

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: P776634

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

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776634
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-5000K
Description: 4 INCH SQUARE MEDIUM LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4278.3 lumens
Efficiency: N/A
Efficacy: 89.1 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

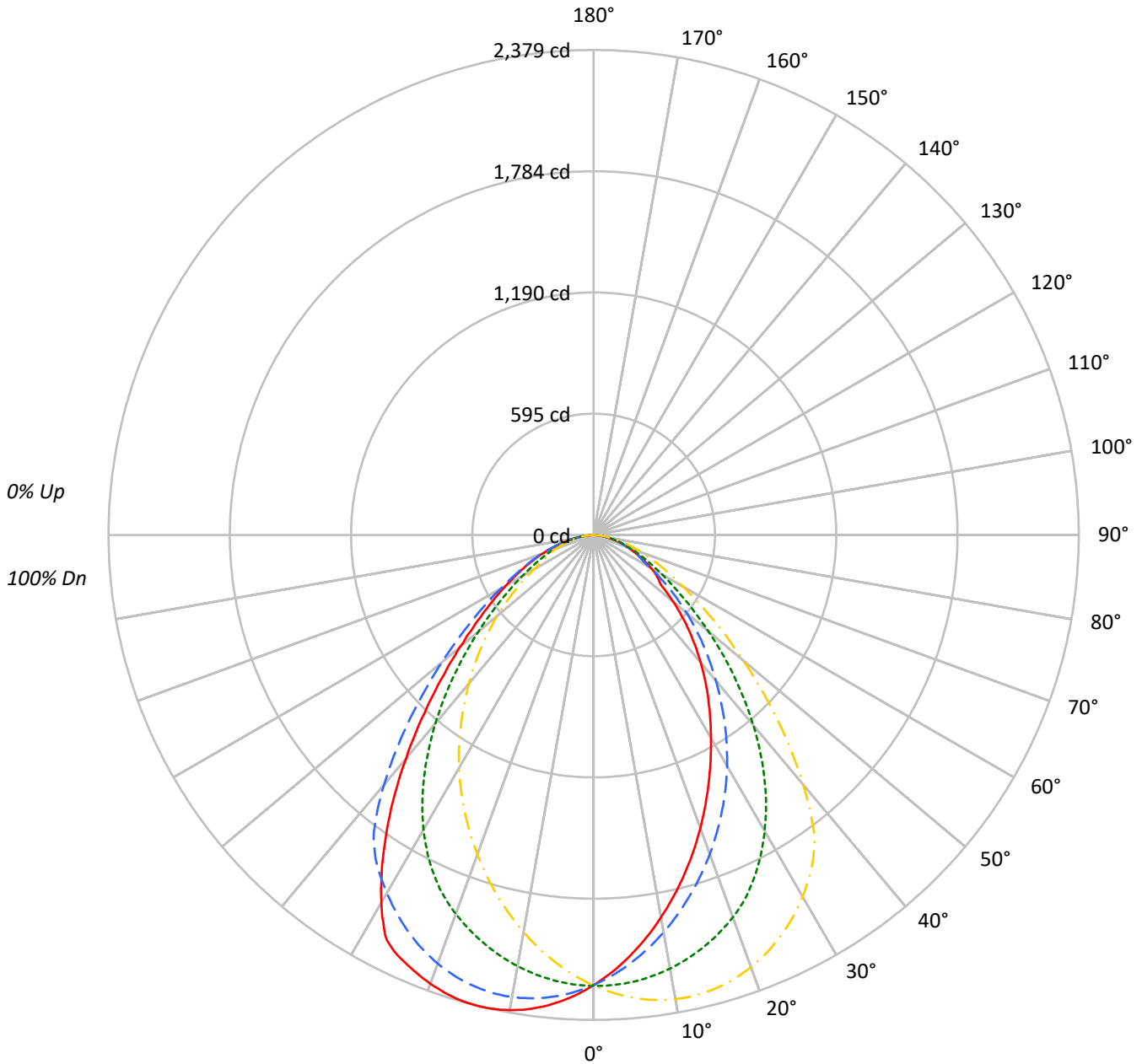
Input Watts (W): 48
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20										
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	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°	278065	278065	278065	278065
5°	261580	278016	291811	277283
10°	243391	275965	302507	274534
15°	224254	272435	309750	270350
20°	204894	267304	313723	264893
25°	185489	258210	316045	256460
30°	167233	243700	302597	242494
35°	150408	224383	271733	222739
40°	134122	200067	234994	198243
45°	117395	172337	198695	171304
50°	99695	143395	167437	144354
55°	86163	117583	143232	120655
60°	81979	97609	124868	102140
65°	73434	82397	110419	88174
70°	65718	70906	97325	77345
75°	58058	61121	83537	68463
80°	45731	51022	64719	59791
85°	22381	37110	30901	49095

