

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: P776563

Luminaire Tested: HCDJBS4050CSD-HCD41TRMB-5000lm-4000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776563
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B031)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD41TRMB-5000lm-4000K
Description: 4 INCH ROUND SHALLOW-WIDE MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

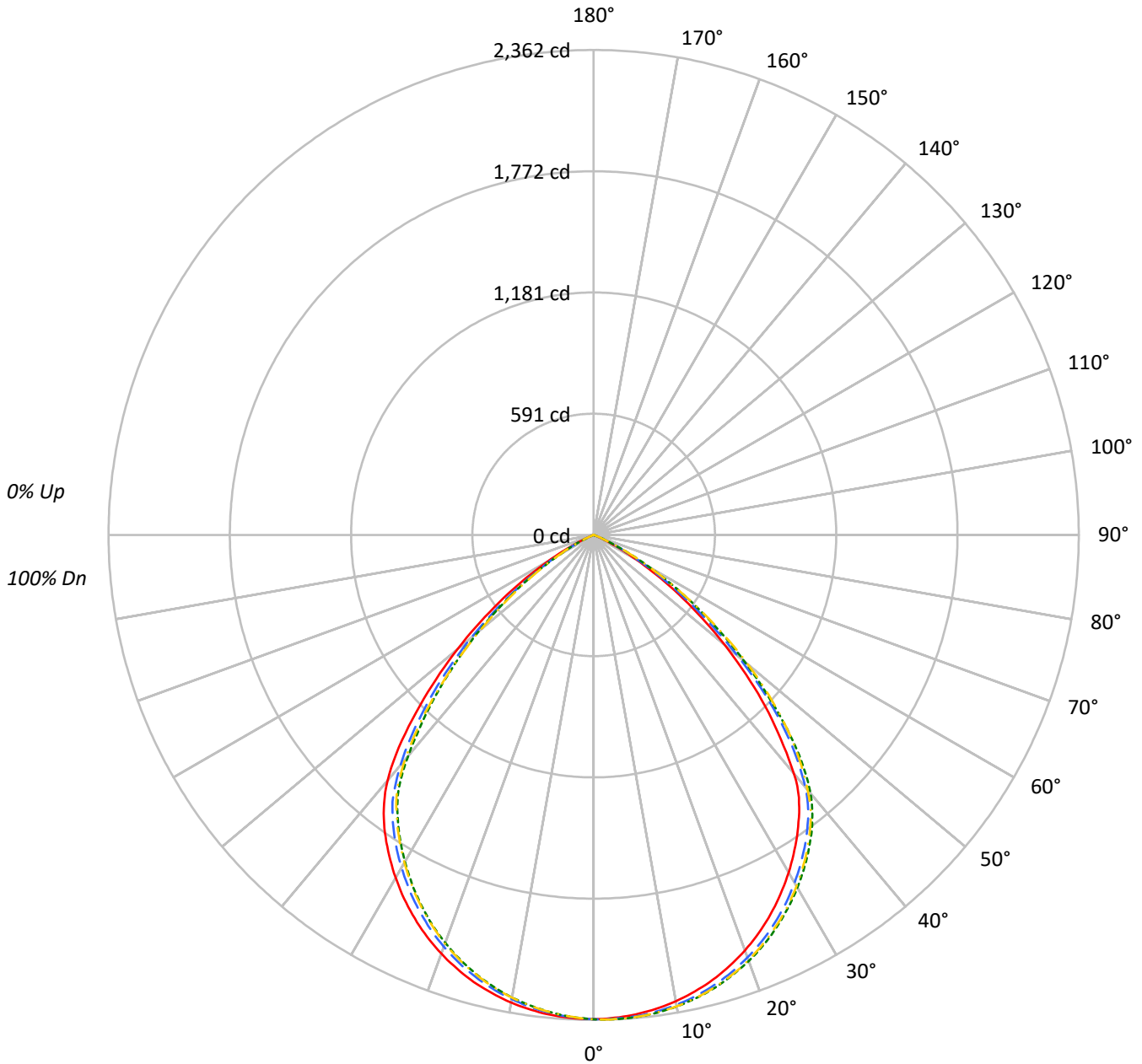
Lumens per Lamp: N/A
Luminaire Lumens: 4368.8 lumens
Efficiency: N/A
Efficacy: 91.0 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.26
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	112	109	106	103	109	106	104	101	102	100	98	99	97	95	95	94	92	90					90			
2	105	98	93	89	102	97	92	88	93	89	86	90	87	84	87	85	82	81					81			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	76	73	72					72			
4	90	81	74	68	88	80	73	68	77	72	67	75	70	66	73	69	65	64					64			
5	84	74	66	61	82	73	66	60	71	64	60	69	63	59	67	62	59	57					57			
6	78	67	60	54	77	66	59	54	65	58	54	63	57	53	62	57	53	51					51			
7	73	62	54	49	72	61	54	49	59	53	48	58	52	48	57	52	48	46					46			
8	69	57	49	44	67	56	49	44	55	48	44	54	48	44	53	47	43	42					42			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	43	40	38					38			
10	60	49	42	37	59	48	41	37	47	41	37	46	41	36	45	40	36	35					35			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	296854	296854	296854	296854
5°	296169	297862	296536	294969
10°	294648	298009	295568	292259
15°	292174	297411	293672	288369
20°	288411	295790	290594	283094
25°	282969	292731	286218	276123
30°	275888	288269	280204	266994
35°	266678	281980	272194	255801
40°	249254	269773	256564	230706
45°	210246	236213	217490	189476
50°	162719	187721	169454	142847
55°	111703	134478	117254	94369
60°	60458	79235	65392	47697
65°	18522	28647	20369	12835
70°	1766	1950	1766	1766
75°	1848	1848	1848	1848
80°	1739	1739	1377	1739
85°	722	1444	722	1444

