

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: P776255

Luminaire Tested: HCDJBL3040CSD-HCD41TRMW-4000lm-2700K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776255
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B030)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD41TRMW-4000lm-2700K
Description: 4 INCH ROUND SHALLOW-WIDE MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

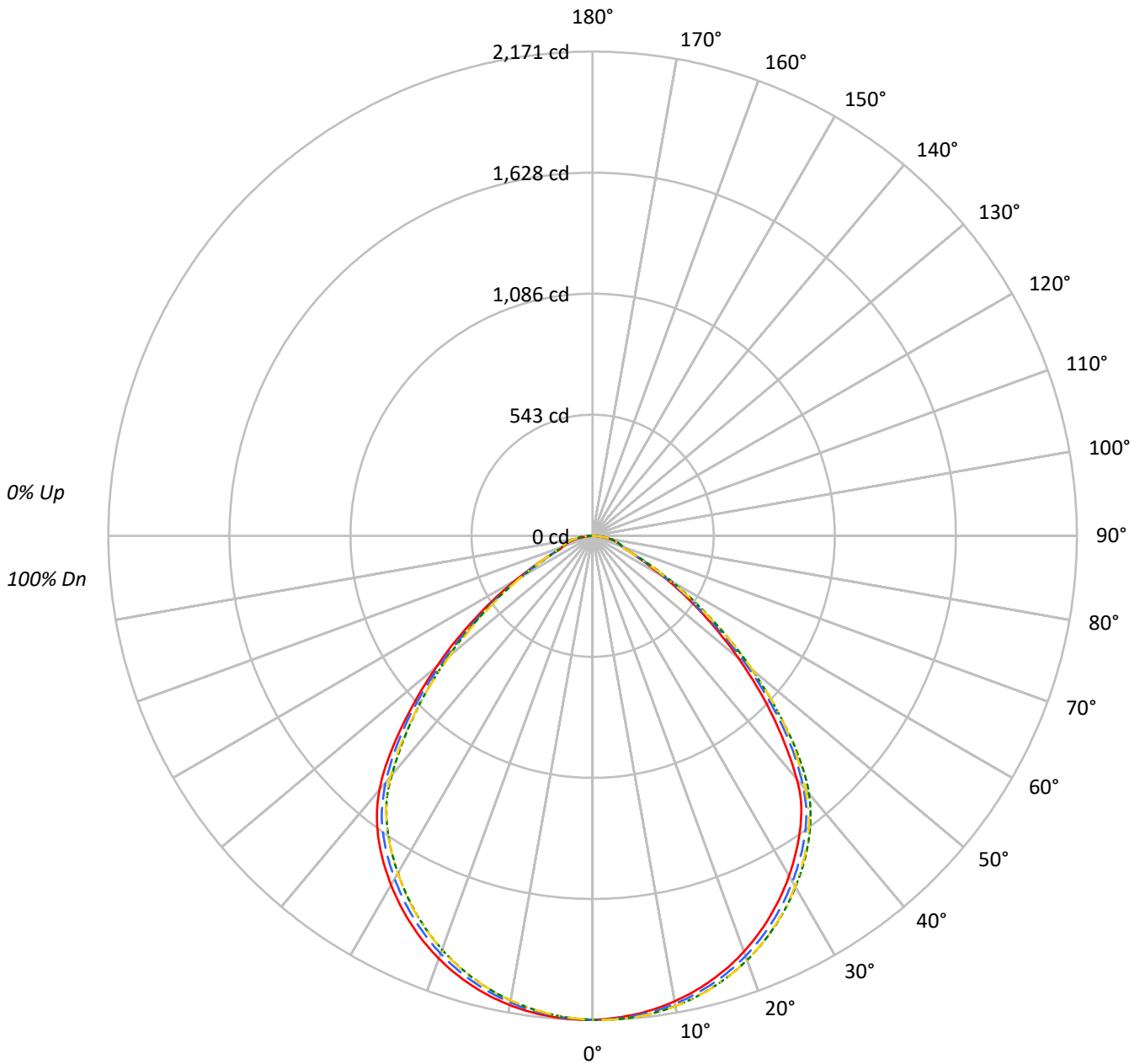
Lumens per Lamp: N/A
Luminaire Lumens: 4530.6 lumens
Efficiency: N/A
Efficacy: 117.7 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.22 / 1.28
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): 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				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	100	100	100
1	111	107	103	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88	88	88	88
2	103	96	90	85	100	94	89	84	90	86	82	87	84	81	84	81	79	77	77	77	77
3	95	86	79	73	93	84	78	73	82	76	72	79	74	70	76	73	69	67	67	67	67
4	88	77	70	64	86	76	69	64	74	68	63	72	66	62	69	65	61	59	59	59	59
5	81	70	62	56	79	69	62	56	67	60	55	65	59	55	63	58	54	52	52	52	52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47	47	47	47
7	71	58	50	45	69	57	50	45	56	49	44	55	49	44	53	48	44	42	42	42	42
8	66	54	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38	38	38	38
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34	34	34	34
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	43	37	33	31	31	31	31

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	273056	273056	273056	273056
5°	272255	273708	273367	272065
10°	270841	273639	273052	270355
15°	268774	272839	272083	267875
20°	265683	271134	270116	264398
25°	261404	268388	267000	259640
30°	255863	264291	262678	253683
35°	248795	258766	256646	246322
40°	233876	247874	244276	230016
45°	202984	219803	215087	200333
50°	167144	182709	179009	165715
55°	129080	142816	140029	129080
60°	92122	102542	100428	92500
65°	62565	67002	65304	62654
70°	52140	51846	52287	53281
75°	54897	55286	53049	57863
80°	51239	57037	46456	61241
85°	28302	52127	19927	59347