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 225°
 Vertical Angle: 45°
 Luminance: 226513 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.7	4.9
10°-20°	581.1	13.6
20°-30°	839.2	19.6
30°-40°	902.9	21.1
40°-50°	749.3	17.5
50°-60°	504.1	11.8
60°-70°	305.1	7.1
70°-80°	154.2	3.6
80°-90°	34.6	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°	1628.1	38.1
0°-40°	2530.9	59.2
0°-60°	3784.3	88.5
0°-90°	4278.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4278.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2210	2210	2210	2210	2210	
5°	2071	2201	2310	2195	2071	192
15°	1721	2091	2377	2075	1721	482
25°	1336	1860	2276	1847	1336	614
35°	979	1460	1769	1450	979	612
45°	660	968	1116	962	660	508
55°	393	536	653	550	393	359
65°	247	277	371	296	247	246
75°	119	126	172	141	119	126
85°	16	26	21	34	16	23
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°	2209.5	2209.5	2209.5	2209.5	2209.5	2209.5	2209.5	2209.5	2209.5	2209.5	2209.5
0.5°	2196.4	2196.4	2198.8	2203.6	2212.9	2216.3	2219.2	2220.6	2220.6	2218.7	2215.8
1°	2183.7	2184.7	2190.0	2198.8	2212.9	2220.6	2227.4	2231.3	2232.3	2229.4	2223.5
1.5°	2170.6	2172.6	2180.8	2193.4	2212.4	2224.5	2235.2	2241.5	2243.4	2239.1	2230.8
2°	2157.5	2160.4	2171.1	2187.6	2211.4	2228.4	2242.5	2251.7	2254.1	2248.8	2238.6
2.5°	2143.4	2147.3	2160.9	2181.8	2210.4	2231.8	2249.7	2260.9	2264.3	2258.5	2245.4
3°	2129.9	2134.7	2151.2	2175.5	2209.0	2235.2	2256.5	2270.1	2274.5	2267.2	2251.7
3.5°	2115.3	2121.1	2140.5	2169.2	2207.5	2237.6	2262.9	2279.4	2283.7	2276.0	2258.0
4°	2100.7	2108.0	2129.4	2162.4	2205.1	2240.5	2269.2	2287.6	2292.9	2284.2	2263.8
4.5°	2085.7	2093.5	2118.2	2155.1	2203.1	2242.5	2275.0	2295.4	2301.7	2292.0	2268.7
5°	2070.6	2079.9	2107.0	2147.8	2200.7	2244.4	2280.3	2303.1	2309.9	2299.3	2274.0
5.5°	2054.6	2065.3	2094.9	2140.0	2197.8	2245.9	2285.2	2310.4	2317.7	2306.0	2278.4
6°	2039.1	2050.3	2083.3	2132.3	2194.9	2247.3	2289.5	2317.2	2325.0	2312.8	2282.8
6.5°	2023.6	2034.7	2071.1	2124.0	2191.5	2247.8	2293.9	2323.0	2331.8	2318.7	2286.6
7°	2007.1	2020.2	2058.5	2116.3	2187.6	2248.3	2297.8	2328.9	2338.6	2324.0	2290.0
7.5°	1990.1	2004.1	2045.4	2107.0	2183.7	2248.3	2301.2	2334.2	2344.4	2329.3	2292.9
8°	1974.0	1988.6	2032.8	2098.3	2179.4	2248.3	2304.1	2339.5	2349.7	2334.2	2295.4
8.5°	1957.1	1972.6	2019.7	2089.1	2174.5	2247.8	2306.5	2343.9	2355.1	2338.1	2297.3
9°	1939.6	1956.6	2006.1	2079.9	2169.7	2246.8	2309.0	2347.8	2359.4	2342.0	2299.3
9.5°	1922.1	1939.6	1992.0	2069.7	2164.8	2245.4	2310.9	2351.2	2363.3	2345.4	2300.7
10°	1904.6	1923.1	1978.4	2060.0	2159.5	2243.9	2312.4	2354.6	2367.2	2348.3	2301.7
10.5°	1886.7	1906.6	1964.3	2049.8	2153.6	2242.0	2313.3	2357.5	2370.1	2350.7	2302.7
11°	1869.2	1889.6	1950.3	2039.6	2147.8	2240.0	2313.8	2359.4	2373.0	2352.6	2302.7
11.5°	1851.2	1872.6	1935.7	2028.4	2141.5	2237.6	2313.8	2361.4	2375.0	2354.1	2302.2
12°	1832.3	1855.6	1920.7	2017.7	2135.2	2234.7	2313.8	2362.8	2376.9	2355.1	2301.7
12.5°	1814.4	1837.7	1906.1	2006.6	2128.4	2231.8	2313.3	2363.3	2378.4	2356.0	2300.7
13°	1796.4	1820.2	1891.0	1995.4	2121.6	2228.4	2311.9	2363.8	2378.9	2356.0	2299.3
13.5°	1777.5	1802.7	1876.0	1984.2	2114.3	2224.5	2310.4	2363.8	2379.3	2355.6	2297.3
14°	1759.0	1785.2	1860.0	1972.6	2107.0	2220.1	2308.5	2363.3	2379.3	2354.6	2294.9
14.5°	1740.1	1767.3	1844.5	1960.5	2099.3	2216.3	2306.5	2362.4	2378.4	2353.1	2292.0
15°	1721.2	1748.3	1828.9	1948.3	2091.0	2211.4	2303.6	2360.9	2377.4	2351.7	2289.1
15.5°	1702.2	1730.4	1813.4	1936.2	2082.8	2206.5	2300.7	2359.0	2375.9	2349.7	2285.7
16°	1683.3	1712.4	1797.4	1924.1	2074.5	2200.7	2297.3	2356.5	2374.0	2347.3	2281.8
16.5°	1664.9	1694.0	1780.9	1911.4	2065.8	2195.4	2293.4	2354.1	2371.6	2344.4	2277.4
17°	1645.4	1676.0	1764.8	1898.3	2056.6	2189.1	2289.5	2351.2	2368.7	2340.5	2273.0
17.5°	1626.5	1656.6	1748.3	1885.2	2046.9	2182.8	2284.7	2347.3	2365.3	2336.6	2267.7
18°	1607.1	1638.2	1732.3	1872.1	2037.1	2175.5	2279.8	2342.9	2361.4	2332.3	2262.4
18.5°	1588.2	1619.7	1715.8	1858.5	2027.4	2168.7	2274.5	2338.6	2357.0	2327.4	2256.5
19°	1568.8	1600.8	1698.8	1844.5	2017.2	2161.4	2268.7	2333.7	2352.6	2322.6	2250.7
19.5°	1548.9	1581.9	1682.3	1830.9	2006.6	2153.2	2262.4	2328.4	2347.8	2316.7	2244.4
20°	1529.9	1563.4	1664.9	1816.8	1995.9	2145.4	2256.1	2322.6	2342.5	2310.9	2237.6
20.5°	1510.5	1544.5	1648.4	1802.2	1984.7	2136.7	2249.3	2316.2	2336.6	2304.6	2229.8
21°	1491.1	1525.6	1631.4	1787.7	1973.1	2127.9	2242.0	2309.9	2330.8	2297.8	2222.6



