

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: P776632

Luminaire Tested: HCDJBL54050CSD-HCD4TQSH-HCD4TSQLWW-5000lm-3500K

Issue Date: 2/7/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776632  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B009)  
Test Lab:  
Issue Date: 2/7/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBS4050CSD-HCD4TQSH-HCD4TSQLWW-5000lm-3500K  
Description: 4 INCH SQUARE MEDIUM LENSED WALLWASH KIT  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4157.6 lumens  
Efficiency: N/A  
Efficacy: 86.6 lumens/watt  
Spacing Criteria (0/90/45): 1.11 / 1.14 / 1.19  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

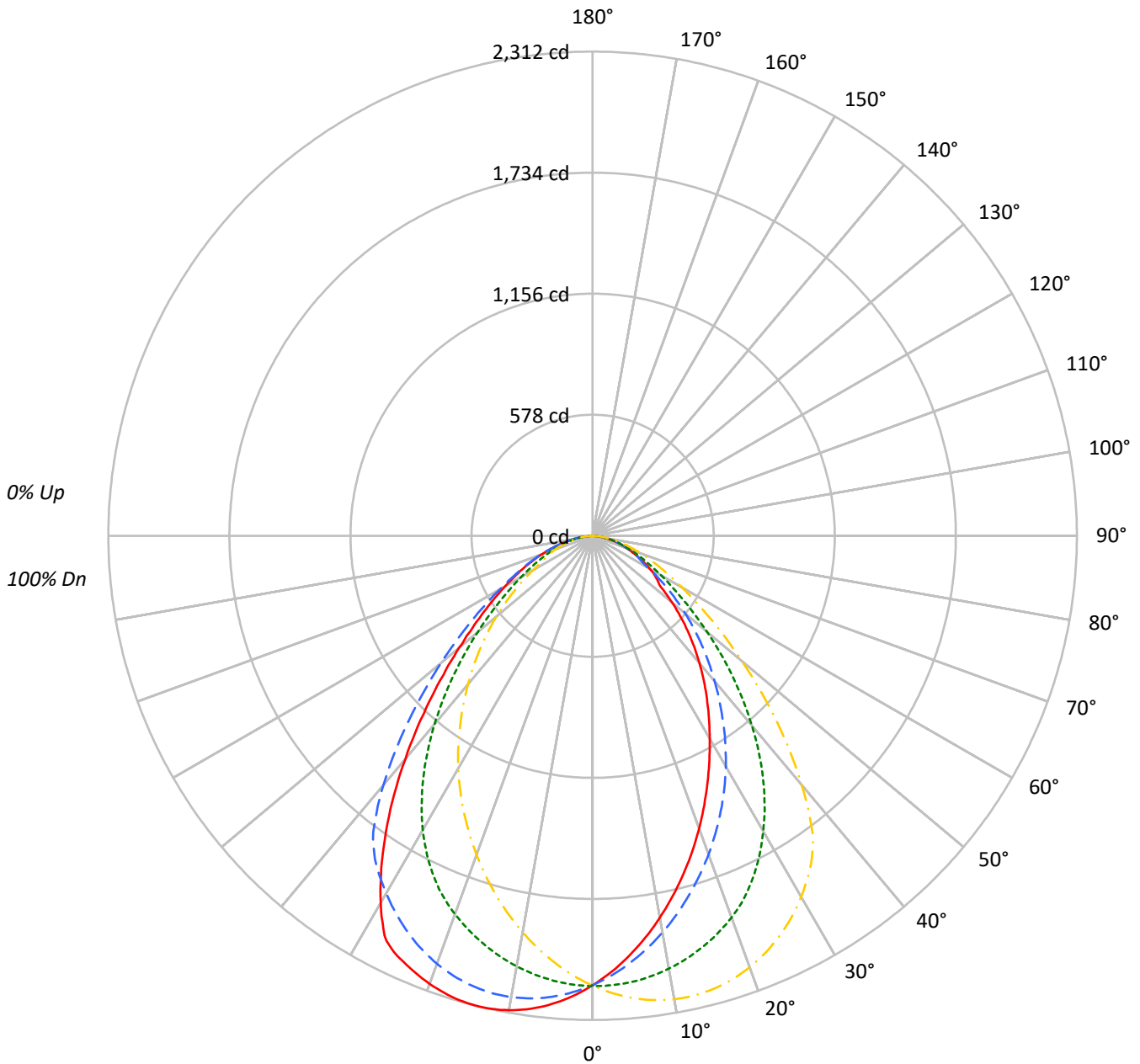
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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									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	89	88																			
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76																			
3	94	85	78	72	92	84	77	72	81	75	71	78	73	69	76	72	68	66																			
4	87	77	69	63	85	75	68	63	73	67	62	71	65	61	69	64	60	58																			
5	81	70	62	56	79	68	61	55	66	60	55	65	59	54	63	58	54	52																			
6	75	63	55	50	74	62	55	49	61	54	49	59	53	49	58	52	48	46																			
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	42																			
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38																			
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34																			
10	58	46	38	34	57	45	38	34	44	38	33	43	37	33	43	37	33	32																			

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

	0°	90°	180°	270°
0°	270212	270212	270212	270212
5°	254202	270170	283587	269463
10°	236529	268170	293971	266790
15°	217922	264748	301007	262728
20°	199122	259764	304870	257420
25°	180254	250920	307130	249226
30°	162525	236826	294053	235664
35°	146168	218053	264067	216455
40°	130344	194432	228373	192641
45°	114084	167478	193089	166481
50°	96876	139362	162719	140282
55°	83728	114248	139195	117254
60°	79663	94866	121344	99245
65°	71350	80075	107322	85673
70°	63878	68919	94603	75137
75°	56405	59419	81203	66518
80°	44427	49572	62907	58124
85°	21804	36099	30034	47651

