

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: P776531

Luminaire Tested: HCDJBL3040CSD-HCD8TSQMW-4000lm-3000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776531
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2310613A001)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD8TSQMW-4000lm-3000K
Description: 8 INCH SQUARE MEDIUM MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

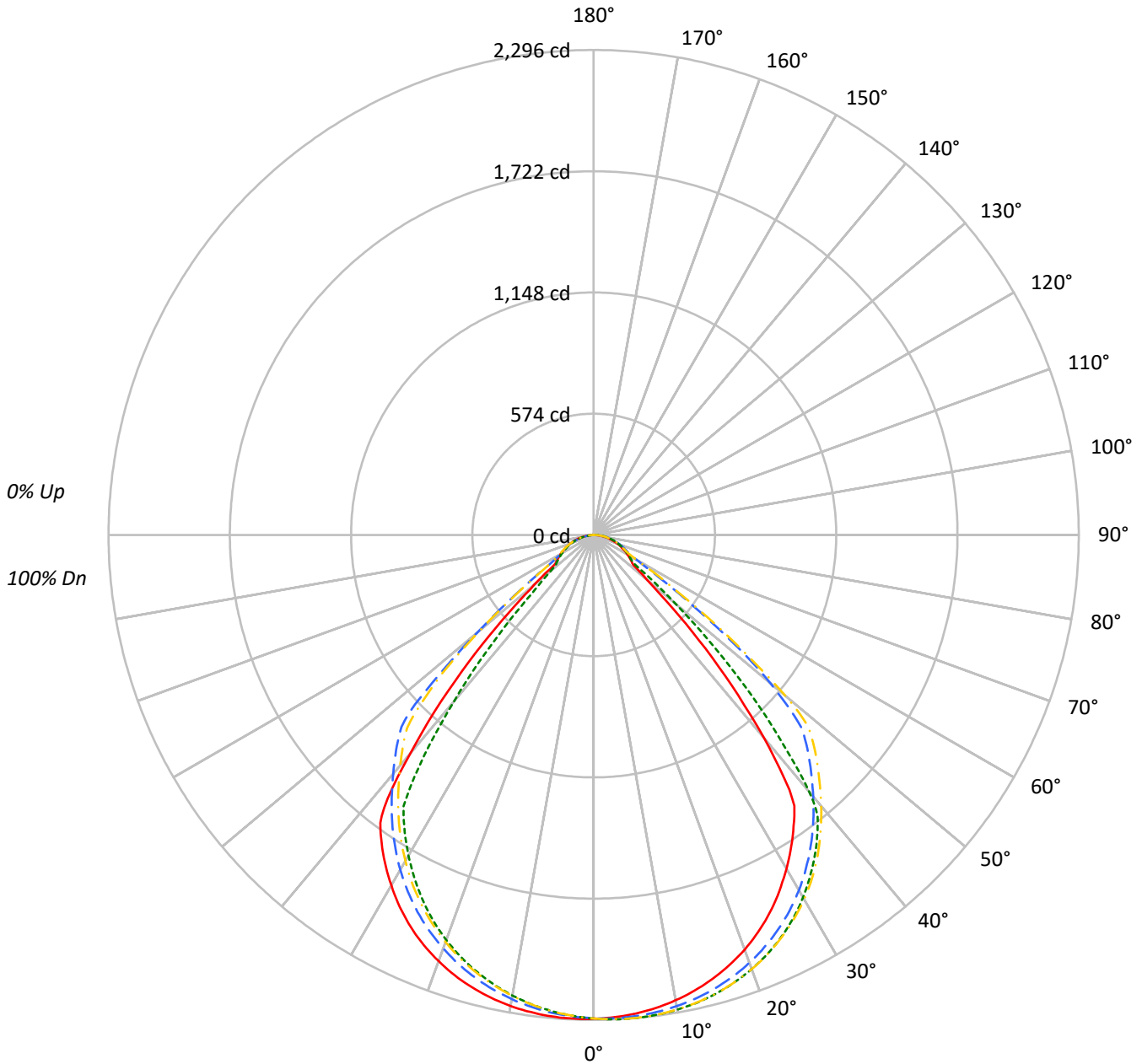
Lumens per Lamp: N/A
Luminaire Lumens: 4146.5 lumens
Efficiency: N/A
Efficacy: 107.7 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.29
Luminous Opening: Rectangular (W 0.67' x L: 0.67' x H: 0')
CIE Type: Direct

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	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	91	89	89	89	89
2	104	97	92	88	101	96	91	87	92	88	85	89	86	83	86	84	81	79	79	79	79
3	97	88	82	77	94	87	81	76	84	79	75	81	77	73	79	75	72	70	70	70	70
4	90	80	73	68	88	79	72	67	77	71	66	75	70	66	73	68	65	63	63	63	63
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	67	62	58	56	56	56	56
6	78	67	60	54	77	66	59	54	65	58	53	63	57	53	62	57	53	51	51	51	51
7	73	62	54	49	72	61	54	49	60	53	48	58	52	48	57	52	48	46	46	46	46
8	69	57	50	44	67	56	49	44	55	49	44	54	48	44	53	48	44	42	42	42	42
9	65	53	45	41	63	52	45	40	51	45	40	50	44	40	49	44	40	38	38	38	38
10	61	49	42	37	60	49	42	37	48	41	37	47	41	37	46	41	37	35	35	35	35

