

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: P776605

Luminaire Tested: HCDJBS4050CSD-HCD4TRH-HCD4TRLWW-5000lm-2700K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776605
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B004)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD4TRH-HCD4TRLWW-5000lm-2700K
Description: 4 INCH ROUND MEDIUM LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4635.3 lumens
Efficiency: N/A
Efficacy: 96.6 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1.09 / 1.15
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

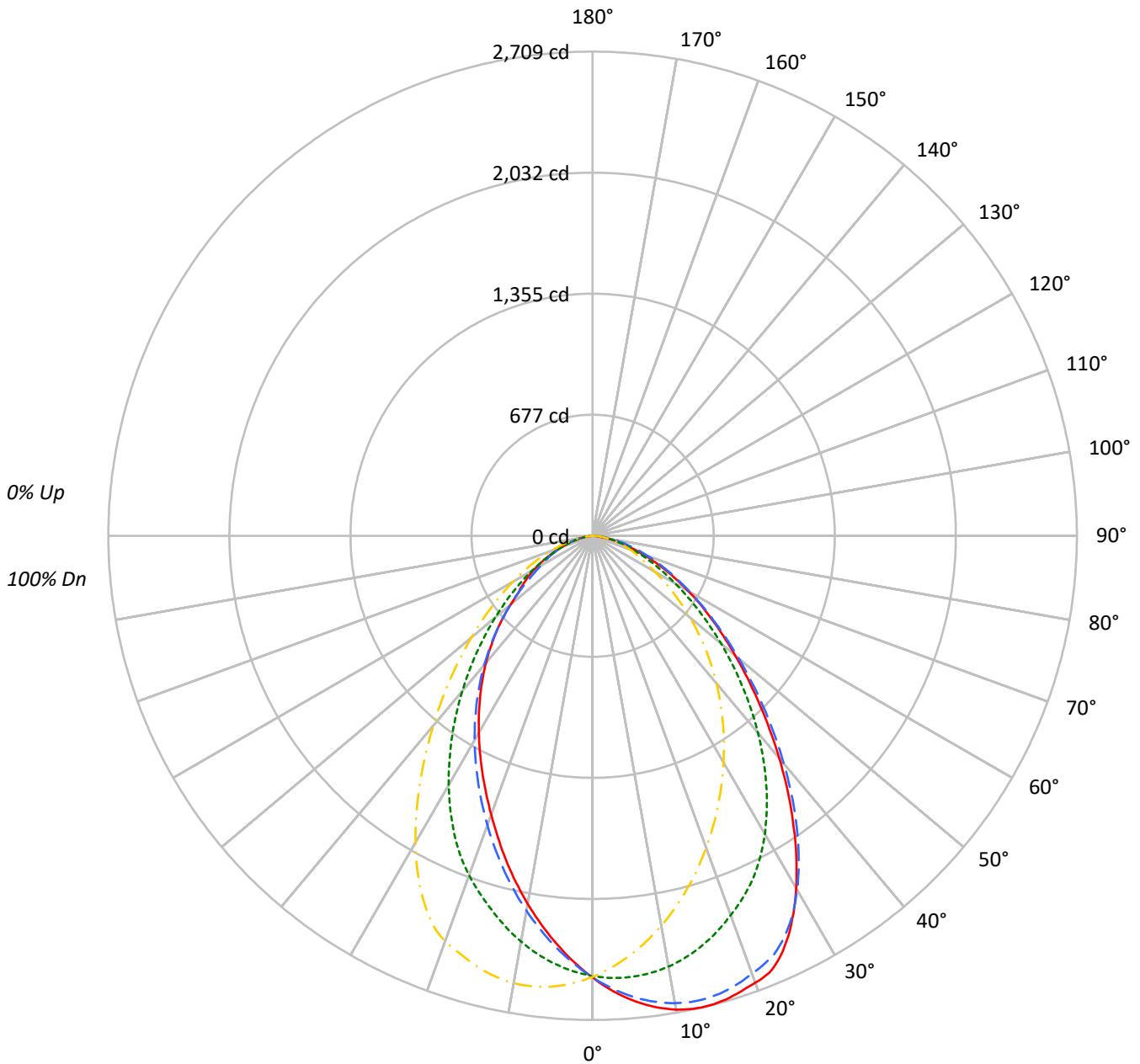
Input Watts (W): 48
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P776605

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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	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88								
2	102	95	89	84	100	93	88	83	90	85	82	87	83	80	84	81	78	76								
3	94	85	78	73	92	84	77	72	81	75	71	78	73	69	76	72	68	66								
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60	58								
5	81	70	62	56	79	69	61	55	67	60	55	65	59	54	63	58	54	52								
6	75	63	55	50	74	63	55	49	61	54	49	59	53	49	58	52	48	46								
7	70	58	50	45	69	57	50	44	56	49	44	54	48	44	53	48	44	42								
8	66	54	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38								
9	62	49	42	37	61	49	42	37	48	41	37	47	41	36	46	40	36	35								
10	58	46	39	34	57	45	38	34	45	38	34	44	38	33	43	37	33	32								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	310723	310723	310723	310723
5°	329811	312946	289802	303787
10°	344001	312718	267224	294661
15°	352446	309150	244305	282910
20°	356486	302580	222251	270719
25°	352524	294300	202722	254683
30°	330905	279971	184991	233876
35°	300340	259995	168552	210494
40°	266799	236242	152457	186299
45°	233704	210175	135637	161996
50°	203736	183472	117433	139029
55°	178207	157911	104901	118110
60°	155450	134458	94991	98767
65°	131800	113873	81712	81176
70°	108327	95412	67263	65423
75°	83343	79793	54508	51396
80°	53196	66386	38629	37976
85°	15739	57903	15162	17761