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 225°  
 Vertical Angle: 45°  
 Luminance: 220124 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	201.9	4.9
10°-20°	564.7	13.6
20°-30°	815.6	19.6
30°-40°	877.4	21.1
40°-50°	728.1	17.5
50°-60°	489.9	11.8
60°-70°	296.5	7.1
70°-80°	149.9	3.6
80°-90°	33.7	0.8
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°	1582.1	38.1
0°-40°	2459.5	59.2
0°-60°	3677.6	88.5
0°-90°	4157.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4157.6	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2147	2147	2147	2147	2147	
5°	2012	2139	2245	2133	2012	187
15°	1673	2032	2310	2016	1673	468
25°	1298	1807	2212	1795	1298	596
35°	951	1419	1719	1409	951	594
45°	641	941	1085	935	641	494
55°	382	521	634	534	382	349
65°	240	269	360	288	240	239
75°	116	122	167	137	116	123
85°	15	25	21	33	15	22
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°	2147.1	2147.1	2147.1	2147.1	2147.1	2147.1	2147.1	2147.1	2147.1	2147.1	2147.1
0.5°	2134.4	2134.4	2136.8	2141.5	2150.4	2153.7	2156.6	2158.0	2158.0	2156.1	2153.3
1°	2122.1	2123.1	2128.3	2136.8	2150.4	2158.0	2164.6	2168.4	2169.3	2166.5	2160.8
1.5°	2109.4	2111.3	2119.3	2131.6	2150.0	2161.8	2172.1	2178.3	2180.1	2175.9	2167.9
2°	2096.7	2099.5	2109.9	2125.9	2149.0	2165.5	2179.2	2188.2	2190.5	2185.3	2175.4
2.5°	2083.0	2086.8	2100.0	2120.2	2148.1	2168.8	2186.3	2197.1	2200.4	2194.8	2182.0
3°	2069.8	2074.5	2090.5	2114.1	2146.7	2172.1	2192.9	2206.1	2210.3	2203.3	2188.2
3.5°	2055.6	2061.3	2080.1	2108.0	2145.2	2174.5	2199.0	2215.1	2219.3	2211.8	2194.3
4°	2041.5	2048.5	2069.3	2101.4	2142.9	2177.3	2205.1	2223.1	2228.3	2219.8	2200.0
4.5°	2026.8	2034.4	2058.5	2094.3	2141.0	2179.2	2210.8	2230.6	2236.8	2227.3	2204.7
5°	2012.2	2021.2	2047.6	2087.2	2138.6	2181.1	2216.0	2238.2	2244.8	2234.4	2209.9
5.5°	1996.7	2007.0	2035.8	2079.7	2135.8	2182.5	2220.7	2245.2	2252.3	2241.0	2214.1
6°	1981.6	1992.4	2024.5	2072.1	2133.0	2183.9	2225.0	2251.8	2259.4	2247.6	2218.4
6.5°	1966.5	1977.3	2012.7	2064.1	2129.7	2184.4	2229.2	2257.5	2266.0	2253.3	2222.1
7°	1950.4	1963.2	2000.4	2056.6	2125.9	2184.9	2233.0	2263.2	2272.6	2258.4	2225.4
7.5°	1933.9	1947.6	1987.7	2047.6	2122.1	2184.9	2236.3	2268.4	2278.3	2263.6	2228.3
8°	1918.4	1932.5	1975.4	2039.1	2117.9	2184.9	2239.1	2273.5	2283.4	2268.4	2230.6
8.5°	1901.9	1916.9	1962.7	2030.2	2113.2	2184.4	2241.5	2277.8	2288.6	2272.1	2232.5
9°	1884.9	1901.4	1949.5	2021.2	2108.5	2183.4	2243.8	2281.6	2292.9	2275.9	2234.4
9.5°	1867.9	1884.9	1935.8	2011.3	2103.7	2182.0	2245.7	2284.9	2296.7	2279.2	2235.8
10°	1850.9	1868.8	1922.6	2001.8	2098.5	2180.6	2247.1	2288.2	2300.4	2282.0	2236.8
10.5°	1833.5	1852.8	1908.9	1991.9	2092.9	2178.7	2248.1	2291.0	2303.3	2284.4	2237.7
11°	1816.5	1836.3	1895.2	1982.0	2087.2	2176.8	2248.5	2292.9	2306.1	2286.3	2237.7
11.5°	1799.0	1819.8	1881.1	1971.2	2081.1	2174.5	2248.5	2294.8	2308.0	2287.7	2237.2
12°	1780.6	1803.3	1866.5	1960.8	2075.0	2171.7	2248.5	2296.2	2309.9	2288.6	2236.8
12.5°	1763.2	1785.8	1852.3	1950.0	2068.4	2168.8	2248.1	2296.7	2311.3	2289.6	2235.8
13°	1745.7	1768.8	1837.7	1939.1	2061.8	2165.5	2246.7	2297.1	2311.7	2289.6	2234.4
13.5°	1727.3	1751.9	1823.1	1928.3	2054.7	2161.8	2245.2	2297.1	2312.2	2289.1	2232.5
14°	1709.4	1734.9	1807.5	1916.9	2047.6	2157.5	2243.4	2296.7	2312.2	2288.2	2230.1
14.5°	1691.0	1717.4	1792.4	1905.2	2040.1	2153.7	2241.5	2295.7	2311.3	2286.7	2227.3
15°	1672.6	1699.0	1777.3	1893.4	2032.0	2149.0	2238.6	2294.3	2310.3	2285.3	2224.5
15.5°	1654.2	1681.6	1762.2	1881.6	2024.0	2144.3	2235.8	2292.4	2308.9	2283.4	2221.2
16°	1635.8	1664.1	1746.7	1869.8	2016.0	2138.6	2232.5	2290.1	2307.0	2281.1	2217.4
16.5°	1617.9	1646.2	1730.6	1857.5	2007.5	2133.5	2228.7	2287.7	2304.7	2278.3	2213.2
17°	1599.0	1628.7	1715.1	1844.8	1998.5	2127.3	2225.0	2284.9	2301.8	2274.5	2208.9
17.5°	1580.6	1609.9	1699.0	1832.0	1989.1	2121.2	2220.2	2281.1	2298.5	2270.7	2203.7
18°	1561.8	1592.0	1683.5	1819.3	1979.7	2114.1	2215.5	2276.8	2294.8	2266.5	2198.5
18.5°	1543.4	1574.0	1667.4	1806.1	1970.2	2107.5	2210.3	2272.6	2290.5	2261.7	2192.9
19°	1524.5	1555.6	1650.9	1792.4	1960.3	2100.4	2204.7	2267.9	2286.3	2257.0	2187.2
19.5°	1505.2	1537.2	1634.9	1779.2	1950.0	2092.4	2198.5	2262.7	2281.6	2251.4	2181.1
20°	1486.8	1519.3	1617.9	1765.5	1939.6	2084.9	2192.4	2257.0	2276.4	2245.7	2174.5
20.5°	1467.9	1500.9	1601.9	1751.4	1928.7	2076.4	2185.8	2250.9	2270.7	2239.6	2166.9
21°	1449.0	1482.5	1585.3	1737.2	1917.4	2067.9	2178.7	2244.8	2265.1	2233.0	2159.9