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	54896	54896	54896	54896
5°	54750	55267	55079	54475
10°	54467	55563	55144	53915
15°	54008	55775	55065	53134
20°	53308	55814	54786	52071
25°	52176	55563	54184	50552
30°	50541	54886	53033	48526
35°	48405	53583	51326	45896
40°	39218	49704	42279	32200
45°	23883	34195	26830	17701
50°	12247	18656	13690	9997
55°	9143	9552	8917	8553
60°	8838	9102	8594	8239
65°	8545	8948	8323	7949
70°	8287	8834	8034	7600
75°	7866	8848	7690	7069
80°	7084	8976	7084	6103
85°	5062	9574	5585	3549

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 135°
 Vertical Angle: 45°
 Luminance: 50527 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	216.6	5.2
10°-20°	619.2	14.9
20°-30°	925.7	22.3
30°-40°	1062.2	25.6
40°-50°	771.3	18.6
50°-60°	282.7	6.8
60°-70°	151.6	3.7
70°-80°	91.6	2.2
80°-90°	25.7	0.6
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°	1761.5	42.5
0°-40°	2823.7	68.1
0°-60°	3877.6	93.5
0°-90°	4146.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4146.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2289	2289	2289	2289	2289	
5°	2275	2296	2288	2263	2275	216
15°	2176	2247	2218	2140	2176	613
25°	1972	2100	2048	1911	1972	907
35°	1654	1830	1753	1568	1654	1009
45°	704	1008	791	522	704	555
55°	219	228	213	205	219	205
65°	151	158	147	140	151	149
75°	85	96	83	76	85	89
85°	18	35	20	13	18	23
90°	0	6	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°	2289.4	2289.4	2289.4	2289.4	2289.4	2289.4	2289.4	2289.4	2289.4	2289.4	2289.4
0.5°	2290.2	2290.6	2289.4	2289.1	2291.0	2291.0	2291.0	2291.8	2291.8	2290.6	2287.5
1°	2289.4	2290.2	2289.8	2290.2	2292.6	2292.2	2292.2	2292.6	2292.2	2290.2	2286.3
1.5°	2288.3	2289.8	2290.2	2291.0	2293.7	2293.4	2293.4	2293.4	2292.2	2289.8	2285.1
2°	2287.1	2289.1	2290.2	2291.4	2294.5	2294.5	2294.1	2293.7	2292.2	2289.4	2284.0
2.5°	2285.1	2288.3	2290.2	2292.2	2295.3	2295.3	2294.9	2293.7	2292.2	2288.7	2282.0
3°	2283.6	2287.1	2289.8	2292.6	2296.1	2296.1	2295.3	2293.7	2291.8	2287.9	2280.4
3.5°	2282.0	2285.9	2289.4	2292.6	2296.1	2296.5	2295.7	2294.1	2291.4	2286.7	2278.1
4°	2279.7	2284.4	2289.1	2292.6	2296.1	2296.5	2296.1	2293.7	2290.6	2285.1	2275.8
4.5°	2277.3	2282.8	2287.9	2291.8	2296.1	2296.5	2295.7	2293.4	2289.4	2283.6	2273.4
5°	2274.6	2280.8	2287.1	2291.4	2296.1	2296.5	2295.7	2292.6	2288.3	2281.6	2270.7
5.5°	2271.8	2278.9	2285.5	2290.6	2295.7	2295.7	2294.9	2291.8	2286.7	2279.3	2267.9
6°	2268.7	2276.5	2284.4	2289.8	2294.9	2295.3	2294.1	2290.6	2285.1	2277.3	2264.8
6.5°	2266.0	2273.8	2282.4	2288.7	2294.1	2294.5	2293.4	2289.4	2283.2	2275.0	2261.7
7°	2262.4	2271.1	2280.8	2287.5	2293.0	2293.7	2292.2	2287.9	2281.2	2272.2	2257.8
7.5°	2258.5	2268.3	2278.5	2285.9	2291.8	2293.0	2291.0	2286.3	2278.9	2269.5	2254.2
8°	2254.6	2265.2	2276.5	2284.4	2290.2	2291.4	2289.4	2284.4	2276.5	2266.4	2249.9
8.5°	2250.7	2261.7	2273.8	2282.0	2288.7	2289.8	2287.9	2282.4	2273.8	2262.8	2245.6
9°	2246.4	2258.1	2271.1	2280.1	2286.7	2288.3	2285.9	2280.1	2271.1	2259.3	2241.3
9.5°	2241.7	2254.2	2268.3	2277.7	2284.7	2285.9	2284.0	2277.7	2267.9	2255.4	2236.6
10°	2237.0	2249.9	2265.6	2275.4	2282.0	2284.0	2281.2	2274.6	2264.8	2251.5	2231.9
10.5°	2231.9	2245.6	2262.1	2272.6	2279.7	2281.6	2278.9	2271.4	2260.9	2247.6	2226.4
11°	2226.8	2241.3	2258.5	2269.5	2276.9	2279.3	2276.1	2268.3	2257.0	2242.9	2221.0
11.5°	2221.4	2236.6	2254.2	2266.4	2274.2	2276.1	2273.0	2264.8	2253.1	2238.6	2215.5
12°	2215.5	2231.5	2250.7	2262.8	2271.1	2273.0	2269.9	2261.3	2249.1	2233.5	2210.0
12.5°	2209.2	2226.4	2246.4	2259.3	2267.5	2269.9	2266.8	2257.8	2244.4	2228.0	2203.8
13°	2203.4	2220.6	2242.1	2255.4	2264.0	2266.4	2262.8	2253.4	2239.8	2222.5	2197.5
13.5°	2196.7	2215.1	2237.4	2251.5	2260.1	2262.8	2258.9	2249.1	2234.7	2217.1	2190.8
14°	2190.1	2208.8	2232.7	2247.2	2255.8	2258.5	2255.0	2244.4	2229.6	2211.2	2183.8
14.5°	2183.0	2203.0	2227.6	2242.9	2251.5	2254.6	2250.7	2239.8	2224.1	2205.3	2176.8
15°	2175.6	2196.3	2222.1	2237.8	2246.8	2250.3	2246.0	2234.7	2218.2	2198.7	2169.7
15.5°	2168.1	2189.7	2216.7	2232.7	2242.1	2245.2	2241.7	2229.6	2212.4	2192.4	2162.3
16°	2160.3	2182.2	2210.8	2227.6	2237.0	2240.5	2236.6	2224.1	2206.1	2185.4	2154.4
16.5°	2152.5	2175.6	2204.5	2222.1	2231.9	2235.4	2231.1	2218.2	2199.8	2178.3	2146.2
17°	2144.3	2168.1	2198.3	2216.3	2226.1	2230.0	2225.7	2212.4	2193.2	2171.3	2138.0
17.5°	2135.7	2160.3	2192.0	2210.4	2220.2	2224.5	2219.8	2206.1	2186.1	2163.8	2129.4
18°	2127.1	2152.5	2185.0	2204.1	2214.3	2218.6	2214.3	2199.1	2178.7	2156.0	2120.8
18.5°	2117.7	2144.3	2177.9	2197.9	2208.1	2212.4	2208.1	2192.8	2171.3	2147.8	2111.4
19°	2108.3	2135.7	2170.9	2190.8	2201.4	2206.1	2201.4	2185.4	2163.4	2139.6	2102.0
19.5°	2098.9	2126.7	2163.1	2183.8	2194.4	2199.4	2194.8	2178.7	2155.6	2131.0	2092.6
20°	2089.1	2117.7	2155.2	2176.8	2187.3	2192.8	2187.7	2170.5	2147.0	2122.4	2082.8
20.5°	2078.5	2108.3	2147.4	2169.3	2179.9	2185.4	2180.7	2163.1	2138.4	2113.4	2072.7
21°	2068.0	2098.9	2139.2	2161.5	2172.4	2178.3	2172.8	2154.8	2129.8	2103.6	2062.1