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 112.5°
 Vertical Angle: 45°
 Luminance: 223292 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	205.1	4.5
10°-20°	585.2	12.9
20°-30°	875.4	19.3
30°-40°	1023.6	22.6
40°-50°	905.3	20.0
50°-60°	550.9	12.2
60°-70°	229.5	5.1
70°-80°	119.1	2.6
80°-90°	36.5	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°	1665.7	36.8
0°-40°	2689.3	59.4
0°-60°	4145.5	91.5
0°-90°	4530.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4530.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2170	2170	2170	2170	2170	
5°	2155	2167	2164	2154	2155	205
15°	2063	2094	2088	2056	2063	582
25°	1882	1933	1923	1870	1882	867
35°	1619	1684	1670	1603	1619	1008
45°	1140	1235	1208	1126	1140	876
55°	588	651	638	588	588	530
65°	210	225	219	210	210	221
75°	113	114	109	119	113	117
85°	20	36	14	41	20	29
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°	2169.7	2169.7	2169.7	2169.7	2169.7	2169.7	2169.7	2169.7	2169.7	2169.7	2169.7
0.5°	2169.3	2169.7	2170.1	2169.3	2170.9	2171.2	2170.5	2170.1	2170.1	2170.1	2169.7
1°	2168.6	2169.3	2169.7	2169.7	2171.2	2171.6	2171.2	2170.5	2170.1	2170.1	2169.3
1.5°	2167.4	2168.6	2169.3	2169.7	2171.2	2172.0	2171.2	2170.5	2170.1	2169.7	2168.6
2°	2166.3	2167.4	2168.9	2169.3	2171.2	2172.0	2171.2	2170.5	2169.7	2168.9	2167.8
2.5°	2164.7	2166.3	2168.2	2168.9	2170.9	2172.0	2171.2	2170.1	2169.3	2168.2	2166.6
3°	2163.2	2165.1	2167.0	2168.2	2170.5	2171.6	2170.5	2169.7	2168.6	2167.4	2165.5
3.5°	2161.6	2163.6	2165.9	2167.4	2169.7	2171.2	2170.1	2168.9	2167.8	2165.9	2163.9
4°	2159.7	2161.6	2164.3	2166.3	2168.9	2170.5	2168.9	2167.8	2166.6	2164.7	2162.0
4.5°	2157.4	2159.7	2162.4	2164.7	2167.8	2169.3	2168.2	2166.6	2165.1	2163.2	2160.1
5°	2155.1	2157.8	2160.5	2163.2	2166.6	2168.2	2166.6	2165.5	2163.9	2161.3	2157.8
5.5°	2152.4	2155.1	2158.6	2161.6	2164.7	2167.0	2165.1	2163.6	2162.0	2159.0	2155.5
6°	2149.4	2152.8	2156.3	2159.7	2163.2	2165.1	2163.6	2162.0	2160.1	2157.0	2152.8
6.5°	2146.3	2149.7	2154.0	2157.4	2161.3	2163.6	2161.6	2160.1	2158.2	2154.7	2150.1
7°	2143.2	2146.7	2151.3	2155.1	2159.0	2161.3	2159.3	2157.8	2155.5	2152.0	2147.4
7.5°	2139.8	2143.6	2148.2	2152.4	2156.6	2159.3	2157.0	2155.5	2152.8	2149.0	2144.0
8°	2136.3	2140.1	2145.5	2149.7	2153.6	2156.6	2154.3	2152.8	2150.1	2145.9	2140.5
8.5°	2132.5	2136.7	2141.7	2146.7	2150.9	2154.3	2151.7	2149.7	2147.0	2142.8	2137.1
9°	2128.2	2132.8	2138.2	2143.6	2147.8	2151.3	2148.6	2146.7	2144.0	2139.0	2133.2
9.5°	2124.0	2128.6	2134.8	2139.8	2144.7	2148.2	2145.5	2143.6	2140.5	2135.5	2129.0
10°	2119.4	2124.4	2130.5	2136.3	2141.3	2144.7	2142.1	2140.1	2136.7	2131.7	2124.8
10.5°	2114.8	2120.2	2126.3	2132.1	2137.4	2141.3	2138.2	2136.3	2132.8	2127.5	2120.6
11°	2109.8	2115.2	2122.1	2128.2	2133.6	2137.4	2134.4	2132.1	2129.0	2122.9	2115.6
11.5°	2104.8	2110.6	2117.5	2124.0	2129.4	2133.6	2130.2	2128.2	2124.4	2118.2	2110.6
12°	2099.4	2105.2	2112.5	2119.0	2125.2	2129.4	2125.9	2124.0	2120.2	2113.6	2105.6
12.5°	2093.7	2099.8	2107.5	2114.4	2120.6	2125.2	2121.3	2119.0	2115.6	2108.6	2100.2
13°	2088.3	2094.4	2102.1	2109.4	2115.6	2120.6	2116.3	2114.4	2110.6	2103.3	2094.8
13.5°	2081.8	2088.7	2096.4	2104.4	2110.6	2115.6	2111.3	2109.4	2105.2	2097.9	2089.1
14°	2076.0	2082.9	2091.0	2099.0	2105.2	2110.6	2106.3	2104.0	2099.8	2092.1	2082.9
14.5°	2069.5	2076.8	2084.8	2093.3	2099.8	2105.2	2100.6	2098.3	2094.1	2086.4	2076.8
15°	2062.9	2070.2	2079.1	2087.5	2094.1	2099.8	2095.2	2092.9	2088.3	2080.2	2070.2
15.5°	2056.0	2063.3	2072.5	2081.0	2088.3	2093.7	2089.1	2086.8	2082.2	2074.1	2063.7
16°	2048.7	2056.4	2065.6	2074.9	2082.2	2087.9	2082.5	2080.6	2075.6	2067.2	2056.8
16.5°	2041.4	2049.5	2059.1	2068.3	2075.6	2081.4	2076.4	2074.1	2069.5	2060.6	2049.5
17°	2034.1	2042.2	2052.2	2061.4	2069.1	2074.9	2069.9	2067.2	2062.2	2053.7	2042.2
17.5°	2026.5	2034.5	2044.9	2054.9	2062.2	2068.3	2062.6	2060.3	2055.3	2046.1	2034.5
18°	2018.4	2026.9	2037.2	2047.6	2055.3	2061.0	2055.7	2053.3	2048.4	2038.8	2026.9
18.5°	2010.0	2018.8	2029.5	2039.9	2048.0	2053.7	2048.4	2046.1	2040.7	2031.1	2018.8
19°	2001.5	2010.7	2021.5	2032.2	2040.3	2046.4	2040.7	2038.4	2033.4	2023.4	2010.7
19.5°	1992.7	2002.3	2013.4	2024.5	2032.6	2038.8	2032.6	2030.7	2025.3	2014.9	2002.3
20°	1983.8	1993.4	2005.0	2016.5	2024.5	2031.1	2024.5	2022.2	2016.9	2006.9	1993.4
20.5°	1975.0	1984.6	1996.5	2008.0	2016.5	2022.6	2016.1	2013.8	2008.4	1998.0	1984.2
21°	1965.0	1975.4	1987.3	1999.6	2008.0	2014.6	2007.7	2005.3	2000.0	1989.2	1975.4