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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°	1392.4	1427.3	1534.9	1693.8	1880.2	2040.1	2155.6	2223.5	2245.7	2211.3	2135.3
23°	1373.1	1408.5	1517.4	1678.3	1866.9	2029.2	2147.1	2216.0	2239.1	2203.7	2126.8
23.5°	1354.7	1390.5	1500.9	1663.2	1852.3	2018.4	2138.2	2208.0	2232.0	2195.7	2117.9
24°	1335.8	1371.7	1483.5	1646.2	1837.7	2006.6	2128.3	2200.4	2225.4	2187.7	2108.5
24.5°	1316.5	1353.3	1466.5	1630.2	1822.6	1993.8	2118.8	2191.9	2218.8	2178.7	2098.5
25°	1298.1	1334.9	1448.6	1613.2	1807.0	1980.6	2108.9	2183.4	2211.8	2170.2	2088.6
25.5°	1279.7	1316.0	1431.6	1596.2	1791.5	1966.9	2099.0	2175.4	2202.3	2161.8	2077.8
26°	1261.3	1297.6	1414.1	1578.3	1775.0	1953.3	2088.2	2167.4	2191.9	2153.7	2067.4
26.5°	1242.9	1279.7	1396.7	1561.3	1758.0	1938.2	2077.3	2158.9	2181.1	2144.8	2056.1
27°	1224.5	1260.8	1379.2	1543.4	1740.5	1922.6	2066.0	2150.0	2169.8	2135.8	2044.8
27.5°	1206.6	1242.9	1361.8	1525.4	1722.6	1907.0	2054.7	2138.2	2151.8	2124.0	2033.5
28°	1188.2	1224.5	1343.8	1507.0	1704.7	1890.5	2042.9	2126.4	2127.3	2111.8	2021.7
28.5°	1170.7	1206.6	1326.4	1488.7	1686.3	1873.5	2030.6	2114.6	2102.3	2099.5	2009.4
29°	1153.3	1188.2	1308.0	1469.8	1667.9	1856.1	2017.9	2101.4	2079.2	2086.3	1996.7
29.5°	1135.4	1171.2	1290.1	1451.4	1648.6	1837.7	2004.7	2081.1	2051.4	2066.0	1983.9
30°	1118.4	1153.8	1271.7	1432.0	1629.7	1818.8	1991.5	2055.6	2023.5	2041.5	1971.2
30.5°	1100.9	1135.8	1253.3	1413.2	1609.4	1800.4	1977.3	2031.1	1995.7	2016.5	1958.0
31°	1083.9	1117.0	1234.9	1393.8	1590.1	1781.6	1962.7	2007.5	1967.4	1992.4	1944.8
31.5°	1067.0	1100.9	1216.0	1374.5	1569.3	1761.3	1947.6	1979.7	1936.3	1965.5	1931.1
32°	1050.0	1083.5	1197.6	1355.2	1549.0	1741.5	1933.0	1951.9	1906.6	1938.2	1917.4
32.5°	1033.5	1067.0	1179.2	1335.8	1528.3	1720.7	1918.4	1923.5	1876.9	1911.3	1903.7
33°	1017.0	1050.0	1160.8	1316.0	1507.0	1700.0	1902.8	1896.2	1845.7	1883.0	1889.6
33.5°	1000.5	1033.5	1142.4	1296.7	1484.9	1678.7	1886.8	1866.5	1814.1	1854.7	1875.0
34°	984.4	1017.0	1123.6	1276.4	1464.1	1657.0	1869.8	1837.2	1782.0	1824.5	1858.5
34.5°	967.4	1000.0	1104.7	1256.6	1441.5	1633.9	1850.9	1806.6	1750.4	1795.7	1840.5
35°	951.4	982.5	1086.3	1236.3	1419.3	1612.2	1832.0	1777.3	1718.8	1766.0	1821.7
35.5°	935.4	967.4	1067.9	1216.5	1396.7	1588.6	1811.8	1746.2	1686.3	1736.8	1803.3
36°	919.8	950.9	1050.0	1196.2	1373.1	1565.5	1791.0	1715.5	1653.3	1706.1	1783.9
36.5°	903.8	934.9	1031.1	1176.4	1350.0	1542.0	1765.5	1683.9	1621.7	1675.4	1760.3
37°	887.7	918.9	1013.2	1156.1	1327.3	1517.4	1735.8	1653.3	1588.6	1645.7	1731.6
37.5°	871.7	902.3	994.8	1135.4	1303.3	1492.4	1706.1	1621.7	1555.2	1615.1	1703.7
38°	855.6	886.3	976.9	1115.1	1279.2	1467.4	1677.3	1590.1	1521.2	1583.9	1675.4
38.5°	840.1	870.3	959.4	1094.3	1255.2	1442.4	1647.6	1557.0	1490.1	1552.3	1647.1
39°	825.0	854.7	941.5	1074.0	1231.6	1417.0	1616.0	1527.3	1457.5	1522.6	1616.0
39.5°	808.9	839.1	923.6	1053.3	1207.5	1391.0	1584.4	1494.8	1424.0	1492.0	1585.3
40°	793.4	822.6	906.1	1032.5	1183.5	1364.6	1552.8	1462.2	1390.1	1460.3	1553.7
40.5°	777.8	807.1	888.7	1012.2	1158.5	1338.7	1521.2	1430.2	1360.8	1428.3	1522.6
41°	762.2	791.5	871.7	991.5	1134.4	1312.2	1488.7	1400.4	1329.2	1399.5	1491.5
41.5°	747.2	775.9	854.2	971.2	1109.9	1285.8	1456.6	1368.8	1295.7	1368.8	1458.5
42°	731.6	760.4	837.2	950.5	1085.8	1259.4	1424.0	1335.8	1265.1	1336.8	1426.9
42.5°	716.5	744.8	820.3	930.6	1061.8	1232.1	1392.4	1306.1	1235.8	1307.5	1394.3
43°	701.4	729.2	803.3	910.4	1037.2	1205.6	1360.4	1276.4	1205.2	1278.3	1363.2
43.5°	685.8	714.1	786.3	890.1	1012.7	1178.8	1328.3	1244.3	1171.2	1247.6	1330.6