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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°	2034.3	2068.4	2112.2	2136.5	2147.4	2154.1	2149.0	2129.0	2101.6	2073.8	2030.0
23°	2022.6	2057.4	2102.8	2127.8	2138.8	2145.5	2140.8	2120.0	2091.5	2063.3	2018.7
23.5°	2010.5	2046.5	2093.4	2118.5	2129.4	2136.8	2131.8	2110.6	2080.9	2052.3	2006.9
24°	1997.9	2034.7	2083.2	2109.1	2120.4	2127.8	2122.4	2100.5	2070.7	2041.4	1995.2
24.5°	1985.4	2023.0	2073.1	2099.7	2110.6	2118.5	2113.4	2090.7	2059.4	2030.0	1982.7
25°	1972.1	2010.8	2062.5	2089.1	2100.1	2108.7	2103.6	2080.5	2048.0	2018.3	1970.5
25.5°	1958.8	1998.3	2051.9	2078.9	2090.3	2098.5	2093.8	2069.9	2036.7	2006.2	1957.6
26°	1945.5	1985.8	2040.6	2068.4	2079.3	2088.7	2083.6	2059.0	2024.5	1994.0	1944.7
26.5°	1931.4	1972.9	2029.6	2057.4	2068.4	2078.1	2073.1	2047.2	2012.0	1981.1	1931.4
27°	1917.3	1959.6	2018.3	2046.5	2057.0	2066.4	2062.5	2035.5	1999.1	1968.2	1917.7
27.5°	1902.1	1945.9	2006.2	2035.1	2045.3	2055.5	2051.5	2023.8	1986.2	1954.9	1904.0
28°	1887.6	1932.2	1993.6	2023.0	2033.1	2044.1	2040.2	2011.6	1972.9	1941.2	1890.3
28.5°	1871.5	1918.1	1981.5	2011.2	2020.6	2032.0	2028.5	1998.7	1959.2	1927.1	1875.5
29°	1857.1	1903.6	1968.6	1998.3	2008.9	2019.5	2016.7	1986.2	1944.7	1913.0	1861.0
29.5°	1840.6	1888.8	1955.7	1985.8	1994.8	2006.9	2004.6	1972.5	1930.6	1897.8	1845.7
30°	1825.4	1873.5	1942.4	1972.9	1982.3	1994.0	1991.7	1959.2	1915.4	1883.3	1830.9
30.5°	1808.5	1858.2	1929.1	1959.6	1967.4	1980.7	1979.2	1945.1	1900.9	1868.0	1814.8
31°	1792.9	1843.0	1915.0	1945.5	1954.5	1967.4	1965.8	1931.0	1885.6	1852.4	1799.2
31.5°	1776.1	1826.5	1900.5	1931.8	1938.8	1952.9	1952.5	1916.5	1870.4	1836.7	1783.1
32°	1759.6	1810.5	1886.0	1917.3	1924.0	1939.2	1938.5	1901.7	1854.7	1821.1	1766.7
32.5°	1742.0	1794.5	1871.2	1902.5	1909.1	1924.4	1924.4	1886.8	1838.7	1805.0	1749.5
33°	1725.6	1778.4	1855.5	1887.6	1894.2	1909.9	1909.9	1871.5	1822.2	1789.0	1732.6
33.5°	1708.0	1761.6	1840.6	1872.7	1878.2	1894.6	1895.0	1856.3	1805.8	1772.9	1715.4
34°	1690.4	1745.2	1824.6	1857.1	1862.2	1879.0	1879.8	1840.2	1789.0	1756.5	1697.8
34.5°	1671.2	1727.9	1808.5	1841.4	1846.1	1863.3	1864.5	1824.6	1771.0	1739.7	1680.2
35°	1653.6	1710.7	1792.1	1825.4	1830.5	1848.1	1848.9	1808.5	1753.4	1722.5	1662.2
35.5°	1635.2	1693.1	1775.7	1809.3	1812.9	1832.0	1832.4	1792.5	1735.4	1704.9	1644.2
36°	1616.0	1675.5	1758.5	1792.9	1796.0	1815.6	1816.0	1775.7	1717.0	1687.2	1625.8
36.5°	1596.1	1657.1	1741.6	1776.9	1778.0	1799.5	1799.2	1758.5	1696.6	1669.2	1607.0
37°	1562.4	1638.7	1724.4	1760.0	1760.0	1782.3	1782.3	1740.9	1666.9	1650.5	1588.6
37.5°	1522.1	1620.3	1706.8	1742.8	1741.6	1765.1	1764.7	1723.2	1629.7	1632.1	1569.5
38°	1468.1	1601.2	1689.2	1725.6	1722.9	1747.1	1747.5	1704.9	1583.6	1612.1	1550.7
38.5°	1414.1	1581.6	1670.8	1708.0	1701.7	1729.5	1729.5	1686.9	1529.2	1589.8	1532.3
39°	1361.7	1552.3	1652.8	1690.4	1671.6	1711.1	1711.9	1668.1	1471.6	1553.4	1513.5
39.5°	1308.5	1513.1	1634.8	1672.0	1634.4	1692.3	1693.5	1646.9	1411.4	1513.1	1494.7
40°	1252.9	1461.9	1616.4	1653.2	1587.9	1673.2	1674.7	1612.5	1350.7	1465.0	1476.3
40.5°	1195.0	1408.3	1598.0	1634.0	1535.0	1652.4	1655.9	1577.7	1293.2	1411.4	1458.3
41°	1135.9	1357.0	1579.3	1614.9	1475.2	1619.9	1637.9	1531.9	1238.0	1358.2	1440.0
41.5°	1077.6	1305.3	1560.9	1594.1	1414.5	1583.9	1619.2	1481.0	1181.7	1298.3	1421.6
42°	1022.1	1251.3	1542.1	1566.3	1353.5	1540.1	1600.8	1425.9	1125.0	1243.5	1402.8