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 112.5°
 Vertical Angle: 45°
 Luminance: 238100 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	222.8	5.1
10°-20°	633.8	14.5
20°-30°	942.8	21.6
30°-40°	1089.7	24.9
40°-50°	919.5	21.0
50°-60°	467.8	10.7
60°-70°	87.5	2.0
70°-80°	3.8	0.1
80°-90°	1.1	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1799.4	41.2
0°-40°	2889.1	66.1
0°-60°	4276.4	97.9
0°-90°	4368.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4368.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2359	2359	2359	2359	2359	
5°	2344	2358	2347	2335	2344	223
15°	2242	2283	2254	2213	2242	632
25°	2038	2108	2061	1988	2038	938
35°	1736	1835	1772	1665	1736	1081
45°	1181	1327	1222	1065	1181	905
55°	509	613	534	430	509	459
65°	62	96	68	43	62	82
75°	4	4	4	4	4	4
85°	0	1	0	1	0	1
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°	2358.8	2358.8	2358.8	2358.8	2358.8	2358.8	2358.8	2358.8	2358.8	2358.8	2358.8
0.5°	2358.3	2358.3	2359.3	2359.8	2360.2	2360.2	2360.2	2358.3	2357.8	2358.3	2357.8
1°	2357.8	2358.8	2359.8	2360.2	2360.7	2361.2	2360.7	2358.8	2357.8	2357.8	2356.9
1.5°	2356.9	2358.3	2359.8	2360.7	2360.7	2361.7	2361.2	2359.3	2357.4	2356.4	2355.4
2°	2355.9	2357.8	2359.3	2361.2	2361.2	2362.1	2361.7	2359.3	2356.9	2355.4	2353.5
2.5°	2354.0	2356.4	2358.8	2361.2	2361.2	2361.7	2360.7	2358.8	2355.9	2354.0	2352.1
3°	2352.6	2355.4	2357.8	2360.2	2361.2	2361.7	2360.7	2357.4	2355.0	2352.6	2349.7
3.5°	2350.7	2354.0	2357.4	2359.8	2360.2	2361.2	2360.7	2356.9	2353.1	2350.2	2347.8
4°	2349.2	2352.6	2355.9	2358.8	2359.8	2360.7	2359.8	2356.4	2351.6	2348.3	2345.4
4.5°	2346.8	2350.7	2355.0	2357.4	2358.8	2359.8	2358.3	2355.4	2349.7	2345.4	2342.1
5°	2344.4	2348.8	2353.1	2356.4	2357.8	2358.3	2356.9	2353.5	2347.3	2343.0	2339.2
5.5°	2341.6	2346.4	2351.1	2355.0	2355.9	2357.4	2355.9	2351.6	2345.4	2340.6	2335.8
6°	2338.2	2344.0	2349.7	2353.1	2354.5	2355.4	2354.0	2349.7	2342.5	2337.3	2332.5
6.5°	2334.9	2341.1	2346.8	2351.1	2352.6	2353.5	2351.6	2347.8	2339.7	2334.4	2329.1
7°	2332.0	2338.2	2344.4	2349.2	2350.2	2351.1	2349.2	2345.4	2336.3	2330.1	2325.3
7.5°	2328.2	2334.9	2341.6	2346.4	2347.3	2349.2	2346.8	2342.5	2333.0	2326.7	2321.0
8°	2324.3	2331.5	2338.7	2344.0	2344.9	2346.4	2344.0	2339.2	2329.1	2322.4	2316.7
8.5°	2320.0	2327.7	2335.4	2340.6	2342.1	2343.5	2341.1	2335.8	2325.3	2318.1	2311.9
9°	2315.3	2323.9	2332.0	2337.3	2338.7	2340.6	2338.2	2332.5	2321.5	2313.8	2306.6
9.5°	2310.5	2319.6	2328.2	2333.9	2335.4	2337.3	2334.4	2329.1	2317.7	2309.0	2301.4
10°	2305.7	2315.3	2323.9	2330.6	2332.0	2333.9	2331.0	2325.3	2312.9	2304.3	2296.1
10.5°	2300.4	2310.5	2319.6	2326.3	2328.2	2330.1	2326.7	2321.0	2308.1	2299.0	2290.4
11°	2295.2	2305.2	2315.3	2322.0	2323.9	2325.8	2322.9	2316.7	2303.3	2293.2	2284.6
11.5°	2289.9	2299.9	2310.5	2317.7	2319.6	2321.5	2318.1	2311.9	2298.0	2287.5	2278.4
12°	2283.2	2294.7	2305.2	2312.9	2315.3	2316.7	2313.8	2306.6	2292.3	2281.8	2271.7
12.5°	2277.5	2288.9	2299.9	2308.1	2310.5	2311.9	2308.6	2301.4	2286.1	2275.5	2265.0
13°	2270.8	2283.2	2294.2	2303.3	2305.2	2307.1	2303.8	2296.6	2280.3	2268.8	2257.8
13.5°	2264.5	2277.0	2288.5	2297.6	2299.9	2301.4	2298.0	2290.9	2274.1	2262.1	2250.7
14°	2257.4	2270.3	2282.7	2291.8	2294.2	2296.6	2292.8	2284.6	2267.4	2255.5	2243.5
14.5°	2250.2	2263.6	2276.0	2286.1	2288.5	2290.4	2286.6	2278.4	2261.2	2248.3	2235.4
15°	2242.5	2256.4	2269.3	2279.9	2282.7	2284.6	2280.3	2272.2	2254.0	2240.6	2227.2
15.5°	2234.9	2248.3	2263.1	2273.2	2276.5	2277.9	2273.6	2265.0	2246.8	2233.0	2219.6
16°	2226.7	2241.6	2255.9	2266.5	2269.8	2271.7	2266.9	2258.3	2239.2	2224.8	2211.4
16.5°	2218.6	2233.9	2248.3	2259.8	2262.6	2264.5	2260.2	2251.1	2231.5	2216.7	2202.3
17°	2210.5	2225.8	2241.1	2252.6	2255.9	2257.4	2253.1	2244.0	2223.4	2208.6	2193.3
17.5°	2201.4	2217.2	2233.4	2244.9	2248.3	2249.7	2245.4	2236.3	2214.8	2199.5	2183.7
18°	2191.8	2208.6	2224.8	2237.3	2240.6	2242.1	2237.7	2227.7	2206.2	2190.4	2174.1
18.5°	2182.7	2200.0	2216.2	2229.6	2232.5	2234.9	2229.6	2219.6	2198.0	2181.3	2164.5
19°	2173.2	2190.4	2208.1	2221.0	2224.8	2226.7	2221.0	2211.4	2188.9	2171.7	2155.0
19.5°	2163.6	2181.3	2199.0	2212.9	2216.7	2218.1	2212.4	2202.8	2179.9	2162.2	2144.4
20°	2153.5	2171.7	2189.9	2204.3	2208.6	2209.5	2203.8	2193.7	2169.8	2152.1	2133.9
20.5°	2143.0	2162.2	2180.8	2195.2	2199.5	2200.9	2194.7	2184.6	2160.7	2142.1	2122.9
21°	2132.5	2151.6	2171.2	2186.1	2190.9	2192.3	2185.6	2175.1	2150.2	2131.1	2111.9