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	641.0	668.4	736.8	830.2	941.0	1098.1	1232.5	1156.1	1084.9	1161.8	1236.8
45.5°	625.9	653.3	720.3	810.4	917.0	1071.7	1200.0	1123.6	1057.1	1130.6	1205.6
46°	611.8	638.7	704.2	791.0	893.4	1045.3	1168.4	1095.7	1032.1	1101.4	1174.5
46.5°	596.2	623.6	687.7	771.2	869.8	1018.4	1138.2	1069.3	1003.8	1077.3	1145.3
47°	581.6	608.5	671.7	752.3	846.2	992.0	1107.5	1039.6	973.1	1049.0	1114.6
47.5°	567.0	593.4	655.2	733.0	823.1	965.5	1076.4	1008.5	951.4	1018.4	1084.9
48°	552.8	578.8	640.1	714.1	800.0	939.6	1045.3	985.4	927.8	994.3	1055.2
48.5°	537.7	563.7	624.0	695.3	777.8	914.1	1017.4	958.9	900.0	970.3	1028.3
49°	523.6	549.5	608.5	677.3	755.6	888.7	988.7	929.2	875.5	942.4	999.5
49.5°	509.4	534.9	592.9	658.9	733.9	863.7	958.9	903.3	854.7	915.1	971.2
50°	494.8	520.3	577.3	640.6	711.8	837.7	930.2	880.2	831.1	893.4	942.9
50.5°	480.2	505.7	562.3	622.6	691.0	813.7	904.2	854.2	804.7	869.3	918.4
51°	466.5	491.5	547.2	605.6	670.3	788.7	876.4	826.4	786.8	840.6	891.5
51.5°	452.3	477.3	532.1	588.2	650.5	765.6	849.0	807.1	767.4	821.2	865.1
52°	438.7	463.2	517.4	571.2	630.2	741.0	825.0	784.4	742.4	799.5	839.6
52.5°	425.0	449.0	502.8	554.7	610.4	718.4	800.0	757.5	724.5	775.0	817.9
53°	412.3	434.9	488.7	538.2	591.5	694.8	773.6	738.2	707.1	751.9	791.5
53.5°	400.0	421.2	474.0	522.2	573.6	672.6	749.5	718.9	686.8	733.9	767.0
54°	392.4	408.0	459.9	506.1	555.2	650.0	726.9	696.2	667.0	712.3	745.3
54.5°	387.3	394.8	446.2	490.6	537.7	628.3	703.8	675.5	651.9	689.1	724.0
55°	381.6	382.5	432.5	475.9	520.7	607.5	680.2	658.5	634.4	673.1	700.5
55.5°	376.4	370.7	419.3	461.3	504.2	586.3	660.4	639.1	615.1	654.7	679.2
56°	370.3	364.6	405.7	447.2	488.2	566.5	638.7	618.9	601.4	632.5	659.4
56.5°	364.1	359.4	392.4	433.0	472.6	547.6	617.0	603.3	585.8	617.0	638.7
57°	358.5	353.8	379.7	419.3	457.1	528.8	598.1	585.8	567.9	600.9	617.9
57.5°	351.9	348.1	367.0	405.7	442.9	510.4	579.2	567.0	555.2	581.6	600.9
58°	345.7	342.0	355.2	392.9	428.3	493.4	559.0	553.3	541.0	566.0	581.6
58.5°	338.7	336.3	342.9	380.7	415.1	476.4	542.0	537.7	524.5	551.9	562.7
59°	331.1	329.7	331.1	368.4	402.4	460.4	524.5	519.8	510.8	534.9	546.2
59.5°	324.1	323.6	319.3	356.1	389.6	444.3	506.6	507.1	496.2	519.8	529.2
60°	316.5	317.0	308.5	344.8	376.9	429.2	490.6	492.9	482.1	506.6	511.3
60.5°	308.5	309.9	297.2	333.0	364.1	414.6	475.0	476.9	468.9	490.6	496.2
61°	300.9	302.8	286.8	322.6	351.4	400.9	458.5	464.6	455.2	476.4	481.1
61.5°	293.4	295.7	277.8	311.8	340.1	387.7	444.3	450.5	442.4	463.2	465.1
62°	285.4	288.2	268.9	301.4	329.2	374.0	430.2	435.8	429.7	448.6	450.9
62.5°	277.8	280.7	263.7	291.5	318.4	360.4	415.1	423.6	417.9	435.8	437.3
63°	270.3	273.6	258.0	281.6	307.5	348.6	402.4	410.8	406.6	423.6	422.2
63.5°	262.7	266.0	252.8	272.2	297.6	336.8	389.6	398.1	394.8	409.4	409.9
64°	254.7	259.0	247.6	263.2	287.7	325.5	377.4	385.8	383.5	397.6	397.6
64.5°	247.2	251.4	242.0	253.8	277.8	314.1	364.6	373.6	371.7	385.8	384.9
65°	239.6	244.3	236.3	245.3	268.9	303.8	351.9	361.3	360.4	374.0	372.6
65.5°	232.1	236.8	230.7	237.3	259.4	293.4	340.1	351.4	349.1	362.3	359.9
66°	224.5	229.7	225.0	228.8	250.5	283.0	328.8	339.1	338.2	350.9	348.1