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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°	1432.8	1468.8	1579.4	1743.0	1934.7	2099.3	2218.2	2288.1	2310.9	2275.5	2197.3
23°	1412.9	1449.4	1561.5	1727.0	1921.1	2088.1	2209.5	2280.3	2304.1	2267.7	2188.6
23.5°	1394.0	1430.9	1544.5	1711.5	1906.1	2076.9	2200.2	2272.1	2296.8	2259.5	2179.4
24°	1374.6	1411.5	1526.5	1694.0	1891.0	2064.8	2190.0	2264.3	2290.0	2251.2	2169.7
24.5°	1354.7	1392.6	1509.1	1677.5	1875.5	2051.7	2180.3	2255.6	2283.2	2242.0	2159.5
25°	1335.8	1373.6	1490.6	1660.0	1859.5	2038.1	2170.1	2246.8	2276.0	2233.2	2149.3
25.5°	1316.8	1354.2	1473.1	1642.5	1843.5	2024.0	2159.9	2238.6	2266.2	2224.5	2138.1
26°	1297.9	1335.3	1455.2	1624.1	1826.5	2010.0	2148.8	2230.3	2255.6	2216.3	2127.4
26.5°	1279.0	1316.8	1437.2	1606.6	1809.0	1994.4	2137.6	2221.6	2244.4	2207.0	2115.8
27°	1260.1	1297.4	1419.3	1588.2	1791.1	1978.4	2126.0	2212.4	2232.8	2197.8	2104.1
27.5°	1241.6	1279.0	1401.3	1569.7	1772.6	1962.4	2114.3	2200.2	2214.3	2185.7	2092.5
28°	1222.7	1260.1	1382.9	1550.8	1754.2	1945.4	2102.2	2188.1	2189.1	2173.1	2080.3
28.5°	1204.7	1241.6	1364.9	1531.9	1735.2	1927.9	2089.6	2176.0	2163.3	2160.4	2067.7
29°	1186.8	1222.7	1346.0	1512.5	1716.3	1910.0	2076.5	2162.4	2139.6	2146.8	2054.6
29.5°	1168.3	1205.2	1327.5	1493.5	1696.4	1891.0	2062.9	2141.5	2110.9	2126.0	2041.5
30°	1150.8	1187.2	1308.6	1473.6	1677.0	1871.6	2049.3	2115.3	2082.3	2100.7	2028.4
30.5°	1132.9	1168.8	1289.7	1454.2	1656.1	1852.7	2034.7	2090.1	2053.7	2075.0	2014.8
31°	1115.4	1149.4	1270.7	1434.3	1636.2	1833.3	2019.7	2065.8	2024.5	2050.3	2001.2
31.5°	1097.9	1132.9	1251.3	1414.4	1614.9	1812.4	2004.1	2037.1	1992.5	2022.6	1987.2
32°	1080.5	1114.9	1232.4	1394.5	1594.0	1792.0	1989.1	2008.5	1961.9	1994.4	1973.1
32.5°	1063.5	1097.9	1213.5	1374.6	1572.6	1770.7	1974.0	1979.4	1931.3	1966.8	1959.0
33°	1046.5	1080.5	1194.5	1354.2	1550.8	1749.3	1958.0	1951.2	1899.3	1937.6	1944.4
33.5°	1029.5	1063.5	1175.6	1334.3	1528.0	1727.5	1941.5	1920.7	1866.8	1908.5	1929.4
34°	1013.0	1046.5	1156.2	1313.4	1506.6	1705.1	1924.1	1890.6	1833.8	1877.5	1912.4
34.5°	995.5	1029.0	1136.8	1293.1	1483.3	1681.4	1904.6	1859.0	1801.3	1847.8	1894.0
35°	979.0	1011.1	1117.8	1272.2	1460.5	1659.0	1885.2	1828.9	1768.7	1817.3	1874.5
35.5°	962.5	995.5	1098.9	1251.8	1437.2	1634.8	1864.4	1796.9	1735.2	1787.2	1855.6
36°	946.5	978.5	1080.5	1230.9	1412.9	1611.0	1843.0	1765.3	1701.3	1755.6	1835.7
36.5°	930.0	962.0	1061.0	1210.5	1389.2	1586.7	1816.8	1732.8	1668.7	1724.1	1811.4
37°	913.5	945.5	1042.6	1189.7	1365.9	1561.5	1786.2	1701.3	1634.8	1693.5	1781.8
37.5°	897.0	928.5	1023.7	1168.3	1341.1	1535.7	1755.6	1668.7	1600.3	1661.9	1753.2
38°	880.5	912.0	1005.2	1147.4	1316.4	1510.0	1726.0	1636.2	1565.4	1629.9	1724.1
38.5°	864.5	895.5	987.3	1126.1	1291.6	1484.3	1695.4	1602.2	1533.3	1597.4	1695.0
39°	848.9	879.5	968.8	1105.2	1267.3	1458.1	1662.9	1571.7	1499.8	1566.8	1662.9
39.5°	832.4	863.5	950.4	1083.9	1242.6	1431.4	1630.4	1538.2	1465.4	1535.3	1631.4
40°	816.4	846.5	932.4	1062.5	1217.8	1404.2	1597.9	1504.7	1430.4	1502.7	1598.8
40.5°	800.4	830.5	914.5	1041.6	1192.1	1377.5	1565.4	1471.7	1400.3	1469.7	1566.8
41°	784.4	814.5	897.0	1020.3	1167.3	1350.3	1531.9	1441.1	1367.8	1440.1	1534.8
41.5°	768.8	798.5	879.0	999.4	1142.1	1323.2	1498.9	1408.6	1333.3	1408.6	1500.8
42°	752.8	782.4	861.6	978.0	1117.3	1296.0	1465.4	1374.6	1301.8	1375.6	1468.3