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°
 Vertical Angle: 45°
 Luminance: 241659 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	231.7	5.0
10°-20°	641.9	13.8
20°-30°	909.5	19.6
30°-40°	950.2	20.5
40°-50°	799.8	17.3
50°-60°	568.0	12.3
60°-70°	344.5	7.4
70°-80°	158.0	3.4
80°-90°	31.8	0.7
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°	1783.0	38.5
0°-40°	2733.2	59.0
0°-60°	4101.0	88.5
0°-90°	4635.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4635.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2469	2469	2469	2469	2469	
5°	2611	2477	2294	2405	2611	252
15°	2705	2373	1875	2171	2705	763
25°	2539	2119	1460	1834	2539	1159
35°	1955	1692	1097	1370	1955	1219
45°	1313	1181	762	910	1313	1015
55°	812	720	478	538	812	730
65°	443	382	274	273	443	442
75°	171	164	112	106	171	185
85°	11	40	10	12	11	21
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°	2469.0	2469.0	2469.0	2469.0	2469.0	2469.0	2469.0	2469.0	2469.0	2469.0	2469.0
0.5°	2488.1	2488.1	2485.4	2479.9	2466.7	2461.7	2458.5	2456.2	2456.2	2455.8	2457.6
1°	2504.1	2503.6	2498.2	2488.6	2469.4	2458.5	2449.4	2442.1	2439.4	2438.4	2443.0
1.5°	2519.1	2519.1	2511.4	2497.2	2472.2	2454.4	2438.9	2427.5	2422.5	2421.6	2428.0
2°	2533.7	2533.7	2524.1	2505.0	2474.5	2450.3	2428.4	2412.5	2404.7	2403.8	2412.5
2.5°	2547.8	2548.3	2536.0	2512.7	2476.3	2445.3	2417.9	2397.0	2386.9	2386.0	2396.5
3°	2561.1	2562.0	2547.8	2519.6	2477.2	2440.3	2407.0	2381.5	2369.2	2367.8	2381.0
3.5°	2574.3	2575.2	2558.8	2526.0	2478.1	2434.3	2395.1	2365.5	2350.9	2349.1	2365.1
4°	2587.0	2588.4	2569.3	2532.3	2478.1	2428.4	2383.3	2349.1	2331.8	2330.4	2348.2
4.5°	2598.9	2600.7	2579.3	2538.3	2478.1	2421.6	2371.0	2332.2	2312.6	2312.2	2331.3
5°	2610.7	2612.6	2588.9	2543.3	2477.2	2414.7	2358.2	2315.4	2294.0	2292.6	2314.5
5.5°	2621.2	2623.9	2598.0	2547.8	2476.7	2407.5	2345.5	2298.1	2274.4	2272.5	2297.2
6°	2631.7	2634.9	2606.6	2552.4	2474.9	2399.7	2331.8	2280.7	2254.8	2252.9	2279.4
6.5°	2641.3	2644.9	2614.4	2556.0	2473.1	2392.0	2318.6	2263.4	2235.2	2233.3	2261.6
7°	2650.4	2654.5	2622.1	2559.2	2470.8	2383.3	2304.9	2245.2	2214.7	2213.7	2243.8
7.5°	2659.0	2663.6	2629.0	2562.0	2467.6	2374.2	2290.3	2227.0	2194.6	2193.2	2225.1
8°	2666.8	2671.8	2635.3	2563.8	2464.4	2365.1	2275.7	2208.7	2174.1	2172.7	2206.5
8.5°	2673.6	2679.6	2641.3	2565.6	2460.8	2355.0	2260.7	2190.0	2153.6	2152.2	2187.8
9°	2680.5	2686.8	2646.7	2567.0	2456.7	2345.5	2246.1	2171.4	2132.6	2131.2	2169.1
9.5°	2686.4	2693.2	2651.3	2567.9	2452.1	2335.0	2230.2	2152.2	2111.6	2110.7	2149.9
10°	2691.9	2699.2	2655.4	2567.9	2447.1	2324.0	2214.7	2133.1	2091.1	2089.3	2130.3
10.5°	2696.4	2704.2	2658.6	2567.4	2441.6	2312.6	2198.2	2113.9	2069.7	2067.9	2110.7
11°	2700.1	2708.7	2661.8	2567.0	2435.7	2301.3	2183.2	2093.9	2048.3	2046.9	2091.1
11.5°	2703.3	2712.4	2663.6	2565.2	2429.3	2289.9	2165.9	2074.3	2027.3	2026.0	2071.5
12°	2705.5	2715.6	2665.4	2563.3	2422.5	2277.6	2149.0	2054.2	2005.4	2004.1	2051.5
12.5°	2707.4	2717.8	2666.3	2561.1	2415.2	2265.2	2131.7	2034.6	1984.0	1982.7	2031.0
13°	2708.3	2719.7	2666.8	2557.9	2407.5	2252.5	2115.3	2014.1	1962.6	1960.8	2011.4
13.5°	2708.7	2720.6	2666.3	2554.2	2399.2	2239.3	2098.0	1994.5	1940.7	1939.4	1990.9
14°	2707.8	2721.0	2665.4	2550.1	2391.0	2225.6	2080.2	1973.5	1918.9	1917.0	1970.4
14.5°	2706.9	2720.6	2663.6	2545.6	2381.5	2211.9	2062.4	1953.0	1897.4	1895.1	1949.8
15°	2705.1	2719.2	2661.3	2540.1	2372.8	2198.2	2044.2	1932.1	1875.1	1873.7	1928.9
15.5°	2702.3	2717.4	2658.6	2534.6	2362.8	2183.7	2026.4	1911.6	1853.2	1851.9	1908.4
16°	2699.6	2714.6	2654.9	2528.2	2352.3	2169.1	2008.2	1891.0	1831.3	1829.5	1887.9
16.5°	2695.5	2711.5	2650.8	2521.4	2341.8	2154.0	1989.5	1870.5	1809.9	1807.6	1867.3
17°	2691.4	2707.8	2645.8	2514.1	2330.9	2139.5	1971.3	1849.6	1787.6	1785.8	1846.4
17.5°	2686.4	2703.7	2640.8	2506.4	2319.0	2123.5	1952.1	1828.6	1765.7	1764.3	1825.9
18°	2681.4	2698.7	2634.9	2498.2	2307.6	2108.0	1933.4	1807.6	1744.3	1742.0	1804.9
18.5°	2675.5	2693.2	2628.5	2489.5	2295.8	2092.0	1914.3	1786.2	1722.9	1720.6	1783.9
19°	2670.4	2687.3	2621.7	2480.8	2283.9	2076.6	1896.1	1765.3	1701.4	1698.7	1763.4
19.5°	2666.3	2681.8	2614.8	2471.3	2271.6	2060.6	1876.0	1744.7	1680.9	1677.7	1742.5
20°	2661.8	2677.3	2607.5	2461.7	2259.3	2044.6	1856.9	1723.8	1659.5	1656.3	1722.0
20.5°	2656.8	2672.3	2600.7	2452.6	2246.6	2028.2	1837.7	1702.8	1639.5	1635.8	1701.0
21°	2650.8	2666.8	2594.3	2443.5	2233.8	2011.8	1818.6	1682.8	1618.5	1614.8	1680.5