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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°	2099.0	2120.0	2140.6	2156.9	2161.2	2162.6	2155.9	2145.4	2118.6	2098.0	2077.5
23°	2087.5	2109.0	2130.1	2146.8	2151.1	2152.6	2145.9	2134.9	2107.6	2087.0	2065.5
23.5°	2075.6	2097.1	2119.6	2136.8	2141.1	2141.6	2135.4	2123.9	2096.6	2075.1	2052.6
24°	2063.1	2085.6	2108.6	2125.8	2130.1	2131.5	2124.4	2113.3	2085.1	2063.1	2040.6
24.5°	2050.7	2074.1	2097.1	2114.8	2119.6	2120.0	2113.3	2101.9	2073.6	2051.1	2027.7
25°	2037.8	2062.2	2085.1	2103.3	2108.1	2109.0	2101.9	2090.4	2061.2	2038.2	2014.8
25.5°	2024.8	2049.7	2073.6	2092.3	2097.1	2097.6	2090.4	2078.9	2048.8	2025.8	2000.9
26°	2011.9	2036.8	2061.2	2080.3	2085.6	2086.1	2078.9	2066.9	2036.3	2012.4	1987.5
26.5°	1999.0	2023.9	2049.2	2068.4	2073.6	2073.6	2066.5	2054.5	2023.4	1999.0	1973.6
27°	1985.1	2011.0	2036.3	2056.4	2061.2	2061.7	2054.0	2042.1	2010.5	1986.1	1959.8
27.5°	1971.2	1997.6	2023.9	2044.5	2048.8	2049.2	2041.6	2029.1	1997.6	1972.2	1945.4
28°	1956.9	1984.2	2011.0	2031.5	2036.8	2037.3	2029.1	2016.2	1984.6	1958.3	1930.6
28.5°	1942.5	1969.8	1997.1	2018.6	2023.9	2023.9	2016.2	2002.8	1970.8	1944.5	1916.2
29°	1928.2	1955.9	1983.2	2005.2	2011.0	2010.5	2002.3	1989.9	1956.4	1929.6	1901.9
29.5°	1913.4	1941.6	1969.8	1992.3	1997.6	1997.1	1989.0	1976.5	1942.5	1915.3	1886.1
30°	1898.5	1927.7	1955.9	1978.9	1983.7	1983.7	1975.1	1962.2	1928.2	1900.4	1870.3
30.5°	1883.2	1912.9	1941.6	1965.0	1970.3	1968.9	1961.2	1948.3	1913.8	1885.6	1855.5
31°	1867.9	1898.0	1927.2	1950.2	1955.9	1955.0	1946.4	1933.9	1898.5	1870.3	1839.7
31.5°	1851.6	1882.7	1912.4	1936.3	1941.6	1940.6	1932.0	1919.6	1883.2	1854.5	1823.4
32°	1835.8	1867.4	1897.6	1922.0	1927.2	1926.3	1917.7	1904.7	1867.9	1839.2	1807.6
32.5°	1819.6	1851.2	1882.3	1907.1	1911.9	1911.0	1902.8	1889.9	1852.6	1822.9	1790.4
33°	1803.3	1835.4	1866.9	1891.8	1897.6	1895.7	1888.0	1874.6	1837.3	1807.1	1774.1
33.5°	1787.0	1819.1	1851.2	1877.0	1882.3	1880.3	1872.7	1858.8	1821.0	1790.9	1756.9
34°	1770.3	1803.3	1835.8	1861.2	1866.9	1865.5	1856.4	1843.5	1804.7	1773.6	1740.6
34.5°	1753.1	1786.6	1819.6	1845.9	1851.2	1849.2	1840.1	1827.2	1788.5	1756.9	1722.4
35°	1735.8	1769.8	1802.8	1829.1	1835.4	1833.5	1823.9	1810.5	1771.7	1739.7	1704.7
35.5°	1717.7	1752.6	1786.1	1813.4	1818.6	1817.2	1807.6	1794.2	1754.5	1722.0	1685.6
36°	1700.4	1735.4	1769.3	1796.1	1802.4	1800.4	1790.4	1777.5	1736.3	1703.3	1666.9
36.5°	1681.8	1717.7	1752.1	1779.4	1785.6	1783.2	1773.2	1759.8	1717.7	1684.2	1647.3
37°	1663.1	1699.5	1734.4	1761.7	1767.4	1765.0	1755.0	1741.6	1699.0	1665.0	1626.8
37.5°	1643.0	1679.9	1715.3	1743.0	1748.8	1746.4	1736.8	1722.9	1678.9	1644.0	1601.9
38°	1622.9	1660.2	1695.7	1724.4	1729.6	1727.2	1717.7	1703.3	1657.4	1621.0	1576.0
38.5°	1600.0	1638.2	1675.6	1704.3	1709.5	1706.7	1695.7	1682.7	1635.4	1596.1	1548.8
39°	1575.1	1613.8	1653.6	1684.2	1688.0	1684.2	1671.7	1660.2	1611.9	1569.8	1521.0
39.5°	1547.8	1587.0	1628.7	1662.2	1666.0	1659.3	1646.4	1635.8	1587.0	1543.0	1491.8
40°	1517.2	1558.8	1601.9	1638.7	1642.1	1633.0	1620.5	1609.5	1561.7	1514.3	1462.2
40.5°	1483.2	1530.1	1574.6	1613.8	1616.2	1606.7	1593.3	1582.7	1533.5	1485.1	1431.1
41°	1450.2	1500.4	1546.4	1587.0	1589.4	1578.9	1566.0	1555.0	1503.8	1455.5	1400.0
41.5°	1416.7	1469.8	1516.7	1558.8	1560.7	1551.2	1538.7	1525.8	1471.3	1424.4	1367.9
42°	1382.7	1437.3	1487.5	1528.2	1530.1	1522.5	1511.0	1496.1	1439.2	1392.8	1334.9