42.5°	969.2	1195.0	1523.3	1530.3	1295.6	1488.1	1582.4	1368.0	1066.3	1190.3	1384.4
43°	914.8	1139.0	1504.9	1487.7	1239.2	1431.7	1563.6	1311.6	1008.4	1139.8	1365.6
43.5°	860.8	1082.7	1485.7	1439.6	1182.5	1372.3	1545.6	1256.8	950.8	1084.3	1346.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	704.3	919.5	1429.4	1274.0	1008.4	1201.7	1490.0	1093.7	791.2	923.4	1286.2
45.5°	654.6	867.9	1410.2	1218.9	949.7	1147.3	1470.9	1037.7	738.4	867.5	1254.5
46°	608.1	815.8	1390.6	1166.8	895.3	1091.7	1451.7	982.1	688.3	817.8	1216.9
46.5°	562.3	763.0	1371.1	1114.8	842.1	1034.2	1432.5	925.8	638.6	766.5	1164.5
47°	517.7	711.8	1350.7	1061.2	788.8	976.7	1413.0	872.6	591.2	720.4	1099.9
47.5°	477.4	662.8	1314.7	1007.2	736.4	920.3	1392.6	820.9	545.5	669.9	1035.4
48°	438.6	615.5	1277.2	953.2	684.4	867.5	1371.5	770.8	504.8	624.5	969.2
48.5°	404.2	570.1	1230.2	898.8	635.1	815.5	1339.0	719.6	464.5	578.3	905.4
49°	374.9	525.5	1184.0	848.7	587.3	763.0	1294.0	669.9	427.7	533.7	844.0
49.5°	349.8	484.0	1137.1	796.7	542.3	712.2	1244.3	621.8	392.9	493.4	783.4
50°	328.3	444.1	1091.7	749.7	500.1	661.3	1183.7	575.2	367.0	455.9	723.5
50.5°	310.3	407.7	1042.4	701.2	460.9	612.4	1119.1	531.4	341.6	418.7	666.8
51°	293.5	375.6	985.3	653.1	423.4	565.8	1051.0	488.3	316.2	384.6	613.9
51.5°	276.6	349.8	927.4	604.5	389.3	521.2	982.5	449.6	290.7	357.6	564.6
52°	260.2	327.1	866.7	560.7	362.3	479.3	916.0	413.2	265.3	330.6	516.9
52.5°	245.7	307.9	804.5	517.3	334.9	440.2	850.7	385.0	245.3	304.0	473.5
53°	235.2	290.3	744.2	477.4	307.9	403.4	790.4	356.9	231.3	277.0	433.9
53.5°	230.1	274.3	685.9	438.2	280.9	375.6	732.9	328.7	225.0	255.5	397.6
54°	225.8	257.9	630.8	403.8	260.6	347.9	676.5	300.5	220.7	236.3	370.2
54.5°	222.3	242.2	577.5	369.4	241.4	320.1	621.4	272.3	216.8	222.3	343.2
55°	218.7	229.7	530.6	339.6	228.5	292.3	568.5	252.4	213.3	216.0	316.6
55.5°	214.8	222.3	486.0	312.3	222.6	264.5	518.9	233.2	209.3	211.7	289.6
56°	211.3	217.9	442.6	287.6	218.7	243.8	472.7	218.3	205.8	208.2	262.9
56.5°	207.8	214.4	403.4	264.9	214.8	225.8	432.8	212.1	202.3	204.3	245.3
57°	204.3	210.5	368.6	244.2	210.9	214.8	399.9	207.8	198.8	200.7	230.5
57.5°	200.7	207.0	336.9	225.8	207.4	210.1	367.0	204.3	195.6	197.2	217.9
58°	197.6	203.5	308.7	214.0	203.9	206.6	333.8	200.3	192.1	193.7	207.8
58.5°	194.1	199.9	284.5	209.3	200.3	202.7	300.9	197.2	189.0	190.6	199.2
59°	191.0	196.4	262.9	205.4	196.8	199.2	268.4	193.7	185.5	187.0	191.7
59.5°	187.4	193.3	245.7	201.5	193.3	195.6	246.5	190.2	182.3	183.9	185.5
60°	184.3	189.8	231.3	198.0	189.8	192.1	229.3	187.0	179.2	180.8	180.0
60.5°	180.8	186.6	219.5	194.5	186.3	188.6	216.0	183.5	176.1	177.6	175.7
61°	177.6	183.5	209.7	191.0	183.1	185.1	204.3	180.4	173.0	174.5	172.2
61.5°	174.1	180.4	200.7	187.8	180.0	182.0	195.6	177.3	169.4	171.4	168.6
62°	171.0	176.9	193.3	184.3	176.9	178.8	187.8	174.1	166.3	168.3	164.7
62.5°	167.5	173.7	186.6	181.2	173.7	175.7	181.6	171.0	162.8	165.1	161.2
63°	164.0	170.6	181.6	177.6	170.2	172.6	175.7	167.9	159.6	161.6	157.7
63.5°	160.8	167.5	177.6	174.5	167.1	169.4	171.4	164.7	156.5	158.5	154.6
64°	157.3	164.3	173.7	171.4	164.0	166.3	167.5	161.6	153.0	155.0	151.0
64.5°	154.2	160.8	170.2	167.9	160.8	163.2	164.0	158.5	149.9	151.8	147.5
65°	150.6	157.7	166.7	164.7	157.7	160.0	160.4	155.3	146.7	148.7	144.0
65.5°	147.1	154.6	162.8	161.6	154.2	156.9	156.9	152.2	143.2	145.2	140.9
66°	144.0	151.0	159.3	158.5	151.0	153.8	153.4	148.7	140.1	142.0	137.3