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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°	2625.8	2645.4	2570.6	2413.4	2194.1	1962.2	1759.8	1622.1	1558.3	1553.8	1618.9
23°	2611.6	2634.9	2561.1	2402.4	2180.0	1945.3	1740.6	1602.5	1537.8	1533.7	1598.4
23.5°	2595.7	2622.6	2550.6	2390.6	2165.4	1928.0	1720.6	1582.5	1518.7	1514.6	1578.4
24°	2578.8	2607.5	2536.9	2377.4	2150.4	1910.6	1701.0	1562.9	1499.1	1494.1	1557.9
24.5°	2560.1	2590.2	2521.9	2363.7	2134.9	1892.4	1680.9	1543.7	1479.5	1474.0	1537.8
25°	2538.7	2572.9	2505.9	2348.2	2119.4	1874.2	1661.8	1523.7	1459.9	1454.9	1517.8
25.5°	2516.8	2554.7	2488.6	2331.8	2102.1	1856.0	1642.2	1505.0	1441.2	1435.7	1497.7
26°	2495.0	2534.2	2470.3	2314.5	2085.2	1837.3	1622.6	1485.4	1422.0	1416.6	1477.7
26.5°	2470.8	2511.4	2451.2	2295.8	2066.5	1818.1	1602.1	1466.7	1402.9	1397.0	1457.6
27°	2445.3	2489.5	2431.2	2276.2	2048.3	1799.4	1582.5	1447.1	1383.8	1378.3	1437.5
27.5°	2418.4	2465.8	2409.3	2256.1	2028.7	1779.8	1562.9	1428.4	1365.5	1359.6	1418.4
28°	2392.9	2440.3	2386.5	2234.7	2009.6	1760.2	1543.3	1409.3	1346.4	1340.9	1398.3
28.5°	2364.2	2414.3	2363.2	2213.3	1989.0	1740.6	1523.2	1391.1	1328.6	1322.2	1378.7
29°	2335.4	2387.9	2339.1	2190.5	1968.5	1720.1	1503.6	1372.4	1309.9	1303.5	1359.1
29.5°	2306.3	2360.0	2313.6	2167.7	1947.1	1700.5	1484.5	1353.7	1291.2	1285.3	1339.5
30°	2277.1	2331.8	2287.6	2144.0	1926.6	1679.6	1464.4	1335.4	1273.0	1267.1	1320.4
30.5°	2245.6	2302.6	2260.7	2119.4	1904.3	1658.6	1444.8	1317.2	1255.2	1248.8	1300.8
31°	2214.7	2272.5	2232.9	2094.8	1881.9	1638.1	1425.2	1298.5	1237.0	1230.6	1281.2
31.5°	2183.2	2241.5	2204.6	2068.8	1859.1	1616.7	1405.6	1279.8	1219.7	1211.9	1261.6
32°	2151.3	2211.0	2175.9	2042.8	1836.8	1595.7	1386.0	1261.6	1201.4	1194.2	1242.9
32.5°	2118.9	2179.6	2145.8	2016.8	1813.1	1574.7	1366.9	1243.8	1184.1	1176.4	1223.3
33°	2087.0	2147.7	2116.2	1990.4	1789.4	1552.9	1346.8	1225.6	1166.4	1158.6	1204.2
33.5°	2054.7	2114.8	2085.7	1962.6	1765.7	1531.4	1327.7	1207.8	1149.0	1140.8	1184.6
34°	2021.9	2082.9	2054.7	1934.8	1741.6	1509.6	1307.6	1190.1	1131.7	1123.1	1165.9
34.5°	1987.7	2048.7	2021.9	1907.0	1716.9	1487.7	1288.5	1171.8	1114.4	1105.3	1146.8
35°	1954.9	2015.9	1990.4	1878.3	1692.3	1465.8	1268.9	1154.0	1097.1	1088.0	1127.6
35.5°	1922.0	1982.2	1958.5	1849.6	1667.7	1444.4	1249.8	1136.3	1080.7	1070.6	1108.9
36°	1889.2	1949.8	1926.1	1820.4	1642.6	1422.5	1230.2	1118.9	1062.9	1052.9	1090.7
36.5°	1855.5	1916.1	1893.3	1791.2	1617.6	1399.7	1211.0	1101.2	1046.5	1035.5	1071.5
37°	1821.3	1881.5	1861.4	1761.6	1592.1	1377.8	1191.4	1083.4	1028.7	1018.2	1052.9
37.5°	1789.0	1847.7	1828.6	1732.0	1566.5	1356.4	1172.3	1066.1	1012.3	1000.9	1034.6
38°	1755.7	1814.0	1795.8	1701.9	1541.0	1333.6	1152.7	1048.8	995.0	984.0	1015.9
38.5°	1722.4	1779.8	1762.1	1671.8	1515.5	1311.7	1134.4	1031.4	978.1	966.7	997.3
39°	1688.7	1747.0	1730.2	1641.7	1490.0	1289.4	1114.8	1013.7	961.7	949.9	979.5
39.5°	1656.8	1713.3	1696.9	1611.7	1464.0	1267.5	1096.2	996.3	945.3	932.5	960.8
40°	1624.0	1679.1	1664.5	1581.6	1438.0	1244.7	1077.0	979.0	928.0	915.7	943.0
40.5°	1590.7	1645.4	1631.3	1551.5	1412.0	1222.9	1057.9	961.2	911.1	898.4	924.3
41°	1558.3	1613.0	1599.8	1521.0	1386.0	1200.5	1039.2	944.4	894.7	881.0	907.0
41.5°	1526.9	1580.2	1567.0	1491.3	1361.0	1178.7	1020.5	927.1	878.3	864.2	888.8
42°	1495.4	1546.9	1535.5	1461.7	1334.5	1156.3	1001.4	909.7	861.4	847.8	871.0