42.5°	1349.3	1404.8	1456.4	1496.6	1499.5	1493.7	1482.3	1466.5	1404.3	1360.3	1300.4
43°	1316.2	1371.7	1424.8	1464.6	1467.4	1464.1	1452.6	1433.9	1368.4	1326.3	1266.0
43.5°	1282.3	1337.8	1392.3	1430.6	1433.9	1433.5	1422.0	1402.4	1332.0	1291.4	1231.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1181.3	1233.9	1288.5	1321.5	1327.2	1337.8	1327.7	1300.9	1222.0	1184.2	1126.3
45.5°	1147.3	1198.5	1251.6	1282.3	1289.9	1304.8	1294.2	1267.0	1185.6	1147.3	1091.4
46°	1112.9	1164.1	1215.8	1244.5	1252.6	1270.3	1261.2	1230.6	1149.3	1109.1	1056.4
46.5°	1078.0	1128.7	1178.4	1206.7	1215.3	1236.3	1228.2	1196.1	1112.4	1071.3	1021.0
47°	1042.1	1093.8	1141.6	1167.9	1177.0	1200.5	1193.3	1158.8	1077.5	1033.5	986.6
47.5°	1006.2	1058.8	1104.3	1128.7	1140.2	1165.0	1159.3	1122.5	1042.1	996.1	951.2
48°	970.8	1023.4	1065.0	1090.9	1103.8	1129.2	1123.4	1086.1	1006.7	958.8	916.7
48.5°	934.9	987.5	1026.8	1053.1	1067.4	1093.3	1089.0	1052.6	971.3	920.6	882.3
49°	900.0	953.1	988.0	1015.8	1030.6	1056.9	1052.6	1014.8	935.9	883.7	847.3
49.5°	865.1	917.7	950.2	978.4	994.2	1020.1	1017.7	978.9	900.5	846.9	812.4
50°	831.1	881.8	911.9	942.6	958.8	982.8	980.8	943.0	865.5	811.5	777.5
50.5°	796.6	845.9	874.1	904.8	922.9	945.9	944.5	908.1	830.6	775.1	742.1
51°	763.6	809.6	835.9	868.9	887.1	909.1	906.7	873.7	797.1	740.7	708.1
51.5°	729.6	774.6	799.5	832.5	851.7	872.7	871.8	839.2	762.2	706.2	674.1
52°	697.1	738.7	763.6	797.6	816.7	835.9	834.9	804.8	728.2	672.7	640.2
52.5°	665.1	704.3	728.7	760.7	781.3	800.0	798.5	769.8	695.2	639.7	606.7
53°	633.0	669.8	692.8	727.7	746.9	764.1	762.7	736.3	662.2	607.6	573.7
53.5°	600.9	635.9	658.4	693.3	712.9	728.7	727.3	702.9	629.2	575.6	541.6
54°	569.4	601.4	624.9	659.3	678.9	693.8	691.4	669.8	597.1	545.4	510.5
54.5°	538.7	567.9	591.9	624.4	645.0	658.8	656.4	636.8	566.0	516.7	480.4
55°	509.1	535.9	559.8	593.3	612.9	624.9	622.5	604.8	534.4	486.1	450.2
55.5°	479.4	503.3	527.7	561.7	580.8	591.4	587.5	572.2	503.8	456.4	423.0
56°	450.2	472.7	497.1	529.7	548.3	558.4	554.1	541.6	473.7	429.7	395.2
56.5°	421.5	442.6	467.0	497.6	516.7	525.3	521.5	509.6	445.4	402.9	367.9
57°	393.8	412.4	437.8	469.4	486.1	494.2	489.9	479.4	417.7	376.5	340.2
57.5°	366.5	383.7	409.1	439.7	456.4	463.1	458.8	450.2	389.9	349.8	314.8
58°	339.2	356.0	380.4	411.0	427.7	433.5	429.7	421.5	361.7	323.0	289.9
58.5°	313.9	329.2	353.1	383.2	399.0	403.8	400.0	392.3	334.0	299.0	266.5
59°	288.0	303.8	327.3	356.5	370.3	374.2	370.8	363.1	308.1	274.2	244.0
59.5°	264.1	278.9	301.9	330.6	342.1	344.5	341.6	334.4	284.2	251.7	222.5
60°	240.2	254.5	277.0	305.3	314.8	317.7	314.3	308.1	259.8	229.2	201.9
60.5°	218.2	232.1	253.1	281.3	289.5	291.4	288.5	282.3	236.4	208.1	181.3
61°	196.2	209.6	231.1	256.9	264.1	266.0	262.7	256.5	213.9	187.1	162.7
61.5°	175.6	189.0	209.1	234.0	239.7	241.1	238.3	232.5	193.3	167.9	145.5
62°	157.9	168.9	188.5	212.4	216.3	217.7	215.3	209.1	171.8	148.8	127.7
62.5°	140.7	152.6	168.9	190.9	193.3	195.2	192.8	185.6	152.1	131.1	112.0
63°	123.0	136.4	152.6	170.8	171.8	173.7	171.3	163.6	133.0	114.4	97.1
63.5°	105.7	120.1	136.4	153.1	151.2	153.1	150.7	143.5	115.3	99.0	83.7
64°	88.5	103.8	120.1	135.4	131.6	133.5	132.1	124.4	98.6	84.2	70.8
64.5°	74.6	88.0	103.8	118.2	112.9	115.3	113.9	106.2	83.3	70.8	59.3
65°	62.2	74.6	87.6	100.5	96.2	98.6	97.1	89.5	68.4	61.2	50.7
65.5°	51.7	62.7	74.2	83.3	80.4	82.3	81.3	74.6	57.4	51.2	42.6
66°	42.1	51.2	61.7	68.9	66.0	67.9	67.0	63.6	46.9	41.1	34.4