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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°	1935.8	1946.6	1959.6	1972.3	1981.5	1988.1	1980.4	1978.5	1972.7	1961.6	1946.6
23°	1925.5	1936.6	1949.7	1963.1	1972.3	1978.8	1970.8	1968.9	1963.1	1952.0	1936.2
23.5°	1915.1	1926.2	1939.7	1953.1	1962.7	1969.2	1961.2	1958.9	1953.5	1941.6	1926.2
24°	1904.3	1915.9	1929.7	1943.5	1952.7	1959.6	1951.2	1948.9	1943.5	1931.6	1915.9
24.5°	1893.6	1905.1	1919.3	1933.2	1942.8	1949.7	1941.2	1938.9	1933.2	1921.2	1905.1
25°	1882.5	1894.0	1908.6	1922.8	1932.8	1939.3	1930.5	1928.5	1922.8	1910.9	1894.4
25.5°	1871.3	1883.2	1897.8	1912.4	1922.4	1928.9	1920.1	1917.8	1912.4	1900.1	1883.2
26°	1859.4	1872.1	1886.7	1901.7	1911.6	1918.6	1909.3	1907.0	1901.7	1889.0	1871.7
26.5°	1848.3	1860.6	1875.5	1890.9	1900.5	1907.8	1898.2	1895.9	1890.1	1878.2	1860.6
27°	1836.4	1848.7	1864.0	1879.4	1889.8	1897.1	1886.7	1884.8	1879.0	1866.7	1849.1
27.5°	1824.1	1837.1	1852.9	1868.3	1878.2	1885.5	1875.5	1873.2	1867.9	1854.8	1837.1
28°	1811.8	1824.9	1840.6	1856.7	1866.7	1874.0	1863.6	1861.7	1856.0	1843.7	1824.9
28.5°	1799.1	1812.6	1828.7	1844.8	1855.6	1862.5	1851.7	1849.8	1844.1	1831.0	1812.6
29°	1786.8	1799.9	1816.4	1832.9	1843.3	1850.6	1839.5	1837.9	1832.2	1819.5	1800.3
29.5°	1773.8	1787.6	1804.1	1820.6	1831.4	1838.7	1827.2	1825.6	1819.9	1806.8	1788.0
30°	1760.7	1774.9	1791.4	1808.3	1818.7	1826.4	1814.9	1813.0	1807.6	1794.5	1774.9
30.5°	1747.3	1761.9	1778.8	1796.1	1806.4	1813.7	1802.2	1800.3	1794.9	1781.5	1761.9
31°	1733.8	1748.4	1766.1	1783.0	1793.8	1801.4	1789.1	1787.2	1781.8	1768.8	1748.8
31.5°	1720.4	1735.4	1752.7	1770.3	1780.7	1788.4	1776.1	1774.2	1768.8	1755.7	1736.1
32°	1707.0	1721.9	1739.2	1757.3	1767.6	1775.3	1762.6	1761.1	1755.7	1743.1	1722.3
32.5°	1692.8	1708.1	1726.2	1743.8	1755.0	1762.3	1749.2	1747.7	1742.3	1729.6	1708.5
33°	1678.9	1694.3	1712.3	1730.4	1741.1	1748.8	1735.4	1733.8	1728.9	1715.8	1694.7
33.5°	1664.7	1680.1	1698.5	1716.9	1727.3	1735.0	1721.6	1719.6	1714.6	1701.6	1680.5
34°	1649.7	1665.9	1683.9	1702.7	1713.5	1721.2	1706.6	1705.0	1700.1	1687.0	1665.9
34.5°	1635.2	1650.9	1669.7	1688.1	1699.3	1706.2	1692.4	1690.5	1685.5	1672.8	1651.3
35°	1619.4	1635.9	1654.7	1673.6	1684.3	1691.6	1677.0	1675.5	1670.5	1657.8	1636.3
35.5°	1604.0	1620.6	1639.4	1658.6	1669.3	1676.6	1662.0	1660.1	1655.5	1642.4	1620.9
36°	1588.3	1604.8	1624.0	1643.2	1654.4	1661.6	1645.9	1643.6	1639.4	1626.3	1604.8
36.5°	1571.8	1588.7	1607.9	1627.9	1638.2	1645.5	1629.0	1627.1	1622.5	1609.8	1588.3
37°	1554.9	1571.8	1591.0	1610.6	1621.3	1628.6	1612.1	1610.2	1605.6	1592.9	1571.4
37.5°	1536.8	1554.5	1574.1	1594.1	1604.4	1611.7	1593.7	1592.5	1588.3	1575.2	1551.8
38°	1518.0	1536.1	1556.8	1576.4	1586.8	1594.4	1573.7	1573.3	1570.3	1556.4	1531.5
38.5°	1496.9	1515.0	1536.1	1558.3	1568.7	1575.6	1552.2	1551.8	1550.7	1537.2	1510.7
39°	1474.6	1491.9	1513.8	1538.4	1549.5	1555.7	1529.9	1530.3	1530.3	1516.5	1488.1
39.5°	1450.1	1468.5	1491.9	1518.0	1529.5	1534.5	1507.7	1507.7	1509.2	1494.6	1465.8
40°	1423.6	1443.5	1468.9	1495.4	1508.8	1511.9	1484.2	1483.5	1486.9	1471.6	1441.6
40.5°	1396.3	1417.0	1444.3	1472.7	1486.5	1488.5	1460.8	1459.7	1463.1	1447.4	1418.9
41°	1368.6	1390.5	1419.7	1448.1	1463.1	1464.6	1437.4	1435.8	1437.8	1422.8	1393.2
41.5°	1341.0	1363.7	1394.0	1423.2	1437.8	1440.5	1412.8	1410.5	1411.7	1397.4	1368.3
42°	1311.8	1335.6	1368.3	1397.4	1411.7	1415.5	1388.2	1385.9	1384.8	1371.3	1342.1