42.5°	1463.5	1514.1	1503.6	1431.6	1309.0	1134.9	982.7	892.9	844.6	830.9	853.7
43°	1433.0	1483.1	1471.7	1402.9	1283.5	1113.0	964.4	876.0	828.2	814.0	835.9
43.5°	1402.9	1451.2	1440.3	1372.8	1257.5	1091.1	945.3	858.7	811.8	797.2	817.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1313.1	1357.8	1348.7	1286.7	1180.9	1026.0	890.6	807.6	762.1	747.5	766.2
45.5°	1284.4	1327.7	1318.6	1257.5	1155.9	1004.5	871.9	790.3	746.1	731.1	748.9
46°	1255.2	1297.6	1289.0	1229.7	1130.8	983.1	853.7	773.9	729.7	714.7	731.5
46.5°	1226.1	1268.4	1260.2	1201.9	1106.2	962.2	835.5	757.1	713.3	697.8	714.7
47°	1199.2	1239.7	1230.6	1174.6	1080.7	940.7	817.2	740.2	696.9	681.9	698.7
47.5°	1171.8	1210.6	1201.9	1146.8	1056.1	919.8	799.4	723.8	680.0	665.4	680.9
48°	1144.0	1181.8	1174.1	1119.9	1031.9	899.3	781.2	707.4	664.5	649.5	664.5
48.5°	1117.6	1155.4	1146.8	1093.9	1008.2	878.8	763.9	690.5	648.1	633.1	648.1
49°	1092.5	1128.1	1119.9	1067.9	984.0	857.8	746.1	674.6	631.7	617.6	632.6
49.5°	1066.5	1100.7	1093.0	1041.9	960.3	838.2	728.3	658.2	615.8	601.6	615.8
50°	1040.6	1074.3	1066.1	1016.9	937.1	817.7	711.0	641.7	599.8	586.1	600.3
50.5°	1016.9	1049.2	1040.1	990.9	913.8	797.6	693.7	625.3	583.4	570.6	584.3
51°	992.2	1024.1	1014.1	966.7	891.5	778.0	676.4	609.4	567.9	554.7	568.8
51.5°	967.6	998.2	989.5	942.1	869.2	758.4	659.5	593.4	552.9	540.1	553.3
52°	944.8	974.5	965.4	918.4	846.4	739.3	642.7	577.9	536.9	525.5	538.3
52.5°	922.5	951.2	940.7	895.2	824.5	719.7	625.8	562.0	522.8	510.5	522.8
53°	898.8	926.6	917.0	871.5	803.1	701.0	609.4	546.5	515.0	495.9	508.2
53.5°	876.0	903.8	893.8	848.7	781.7	682.3	592.5	531.4	506.8	482.2	493.6
54°	855.5	881.5	870.5	826.3	760.2	663.6	576.6	516.4	497.7	474.0	479.5
54.5°	834.1	859.6	848.2	804.5	739.7	645.4	560.6	501.8	487.7	465.4	465.4
55°	812.2	837.7	826.3	782.6	719.7	627.6	545.1	487.7	478.1	456.2	451.7
55.5°	793.1	816.3	804.9	761.6	699.6	609.8	529.6	473.1	467.6	446.7	438.5
56°	772.6	795.3	783.5	740.2	679.6	592.5	514.1	462.6	457.6	437.1	425.2
56.5°	752.0	774.8	763.0	720.1	660.0	575.2	498.6	454.4	447.6	427.1	412.5
57°	732.4	754.3	742.5	700.1	641.3	558.3	484.0	445.3	437.1	417.5	400.2
57.5°	713.3	735.2	722.4	680.5	622.6	541.5	469.5	436.2	427.1	407.9	389.2
58°	692.8	715.6	702.8	660.9	604.4	525.5	455.3	426.6	417.5	398.4	378.3
58.5°	674.1	696.0	683.7	642.2	586.1	509.6	441.7	417.0	407.5	388.8	367.4
59°	654.5	677.3	664.5	623.5	568.4	493.6	428.0	407.0	397.4	379.7	356.4
59.5°	635.4	658.2	646.3	605.3	551.0	478.1	414.3	397.4	387.4	370.6	345.5
60°	617.6	639.5	628.1	587.0	534.2	463.1	401.1	388.3	377.4	361.0	337.3
60.5°	597.5	621.2	610.3	569.7	517.3	448.5	389.2	378.8	367.4	351.9	329.1
61°	580.2	601.6	592.1	552.4	501.4	433.9	377.4	369.2	357.3	342.3	320.9
61.5°	562.0	584.8	575.7	536.0	485.0	419.3	365.5	360.1	347.3	333.2	312.7
62°	544.7	567.0	558.8	519.1	469.5	406.1	353.7	350.5	336.8	324.1	304.5
62.5°	526.9	549.2	541.9	503.2	454.0	392.9	341.8	340.5	326.3	314.5	296.3
63°	509.1	532.4	525.5	486.8	438.9	380.1	330.4	330.9	315.9	304.9	288.1
63.5°	492.2	515.0	509.6	471.3	423.9	366.9	320.4	320.9	305.4	295.8	279.9
64°	474.9	498.6	494.1	455.8	409.3	354.1	310.8	311.3	294.9	286.2	272.6
64.5°	459.0	481.8	478.6	441.2	396.1	340.9	302.6	301.7	284.4	276.7	264.8
65°	442.6	466.3	463.5	426.6	382.4	329.5	294.9	292.6	274.4	267.5	257.1
65.5°	427.1	449.9	448.5	412.5	368.7	317.7	287.1	282.6	264.4	258.0	249.3
66°	410.7	434.8	433.9	398.4	355.5	305.4	278.9	273.5	254.3	248.9	242.0