TEST NUMBER: P776563

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	20.6	25.4	32.1	34.0	35.9	37.3	36.4	31.6	14.4	15.8	12.9
68°	17.2	19.1	24.4	25.4	25.8	26.8	25.8	21.1	8.6	11.0	9.1
68.5°	14.4	15.3	17.7	18.7	16.3	16.7	15.8	14.4	5.7	7.2	6.7
69°	11.0	12.0	14.4	15.3	11.0	11.5	10.5	9.6	5.3	5.7	5.3
69.5°	8.1	8.6	11.5	12.0	7.7	7.7	7.2	6.7	5.3	5.3	5.3
70°	4.8	5.3	8.1	8.1	5.3	5.3	5.3	5.3	4.8	4.8	4.8
70.5°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
71°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
71.5°	4.3	4.3	4.3	4.8	4.3	4.3	4.8	4.8	4.8	4.8	4.8
72°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
72.5°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
73°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
73.5°	3.8	3.8	3.8	3.8	3.8	3.8	4.3	4.3	3.8	3.8	4.3
74°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
74.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
75°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
75.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.8	3.3	3.3	3.3
76°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
76.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
77°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.9	2.9	3.3
77.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
78°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
78.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.4	2.4	2.9
79°	2.4	2.4	2.9	2.9	2.9	2.9	2.9	2.9	2.4	2.4	2.4
79.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
80°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.9	1.9	2.4
80.5°	1.9	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.9	1.9	2.4
81°	1.9	1.9	2.4	2.4	2.4	2.4	2.4	1.9	1.9	1.9	1.9
81.5°	1.9	1.9	1.9	2.4	1.9	1.9	1.9	1.9	1.4	1.4	1.9
82°	1.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.4	1.4	1.9
82.5°	1.4	1.4	1.9	1.9	1.9	1.9	1.9	1.4	1.0	1.4	1.4
83°	1.4	1.4	1.9	1.9	1.9	1.9	1.9	1.4	1.0	1.0	1.4
83.5°	1.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.0	1.0	1.4
84°	1.0	1.0	1.4	1.4	1.4	1.4	1.4	1.0	0.5	0.5	1.0
84.5°	0.5	1.0	1.4	1.4	1.4	1.4	1.4	1.0	0.5	0.5	1.0
85°	0.5	1.0	1.0	1.4	1.0	1.4	1.0	1.0	0.5	0.5	1.0
85.5°	0.5	0.5	1.0	1.0	1.0	1.0	1.0	0.5	0.0	0.5	1.0
86°	0.5	0.5	1.0	1.0	1.0	1.0	1.0	0.5	0.0	0.5	0.5
86.5°	0.0	0.5	1.0	1.0	0.5	1.0	1.0	0.5	0.0	0.5	0.5
87°	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.5
87.5°	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0
88°	0.0	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776563