42.5°	1283.8	1307.6	1341.8	1371.3	1384.0	1389.8	1362.5	1359.8	1356.7	1344.1	1315.6
43°	1255.4	1279.9	1314.9	1344.1	1355.6	1363.3	1336.8	1333.3	1327.9	1316.4	1288.0
43.5°	1226.9	1251.9	1286.1	1316.4	1325.6	1337.2	1310.7	1306.4	1298.0	1288.0	1261.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1140.5	1167.8	1200.1	1228.9	1235.0	1254.6	1228.5	1223.1	1208.5	1198.9	1175.5
45.5°	1111.7	1139.4	1170.5	1198.5	1203.9	1225.0	1201.2	1194.3	1178.2	1168.2	1146.7
46°	1083.3	1111.0	1140.5	1167.4	1172.4	1196.2	1172.0	1164.3	1148.2	1137.5	1116.3
46.5°	1054.5	1082.2	1110.6	1136.3	1142.1	1166.6	1143.2	1135.2	1118.3	1106.7	1086.4
47°	1024.9	1053.7	1080.6	1104.8	1112.1	1136.3	1114.4	1106.0	1089.1	1076.0	1056.8
47.5°	996.1	1024.6	1049.5	1073.7	1081.8	1106.0	1086.0	1075.6	1059.9	1046.1	1027.3
48°	967.3	995.0	1020.0	1042.2	1051.8	1075.6	1056.1	1045.7	1030.3	1015.0	996.5
48.5°	938.5	966.2	989.2	1010.7	1022.3	1045.3	1027.3	1015.3	1001.1	985.0	967.3
49°	910.1	937.0	959.3	980.0	992.3	1015.3	996.5	985.8	972.3	954.7	937.0
49.5°	881.7	907.1	929.3	948.9	962.4	984.6	966.2	955.8	943.2	925.1	907.4
50°	853.7	878.3	899.0	918.2	933.2	954.7	936.6	925.9	914.3	895.1	877.9
50.5°	825.6	848.7	869.0	887.5	904.0	924.7	905.5	896.7	885.2	866.3	848.3
51°	797.6	819.9	839.5	857.5	874.4	894.4	876.3	867.9	857.1	837.9	819.5
51.5°	770.7	791.8	810.3	827.6	845.6	866.0	845.6	838.7	829.1	809.1	791.1
52°	743.5	763.4	781.1	798.8	817.2	836.4	814.9	809.5	801.8	780.3	762.7
52.5°	717.0	735.4	752.3	770.0	788.4	806.8	785.7	781.1	773.4	752.7	733.9
53°	690.5	707.7	723.1	741.5	760.4	777.6	756.1	753.1	745.4	724.6	706.2
53.5°	664.4	680.5	695.1	713.5	731.9	749.6	727.3	724.6	717.7	698.1	678.9
54°	638.6	653.6	666.7	686.2	705.1	721.2	697.4	697.0	692.0	670.9	652.8
54.5°	613.3	626.3	639.8	659.0	678.2	693.5	669.3	670.1	665.1	644.8	626.7
55°	588.3	600.6	613.3	632.9	650.9	666.7	641.3	643.2	638.2	618.7	600.2
55.5°	564.1	575.3	586.4	606.7	624.4	639.4	613.7	616.7	612.1	593.7	574.9
56°	540.3	550.3	560.3	581.8	598.3	611.7	586.8	589.9	587.5	568.3	550.7
56.5°	516.5	525.3	535.7	556.8	573.0	585.6	560.3	564.5	561.8	544.2	526.5
57°	493.5	501.5	511.1	532.6	547.6	560.3	534.6	539.2	536.9	520.7	503.1
57.5°	470.8	477.7	486.9	508.4	523.0	534.6	509.6	514.6	512.7	497.7	479.6
58°	448.5	454.7	463.1	485.8	498.5	509.2	485.4	490.4	489.6	475.0	457.8
58.5°	427.0	432.4	440.9	462.7	475.8	485.0	461.6	465.8	465.8	453.1	436.2
59°	406.3	410.9	419.7	441.6	452.0	461.2	438.5	442.4	442.8	431.6	414.7
59.5°	385.9	389.8	398.6	419.3	429.3	437.8	415.9	420.1	420.5	410.5	394.8
60°	366.0	369.4	378.6	398.6	407.4	414.7	394.0	397.8	399.0	390.2	375.2
60.5°	347.2	349.8	359.1	378.3	386.3	392.9	373.7	376.0	377.9	370.6	356.0
61°	328.3	331.0	340.2	358.7	365.6	372.1	354.8	355.6	357.5	352.5	339.1
61.5°	310.7	313.4	322.6	339.1	346.8	352.9	335.6	336.8	338.7	334.5	322.6
62°	293.8	296.5	305.3	321.0	328.0	333.3	316.8	317.6	319.9	316.4	305.7
62.5°	277.6	279.9	288.8	303.0	309.5	314.1	298.0	298.4	301.1	298.4	288.8
63°	262.3	264.2	273.0	285.7	290.7	294.5	279.2	279.6	282.6	280.3	271.9
63.5°	248.1	249.6	258.1	269.2	271.9	275.3	261.9	262.7	266.1	264.2	256.9
64°	234.3	236.2	243.9	253.1	255.8	258.4	246.2	246.2	250.0	249.2	242.7
64.5°	221.2	223.1	230.4	238.5	240.0	242.7	231.6	231.6	234.6	234.6	229.6
65°	210.1	211.2	217.7	224.7	225.0	227.7	217.4	217.7	219.3	221.2	217.4
65.5°	199.3	200.5	206.2	211.6	211.2	213.5	204.3	204.7	204.7	208.9	205.8
66°	188.9	190.5	195.5	199.3	198.2	200.8	192.4	192.8	190.9	196.6	195.1