TEST NUMBER: P776531

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQMW-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	134.2	142.8	149.1	148.7	141.6	144.4	143.2	138.9	130.7	132.3	127.2
68°	131.1	139.3	145.6	145.2	138.5	141.3	139.7	135.8	127.6	128.7	123.6
68.5°	128.0	135.8	141.3	141.6	135.4	137.7	136.6	132.6	124.4	125.6	120.1
69°	124.8	131.9	138.1	138.5	132.3	134.6	133.0	129.1	121.3	122.1	117.0
69.5°	121.3	128.3	135.0	135.4	129.1	131.5	129.9	126.0	118.2	119.0	113.5
70°	118.2	125.2	131.5	132.6	126.0	128.3	126.4	122.9	114.6	115.8	110.0
70.5°	114.6	121.7	128.3	129.5	123.3	125.2	123.3	119.7	111.5	112.3	106.8
71°	111.5	118.6	124.8	126.0	120.1	122.1	119.7	116.2	108.4	109.2	103.3
71.5°	108.0	115.4	121.7	122.9	117.0	119.0	116.6	113.1	105.3	106.0	99.8
72°	104.9	111.9	118.2	119.7	113.9	115.8	113.1	110.0	102.1	102.5	96.6
72.5°	101.3	108.4	114.6	116.6	111.1	112.7	110.0	106.8	99.0	99.4	93.1
73°	98.2	105.3	111.1	113.1	108.0	109.6	106.4	103.3	95.9	96.3	90.0
73.5°	94.7	101.7	108.0	110.0	104.9	106.4	103.3	100.2	92.7	92.7	86.5
74°	91.6	98.6	104.5	106.8	101.7	103.3	100.2	97.0	89.6	89.6	83.0
74.5°	88.0	95.1	101.0	103.7	98.6	100.2	96.6	93.9	86.1	86.1	79.8
75°	84.9	92.0	97.8	100.6	95.5	97.0	93.5	90.4	83.0	83.0	76.3
75.5°	81.4	88.4	94.3	97.4	92.7	93.9	90.4	87.3	79.8	79.4	72.8
76°	77.9	84.9	90.8	93.9	89.6	90.8	86.9	83.7	76.7	75.9	69.6
76.5°	74.7	81.4	87.6	90.8	86.5	87.6	83.7	80.6	73.6	72.8	66.1
77°	71.2	78.3	84.1	87.6	83.3	84.5	80.6	77.5	70.0	69.6	63.0
77.5°	68.1	74.7	80.6	84.1	80.2	81.4	77.1	74.0	66.9	66.1	59.5
78°	64.6	71.2	77.5	81.0	77.1	78.3	74.0	70.8	63.8	63.0	56.3
78.5°	61.4	68.1	74.0	77.9	74.0	75.1	70.8	67.3	60.7	59.5	52.8
79°	57.9	64.6	70.8	74.3	71.2	72.0	67.3	64.2	57.5	56.3	49.7
79.5°	54.8	61.0	67.3	71.2	68.1	68.9	64.2	61.0	54.4	52.8	46.2
80°	51.3	57.9	63.8	68.1	65.0	65.3	61.0	57.5	51.3	49.7	43.0
80.5°	48.1	54.4	60.7	64.6	61.8	62.6	57.9	54.4	48.1	46.2	39.9
81°	45.0	50.9	57.5	61.4	59.1	59.5	54.8	51.3	45.0	43.0	36.4
81.5°	41.5	47.3	54.0	58.3	56.0	56.0	51.3	48.1	41.9	39.5	33.3
82°	38.3	44.2	50.5	54.8	52.8	53.2	48.1	44.6	38.7	36.4	30.1
82.5°	34.8	40.7	47.3	51.7	49.7	49.7	45.0	41.5	35.6	32.9	26.6
83°	31.7	37.6	44.2	48.5	47.0	46.6	41.9	38.3	32.5	29.7	23.5
83.5°	28.2	34.0	40.7	45.4	43.8	43.4	38.7	34.8	29.3	26.2	20.7
84°	25.0	30.5	37.6	42.3	40.7	40.3	35.6	31.7	26.2	23.1	18.0
84.5°	21.9	27.4	34.0	38.7	38.0	37.2	32.5	28.6	23.1	20.0	15.3
85°	18.4	23.9	30.9	35.6	34.8	34.4	29.3	25.0	20.3	16.4	12.5
85.5°	15.3	20.7	27.8	32.5	31.7	31.3	26.2	21.9	17.2	13.3	9.8
86°	12.9	17.2	24.3	29.3	29.0	28.2	23.1	18.8	14.5	10.6	7.4
86.5°	10.2	13.7	21.5	26.6	25.8	25.0	20.3	15.3	11.3	8.2	4.7
87°	7.8	11.3	18.8	23.5	22.7	21.9	17.6	12.5	8.6	6.3	2.3
87.5°	5.5	9.0	16.0	20.3	20.0	19.2	14.9	10.2	6.7	4.3	0.4
88°	3.1	6.7	13.7	17.6	16.8	16.0	12.5	7.8	4.7	2.3	0.0
88.5°	1.2	4.3	11.0	14.5	14.1	13.3	9.8	5.9	2.7	0.4	0.0