42.5°	737.3	766.4	844.1	957.7	1092.6	1267.8	1432.8	1344.0	1271.7	1345.5	1434.8
43°	721.8	750.4	826.6	936.8	1067.4	1240.6	1399.8	1313.4	1240.2	1315.4	1402.8
43.5°	705.7	734.9	809.1	915.9	1042.1	1213.0	1366.8	1280.4	1205.2	1283.8	1369.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	659.6	687.8	758.2	854.3	968.3	1130.0	1268.3	1189.7	1116.4	1195.5	1272.7
45.5°	644.1	672.3	741.2	833.9	943.6	1102.8	1234.8	1156.2	1087.7	1163.5	1240.6
46°	629.5	657.2	724.7	814.0	919.3	1075.6	1202.3	1127.5	1062.0	1133.4	1208.6
46.5°	613.5	641.7	707.7	793.6	895.0	1047.9	1171.2	1100.4	1032.9	1108.6	1178.5
47°	598.5	626.1	691.2	774.2	870.8	1020.8	1139.7	1069.8	1001.3	1079.5	1147.0
47.5°	583.4	610.6	674.2	754.3	847.0	993.6	1107.6	1037.7	979.0	1047.9	1116.4
48°	568.9	595.6	658.7	734.9	823.2	966.9	1075.6	1014.0	954.7	1023.2	1085.8
48.5°	553.3	580.0	642.2	715.5	800.4	940.7	1047.0	986.8	926.1	998.4	1058.1
49°	538.8	565.5	626.1	697.0	777.6	914.5	1017.4	956.2	900.9	969.8	1028.5
49.5°	524.2	550.4	610.1	678.1	755.3	888.7	986.8	929.5	879.5	941.6	999.4
50°	509.2	535.4	594.1	659.1	732.4	862.0	957.2	905.7	855.2	919.3	970.3
50.5°	494.1	520.3	578.6	640.7	711.1	837.3	930.5	879.0	828.1	894.6	945.0
51°	480.0	505.8	563.0	623.2	689.7	811.6	901.8	850.4	809.6	865.0	917.4
51.5°	465.5	491.2	547.5	605.3	669.3	787.8	873.7	830.5	789.7	845.0	890.2
52°	451.4	476.6	532.5	587.8	648.5	762.5	848.9	807.2	764.0	822.7	864.0
52.5°	437.3	462.1	517.4	570.8	628.1	739.2	823.2	779.5	745.5	797.5	841.7
53°	424.2	447.5	502.9	553.8	608.7	715.0	796.0	759.6	727.6	773.7	814.5
53.5°	411.6	433.4	487.8	537.3	590.2	692.2	771.3	739.7	706.7	755.3	789.2
54°	403.8	419.9	473.2	520.8	571.3	668.9	748.0	716.4	686.3	732.9	766.9
54.5°	398.5	406.3	459.2	504.8	553.3	646.5	724.2	695.1	670.8	709.1	745.1
55°	392.7	393.6	445.1	489.8	535.9	625.2	699.9	677.6	652.8	692.6	720.8
55.5°	387.3	381.5	431.5	474.7	518.9	603.3	679.5	657.7	632.9	673.7	698.9
56°	381.0	375.2	417.4	460.1	502.4	582.9	657.2	636.8	618.9	650.9	678.6
56.5°	374.7	369.9	403.8	445.6	486.4	563.5	634.9	620.8	602.8	634.9	657.2
57°	368.9	364.0	390.7	431.5	470.3	544.1	615.5	602.8	584.4	618.4	635.9
57.5°	362.1	358.2	377.6	417.4	455.8	525.2	596.0	583.4	571.3	598.5	618.4
58°	355.8	351.9	365.5	404.3	440.7	507.7	575.2	569.4	556.7	582.5	598.5
58.5°	348.5	346.1	352.9	391.7	427.1	490.2	557.7	553.3	539.7	567.9	579.1
59°	340.7	339.3	340.7	379.1	414.0	473.7	539.7	534.9	525.7	550.4	562.1
59.5°	333.5	333.0	328.6	366.5	400.9	457.2	521.3	521.8	510.6	534.9	544.6
60°	325.7	326.2	317.4	354.8	387.8	441.7	504.8	507.2	496.1	521.3	526.2
60.5°	317.4	318.9	305.8	342.7	374.7	426.7	488.8	490.7	482.5	504.8	510.6
61°	309.7	311.6	295.1	332.0	361.6	412.6	471.8	478.1	468.4	490.2	495.1
61.5°	301.9	304.3	285.9	320.8	350.0	399.0	457.2	463.5	455.3	476.6	478.6
62°	293.7	296.6	276.7	310.2	338.8	384.9	442.7	448.5	442.2	461.6	464.0
62.5°	285.9	288.8	271.3	300.0	327.6	370.8	427.1	435.9	430.0	448.5	449.9
63°	278.1	281.5	265.5	289.8	316.5	358.7	414.0	422.8	418.4	435.9	434.4
63.5°	270.4	273.8	260.2	280.1	306.3	346.6	400.9	409.7	406.3	421.3	421.8
64°	262.1	266.5	254.8	270.8	296.1	334.9	388.3	397.0	394.6	409.2	409.2
64.5°	254.3	258.7	249.0	261.1	285.9	323.3	375.2	384.4	382.5	397.0	396.1
65°	246.6	251.4	243.2	252.4	276.7	312.6	362.1	371.8	370.8	384.9	383.5
65.5°	238.8	243.7	237.4	244.1	267.0	301.9	350.0	361.6	359.2	372.8	370.3
66°	231.0	236.4	231.5	235.4	257.7	291.2	338.3	349.0	348.0	361.1	358.2