TEST NUMBER: P776605

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRH-HCD4TRLWW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	365.5	389.2	391.1	357.8	317.2	273.5	255.7	245.7	225.2	222.0	219.7
68°	350.5	374.7	377.4	345.0	304.5	263.0	247.9	236.6	216.0	212.9	212.4
68.5°	335.9	360.5	364.2	331.8	293.1	253.0	240.7	227.9	207.4	204.6	205.1
69°	322.2	346.4	351.0	319.5	281.7	243.4	232.9	218.8	198.7	196.0	197.8
69.5°	308.1	332.3	337.3	307.2	270.3	233.8	225.2	210.1	191.0	188.2	190.5
70°	294.4	319.0	325.0	295.8	259.3	224.7	217.9	201.5	182.8	180.5	183.2
70.5°	280.8	305.8	312.7	283.5	248.4	216.0	210.6	193.7	175.0	172.7	175.9
71°	267.5	292.6	300.4	272.6	238.4	207.4	203.3	185.5	167.7	165.4	169.1
71.5°	254.8	279.9	287.6	261.2	227.9	199.2	196.0	177.8	160.4	158.2	161.8
72°	242.5	267.1	276.2	250.2	218.3	191.0	188.7	170.5	153.1	150.9	155.0
72.5°	229.7	255.2	264.4	239.7	208.3	183.2	181.4	163.2	145.9	144.0	148.1
73°	217.4	243.4	253.0	228.8	199.2	175.9	174.6	155.9	139.0	137.2	141.3
73.5°	205.6	231.1	241.6	218.8	189.6	168.2	167.3	149.0	132.2	130.4	134.5
74°	193.7	220.1	230.6	209.2	180.9	160.9	160.4	142.2	125.3	123.5	128.1
74.5°	182.3	208.7	220.1	199.2	172.3	154.1	154.1	135.4	119.0	117.1	122.2
75°	171.4	197.8	209.2	189.6	164.1	147.2	146.8	129.0	112.1	110.3	115.8
75.5°	160.9	186.9	198.7	180.5	155.9	140.4	140.4	122.6	105.7	103.9	109.8
76°	150.4	176.8	188.7	171.4	148.1	134.0	133.5	115.8	99.8	97.5	103.9
76.5°	140.4	166.4	178.7	162.7	140.4	127.6	127.6	109.4	93.4	91.6	98.0
77°	129.9	156.8	169.1	154.5	133.1	121.7	121.2	103.5	87.5	85.2	92.1
77.5°	119.9	147.7	160.0	145.9	125.3	115.8	115.3	97.5	81.6	79.3	86.6
78°	110.3	138.1	151.3	137.6	118.5	109.8	108.9	91.2	75.7	73.4	80.7
78.5°	100.3	128.5	142.2	129.4	111.2	104.4	103.5	85.2	69.7	67.5	75.2
79°	91.2	119.4	133.1	121.7	104.8	99.4	97.5	79.3	64.3	62.0	69.7
79.5°	82.0	110.8	124.4	113.9	98.0	93.9	91.6	73.8	58.8	56.5	64.3
80°	73.4	102.1	115.8	106.7	91.6	88.9	86.1	67.9	53.3	51.0	59.3
80.5°	64.7	93.4	108.0	99.4	85.7	83.9	80.7	62.4	47.9	46.0	54.2
81°	56.5	85.7	100.3	92.5	79.8	78.9	75.2	57.0	42.8	41.5	49.7
81.5°	48.3	77.9	92.1	85.7	74.3	73.8	70.2	52.0	37.8	36.9	44.7
82°	40.1	70.6	84.8	79.3	68.8	68.8	64.7	46.5	32.8	32.4	40.6
82.5°	32.8	63.4	77.9	72.9	63.4	63.8	59.7	42.4	27.8	27.8	36.5
83°	25.5	56.5	71.1	67.0	58.3	59.3	54.7	37.8	22.8	23.2	32.4
83.5°	18.7	50.1	64.7	61.1	53.3	54.7	50.1	33.3	18.2	20.1	28.3
84°	16.4	44.2	58.3	55.1	48.8	49.7	45.6	29.2	14.6	17.3	24.2
84.5°	13.7	39.2	52.4	49.7	44.2	45.6	41.5	24.6	11.9	15.0	20.5
85°	10.9	34.6	46.5	44.2	40.1	41.0	36.9	21.9	10.5	12.8	16.9
85.5°	8.2	30.1	41.0	39.2	35.6	36.9	32.8	19.1	8.7	10.5	13.2
86°	5.9	26.0	35.6	34.2	31.4	32.4	28.7	16.4	7.3	8.2	10.0
86.5°	4.6	21.9	30.1	29.2	26.9	27.8	24.2	13.7	5.9	6.4	6.4
87°	3.2	17.8	25.1	24.6	22.8	23.7	20.5	11.4	4.6	4.1	3.2
87.5°	2.3	13.7	20.1	20.1	19.1	19.6	16.4	8.7	2.7	2.3	0.9
88°	0.9	10.0	15.5	16.0	15.5	16.0	12.8	6.4	1.4	0.9	0.5
88.5°	0.5	6.4	11.9	12.3	11.9	11.9	9.1	3.6	0.5	0.5	0.0