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-4000K

CANDELA DISTRIBUTION (continued):

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



TEST NUMBER: P776563

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2358.8	2358.8	2358.8	2358.8	2358.8	2358.8
0.5°	2357.4	2357.4	2358.3	2357.8	2356.9	2358.3
1°	2355.9	2355.9	2356.9	2356.4	2355.9	2357.8
1.5°	2354.0	2354.0	2355.0	2355.0	2354.5	2356.9
2°	2352.6	2352.1	2352.6	2353.1	2352.1	2355.9
2.5°	2350.7	2349.7	2350.7	2350.2	2350.2	2354.0
3°	2348.3	2347.3	2347.8	2347.8	2348.3	2352.6
3.5°	2345.4	2344.9	2344.9	2345.4	2345.9	2350.7
4°	2342.5	2342.1	2342.1	2342.5	2343.5	2349.2
4.5°	2339.2	2338.7	2338.7	2339.2	2340.6	2346.8
5°	2335.8	2334.9	2334.9	2335.8	2337.3	2344.4
5.5°	2332.5	2331.5	2331.0	2332.0	2334.4	2341.6
6°	2328.7	2327.2	2326.7	2328.7	2330.6	2338.2
6.5°	2324.8	2323.4	2322.4	2324.3	2326.7	2334.9
7°	2320.5	2319.1	2318.6	2320.0	2322.9	2332.0
7.5°	2315.7	2314.3	2313.8	2315.3	2319.1	2328.2
8°	2311.0	2309.0	2309.0	2310.0	2314.3	2324.3
8.5°	2305.7	2304.3	2303.8	2305.2	2309.0	2320.0
9°	2300.4	2298.5	2298.0	2299.9	2303.8	2315.3
9.5°	2295.2	2292.8	2292.3	2294.2	2298.5	2310.5
10°	2289.4	2287.0	2286.1	2288.5	2292.8	2305.7
10.5°	2283.2	2281.3	2280.3	2282.7	2287.5	2300.4
11°	2277.0	2275.1	2274.1	2276.5	2280.8	2295.2
11.5°	2270.3	2267.9	2267.4	2269.3	2274.6	2289.9
12°	2263.6	2261.2	2260.2	2262.6	2268.4	2283.2
12.5°	2256.9	2254.0	2253.1	2255.5	2261.2	2277.5
13°	2249.2	2246.4	2244.9	2248.3	2254.0	2270.8
13.5°	2241.6	2238.7	2237.3	2240.6	2246.8	2264.5
14°	2233.9	2230.6	2229.6	2233.0	2239.2	2257.4
14.5°	2225.8	2222.4	2221.0	2224.8	2231.5	2250.2
15°	2217.2	2213.3	2212.4	2215.7	2222.9	2242.5
15.5°	2208.6	2204.7	2203.8	2207.1	2214.3	2234.9
16°	2199.5	2195.6	2195.2	2198.5	2205.7	2226.7
16.5°	2190.9	2186.6	2185.6	2189.4	2196.6	2218.6
17°	2181.3	2176.5	2175.5	2179.9	2187.5	2210.5
17.5°	2171.7	2166.9	2166.0	2170.3	2177.9	2201.4
18°	2161.7	2156.9	2155.9	2159.8	2168.9	2191.8
18.5°	2151.1	2146.4	2145.4	2149.7	2158.8	2182.7
19°	2141.1	2135.8	2134.4	2139.2	2147.8	2173.2
19.5°	2130.1	2124.8	2123.9	2128.2	2137.8	2163.6
20°	2119.1	2113.8	2112.9	2117.2	2127.7	2153.5
20.5°	2108.1	2102.3	2100.9	2105.7	2116.2	2143.0
21°	2096.6	2090.4	2089.4	2094.2	2104.7	2132.5