TEST NUMBER: P776632

CATALOG NUMBER: HCDJBL54050CSD-HCD4TQSH-HCD4TSQLWW-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	204.7	208.0	206.6	205.7	225.5	254.2	295.3	307.5	306.6	318.4	314.6
68°	198.1	201.4	200.0	198.6	217.4	245.3	284.9	297.2	296.7	307.5	303.8
68.5°	192.0	194.8	193.9	191.5	209.4	236.8	274.5	286.8	286.3	297.2	292.9
69°	185.8	188.2	188.2	184.4	201.9	228.3	264.1	276.9	276.9	286.8	282.5
69.5°	179.7	182.1	182.1	177.8	194.3	219.3	254.7	267.0	267.0	276.9	272.2
70°	173.6	175.9	175.5	171.7	187.3	211.3	244.8	257.1	257.1	267.0	262.7
70.5°	167.9	168.9	169.8	165.6	179.7	203.3	235.4	248.1	248.1	257.1	252.8
71°	162.3	163.7	164.1	159.9	173.1	195.8	226.4	238.2	238.7	248.1	243.4
71.5°	156.6	158.0	158.0	153.8	166.0	187.7	217.0	229.2	229.2	238.2	234.0
72°	150.5	152.4	151.9	148.1	159.4	180.2	208.0	219.8	219.8	228.8	225.0
72.5°	144.8	146.7	146.2	142.0	152.8	173.1	199.5	210.8	210.8	219.3	215.6
73°	139.1	141.0	140.1	136.8	146.7	165.6	191.0	202.4	201.9	210.8	207.1
73.5°	133.0	135.4	134.4	131.6	140.1	158.5	182.5	193.4	192.9	201.4	198.1
74°	127.4	129.2	128.3	126.9	134.0	151.9	174.1	184.4	184.0	192.4	189.6
74.5°	121.7	123.6	123.1	122.6	127.8	144.8	166.0	175.9	175.5	184.0	181.1
75°	116.0	117.9	117.9	117.9	122.2	138.2	158.0	167.9	167.0	175.5	173.1
75.5°	110.4	112.3	112.3	113.2	116.0	132.1	150.0	159.4	158.5	166.5	164.6
76°	104.7	106.6	106.6	108.0	110.4	125.5	142.9	150.9	150.0	158.5	156.6
76.5°	99.1	100.9	101.4	103.3	104.7	118.9	134.9	142.5	141.5	150.0	148.6
77°	93.9	95.3	96.2	98.6	99.5	112.7	127.8	134.9	134.0	142.0	141.0
77.5°	88.2	89.6	91.0	93.4	93.9	106.6	120.3	126.9	125.5	133.5	133.5
78°	83.0	84.0	85.8	88.7	88.7	100.5	113.2	119.3	117.5	125.9	125.9
78.5°	77.4	78.8	80.7	84.0	83.5	94.3	106.1	111.3	109.9	117.9	118.9
79°	72.2	73.1	75.9	78.8	78.3	88.7	99.5	103.8	101.9	109.9	111.3
79.5°	66.5	67.5	70.8	74.1	73.6	83.0	92.9	95.8	94.3	102.4	104.2
80°	61.3	61.8	65.6	69.3	68.4	77.4	86.3	88.2	86.8	94.8	97.6
80.5°	56.1	56.6	60.8	64.6	63.7	71.7	79.7	81.1	79.2	87.3	90.6
81°	50.9	50.9	56.1	59.9	59.0	66.5	73.6	73.6	71.7	79.7	84.0
81.5°	45.8	45.8	51.4	55.2	54.7	61.3	67.5	66.5	64.6	72.6	77.8
82°	40.6	40.6	47.2	50.9	50.0	56.1	61.3	60.4	57.5	65.6	71.2
82.5°	35.4	36.3	42.5	46.2	45.8	51.4	55.7	53.8	50.9	59.0	65.6
83°	30.7	31.6	38.2	42.0	41.5	46.2	50.5	48.1	44.3	52.4	59.4
83.5°	25.5	27.4	34.4	37.7	37.3	42.0	45.3	42.9	37.7	47.2	53.8
84°	20.8	23.6	30.2	33.0	33.0	37.3	40.6	37.3	31.1	41.5	48.6
84.5°	17.0	19.8	26.4	28.8	28.8	32.5	35.4	31.6	24.5	36.3	43.9
85°	15.1	17.0	22.6	24.5	25.0	27.8	30.7	25.9	20.8	31.1	38.7
85.5°	12.7	14.6	18.9	20.3	20.8	23.1	25.5	22.2	17.9	25.5	34.0
86°	10.4	11.8	15.6	16.0	17.0	18.9	21.2	18.4	15.1	21.7	28.8
86.5°	8.5	9.4	11.8	12.3	13.2	14.6	16.5	15.1	12.7	18.4	24.1
87°	6.1	6.6	8.5	8.5	9.4	10.4	12.3	11.3	9.9	15.1	19.3
87.5°	4.2	4.2	4.7	5.2	5.7	6.6	8.0	8.0	7.5	11.3	15.1
88°	2.4	1.9	1.9	1.4	2.4	3.3	4.2	5.2	5.2	8.0	10.8
88.5°	0.9	0.5	0.5	0.5	0.5	0.9	1.4	2.4	2.4	4.7	6.6