TEST NUMBER: P776255

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	164.0	165.9	168.2	169.4	167.0	169.7	163.2	164.7	160.5	167.8	169.0
68°	157.4	159.4	160.9	161.7	159.4	161.7	156.3	157.8	154.0	160.9	162.1
68.5°	151.3	154.0	154.8	154.8	152.8	154.8	150.9	152.1	150.2	154.8	155.9
69°	147.1	149.4	149.0	149.0	147.8	149.4	146.7	147.5	147.5	150.2	150.9
69.5°	144.4	145.2	144.8	144.4	143.6	144.8	143.6	144.4	144.8	146.3	147.5
70°	141.7	141.7	141.7	141.3	140.9	142.1	141.3	141.7	142.1	143.6	144.8
70.5°	139.0	139.4	140.2	139.0	138.6	139.8	139.0	139.0	139.4	140.9	142.5
71°	136.3	136.7	137.5	136.3	135.9	137.1	136.3	135.9	136.3	138.2	140.2
71.5°	134.0	134.0	135.2	134.0	133.6	134.8	133.6	133.3	133.6	135.2	137.5
72°	131.3	131.3	132.5	131.7	131.0	132.1	131.0	130.2	130.2	132.1	134.8
72.5°	129.0	129.0	129.8	129.4	128.3	129.4	128.3	127.1	127.1	129.0	132.1
73°	126.0	126.0	127.1	126.7	125.6	126.7	125.2	123.7	123.7	126.0	129.0
73.5°	122.9	122.9	124.4	123.7	122.9	123.7	122.1	120.2	120.2	122.5	126.0
74°	119.4	119.8	121.3	121.0	119.8	121.0	119.0	116.7	116.7	119.0	122.9
74.5°	116.0	116.4	118.3	118.3	116.7	117.9	116.0	113.3	112.9	115.6	119.8
75°	112.9	112.9	115.2	115.2	113.7	114.8	112.5	109.4	109.1	111.7	116.4
75.5°	109.1	109.4	112.1	112.1	110.6	111.7	109.1	105.6	105.2	107.9	112.9
76°	105.2	105.6	108.7	109.1	107.5	108.7	105.6	101.8	101.0	104.1	109.4
76.5°	101.8	102.1	105.2	105.6	104.1	105.2	101.8	97.9	97.2	99.8	106.0
77°	97.5	98.3	101.8	102.5	100.6	101.8	98.3	93.7	92.5	95.6	102.5
77.5°	93.3	94.1	98.3	99.1	97.2	98.3	94.5	89.5	87.9	91.0	98.3
78°	89.1	90.2	94.5	95.6	93.7	94.9	90.2	84.9	83.3	86.8	94.5
78.5°	84.9	86.0	90.6	92.2	89.9	91.0	86.4	80.3	78.7	82.2	90.2
79°	80.3	81.4	86.8	88.3	86.4	87.2	82.2	75.7	74.1	77.6	86.4
79.5°	75.7	77.2	82.9	84.5	82.6	83.7	78.0	71.0	69.1	72.6	82.2
80°	70.7	72.2	78.7	80.6	78.7	79.5	73.7	66.4	64.1	67.6	77.6
80.5°	66.1	67.6	74.5	76.8	74.5	75.7	69.5	61.4	59.1	63.0	73.3
81°	61.4	63.0	70.3	73.0	70.7	71.4	65.3	56.5	53.8	57.6	68.7
81.5°	56.1	58.0	66.1	68.7	66.4	67.2	60.7	51.5	48.8	52.6	64.1
82°	51.1	53.0	61.4	64.5	62.2	63.4	56.5	46.5	43.4	47.6	59.9
82.5°	46.1	48.0	57.2	60.3	58.0	58.8	52.2	41.9	38.4	42.2	55.3
83°	40.7	43.0	53.0	56.1	53.8	54.5	48.0	37.6	33.0	38.0	51.1
83.5°	35.3	38.0	48.8	51.8	49.5	50.3	43.8	33.4	28.0	33.8	46.5
84°	30.0	33.0	44.5	47.6	45.3	46.1	39.6	29.2	22.7	29.6	42.6
84.5°	24.6	28.4	40.3	43.0	40.7	41.5	35.3	25.3	17.3	25.0	38.4
85°	19.6	24.6	36.5	38.8	36.1	36.9	31.1	21.1	13.8	20.7	34.2
85.5°	15.0	21.5	32.3	34.2	31.5	32.3	26.5	18.0	11.9	18.4	30.3
86°	13.1	18.8	28.0	29.6	26.9	27.6	22.3	15.4	10.4	15.7	26.1
86.5°	11.1	15.7	23.4	25.0	22.3	23.0	18.0	12.7	8.4	13.4	21.9
87°	9.2	13.1	19.2	20.0	17.7	18.0	13.8	9.6	6.9	10.8	17.7
87.5°	6.9	10.4	14.6	15.4	13.1	13.4	9.2	6.9	5.0	8.4	13.4
88°	5.0	7.7	11.1	11.5	8.4	9.2	5.4	4.2	3.1	5.8	9.2
88.5°	3.5	5.0	7.7	7.7	4.6	5.0	1.9	1.9	1.9	3.5	5.4