TEST NUMBER: P776605

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRH-HCD4TRLWW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.5	0.5	1.4	2.3	1.8	0.9	0.5	0.0	0.5	0.0



TEST NUMBER: P776605

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRH-HCD4TRLWW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2469.0	2469.0	2469.0	2469.0	2469.0	2469.0
0.5°	2460.8	2459.0	2467.2	2475.8	2483.1	2488.1
1°	2450.8	2454.9	2469.4	2484.0	2495.9	2504.1
1.5°	2440.3	2450.3	2470.8	2491.3	2508.2	2519.1
2°	2429.3	2444.4	2471.7	2498.6	2520.5	2533.7
2.5°	2417.9	2439.4	2472.6	2505.4	2531.4	2547.8
3°	2406.5	2433.4	2472.6	2511.4	2542.4	2561.1
3.5°	2394.2	2427.0	2472.6	2517.3	2552.8	2574.3
4°	2381.9	2420.2	2471.7	2522.3	2562.4	2587.0
4.5°	2369.6	2412.5	2470.3	2526.9	2572.0	2598.9
5°	2355.9	2404.7	2469.0	2531.0	2580.6	2610.7
5.5°	2342.7	2397.0	2466.7	2534.6	2589.3	2621.2
6°	2329.1	2388.3	2464.4	2537.3	2596.6	2631.7
6.5°	2315.4	2379.2	2460.8	2540.1	2603.9	2641.3
7°	2300.8	2370.1	2457.6	2541.9	2609.8	2650.4
7.5°	2286.2	2360.0	2453.5	2543.3	2615.7	2659.0
8°	2271.2	2350.0	2448.5	2544.2	2620.8	2666.8
8.5°	2255.7	2339.1	2443.5	2544.2	2625.3	2673.6
9°	2240.2	2328.6	2438.0	2544.2	2629.4	2680.5
9.5°	2224.7	2317.2	2432.1	2543.3	2632.6	2686.4
10°	2208.7	2305.8	2425.7	2541.5	2635.3	2691.9
10.5°	2192.3	2293.5	2418.8	2539.6	2637.6	2696.4
11°	2175.5	2281.7	2411.1	2536.9	2639.0	2700.1
11.5°	2158.6	2268.4	2402.9	2533.7	2639.4	2703.3
12°	2141.7	2255.7	2394.7	2529.6	2639.4	2705.5
12.5°	2124.4	2242.0	2385.6	2525.0	2638.5	2707.4
13°	2107.5	2228.3	2376.5	2520.0	2637.2	2708.3
13.5°	2090.2	2214.2	2366.9	2514.6	2634.9	2708.7
14°	2072.0	2200.5	2356.9	2508.6	2632.2	2707.8
14.5°	2053.8	2185.9	2346.4	2502.3	2629.0	2706.9
15°	2036.0	2171.4	2335.9	2495.0	2624.9	2705.1
15.5°	2018.2	2156.8	2325.0	2487.2	2620.3	2702.3
16°	2000.0	2142.6	2314.0	2479.5	2615.3	2699.6
16.5°	1981.7	2127.6	2302.6	2471.7	2609.8	2695.5
17°	1964.4	2113.0	2291.7	2463.1	2603.9	2691.4
17.5°	1945.7	2098.4	2280.7	2454.4	2597.5	2686.4
18°	1927.1	2083.4	2269.8	2447.1	2590.7	2681.4
18.5°	1908.4	2068.3	2258.0	2439.4	2585.2	2675.5
19°	1890.1	2052.9	2247.0	2431.2	2580.2	2670.4
19.5°	1871.9	2037.8	2234.3	2422.0	2574.7	2666.3
20°	1853.7	2021.4	2221.0	2412.5	2567.9	2661.8
20.5°	1835.0	2005.0	2207.8	2402.4	2560.6	2656.8
21°	1815.8	1987.7	2193.2	2391.0	2552.4	2650.8