TEST NUMBER: P776632

CATALOG NUMBER: HCDJBL54050CSD-HCD4TQSH-HCD4TSQLWW-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0



TEST NUMBER: P776632

CATALOG NUMBER: HCDJBL54050CSD-HCD4TQSH-HCD4TSQLWW-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2147.1	2147.1	2147.1	2147.1	2147.1	2147.1
0.5°	2150.4	2149.5	2144.3	2139.6	2136.3	2134.4
1°	2154.2	2149.0	2139.1	2130.6	2125.0	2122.1
1.5°	2158.0	2148.1	2133.9	2121.2	2113.2	2109.4
2°	2161.3	2146.7	2127.8	2112.2	2100.9	2096.7
2.5°	2164.1	2145.2	2121.7	2101.8	2088.2	2083.0
3°	2166.9	2143.4	2115.5	2091.9	2075.9	2069.8
3.5°	2169.3	2141.0	2108.9	2081.6	2063.2	2055.6
4°	2171.2	2138.6	2101.8	2071.2	2049.5	2041.5
4.5°	2172.6	2135.8	2094.8	2059.4	2035.8	2026.8
5°	2174.0	2133.0	2087.7	2048.5	2021.7	2012.2
5.5°	2175.0	2129.2	2080.1	2036.8	2008.0	1996.7
6°	2175.9	2125.9	2072.1	2025.0	1993.4	1981.6
6.5°	2176.4	2122.1	2063.6	2012.7	1978.7	1966.5
7°	2176.4	2117.9	2055.2	2001.4	1964.1	1950.4
7.5°	2175.9	2113.6	2046.7	1988.6	1949.0	1933.9
8°	2175.4	2108.9	2037.7	1975.9	1933.5	1918.4
8.5°	2174.5	2103.7	2028.7	1963.2	1917.9	1901.9
9°	2173.1	2098.5	2019.3	1950.0	1901.9	1884.9
9.5°	2171.7	2093.4	2009.4	1936.3	1886.3	1867.9
10°	2169.8	2087.7	1999.5	1922.6	1870.2	1850.9
10.5°	2167.4	2081.6	1989.6	1909.4	1854.2	1833.5
11°	2165.1	2075.4	1979.2	1895.2	1837.7	1816.5
11.5°	2162.2	2068.8	1968.8	1881.1	1820.7	1799.0
12°	2158.9	2061.8	1958.0	1866.9	1804.2	1780.6
12.5°	2155.6	2055.2	1947.1	1852.3	1787.2	1763.2
13°	2151.8	2048.1	1936.3	1837.7	1770.2	1745.7
13.5°	2147.1	2040.5	1925.0	1823.1	1753.3	1727.3
14°	2143.4	2033.0	1914.1	1808.5	1735.8	1709.4
14.5°	2138.6	2025.0	1902.3	1793.4	1718.4	1691.0
15°	2133.5	2016.5	1890.5	1777.8	1700.9	1672.6
15.5°	2128.3	2008.5	1878.7	1762.7	1683.0	1654.2
16°	2122.6	2000.0	1866.9	1747.1	1665.5	1635.8
16.5°	2116.9	1991.0	1854.7	1732.0	1648.1	1617.9
17°	2110.3	1982.0	1842.4	1716.5	1630.2	1599.0
17.5°	2103.7	1972.6	1829.7	1700.4	1612.2	1580.6
18°	2097.1	1963.2	1817.4	1684.4	1594.3	1561.8
18.5°	2090.1	1953.3	1804.2	1668.8	1575.9	1543.4
19°	2082.5	1942.9	1791.0	1652.3	1558.0	1524.5
19.5°	2075.0	1933.0	1777.8	1636.8	1540.5	1505.2
20°	2066.9	1922.1	1764.6	1620.7	1522.1	1486.8
20.5°	2058.0	1911.3	1750.9	1604.2	1504.2	1467.9
21°	2049.5	1900.0	1736.8	1587.7	1485.8	1449.0