TEST NUMBER: P776255
CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

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

TEST NUMBER: P776255

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2169.7	2169.7	2169.7	2169.7	2169.7	2169.7
0.5°	2168.6	2169.7	2169.7	2169.3	2168.9	2169.3
1°	2167.8	2168.9	2168.2	2168.6	2168.2	2168.6
1.5°	2167.0	2167.8	2167.0	2167.0	2167.0	2167.4
2°	2165.5	2166.3	2165.5	2165.9	2165.5	2166.3
2.5°	2164.3	2164.7	2163.9	2164.3	2163.9	2164.7
3°	2162.8	2162.8	2161.6	2162.4	2162.0	2163.2
3.5°	2160.9	2160.9	2159.7	2160.5	2160.5	2161.6
4°	2159.0	2159.0	2157.0	2158.2	2158.2	2159.7
4.5°	2156.6	2156.3	2154.7	2155.9	2155.9	2157.4
5°	2154.0	2153.6	2152.0	2153.2	2153.2	2155.1
5.5°	2151.3	2150.9	2149.0	2150.1	2150.5	2152.4
6°	2148.6	2147.8	2145.5	2147.4	2147.4	2149.4
6.5°	2145.5	2144.7	2142.1	2144.0	2144.4	2146.3
7°	2142.4	2141.3	2138.6	2140.5	2140.9	2143.2
7.5°	2138.6	2137.4	2134.8	2136.7	2137.1	2139.8
8°	2135.1	2133.6	2130.5	2132.8	2133.6	2136.3
8.5°	2130.9	2129.0	2126.7	2129.0	2129.4	2132.5
9°	2127.1	2124.8	2122.1	2124.8	2125.5	2128.2
9.5°	2122.5	2120.2	2117.5	2120.2	2120.9	2124.0
10°	2117.9	2115.6	2112.5	2115.2	2116.3	2119.4
10.5°	2113.3	2110.6	2107.1	2110.6	2111.7	2114.8
11°	2107.9	2105.6	2101.7	2105.2	2106.7	2109.8
11.5°	2102.9	2100.2	2096.4	2099.8	2101.4	2104.8
12°	2097.5	2094.4	2090.6	2094.4	2095.6	2099.4
12.5°	2091.8	2088.3	2084.5	2088.7	2090.2	2093.7
13°	2086.0	2082.5	2078.3	2082.5	2084.1	2088.3
13.5°	2079.5	2076.0	2072.2	2076.4	2077.9	2081.8
14°	2073.3	2069.9	2065.6	2070.2	2071.4	2076.0
14.5°	2066.8	2062.9	2058.7	2063.3	2064.9	2069.5
15°	2059.9	2056.0	2051.4	2056.8	2058.3	2062.9
15.5°	2053.0	2049.1	2044.5	2049.5	2051.0	2056.0
16°	2045.7	2041.4	2036.8	2042.2	2043.7	2048.7
16.5°	2038.4	2034.1	2029.2	2034.5	2036.5	2041.4
17°	2030.7	2026.1	2021.1	2026.9	2028.8	2034.1
17.5°	2022.6	2018.0	2013.0	2018.8	2020.7	2026.5
18°	2014.6	2009.6	2004.2	2010.7	2012.6	2018.4
18.5°	2006.1	2001.1	1995.7	2002.3	2004.2	2010.0
19°	1997.7	1992.3	1986.9	1993.4	1995.4	2001.5
19.5°	1988.8	1983.5	1977.7	1984.6	1986.5	1992.7
20°	1980.0	1974.2	1968.5	1975.4	1977.7	1983.8
20.5°	1970.4	1964.6	1958.5	1965.8	1968.9	1975.0
21°	1960.8	1954.7	1948.5	1956.6	1959.3	1965.0