TEST NUMBER: P776634

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	210.7	214.1	212.6	211.6	232.0	261.6	303.8	316.5	315.5	327.6	323.7
68°	203.9	207.3	205.8	204.3	223.8	252.4	293.2	305.8	305.3	316.5	312.6
68.5°	197.6	200.5	199.5	197.1	215.5	243.7	282.5	295.1	294.6	305.8	301.4
69°	191.2	193.7	193.7	189.8	207.7	234.9	271.8	284.9	284.9	295.1	290.7
69.5°	184.9	187.4	187.4	183.0	200.0	225.7	262.1	274.7	274.7	284.9	280.1
70°	178.6	181.0	180.6	176.7	192.7	217.5	251.9	264.5	264.5	274.7	270.4
70.5°	172.8	173.8	174.7	170.4	184.9	209.2	242.2	255.3	255.3	264.5	260.2
71°	167.0	168.4	168.9	164.5	178.1	201.4	233.0	245.1	245.6	255.3	250.5
71.5°	161.1	162.6	162.6	158.2	170.9	193.2	223.3	235.9	235.9	245.1	240.7
72°	154.8	156.8	156.3	152.4	164.1	185.4	214.1	226.2	226.2	235.4	231.5
72.5°	149.0	151.0	150.5	146.1	157.3	178.1	205.3	217.0	217.0	225.7	221.8
73°	143.2	145.1	144.2	140.8	151.0	170.4	196.6	208.2	207.7	217.0	213.1
73.5°	136.9	139.3	138.3	135.4	144.2	163.1	187.8	199.0	198.5	207.3	203.9
74°	131.1	133.0	132.0	130.6	137.8	156.3	179.1	189.8	189.3	198.0	195.1
74.5°	125.2	127.2	126.7	126.2	131.5	149.0	170.9	181.0	180.6	189.3	186.4
75°	119.4	121.3	121.3	121.3	125.7	142.2	162.6	172.8	171.8	180.6	178.1
75.5°	113.6	115.5	115.5	116.5	119.4	135.9	154.4	164.1	163.1	171.3	169.4
76°	107.8	109.7	109.7	111.2	113.6	129.1	147.1	155.3	154.4	163.1	161.1
76.5°	101.9	103.9	104.4	106.3	107.8	122.3	138.8	146.6	145.6	154.4	152.9
77°	96.6	98.0	99.0	101.4	102.4	116.0	131.5	138.8	137.8	146.1	145.1
77.5°	90.8	92.2	93.7	96.1	96.6	109.7	123.8	130.6	129.1	137.4	137.4
78°	85.4	86.4	88.3	91.3	91.3	103.4	116.5	122.8	120.9	129.6	129.6
78.5°	79.6	81.1	83.0	86.4	85.9	97.1	109.2	114.6	113.1	121.3	122.3
79°	74.3	75.2	78.1	81.1	80.6	91.3	102.4	106.8	104.8	113.1	114.6
79.5°	68.4	69.4	72.8	76.2	75.7	85.4	95.6	98.5	97.1	105.3	107.3
80°	63.1	63.6	67.5	71.4	70.4	79.6	88.8	90.8	89.3	97.6	100.5
80.5°	57.8	58.2	62.6	66.5	65.5	73.8	82.0	83.5	81.5	89.8	93.2
81°	52.4	52.4	57.8	61.6	60.7	68.4	75.7	75.7	73.8	82.0	86.4
81.5°	47.1	47.1	52.9	56.8	56.3	63.1	69.4	68.4	66.5	74.7	80.1
82°	41.7	41.7	48.5	52.4	51.5	57.8	63.1	62.1	59.2	67.5	73.3
82.5°	36.4	37.4	43.7	47.6	47.1	52.9	57.3	55.3	52.4	60.7	67.5
83°	31.5	32.5	39.3	43.2	42.7	47.6	51.9	49.5	45.6	53.9	61.2
83.5°	26.2	28.2	35.4	38.8	38.3	43.2	46.6	44.2	38.8	48.5	55.3
84°	21.4	24.3	31.1	34.0	34.0	38.3	41.7	38.3	32.0	42.7	50.0
84.5°	17.5	20.4	27.2	29.6	29.6	33.5	36.4	32.5	25.2	37.4	45.1
85°	15.5	17.5	23.3	25.2	25.7	28.6	31.5	26.7	21.4	32.0	39.8
85.5°	13.1	15.0	19.4	20.9	21.4	23.8	26.2	22.8	18.4	26.2	34.9