TEST NUMBER: P776605

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRH-HCD4TRLWW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1758.0	1934.3	2143.1	2345.9	2516.4	2625.8
23°	1737.9	1915.7	2124.4	2327.2	2500.0	2611.6
23.5°	1718.3	1896.1	2104.4	2308.1	2482.2	2595.7
24°	1698.3	1875.6	2083.8	2287.6	2463.1	2578.8
24.5°	1678.7	1855.0	2061.5	2265.2	2443.0	2560.1
25°	1658.1	1834.1	2040.1	2242.9	2421.1	2538.7
25.5°	1637.6	1812.7	2017.8	2220.6	2397.4	2516.8
26°	1616.7	1790.8	1994.5	2196.9	2373.7	2495.0
26.5°	1595.7	1769.4	1970.8	2171.8	2349.1	2470.8
27°	1575.2	1747.5	1947.1	2147.2	2322.7	2445.3
27.5°	1553.8	1724.7	1923.0	2120.8	2294.9	2418.4
28°	1532.3	1701.4	1898.3	2093.4	2267.1	2392.9
28.5°	1510.9	1679.6	1873.3	2066.5	2239.3	2364.2
29°	1489.5	1655.9	1847.7	2039.2	2210.6	2335.4
29.5°	1468.1	1633.1	1822.7	2010.0	2180.5	2306.3
30°	1446.2	1609.4	1797.2	1981.7	2151.3	2277.1
30.5°	1424.3	1586.1	1770.3	1952.1	2119.9	2245.6
31°	1402.4	1562.4	1744.3	1923.0	2089.3	2214.7
31.5°	1381.0	1538.7	1717.4	1893.8	2057.9	2183.2
32°	1359.6	1514.1	1690.0	1862.8	2026.4	2151.3
32.5°	1337.3	1490.9	1663.6	1833.2	1994.1	2118.9
33°	1315.8	1466.3	1636.3	1803.1	1963.1	2087.0
33.5°	1294.4	1443.0	1609.4	1773.0	1931.2	2054.7
34°	1273.5	1418.4	1581.1	1742.9	1899.3	2021.9
34.5°	1251.6	1394.7	1553.8	1711.9	1866.9	1987.7
35°	1229.7	1370.1	1526.0	1681.8	1835.0	1954.9
35.5°	1208.3	1346.8	1499.1	1651.8	1802.6	1922.0
36°	1187.3	1323.6	1471.3	1621.7	1771.6	1889.2
36.5°	1165.9	1299.0	1443.9	1592.1	1739.3	1855.5
37°	1144.9	1274.8	1417.0	1562.0	1707.8	1821.3
37.5°	1123.5	1251.6	1389.2	1532.3	1675.0	1789.0
38°	1103.0	1227.9	1362.3	1502.7	1643.6	1755.7
38.5°	1082.0	1204.2	1335.4	1474.0	1612.6	1722.4
39°	1062.0	1180.5	1308.6	1444.8	1580.7	1688.7
39.5°	1041.0	1157.2	1282.6	1416.1	1550.6	1656.8
40°	1020.0	1134.0	1255.2	1387.0	1519.1	1624.0
40.5°	1000.0	1110.7	1230.2	1359.1	1489.0	1590.7
41°	979.9	1087.5	1204.2	1330.4	1457.1	1558.3
41.5°	959.9	1064.3	1178.7	1303.5	1428.4	1526.9
42°	939.8	1041.9	1153.1	1276.2	1399.3	1495.4
42.5°	920.2	1019.6	1128.5	1249.3	1369.6	1463.5
43°	900.2	997.3	1103.9	1222.0	1339.5	1433.0
43.5°	881.0	975.4	1079.3	1196.0	1311.7	1402.9

TEST NUMBER: P776605

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRH-HCD4TRLWW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	823.1	910.2	1008.2	1118.9	1227.0	1313.1
45.5°	804.0	889.2	985.4	1093.9	1201.0	1284.4
46°	785.8	868.3	962.6	1068.8	1174.6	1255.2
46.5°	767.1	847.3	939.8	1045.1	1148.1	1226.1
47°	747.9	827.2	917.9	1021.0	1120.8	1199.2
47.5°	730.2	806.7	896.1	997.3	1095.7	1171.8
48°	712.4	786.7	874.6	973.6	1071.1	1144.0
48.5°	694.6	767.1	853.2	951.2	1046.5	1117.6
49°	677.3	747.9	832.3	928.9	1021.4	1092.5
49.5°	659.5	729.3	811.8	907.0	998.2	1066.5
50°	642.2	710.1	791.7	884.2	974.0	1040.6
50.5°	625.3	691.9	771.2	863.3	950.8	1016.9
51°	608.5	673.6	752.0	841.8	927.5	992.2
51.5°	592.5	655.9	732.4	821.3	906.1	967.6
52°	576.1	638.6	713.8	801.3	883.8	944.8
52.5°	560.2	621.2	694.6	780.3	861.9	922.5
53°	544.2	603.9	676.8	760.7	840.9	898.8
53.5°	529.2	587.0	658.2	741.1	820.0	876.0
54°	514.1	570.6	640.4	722.0	799.0	855.5
54.5°	498.6	553.8	622.1	703.3	779.4	834.1
55°	484.0	538.3	605.7	684.6	759.3	812.2
55.5°	469.9	522.3	588.9	666.4	739.7	793.1
56°	455.8	506.8	572.0	648.6	720.1	772.6
56.5°	441.7	491.8	555.6	630.8	701.9	752.0
57°	428.0	476.8	539.6	613.5	683.2	732.4
57.5°	415.2	461.7	523.2	596.2	665.0	713.3
58°	402.0	448.0	507.7	579.8	647.7	692.8
58.5°	389.7	433.5	492.2	563.3	629.9	674.1
59°	377.8	419.8	477.2	547.4	612.6	654.5
59.5°	365.5	406.1	462.6	531.0	595.3	635.4
60°	353.2	392.4	448.0	515.0	577.9	617.6
60.5°	340.9	379.2	433.5	500.0	561.1	597.5
61°	329.5	366.5	419.8	485.0	544.2	580.2
61.5°	318.1	353.7	405.6	469.9	527.3	562.0
62°	307.7	341.4	392.4	455.3	510.9	544.7
62.5°	297.2	329.5	378.8	440.7	494.1	526.9
63°	286.2	317.7	366.0	426.6	478.1	509.1
63.5°	276.2	305.8	352.8	412.9	462.2	492.2
64°	266.6	294.4	340.5	399.3	446.7	474.9
64.5°	257.1	283.5	328.2	385.6	431.6	459.0
65°	247.9	272.6	316.3	372.8	416.1	442.6
65.5°	238.8	261.6	304.0	359.2	401.5	427.1
66°	229.7	251.6	292.6	346.4	386.5	410.7