TEST NUMBER: P776531
CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQMW-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.0	3.1	5.9	5.5	4.7	2.3	0.4	0.0	0.0	0.0



TEST NUMBER: P776531

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQMW-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2289.4	2289.4	2289.4	2289.4	2289.4	2289.4
0.5°	2286.3	2287.9	2287.5	2287.9	2289.1	2290.2
1°	2284.7	2285.9	2285.1	2285.9	2287.5	2289.4
1.5°	2282.8	2284.0	2282.8	2283.6	2285.9	2288.3
2°	2280.8	2281.6	2280.4	2281.6	2284.0	2287.1
2.5°	2278.5	2278.9	2278.1	2278.9	2281.6	2285.1
3°	2276.1	2276.5	2275.0	2276.5	2279.3	2283.6
3.5°	2273.4	2273.4	2272.2	2273.4	2276.9	2282.0
4°	2270.7	2270.3	2268.7	2270.3	2274.2	2279.7
4.5°	2267.5	2266.8	2265.6	2267.1	2271.4	2277.3
5°	2264.4	2263.2	2261.7	2263.2	2267.9	2274.6
5.5°	2260.9	2259.3	2257.8	2259.7	2264.8	2271.8
6°	2257.0	2255.4	2253.4	2255.8	2261.3	2268.7
6.5°	2253.1	2251.1	2249.1	2251.5	2257.8	2266.0
7°	2248.8	2246.4	2244.4	2247.2	2253.4	2262.4
7.5°	2244.4	2241.7	2239.4	2242.5	2249.5	2258.5
8°	2239.8	2236.6	2234.3	2237.8	2244.8	2254.6
8.5°	2234.7	2231.5	2229.2	2232.7	2240.1	2250.7
9°	2229.6	2225.7	2223.7	2227.2	2235.4	2246.4
9.5°	2224.1	2220.2	2217.8	2221.8	2230.4	2241.7
10°	2218.6	2214.3	2211.6	2215.9	2224.9	2237.0
10.5°	2212.4	2208.1	2205.3	2210.0	2219.4	2231.9
11°	2206.5	2201.4	2199.1	2203.8	2213.5	2226.8
11.5°	2199.8	2194.8	2192.4	2197.5	2207.7	2221.4
12°	2193.6	2187.7	2185.0	2190.4	2201.0	2215.5
12.5°	2186.5	2180.3	2177.9	2183.8	2194.4	2209.2
13°	2179.5	2172.8	2170.1	2176.4	2188.1	2203.4
13.5°	2172.1	2165.0	2162.7	2169.3	2181.1	2196.7
14°	2164.6	2157.2	2154.4	2161.5	2173.6	2190.1
14.5°	2156.8	2149.0	2146.2	2153.7	2166.2	2183.0
15°	2148.6	2140.4	2137.2	2145.5	2158.4	2175.6
15.5°	2140.4	2131.8	2129.0	2137.2	2150.1	2168.1
16°	2131.8	2122.4	2120.0	2128.2	2142.3	2160.3
16.5°	2123.1	2113.4	2110.6	2119.6	2133.7	2152.5
17°	2113.8	2104.0	2100.8	2110.2	2125.1	2144.3
17.5°	2104.4	2093.8	2091.1	2101.2	2116.1	2135.7
18°	2095.0	2083.6	2081.3	2091.5	2106.7	2127.1
18.5°	2084.8	2073.1	2071.1	2081.3	2097.3	2117.7
19°	2074.6	2062.5	2059.8	2071.5	2087.5	2108.3
19.5°	2064.5	2051.9	2049.2	2060.9	2077.8	2098.9
20°	2053.9	2040.6	2038.2	2050.4	2067.2	2089.1
20.5°	2042.5	2028.8	2026.9	2039.8	2056.6	2078.5
21°	2031.6	2017.1	2015.2	2028.1	2045.7	2068.0