86°	10.7	12.1	16.0	16.5	17.5	19.4	21.8	18.9	15.5	22.3	29.6
86.5°	8.7	9.7	12.1	12.6	13.6	15.0	17.0	15.5	13.1	18.9	24.8
87°	6.3	6.8	8.7	8.7	9.7	10.7	12.6	11.6	10.2	15.5	19.9
87.5°	4.4	4.4	4.9	5.3	5.8	6.8	8.3	8.3	7.8	11.6	15.5
88°	2.4	1.9	1.9	1.5	2.4	3.4	4.4	5.3	5.3	8.3	11.2
88.5°	1.0	0.5	0.5	0.5	0.5	1.0	1.5	2.4	2.4	4.9	6.8



TEST NUMBER: P776634

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

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: P776634

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2209.5	2209.5	2209.5	2209.5	2209.5	2209.5
0.5°	2212.9	2211.9	2206.5	2201.7	2198.3	2196.4
1°	2216.7	2211.4	2201.2	2192.5	2186.6	2183.7
1.5°	2220.6	2210.4	2195.9	2182.8	2174.5	2170.6
2°	2224.0	2209.0	2189.6	2173.5	2161.9	2157.5
2.5°	2226.9	2207.5	2183.2	2162.9	2148.8	2143.4
3°	2229.8	2205.6	2176.9	2152.7	2136.2	2129.9
3.5°	2232.3	2203.1	2170.1	2142.0	2123.1	2115.3
4°	2234.2	2200.7	2162.9	2131.3	2109.0	2100.7
4.5°	2235.7	2197.8	2155.6	2119.2	2094.9	2085.7
5°	2237.1	2194.9	2148.3	2108.0	2080.3	2070.6
5.5°	2238.1	2191.0	2140.5	2095.9	2066.3	2054.6
6°	2239.1	2187.6	2132.3	2083.7	2051.2	2039.1
6.5°	2239.6	2183.7	2123.5	2071.1	2036.2	2023.6
7°	2239.6	2179.4	2114.8	2059.5	2021.1	2007.1
7.5°	2239.1	2175.0	2106.1	2046.4	2005.6	1990.1
8°	2238.6	2170.1	2096.8	2033.3	1989.6	1974.0
8.5°	2237.6	2164.8	2087.6	2020.2	1973.6	1957.1
9°	2236.2	2159.5	2077.9	2006.6	1957.1	1939.6
9.5°	2234.7	2154.1	2067.7	1992.5	1941.0	1922.1
10°	2232.8	2148.3	2057.5	1978.4	1924.5	1904.6
10.5°	2230.3	2142.0	2047.3	1964.8	1908.0	1886.7
11°	2227.9	2135.7	2036.7	1950.3	1891.0	1869.2
11.5°	2225.0	2128.9	2026.0	1935.7	1873.6	1851.2
12°	2221.6	2121.6	2014.8	1921.1	1856.6	1832.3
12.5°	2218.2	2114.8	2003.7	1906.1	1839.1	1814.4
13°	2214.3	2107.5	1992.5	1891.0	1821.6	1796.4
13.5°	2209.5	2099.8	1980.8	1876.0	1804.2	1777.5
14°	2205.6	2092.0	1969.7	1861.0	1786.2	1759.0
14.5°	2200.7	2083.7	1957.5	1845.4	1768.2	1740.1
15°	2195.4	2075.0	1945.4	1829.4	1750.3	1721.2
15.5°	2190.0	2066.8	1933.3	1813.9	1731.8	1702.2
16°	2184.2	2058.0	1921.1	1797.9	1713.9	1683.3
16.5°	2178.4	2048.8	1908.5	1782.3	1695.9	1664.9
17°	2171.6	2039.6	1895.9	1766.3	1677.5	1645.4
17.5°	2164.8	2029.9	1882.8	1749.8	1659.0	1626.5
18°	2158.0	2020.2	1870.2	1733.3	1640.6	1607.1
18.5°	2150.7	2010.0	1856.6	1717.3	1621.7	1588.2
19°	2143.0	1999.3	1843.0	1700.3	1603.2	1568.8
19.5°	2135.2	1989.1	1829.4	1684.3	1585.3	1548.9
20°	2126.9	1977.9	1815.8	1667.8	1566.3	1529.9
20.5°	2117.7	1966.8	1801.7	1650.8	1547.9	1510.5
21°	2109.0	1955.1	1787.2	1633.8	1529.0	1491.1