TEST NUMBER: P776563

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2060.2	2054.5	2052.6	2057.4	2069.8	2099.0
23°	2047.8	2042.1	2040.1	2045.4	2056.9	2087.5
23.5°	2034.9	2028.7	2027.2	2032.5	2044.0	2075.6
24°	2022.0	2015.3	2013.4	2019.6	2031.5	2063.1
24.5°	2008.6	2001.9	2000.0	2005.7	2018.6	2050.7
25°	1995.2	1988.5	1986.6	1992.3	2005.7	2037.8
25.5°	1981.3	1974.1	1972.2	1977.9	1991.8	2024.8
26°	1967.4	1959.8	1957.9	1964.1	1977.9	2011.9
26.5°	1952.6	1945.4	1943.5	1950.2	1963.6	1999.0
27°	1938.7	1930.6	1929.1	1935.4	1949.2	1985.1
27.5°	1923.4	1915.7	1913.8	1920.5	1934.9	1971.2
28°	1908.6	1900.0	1898.5	1905.2	1920.1	1956.9
28.5°	1893.3	1885.1	1883.2	1890.4	1904.7	1942.5
29°	1877.9	1869.8	1867.4	1874.6	1889.9	1928.2
29.5°	1861.7	1854.0	1851.6	1859.3	1874.6	1913.4
30°	1846.4	1837.3	1835.8	1843.0	1859.3	1898.5
30.5°	1829.6	1821.5	1819.1	1827.2	1843.0	1883.2
31°	1813.4	1804.7	1802.4	1810.0	1826.8	1867.9
31.5°	1797.1	1788.5	1785.6	1794.2	1811.0	1851.6
32°	1780.3	1771.3	1768.4	1778.0	1794.7	1835.8
32.5°	1763.1	1754.5	1752.1	1760.7	1778.4	1819.6
33°	1745.4	1737.3	1734.9	1743.0	1761.2	1803.3
33.5°	1728.2	1719.6	1717.2	1726.3	1743.5	1787.0
34°	1710.5	1701.4	1699.5	1709.1	1726.3	1770.3
34.5°	1692.8	1683.7	1681.3	1690.9	1709.1	1753.1
35°	1674.1	1665.0	1663.1	1672.2	1690.4	1735.8
35.5°	1654.5	1646.4	1644.5	1654.0	1673.2	1717.7
36°	1635.4	1626.3	1624.8	1635.4	1654.5	1700.4
36.5°	1614.8	1605.7	1604.7	1615.8	1634.4	1681.8
37°	1592.3	1584.2	1583.7	1594.2	1614.3	1663.1
37.5°	1566.0	1559.3	1560.3	1573.2	1594.2	1643.0
38°	1537.8	1531.5	1533.0	1547.3	1568.9	1622.9
38.5°	1508.6	1500.9	1504.3	1519.1	1542.1	1600.0
39°	1477.0	1470.3	1474.1	1489.9	1514.3	1575.1
39.5°	1444.5	1437.8	1442.6	1458.8	1484.7	1547.8
40°	1411.5	1404.3	1409.5	1426.8	1453.6	1517.2
40.5°	1378.0	1369.8	1375.6	1394.2	1420.1	1483.2
41°	1345.4	1335.9	1342.1	1361.7	1386.1	1450.2
41.5°	1312.4	1300.4	1307.1	1327.2	1350.2	1416.7
42°	1279.4	1267.9	1272.7	1293.3	1315.3	1382.7
42.5°	1247.3	1233.5	1237.8	1258.8	1279.9	1349.3
43°	1214.8	1200.5	1201.9	1223.4	1243.0	1316.2
43.5°	1182.7	1165.0	1166.0	1187.5	1207.1	1282.3

TEST NUMBER: P776563

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1083.2	1064.6	1057.9	1077.0	1101.4	1181.3
45.5°	1049.3	1030.1	1022.0	1040.2	1065.5	1147.3
46°	1014.8	997.1	988.0	1003.3	1031.1	1112.9
46.5°	979.4	961.7	952.6	966.5	996.1	1078.0
47°	945.0	929.2	917.7	929.6	961.7	1042.1
47.5°	910.5	893.8	882.3	893.3	926.3	1006.2
48°	875.6	861.7	849.3	857.4	891.8	970.8
48.5°	841.6	827.3	814.3	821.0	857.4	934.9
49°	808.1	794.7	781.3	786.6	823.4	900.0
49.5°	774.1	762.2	747.4	752.1	789.5	865.1
50°	740.7	729.6	714.3	717.7	755.5	831.1
50.5°	709.1	697.6	681.3	684.2	722.5	796.6
51°	677.0	665.5	649.7	652.1	689.9	763.6
51.5°	645.0	634.9	617.7	620.1	656.9	729.6
52°	612.9	604.3	587.1	589.0	625.8	697.1
52.5°	582.8	574.1	556.0	557.9	594.2	665.1
53°	551.7	543.5	526.8	528.7	563.6	633.0
53.5°	521.0	514.3	496.6	500.0	533.0	600.9
54°	490.9	485.2	468.4	471.3	503.3	569.4
54.5°	462.7	457.4	441.1	444.0	474.2	538.7
55°	434.9	430.1	414.3	417.7	446.4	509.1
55.5°	407.6	402.4	388.5	391.9	418.2	479.4
56°	380.4	375.6	362.7	367.0	390.9	450.2
56.5°	353.1	349.8	337.8	342.6	364.1	421.5
57°	325.8	324.4	314.3	318.7	339.2	393.8
57.5°	301.0	300.0	291.4	295.7	313.9	366.5
58°	276.1	275.6	269.4	274.2	290.4	339.2
58.5°	252.1	252.6	248.3	253.1	266.5	313.9
59°	229.2	230.6	227.7	232.5	245.0	288.0
59.5°	207.2	209.6	208.6	212.9	223.9	264.1
60°	186.6	189.5	189.9	194.7	203.8	240.2
60.5°	167.0	168.9	171.8	176.1	183.7	218.2
61°	148.3	152.6	156.5	161.2	165.1	196.2
61.5°	130.1	136.8	141.1	145.9	149.3	175.6
62°	113.4	120.6	125.8	130.6	133.0	157.9
62.5°	98.6	104.3	110.5	115.3	116.7	140.7
63°	84.2	88.5	95.2	100.0	101.0	123.0
63.5°	71.3	75.1	82.3	87.1	87.1	105.7
64°	59.3	63.2	70.3	75.1	74.6	88.5
64.5°	51.2	52.6	59.3	63.6	62.2	74.6
65°	43.5	43.1	49.8	53.1	52.2	62.2
65.5°	35.4	34.9	40.7	43.5	42.6	51.7
66°	27.8	27.8	32.1	35.4	34.0	42.1