TEST NUMBER: P776632

CATALOG NUMBER: HCDJBL54050CSD-HCD4TQSH-HCD4TSQLWW-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2021.2	1864.6	1694.3	1538.7	1431.1	1392.4
23°	2011.3	1851.9	1679.2	1522.1	1412.2	1373.1
23.5°	2000.4	1838.6	1665.1	1505.6	1394.8	1354.7
24°	1989.6	1824.0	1650.0	1488.7	1376.4	1335.8
24.5°	1978.3	1810.3	1634.4	1472.1	1358.0	1316.5
25°	1966.5	1794.8	1618.4	1455.2	1339.1	1298.1
25.5°	1954.2	1779.7	1602.8	1438.2	1321.7	1279.7
26°	1941.0	1763.2	1586.3	1421.2	1303.3	1261.3
26.5°	1927.3	1747.1	1569.3	1404.2	1284.9	1242.9
27°	1913.2	1731.1	1552.3	1387.2	1267.0	1224.5
27.5°	1898.1	1713.6	1534.9	1369.8	1249.0	1206.6
28°	1882.0	1695.3	1517.0	1352.3	1230.6	1188.2
28.5°	1866.0	1678.3	1499.5	1335.4	1212.7	1170.7
29°	1849.5	1659.9	1481.6	1318.4	1195.3	1153.3
29.5°	1832.0	1641.0	1463.7	1300.9	1177.8	1135.4
30°	1815.1	1621.7	1444.8	1283.0	1160.4	1118.4
30.5°	1797.1	1601.9	1426.9	1265.5	1142.9	1100.9
31°	1778.3	1581.6	1407.5	1247.6	1125.5	1083.9
31.5°	1758.5	1560.8	1388.7	1229.7	1108.0	1067.0
32°	1738.6	1540.5	1369.3	1212.2	1091.5	1050.0
32.5°	1718.4	1519.3	1350.4	1193.8	1074.5	1033.5
33°	1697.1	1497.1	1330.6	1175.9	1057.5	1017.0
33.5°	1675.9	1475.4	1310.8	1158.0	1041.0	1000.5
34°	1653.3	1453.7	1291.0	1139.6	1024.5	984.4
34.5°	1631.1	1431.1	1271.2	1121.2	1008.5	967.4
35°	1608.5	1408.9	1250.9	1102.8	992.0	951.4
35.5°	1585.3	1385.4	1231.1	1084.9	975.9	935.4
36°	1561.8	1363.2	1210.8	1067.4	959.4	919.8
36.5°	1537.2	1340.1	1190.5	1049.5	943.9	903.8
37°	1513.2	1316.0	1170.3	1031.6	927.8	887.7
37.5°	1488.7	1292.9	1150.0	1013.2	912.2	871.7
38°	1463.7	1268.4	1129.7	995.3	895.7	855.6
38.5°	1438.2	1244.8	1108.9	977.8	880.2	840.1
39°	1413.2	1220.7	1088.7	960.4	865.1	825.0
39.5°	1387.7	1197.1	1068.4	943.4	849.5	808.9
40°	1361.8	1172.6	1048.1	925.5	833.0	793.4
40.5°	1335.4	1148.6	1027.3	908.0	817.9	777.8
41°	1308.9	1124.5	1007.1	891.0	802.8	762.2
41.5°	1283.0	1100.5	986.3	873.6	786.8	747.2
42°	1256.1	1076.9	966.0	856.6	771.7	731.6
42.5°	1230.6	1052.8	945.7	839.6	756.1	716.5
43°	1203.8	1028.8	925.9	822.6	741.5	701.4
43.5°	1176.9	1005.2	905.6	805.6	725.5	685.8

TEST NUMBER: P776632

CATALOG NUMBER: HCDJBL54050CSD-HCD4TQSH-HCD4TSQLWW-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1098.6	935.4	846.7	756.1	681.1	641.0
45.5°	1072.6	912.2	826.9	740.1	665.6	625.9
46°	1046.2	889.6	808.5	724.0	651.4	611.8
46.5°	1020.7	867.0	788.7	707.5	636.3	596.2
47°	994.8	844.8	769.8	691.5	621.7	581.6
47.5°	969.8	822.6	750.9	675.5	606.6	567.0
48°	944.3	800.9	733.0	659.9	592.4	552.8
48.5°	919.8	779.2	714.6	644.3	577.8	537.7
49°	894.8	758.5	696.2	628.8	563.2	523.6
49.5°	870.7	737.7	678.3	613.2	548.6	509.4
50°	846.2	716.5	661.3	597.6	534.4	494.8
50.5°	822.6	696.7	643.4	582.5	520.3	480.2
51°	799.5	676.9	626.4	567.4	505.7	466.5
51.5°	776.9	657.5	609.4	552.8	491.5	452.3
52°	753.8	638.7	592.9	537.7	477.8	438.7
52.5°	730.6	619.8	576.4	523.6	464.1	425.0
53°	708.5	601.9	560.8	509.0	450.0	412.3
53.5°	687.3	584.4	544.3	494.8	435.8	400.0
54°	665.6	567.0	528.8	480.7	422.6	392.4
54.5°	645.3	550.5	514.1	467.0	409.4	387.3
55°	625.5	534.4	499.0	453.3	396.7	381.6
55.5°	605.6	518.4	484.9	440.1	384.0	376.4
56°	586.8	503.3	470.3	426.9	372.2	370.3
56.5°	568.4	488.2	456.6	413.7	365.6	364.1
57°	550.9	473.6	442.9	400.9	360.4	358.5
57.5°	533.5	459.4	430.2	388.2	354.7	351.9
58°	517.0	445.7	417.4	375.9	349.1	345.7
58.5°	500.9	432.5	404.7	364.1	342.9	338.7
59°	484.9	419.8	392.4	352.4	336.8	331.1
59.5°	469.8	407.1	380.7	340.6	331.1	324.1
60°	455.2	394.3	368.9	329.2	324.5	316.5
60.5°	441.0	382.5	357.5	318.4	317.9	308.5
61°	427.4	370.7	346.2	307.5	311.3	300.9
61.5°	413.7	359.9	335.8	297.6	304.2	293.4
62°	401.4	348.6	325.5	287.7	296.7	285.4
62.5°	389.1	337.7	315.6	278.3	289.6	277.8
63°	376.9	327.4	305.2	269.8	282.5	270.3
63.5°	364.6	317.0	295.7	263.2	275.5	262.7
64°	352.4	306.6	285.8	258.0	267.9	254.7
64.5°	340.6	297.2	276.9	252.8	260.8	247.2
65°	329.7	287.7	267.9	247.6	253.8	239.6
65.5°	318.9	278.8	259.4	242.0	246.7	232.1
66°	308.5	269.3	250.9	236.3	239.1	224.5