TEST NUMBER: P776634

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2079.9	1918.7	1743.5	1583.3	1472.6	1432.8
23°	2069.7	1905.6	1728.0	1566.3	1453.2	1412.9
23.5°	2058.5	1892.0	1713.4	1549.3	1435.3	1394.0
24°	2047.3	1877.0	1697.9	1531.9	1416.3	1374.6
24.5°	2035.7	1862.9	1681.8	1514.9	1397.4	1354.7
25°	2023.6	1846.9	1665.3	1497.4	1378.0	1335.8
25.5°	2010.9	1831.3	1649.3	1479.9	1360.0	1316.8
26°	1997.3	1814.4	1632.3	1462.5	1341.1	1297.9
26.5°	1983.3	1797.9	1614.9	1445.0	1322.2	1279.0
27°	1968.7	1781.4	1597.4	1427.5	1303.7	1260.1
27.5°	1953.2	1763.4	1579.4	1409.5	1285.3	1241.6
28°	1936.7	1744.5	1561.0	1391.6	1266.4	1222.7
28.5°	1920.2	1727.0	1543.0	1374.1	1247.9	1204.7
29°	1903.2	1708.1	1524.6	1356.6	1230.0	1186.8
29.5°	1885.2	1688.6	1506.1	1338.7	1212.0	1168.3
30°	1867.7	1668.7	1486.7	1320.2	1194.0	1150.8
30.5°	1849.3	1648.4	1468.3	1302.3	1176.1	1132.9
31°	1829.9	1627.5	1448.4	1283.8	1158.1	1115.4
31.5°	1809.5	1606.1	1429.0	1265.4	1140.2	1097.9
32°	1789.1	1585.3	1409.1	1247.4	1123.2	1080.5
32.5°	1768.2	1563.4	1389.6	1228.5	1105.7	1063.5
33°	1746.4	1540.6	1369.3	1210.1	1088.2	1046.5
33.5°	1724.6	1518.3	1348.9	1191.6	1071.2	1029.5
34°	1701.3	1495.9	1328.5	1172.7	1054.2	1013.0
34.5°	1678.5	1472.6	1308.1	1153.8	1037.7	995.5
35°	1655.2	1449.8	1287.2	1134.8	1020.8	979.0
35.5°	1631.4	1425.6	1266.8	1116.4	1004.3	962.5
36°	1607.1	1402.8	1246.0	1098.4	987.3	946.5
36.5°	1581.9	1379.0	1225.1	1080.0	971.2	930.0
37°	1557.1	1354.2	1204.2	1061.5	954.7	913.5
37.5°	1531.9	1330.4	1183.4	1042.6	938.7	897.0
38°	1506.1	1305.2	1162.5	1024.2	921.7	880.5
38.5°	1479.9	1280.9	1141.1	1006.2	905.7	864.5
39°	1454.2	1256.2	1120.3	988.2	890.2	848.9
39.5°	1428.0	1231.9	1099.4	970.8	874.2	832.4
40°	1401.3	1206.7	1078.5	952.3	857.2	816.4
40.5°	1374.1	1181.9	1057.2	934.4	841.7	800.4
41°	1346.9	1157.2	1036.3	916.9	826.1	784.4
41.5°	1320.2	1132.4	1014.9	898.9	809.6	768.8
42°	1292.6	1108.1	994.1	881.5	794.1	752.8
42.5°	1266.4	1083.4	973.2	864.0	778.1	737.3
43°	1238.7	1058.6	952.8	846.5	763.0	721.8
43.5°	1211.0	1034.3	931.9	829.0	746.5	705.7