TEST NUMBER: P776563

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	11.0	13.9	15.3	15.3	15.3	20.6
68°	8.1	11.0	12.0	12.9	11.0	17.2
68.5°	6.2	8.1	8.6	10.0	10.0	14.4
69°	5.3	5.3	5.3	7.7	8.6	11.0
69.5°	5.3	5.3	4.8	5.3	7.2	8.1
70°	4.8	4.8	4.8	4.8	5.7	4.8
70.5°	4.8	4.8	4.8	4.8	4.8	4.8
71°	4.8	4.8	4.8	4.8	4.3	4.8
71.5°	4.3	4.3	4.3	4.3	4.3	4.3
72°	4.3	4.3	4.3	4.3	4.3	4.3
72.5°	4.3	4.3	4.3	4.3	4.3	4.3
73°	4.3	4.3	4.3	4.3	3.8	4.3
73.5°	3.8	3.8	3.8	3.8	3.8	3.8
74°	3.8	3.8	3.8	3.8	3.8	3.8
74.5°	3.8	3.8	3.8	3.8	3.8	3.8
75°	3.8	3.8	3.8	3.8	3.3	3.8
75.5°	3.3	3.3	3.3	3.3	3.3	3.3
76°	3.3	3.3	3.3	3.3	3.3	3.3
76.5°	3.3	3.3	3.3	3.3	3.3	3.3
77°	3.3	3.3	3.3	3.3	2.9	3.3
77.5°	2.9	2.9	2.9	2.9	2.9	2.9
78°	2.9	2.9	2.9	2.9	2.9	2.9
78.5°	2.9	2.9	2.9	2.9	2.4	2.9
79°	2.9	2.9	2.9	2.4	2.4	2.4
79.5°	2.4	2.4	2.4	2.4	2.4	2.4
80°	2.4	2.4	2.4	2.4	1.9	2.4
80.5°	2.4	2.4	2.4	2.4	1.9	1.9
81°	1.9	2.4	2.4	1.9	1.9	1.9
81.5°	1.9	1.9	1.9	1.9	1.4	1.9
82°	1.9	1.9	1.9	1.9	1.4	1.4
82.5°	1.9	1.9	1.9	1.4	1.4	1.4
83°	1.4	1.4	1.4	1.4	1.0	1.4
83.5°	1.4	1.4	1.4	1.4	1.0	1.0
84°	1.4	1.4	1.4	1.4	1.0	1.0
84.5°	1.0	1.0	1.0	1.0	0.5	0.5
85°	1.0	1.0	1.0	1.0	0.5	0.5
85.5°	1.0	1.0	1.0	1.0	0.5	0.5
86°	0.5	0.5	0.5	0.5	0.5	0.5
86.5°	0.5	0.5	0.5	0.5	0.5	0.0
87°	0.5	0.5	0.5	0.5	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776563
CATALOG NUMBER: HCDJBS4050CSD-HCD41TRMB-5000lm-4000K

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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Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Report Generated By 670245859 / DESKTOP-T8S5UU9

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Scaled Data Report





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

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Scaled Data Report





21.5°	2121.5	2141.6	2161.7	2176.5	2180.8	2182.2	2175.5	2165.5	2140.1	2120.5	2100.9
22°	2110.5	2131.1	2151.1	2166.9	2171.2	2172.2	2166.5	2155.9	2129.1	2110.0	2089.4



44°	1249.3	1303.8	1358.3	1394.7	1400.0	1402.4	1391.4	1369.3	1295.7	1256.0	1196.6
44.5°	1215.3	1268.4	1322.9	1358.3	1363.1	1370.8	1360.7	1337.3	1258.3	1220.5	1161.7



66.5°	33.5	41.6	50.7	56.0	56.0	57.9	56.5	53.1	35.9	31.6	25.8
67°	26.8	33.0	40.7	44.0	45.9	47.4	46.4	42.1	25.4	21.5	17.7



89°	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0

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21.5°	2084.6	2078.9	2077.0	2082.2	2092.8	2121.5
22°	2072.7	2066.9	2065.0	2069.8	2081.3	2110.5



44°	1149.3	1132.0	1129.6	1150.7	1171.7	1249.3
44.5°	1116.7	1097.6	1093.8	1113.9	1136.8	1215.3

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66.5°	20.1	22.0	24.9	27.8	26.3	33.5
67°	15.3	16.7	18.7	21.1	20.6	26.8

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Scaled Data Report



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)