TEST NUMBER: P776632

CATALOG NUMBER: HCDJBL54050CSD-HCD4TQSH-HCD4TSQLWW-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	278.8	243.9	226.9	219.3	217.9	204.7
68°	268.9	235.4	219.3	213.2	210.8	198.1
68.5°	259.9	227.4	212.3	207.5	204.2	192.0
69°	250.9	219.3	204.7	201.4	197.6	185.8
69.5°	242.0	211.8	197.6	195.3	191.0	179.7
70°	233.5	204.2	191.0	189.1	184.9	173.6
70.5°	225.0	197.2	184.4	183.0	178.8	167.9
71°	217.0	189.6	177.4	176.9	172.6	162.3
71.5°	208.5	182.5	171.7	170.8	167.0	156.6
72°	200.9	175.5	165.6	165.1	160.8	150.5
72.5°	192.9	169.8	159.4	159.0	155.2	144.8
73°	185.4	163.2	153.8	153.3	149.1	139.1
73.5°	177.8	156.6	147.6	147.2	143.4	133.0
74°	170.8	149.5	142.0	141.5	137.3	127.4
74.5°	163.2	142.9	136.3	135.8	131.6	121.7
75°	156.1	136.8	131.1	130.2	125.5	116.0
75.5°	149.5	130.7	125.9	125.0	119.8	110.4
76°	142.5	124.5	121.2	119.3	113.7	104.7
76.5°	135.8	118.9	116.5	113.7	108.0	99.1
77°	129.2	112.7	111.8	108.5	102.4	93.9
77.5°	122.6	107.1	107.1	102.8	96.7	88.2
78°	116.5	101.4	101.9	97.6	91.0	83.0
78.5°	109.9	96.2	97.2	92.5	85.4	77.4
79°	103.8	90.6	92.0	87.3	79.7	72.2
79.5°	97.6	85.4	87.3	82.1	74.1	66.5
80°	91.5	80.2	82.1	76.9	68.4	61.3
80.5°	85.8	75.0	77.4	71.7	63.2	56.1
81°	80.2	69.8	72.2	67.0	57.5	50.9
81.5°	74.5	65.1	67.5	61.8	52.4	45.8
82°	68.9	60.4	62.7	57.1	47.6	40.6
82.5°	63.7	55.7	58.0	52.4	42.5	35.4
83°	58.5	50.9	53.3	48.1	37.7	30.7
83.5°	53.3	46.2	48.6	43.4	33.0	25.5
84°	48.1	42.0	44.3	39.2	28.8	20.8
84.5°	43.4	37.3	39.6	34.9	25.0	17.0
85°	38.7	33.0	34.9	30.7	21.2	15.1
85.5°	34.0	28.8	30.7	26.4	18.4	12.7
86°	29.2	25.0	25.9	22.6	15.6	10.4
86.5°	24.1	20.8	21.7	18.4	12.7	8.5
87°	19.8	17.0	17.5	14.6	9.9	6.1
87.5°	15.6	13.2	13.2	11.3	7.1	4.2
88°	11.3	9.4	9.4	7.5	4.7	2.4
88.5°	7.1	5.7	5.7	3.8	2.4	0.9



TEST NUMBER: P776632

CATALOG NUMBER: HCDJBL54050CSD-HCD4TQSH-HCD4TSQLWW-5000lm-3500K

**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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Peachtree City, GA 30269

Scaled Data Report



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21.5°	1429.7	1464.1	1568.4	1723.1	1905.6	2058.9	2171.2	2237.7	2258.9	2225.9	2151.8
22°	1411.3	1445.7	1551.4	1708.5	1893.4	2049.5	2163.6	2231.1	2252.3	2218.8	2144.3



44°	671.2	699.0	769.8	870.3	988.7	1151.9	1294.8	1212.2	1144.8	1215.5	1298.1
44.5°	656.1	683.9	753.3	850.0	964.6	1125.5	1263.7	1185.4	1116.5	1189.6	1267.0



66.5°	217.9	222.6	218.4	220.8	242.0	273.1	317.0	328.8	327.4	339.6	336.8
67°	210.8	215.1	212.3	213.2	233.5	263.7	306.1	317.9	317.0	329.2	325.0



89°	0.0	0.5	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.9	2.8
89.5°	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.9



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21.5°	2040.5	1888.6	1722.6	1571.7	1467.4	1429.7
22°	2031.1	1876.4	1708.5	1555.2	1449.0	1411.3



44°	1150.5	982.1	885.8	789.1	711.3	671.2
44.5°	1125.0	958.5	866.0	772.6	695.7	656.1



66.5°	298.1	260.8	242.9	231.1	232.1	217.9
67°	288.2	251.9	234.9	225.5	225.0	210.8

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89°	3.3	1.9	1.9	1.4	0.5	0.0
89.5°	0.9	0.5	0.5	0.5	0.5	0.0

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Scaled Data Report



(END OF REPORT)