TEST NUMBER: P776531

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQMW-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1996.0	1979.5	1978.4	1993.2	2011.2	2034.3
23°	1983.8	1966.2	1965.5	1981.1	1999.5	2022.6
23.5°	1970.9	1953.3	1952.5	1969.0	1987.4	2010.5
24°	1958.0	1939.2	1939.2	1956.1	1974.8	1997.9
24.5°	1944.7	1925.2	1925.2	1943.2	1961.9	1985.4
25°	1931.0	1910.7	1911.1	1929.8	1949.0	1972.1
25.5°	1917.3	1896.2	1897.0	1916.5	1935.3	1958.8
26°	1902.8	1881.3	1882.5	1902.5	1922.0	1945.5
26.5°	1888.4	1866.5	1867.6	1888.4	1907.9	1931.4
27°	1873.9	1850.8	1852.4	1874.3	1893.8	1917.3
27.5°	1858.6	1834.8	1837.1	1859.8	1879.0	1902.1
28°	1843.4	1818.7	1821.1	1844.5	1864.1	1887.6
28.5°	1827.7	1802.3	1805.4	1829.7	1849.2	1871.5
29°	1812.1	1785.9	1789.4	1814.0	1834.4	1857.1
29.5°	1796.0	1769.4	1772.9	1798.4	1818.3	1840.6
30°	1779.6	1752.6	1756.1	1782.7	1802.7	1825.4
30.5°	1763.2	1735.4	1739.7	1766.3	1786.6	1808.5
31°	1746.7	1718.2	1722.9	1750.2	1770.2	1792.9
31.5°	1729.9	1700.6	1705.2	1733.4	1753.8	1776.1
32°	1713.1	1682.6	1688.0	1716.6	1736.9	1759.6
32.5°	1696.2	1664.6	1671.2	1699.0	1720.1	1742.0
33°	1678.6	1646.2	1653.6	1682.2	1703.3	1725.6
33.5°	1661.0	1627.4	1635.2	1664.6	1685.7	1708.0
34°	1643.0	1608.6	1617.6	1646.9	1669.2	1690.4
34.5°	1625.4	1588.6	1598.8	1628.2	1651.6	1671.2
35°	1607.0	1567.9	1580.4	1610.6	1634.0	1653.6
35.5°	1588.6	1526.4	1561.3	1592.6	1616.4	1635.2
36°	1569.9	1479.1	1542.5	1573.8	1598.4	1616.0
36.5°	1550.7	1425.9	1521.7	1555.4	1579.6	1596.1
37°	1530.3	1372.6	1492.8	1537.0	1561.3	1562.4
37.5°	1506.5	1317.9	1451.7	1518.2	1542.5	1522.1
38°	1466.2	1261.5	1401.2	1499.4	1523.3	1468.1
38.5°	1417.6	1203.6	1349.2	1480.6	1504.5	1414.1
39°	1366.4	1144.1	1300.3	1462.3	1484.2	1361.7
39.5°	1314.7	1084.3	1247.4	1443.5	1452.1	1308.5
40°	1263.1	1028.7	1193.4	1425.1	1413.3	1252.9
40.5°	1208.7	973.5	1136.7	1405.9	1363.3	1195.0
41°	1152.7	920.3	1081.5	1387.1	1313.2	1135.9
41.5°	1095.6	865.5	1026.4	1368.3	1264.7	1077.6
42°	1040.1	813.1	972.8	1350.0	1214.6	1022.1
42.5°	985.3	759.1	921.5	1331.2	1164.5	969.2
43°	932.1	707.8	872.2	1312.4	1111.7	914.8
43.5°	880.8	658.5	820.9	1292.8	1058.1	860.8

TEST NUMBER: P776531

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQMW-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	727.4	522.0	670.7	1200.1	902.7	704.3
45.5°	678.1	479.3	624.1	1156.3	854.2	654.6
46°	630.4	440.6	579.9	1111.3	804.9	608.1
46.5°	584.6	406.2	536.1	1068.6	755.6	562.3
47°	540.4	377.6	493.4	1024.4	706.3	517.7
47.5°	498.1	353.3	454.3	979.0	659.3	477.4
48°	456.6	333.4	417.9	924.2	613.9	438.6
48.5°	420.2	315.8	386.6	867.5	570.1	404.2
49°	386.6	299.7	360.0	807.6	527.1	374.9
49.5°	365.1	283.7	336.9	751.3	487.2	349.8
50°	344.3	268.0	317.7	697.7	447.2	328.3
50.5°	323.6	252.0	300.9	647.2	411.2	310.3
51°	302.5	239.5	285.3	597.5	378.4	293.5
51.5°	281.7	231.3	269.6	552.9	350.6	276.6
52°	265.7	226.6	253.9	509.9	326.3	260.2
52.5°	250.4	222.6	239.1	467.6	305.6	245.7
53°	235.2	219.1	227.7	429.6	287.6	235.2
53.5°	223.0	215.6	222.3	395.2	271.2	230.1
54°	216.4	211.7	217.9	362.3	254.7	225.8
54.5°	212.5	208.2	214.4	335.3	239.5	222.3
55°	208.6	204.6	210.5	309.1	226.6	218.7
55.5°	205.0	201.1	207.0	286.4	218.7	214.8
56°	201.5	198.0	203.5	265.7	214.8	211.3
56.5°	198.0	194.5	199.9	249.6	210.9	207.8
57°	194.9	191.3	196.4	235.2	207.4	204.3
57.5°	191.3	187.8	193.3	223.4	203.9	200.7
58°	188.2	184.7	190.2	213.3	200.3	197.6
58.5°	185.1	181.6	186.6	205.0	196.8	194.1
59°	181.6	178.4	183.5	197.2	193.7	191.0
59.5°	178.4	175.3	180.4	190.6	190.2	187.4
60°	175.3	171.8	176.9	185.5	186.6	184.3
60.5°	172.2	168.6	174.1	181.6	183.5	180.8
61°	169.0	165.5	171.0	178.0	180.0	177.6
61.5°	165.5	162.4	167.9	174.5	176.9	174.1
62°	162.4	158.9	164.3	170.6	173.3	171.0
62.5°	159.3	155.7	161.2	167.1	170.2	167.5
63°	155.7	152.6	158.1	163.6	166.7	164.0
63.5°	152.6	149.1	154.6	160.0	163.2	160.8
64°	149.5	146.0	151.4	156.5	159.6	157.3
64.5°	146.0	143.2	147.9	153.0	156.1	154.2
65°	142.8	140.1	144.8	149.5	153.0	150.6
65.5°	139.3	137.0	140.9	146.3	149.5	147.1
66°	136.2	133.8	138.1	142.8	146.0	144.0