TEST NUMBER: P776255

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1931.2	1924.7	1917.8	1926.2	1929.3	1935.8
23°	1920.9	1914.3	1907.0	1915.9	1918.9	1925.5
23.5°	1910.5	1904.0	1896.3	1905.1	1908.2	1915.1
24°	1899.7	1892.4	1885.1	1894.0	1897.1	1904.3
24.5°	1888.6	1881.3	1874.0	1883.2	1886.3	1893.6
25°	1877.5	1869.8	1862.5	1871.7	1875.2	1882.5
25.5°	1865.9	1858.3	1850.2	1860.2	1863.6	1871.3
26°	1854.4	1846.4	1838.7	1848.7	1852.1	1859.4
26.5°	1842.5	1834.8	1826.8	1836.4	1840.2	1848.3
27°	1830.6	1822.6	1814.1	1824.5	1828.3	1836.4
27.5°	1818.7	1810.3	1801.8	1812.2	1816.0	1824.1
28°	1806.4	1797.2	1789.1	1799.5	1803.4	1811.8
28.5°	1793.8	1784.9	1776.1	1786.5	1791.1	1799.1
29°	1781.1	1772.2	1763.4	1773.4	1778.0	1786.8
29.5°	1768.0	1759.2	1749.6	1760.7	1765.0	1773.8
30°	1755.4	1745.7	1736.9	1747.3	1751.9	1760.7
30.5°	1741.9	1732.3	1723.1	1733.8	1738.5	1747.3
31°	1728.9	1718.9	1709.7	1720.8	1725.0	1733.8
31.5°	1715.4	1705.4	1695.1	1706.6	1711.2	1720.4
32°	1701.6	1691.2	1681.6	1692.8	1697.4	1707.0
32.5°	1687.8	1677.4	1667.4	1678.5	1683.5	1692.8
33°	1673.6	1663.2	1653.2	1664.3	1669.3	1678.9
33.5°	1659.3	1648.6	1638.2	1650.1	1655.1	1664.7
34°	1644.4	1634.0	1623.2	1635.2	1640.1	1649.7
34.5°	1629.4	1618.6	1608.3	1620.2	1625.2	1635.2
35°	1614.4	1603.3	1592.5	1604.4	1609.8	1619.4
35.5°	1598.7	1587.5	1576.4	1588.7	1594.1	1604.0
36°	1582.5	1571.4	1560.3	1573.3	1578.3	1588.3
36.5°	1566.0	1554.9	1543.8	1556.4	1561.4	1571.8
37°	1548.7	1537.6	1526.5	1539.5	1544.5	1554.9
37.5°	1529.2	1519.2	1508.0	1522.3	1527.2	1536.8
38°	1507.3	1498.8	1486.9	1504.2	1508.4	1518.0
38.5°	1485.0	1476.9	1463.9	1483.1	1486.2	1496.9
39°	1461.6	1453.1	1441.2	1459.7	1463.9	1474.6
39.5°	1437.4	1427.0	1416.6	1435.5	1440.1	1450.1
40°	1412.4	1400.1	1390.1	1410.1	1415.1	1423.6
40.5°	1387.1	1373.3	1363.7	1384.0	1388.2	1396.3
41°	1361.0	1346.0	1336.0	1357.5	1361.3	1368.6
41.5°	1334.1	1318.0	1308.0	1331.0	1333.3	1341.0
42°	1306.8	1291.1	1279.9	1303.4	1304.9	1311.8
42.5°	1279.6	1264.2	1250.7	1275.7	1276.1	1283.8
43°	1251.9	1236.9	1221.9	1247.7	1247.7	1255.4
43.5°	1224.6	1208.9	1192.4	1218.9	1218.1	1226.9



TEST NUMBER: P776255

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1141.7	1125.6	1106.0	1130.6	1129.4	1140.5
45.5°	1114.0	1097.5	1077.2	1100.6	1099.4	1111.7
46°	1086.4	1070.3	1048.8	1070.6	1069.9	1083.3
46.5°	1058.7	1041.5	1020.0	1041.5	1040.3	1054.5
47°	1029.9	1013.0	991.9	1010.7	1010.7	1024.9
47.5°	1002.3	985.0	963.1	980.8	981.6	996.1
48°	974.3	957.0	935.1	950.1	952.8	967.3
48.5°	945.8	928.6	906.3	921.3	923.9	938.5
49°	917.0	901.3	879.4	890.9	895.5	910.1
49.5°	888.6	874.0	852.1	862.1	867.1	881.7
50°	860.2	846.4	824.1	832.6	839.1	853.7
50.5°	832.2	819.1	796.8	804.5	811.0	825.6
51°	804.5	793.0	770.0	776.1	783.0	797.6
51.5°	776.5	766.1	743.5	748.8	755.4	770.7
52°	748.8	740.0	717.0	721.6	728.5	743.5
52.5°	721.6	713.9	690.5	695.8	702.0	717.0
53°	694.7	688.2	664.7	669.3	675.9	690.5
53.5°	668.2	662.8	639.8	643.6	649.8	664.4
54°	641.7	637.1	614.4	619.0	624.0	638.6
54.5°	616.0	612.5	590.2	594.8	599.1	613.3
55°	590.6	588.3	566.4	570.7	575.3	588.3
55.5°	565.7	564.1	543.0	548.0	551.5	564.1
56°	541.1	539.9	519.6	525.3	527.6	540.3
56.5°	517.3	516.9	497.3	503.4	505.0	516.5
57°	493.5	493.8	475.4	481.9	483.1	493.5
57.5°	470.4	471.6	453.9	460.8	461.6	470.8
58°	448.5	449.7	433.6	441.2	440.5	448.5
58.5°	426.6	428.6	413.6	421.7	420.9	427.0
59°	405.5	407.4	394.0	402.5	400.9	406.3
59.5°	384.8	387.1	375.6	384.0	382.5	385.9
60°	365.2	367.5	357.1	366.7	364.0	366.0
60.5°	347.9	348.3	339.5	349.5	346.8	347.2
61°	330.3	329.9	322.6	332.9	329.5	328.3
61.5°	312.6	312.2	306.8	316.8	313.4	310.7
62°	295.3	294.9	291.5	301.8	297.6	293.8
62.5°	277.6	278.8	276.5	287.2	282.6	277.6
63°	262.7	263.4	262.3	273.0	268.0	262.3
63.5°	248.8	248.5	248.8	259.6	254.6	248.1
64°	235.0	234.6	236.2	246.5	241.5	234.3
64.5°	222.3	222.0	224.3	234.3	229.3	221.2
65°	210.8	210.4	212.7	222.3	217.0	210.1
65.5°	200.1	200.1	202.0	211.6	207.0	199.3
66°	190.1	190.5	192.4	201.2	196.6	188.9



