	21.0	31.4	36.7	41.1	57.2	61.3	65.3	63.7	47.6	61.3	58.0



89°	0.4	0.8	1.2	0.8	0.0	0.0	0.0	0.4	0.0	0.4	0.4
89.5°	0.4	1.2	1.2	0.8	0.4	0.0	0.0	0.4	0.0	0.4	0.4

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21.5°	2269.5	2249.7	2245.7	2242.5	2240.9	2246.1
22°	2252.1	2232.8	2228.4	2224.3	2223.1	2229.2



44°	1280.8	1244.6	1231.7	1226.8	1235.3	1251.0
44.5°	1255.0	1220.0	1206.7	1203.1	1211.1	1227.2

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66.5°	61.7	51.2	53.6	51.6	46.3	30.6
67°	51.6	39.1	41.5	40.3	35.1	21.0



89°	0.4	1.2	2.0	2.8	2.0	0.4
89.5°	0.4	1.2	2.4	2.8	2.4	0.4

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Scaled Data Report



(END OF REPORT)