TEST NUMBER: P776531

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQMW-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	126.4	124.0	129.1	132.3	135.8	134.2
68°	123.3	120.9	125.6	129.1	132.3	131.1
68.5°	119.7	117.8	122.5	125.6	128.7	128.0
69°	116.6	114.6	119.3	122.1	125.6	124.8
69.5°	113.1	111.5	115.8	118.6	122.1	121.3
70°	110.0	108.4	112.7	115.0	118.6	118.2
70.5°	106.8	105.3	109.2	111.5	115.0	114.6
71°	103.7	102.1	106.0	108.0	111.9	111.5
71.5°	100.2	99.0	102.9	104.5	108.4	108.0
72°	97.0	95.5	99.4	101.0	104.9	104.9
72.5°	93.5	92.3	95.9	97.4	101.3	101.3
73°	90.4	89.2	92.7	94.3	97.8	98.2
73.5°	86.9	85.7	89.2	90.8	94.3	94.7
74°	83.7	82.6	86.1	87.3	91.2	91.6
74.5°	80.2	79.4	82.6	83.7	87.6	88.0
75°	77.1	76.3	79.0	80.2	84.1	84.9
75.5°	73.6	72.8	75.9	76.7	80.2	81.4
76°	70.4	69.6	72.4	73.2	77.1	77.9
76.5°	66.9	66.5	69.3	69.6	73.6	74.7
77°	63.8	63.4	65.7	66.5	70.0	71.2
77.5°	60.3	60.3	62.6	63.0	66.5	68.1
78°	57.1	57.1	59.1	59.5	63.0	64.6
78.5°	53.6	53.6	56.0	56.0	59.5	61.4
79°	50.5	50.5	52.4	52.4	56.0	57.9
79.5°	47.0	47.3	48.9	48.9	52.4	54.8
80°	43.8	44.2	45.8	45.8	48.9	51.3
80.5°	40.3	41.1	42.3	42.3	45.4	48.1
81°	37.2	38.0	39.1	38.7	41.9	45.0
81.5°	34.0	34.8	36.0	35.6	38.3	41.5
82°	30.9	31.7	32.5	32.5	34.8	38.3
82.5°	27.8	28.2	29.3	29.3	31.7	34.8
83°	24.3	25.0	26.2	26.2	28.2	31.7
83.5°	21.1	21.9	22.7	23.1	24.3	28.2
84°	18.0	18.8	19.6	20.3	21.1	25.0
84.5°	15.3	16.0	16.4	17.2	17.6	21.9
85°	12.1	12.9	13.3	14.5	14.9	18.4
85.5°	9.0	9.8	10.6	11.7	12.5	15.3
86°	5.9	7.0	7.4	9.0	10.2	12.9
86.5°	3.1	3.9	4.3	6.3	7.4	10.2
87°	0.8	1.2	1.6	3.1	5.1	7.8
87.5°	0.0	0.0	0.4	1.2	3.1	5.5
88°	0.0	0.0	0.0	0.0	1.2	3.1
88.5°	0.0	0.0	0.0	0.0	0.0	1.2



TEST NUMBER: P776531

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQMW-4000lm-3000K

CANDELA DISTRIBUTION (continued):

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



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Peachtree City, GA 30269

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°	2057.0	2089.1	2130.2	2153.7	2164.2	2170.5	2165.4	2146.6	2120.8	2093.8	2051.9
22°	2045.7	2078.9	2121.6	2145.1	2156.0	2162.7	2157.6	2138.0	2111.4	2083.6	2041.0



44°	807.6	1026.7	1466.6	1385.2	1124.6	1313.6	1527.2	1203.6	895.7	1030.3	1327.3
44.5°	755.2	972.4	1447.4	1329.6	1066.7	1256.0	1508.8	1148.0	842.1	973.5	1308.1



66.5°	140.9	147.9	155.7	155.0	147.9	150.6	149.9	145.6	137.0	138.5	133.8
67°	137.7	144.4	152.2	151.8	144.8	147.5	146.7	142.4	133.8	135.4	130.7



89°	0.0	2.3	8.2	11.7	11.0	10.2	7.4	3.5	1.2	0.0	0.0
89.5°	0.0	0.4	5.9	8.6	8.2	7.4	4.7	1.6	0.0	0.0	0.0

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21.5°	2019.8	2004.6	2003.4	2016.7	2034.7	2057.0
22°	2008.1	1992.1	1990.5	2005.4	2023.4	2045.7



44°	830.3	612.0	769.7	1272.1	1005.2	807.6
44.5°	779.1	565.0	718.8	1237.3	953.2	755.2



66.5°	133.0	130.7	135.0	139.3	142.4	140.9
67°	129.9	127.6	131.9	135.8	138.9	137.7

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

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Scaled Data Report



(END OF REPORT)