TEST NUMBER: P776255

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	166.7	168.2	167.8	174.3	170.9	164.0
68°	160.9	162.1	161.7	167.0	163.6	157.4
68.5°	155.5	156.7	155.9	160.5	157.4	151.3
69°	150.9	152.1	150.9	154.4	152.1	147.1
69.5°	147.1	147.8	146.7	149.4	147.5	144.4
70°	144.8	144.8	143.6	145.5	144.0	141.7
70.5°	142.5	142.5	141.3	142.9	140.9	139.0
71°	139.8	139.8	139.0	140.6	138.2	136.3
71.5°	137.5	137.5	136.7	137.9	135.9	134.0
72°	134.8	134.8	134.0	135.6	133.3	131.3
72.5°	132.1	132.5	131.3	132.9	130.6	129.0
73°	129.4	130.2	129.0	130.6	127.9	126.0
73.5°	126.7	127.5	126.3	128.3	124.8	122.9
74°	124.0	124.8	124.0	125.2	121.7	119.4
74.5°	121.0	122.1	121.0	122.1	118.3	116.0
75°	117.9	119.0	117.9	119.4	115.2	112.9
75.5°	114.8	116.0	114.8	116.0	111.4	109.1
76°	111.7	112.9	111.7	112.9	107.9	105.2
76.5°	108.3	109.4	108.7	109.4	104.1	101.8
77°	104.8	106.4	105.2	106.0	100.2	97.5
77.5°	101.4	102.9	102.1	102.5	96.4	93.3
78°	97.9	99.5	98.7	99.1	92.2	89.1
78.5°	94.1	96.0	94.9	95.2	87.9	84.9
79°	90.2	92.2	91.4	91.4	83.7	80.3
79.5°	86.4	88.3	87.6	87.2	79.1	75.7
80°	82.6	84.5	83.3	83.3	74.5	70.7
80.5°	78.3	80.3	79.5	79.1	69.9	66.1
81°	74.5	76.4	75.7	74.9	65.3	61.4
81.5°	70.3	72.2	71.4	70.7	60.3	56.1
82°	65.7	68.0	67.2	66.1	55.3	51.1
82.5°	61.4	63.7	63.0	61.8	50.3	46.1
83°	57.2	59.1	58.4	57.6	45.7	40.7
83.5°	52.6	54.9	54.1	53.4	40.7	35.3
84°	48.0	50.3	49.9	48.8	35.7	30.0
84.5°	43.4	45.7	45.3	44.5	31.1	24.6
85°	38.8	41.1	40.7	40.7	26.9	19.6
85.5°	34.2	36.5	36.1	36.5	23.4	15.0
86°	29.2	31.9	31.5	32.3	20.4	13.1
86.5°	24.6	26.9	26.5	28.0	17.7	11.1
87°	20.0	22.3	21.9	23.4	14.6	9.2
87.5°	15.0	17.3	16.9	19.2	11.9	6.9
88°	10.4	12.7	12.3	14.6	9.2	5.0
88.5°	6.1	9.6	9.2	11.1	6.5	3.5



TEST NUMBER: P776255

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.4	0.4	0.4	0.4	0.0



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Peachtree City, GA 30269

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

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Scaled Data Report



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21.5°	1955.8	1965.8	1978.5	1990.8	1999.6	2005.7	1998.8	1996.5	1990.8	1980.0	1965.8
22°	1945.8	1956.6	1969.2	1981.5	1990.4	1996.9	1989.6	1987.7	1981.9	1970.8	1956.2



44°	1198.1	1224.3	1258.0	1288.0	1295.7	1309.9	1284.2	1279.6	1268.4	1258.8	1232.7
44.5°	1169.0	1195.8	1229.2	1258.4	1265.3	1282.2	1256.1	1251.1	1238.5	1229.6	1204.3



66.5°	179.7	181.3	185.5	188.6	186.2	189.3	181.3	182.4	179.3	185.9	185.5
67°	171.7	172.8	176.3	178.2	175.9	179.0	171.7	172.8	169.0	176.3	176.6



89°	1.9	2.3	3.8	4.2	0.8	1.2	0.0	0.4	0.4	1.2	2.3
89.5°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4	0.0	0.4	0.0

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21.5°	1951.2	1945.1	1938.5	1946.6	1949.3	1955.8
22°	1941.6	1935.1	1928.5	1936.6	1939.3	1945.8



44°	1196.6	1180.9	1163.6	1189.7	1188.2	1198.1
44.5°	1169.3	1153.2	1134.4	1160.1	1158.6	1169.0



66.5°	181.6	182.4	183.6	191.6	187.0	179.7
67°	173.6	174.3	175.1	182.8	178.6	171.7



89°	2.7	6.5	6.1	7.7	3.8	1.9
89.5°	0.0	3.5	3.5	4.2	1.5	0.4

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(END OF REPORT)