TEST NUMBER: P776605

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRH-HCD4TRLWW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	205.1	222.0	258.9	309.5	344.6	365.5
68°	197.4	212.9	248.4	297.6	330.9	350.5
68.5°	190.1	203.3	237.9	285.3	317.7	335.9
69°	182.8	194.6	227.9	273.9	304.5	322.2
69.5°	175.5	186.0	217.9	262.5	291.7	308.1
70°	169.1	177.8	208.3	251.6	278.5	294.4
70.5°	162.7	169.6	198.7	240.2	266.2	280.8
71°	156.8	164.1	189.6	229.7	253.9	267.5
71.5°	150.4	156.3	180.5	219.2	242.0	254.8
72°	144.5	148.6	171.8	208.7	230.6	242.5
72.5°	138.6	140.4	162.3	198.7	219.2	229.7
73°	133.1	132.6	154.5	188.7	207.8	217.4
73.5°	127.2	125.8	146.8	179.1	196.9	205.6
74°	121.7	119.0	139.0	169.6	186.4	193.7
74.5°	116.2	112.6	131.3	160.9	175.9	182.3
75°	110.3	105.7	124.0	151.8	166.4	171.4
75.5°	105.3	99.8	116.7	143.1	156.8	160.9
76°	99.8	93.9	109.4	134.0	147.7	150.4
76.5°	94.3	88.0	102.1	125.3	138.1	140.4
77°	88.9	82.5	95.7	117.1	129.0	129.9
77.5°	83.9	77.0	88.9	109.4	119.4	119.9
78°	78.9	72.0	83.0	101.6	111.2	110.3
78.5°	73.8	67.0	76.6	93.9	102.6	100.3
79°	68.8	62.0	70.6	87.1	94.3	91.2
79.5°	63.8	57.0	65.2	79.8	86.6	82.0
80°	58.8	52.4	59.3	72.9	78.9	73.4
80.5°	54.2	47.9	54.2	66.5	72.0	64.7
81°	49.7	43.3	49.2	60.2	65.2	56.5
81.5°	45.1	39.2	43.8	54.2	58.3	48.3
82°	40.6	35.1	39.2	48.3	52.0	40.1
82.5°	36.5	31.0	34.6	42.8	46.5	32.8
83°	31.9	26.9	30.1	37.8	40.6	25.5
83.5°	27.8	22.8	25.5	32.8	35.6	18.7
84°	23.2	19.1	21.4	27.8	31.0	16.4
84.5°	19.1	15.5	17.3	23.2	26.9	13.7
85°	15.0	12.3	13.7	18.7	22.8	10.9
85.5°	11.4	9.1	10.0	15.0	18.7	8.2
86°	7.7	5.9	6.8	11.4	15.0	5.9
86.5°	4.1	2.3	3.2	7.7	11.9	4.6
87°	1.4	0.5	0.9	4.1	8.2	3.2
87.5°	0.5	0.0	0.5	0.9	4.6	2.3
88°	0.0	0.0	0.0	0.0	0.9	0.9
88.5°	0.0	0.0	0.0	0.0	0.5	0.5



TEST NUMBER: P776605

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRH-HCD4TRLWW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.5	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°	2644.0	2660.4	2587.0	2433.9	2221.0	1995.4	1799.0	1662.2	1598.4	1594.3	1659.5
22°	2636.3	2653.6	2579.3	2423.9	2207.4	1978.6	1778.9	1642.2	1578.4	1573.8	1639.0



44°	1371.9	1419.3	1410.2	1343.7	1231.5	1068.8	927.1	841.4	794.9	780.8	800.4
44.5°	1341.8	1387.4	1379.2	1314.9	1206.0	1047.4	908.8	824.5	778.5	763.9	783.5



66.5°	395.6	419.3	419.3	384.7	341.8	294.4	271.2	264.4	244.3	239.7	234.3
67°	380.1	403.8	405.2	370.6	329.5	284.0	263.4	254.8	234.7	230.6	227.0



89°	0.0	2.7	8.2	8.7	8.2	8.2	5.5	1.8	0.0	0.5	0.0
89.5°	0.0	0.5	4.6	5.0	5.0	4.6	2.7	0.5	0.0	0.5	0.0

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21.5°	1796.7	1970.4	2178.2	2377.8	2542.8	2644.0
22°	1777.6	1953.0	2161.3	2363.2	2530.5	2636.3



44°	861.4	952.6	1055.1	1169.5	1283.9	1371.9
44.5°	842.3	931.2	1031.4	1144.5	1256.1	1341.8

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66.5°	221.5	241.6	281.2	334.1	372.4	395.6
67°	213.3	231.5	269.8	321.3	358.2	380.1

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89°	0.0	0.0	0.0	0.0	0.5	0.0
89.5°	0.0	0.0	0.0	0.0	0.5	0.0

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Scaled Data Report



(END OF REPORT)