TEST NUMBER: P776634

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1130.5	962.5	871.3	778.1	700.9	659.6
45.5°	1103.8	938.7	850.9	761.6	684.9	644.1
46°	1076.6	915.4	831.9	745.1	670.3	629.5
46.5°	1050.4	892.1	811.6	728.1	654.8	613.5
47°	1023.7	869.3	792.1	711.6	639.7	598.5
47.5°	997.9	846.5	772.7	695.1	624.2	583.4
48°	971.7	824.2	754.3	679.0	609.6	568.9
48.5°	946.5	801.9	735.4	663.0	594.6	553.3
49°	920.8	780.5	716.4	647.0	579.5	538.8
49.5°	896.0	759.1	698.0	631.0	564.5	524.2
50°	870.8	737.3	680.5	615.0	549.9	509.2
50.5°	846.5	716.9	662.1	599.4	535.4	494.1
51°	822.7	696.5	644.6	583.9	520.3	480.0
51.5°	799.4	676.6	627.1	568.9	505.8	465.5
52°	775.6	657.2	610.1	553.3	491.7	451.4
52.5°	751.9	637.8	593.1	538.8	477.6	437.3
53°	729.0	619.3	577.1	523.7	463.1	424.2
53.5°	707.2	601.4	560.1	509.2	448.5	411.6
54°	684.9	583.4	544.1	494.6	434.9	403.8
54.5°	664.0	566.4	529.1	480.5	421.3	398.5
55°	643.6	549.9	513.5	466.5	408.2	392.7
55.5°	623.2	533.4	499.0	452.9	395.1	387.3
56°	603.8	517.9	483.9	439.3	383.0	381.0
56.5°	584.9	502.4	469.8	425.7	376.2	374.7
57°	566.9	487.3	455.8	412.6	370.8	368.9
57.5°	549.0	472.8	442.7	399.5	365.0	362.1
58°	532.0	458.7	429.6	386.8	359.2	355.8
58.5°	515.5	445.1	416.5	374.7	352.9	348.5
59°	499.0	432.0	403.8	362.6	346.6	340.7
59.5°	483.4	418.9	391.7	350.4	340.7	333.5
60°	468.4	405.8	379.6	338.8	333.9	325.7
60.5°	453.8	393.6	367.9	327.6	327.1	317.4
61°	439.8	381.5	356.3	316.5	320.4	309.7
61.5°	425.7	370.3	345.6	306.3	313.1	301.9
62°	413.1	358.7	334.9	296.1	305.3	293.7
62.5°	400.4	347.5	324.7	286.4	298.0	285.9
63°	387.8	336.9	314.0	277.6	290.7	278.1
63.5°	375.2	326.2	304.3	270.8	283.5	270.4
64°	362.6	315.5	294.1	265.5	275.7	262.1
64.5°	350.4	305.8	284.9	260.2	268.4	254.3
65°	339.3	296.1	275.7	254.8	261.1	246.6
65.5°	328.1	286.9	267.0	249.0	253.9	238.8
66°	317.4	277.2	258.2	243.2	246.1	231.0



TEST NUMBER: P776634

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	286.9	250.9	233.5	225.7	224.2	210.7
68°	276.7	242.2	225.7	219.4	217.0	203.9
68.5°	267.4	234.0	218.4	213.6	210.2	197.6
69°	258.2	225.7	210.7	207.3	203.4	191.2
69.5°	249.0	217.9	203.4	200.9	196.6	184.9
70°	240.3	210.2	196.6	194.6	190.3	178.6
70.5°	231.5	202.9	189.8	188.3	184.0	172.8
71°	223.3	195.1	182.5	182.0	177.6	167.0
71.5°	214.5	187.8	176.7	175.7	171.8	161.1
72°	206.8	180.6	170.4	169.9	165.5	154.8
72.5°	198.5	174.7	164.1	163.6	159.7	149.0
73°	190.8	167.9	158.2	157.7	153.4	143.2
73.5°	183.0	161.1	151.9	151.4	147.6	136.9
74°	175.7	153.9	146.1	145.6	141.2	131.1
74.5°	167.9	147.1	140.3	139.8	135.4	125.2
75°	160.7	140.8	134.9	134.0	129.1	119.4
75.5°	153.9	134.5	129.6	128.6	123.3	113.6
76°	146.6	128.1	124.7	122.8	117.0	107.8
76.5°	139.8	122.3	119.9	117.0	111.2	101.9
77°	133.0	116.0	115.0	111.6	105.3	96.6
77.5°	126.2	110.2	110.2	105.8	99.5	90.8
78°	119.9	104.4	104.8	100.5	93.7	85.4
78.5°	113.1	99.0	100.0	95.1	87.9	79.6
79°	106.8	93.2	94.6	89.8	82.0	74.3
79.5°	100.5	87.9	89.8	84.5	76.2	68.4
80°	94.2	82.5	84.5	79.1	70.4	63.1
80.5°	88.3	77.2	79.6	73.8	65.0	57.8
81°	82.5	71.8	74.3	68.9	59.2	52.4
81.5°	76.7	67.0	69.4	63.6	53.9	47.1
82°	70.9	62.1	64.6	58.7	49.0	41.7
82.5°	65.5	57.3	59.7	53.9	43.7	36.4
83°	60.2	52.4	54.8	49.5	38.8	31.5
83.5°	54.8	47.6	50.0	44.7	34.0	26.2
84°	49.5	43.2	45.6	40.3	29.6	21.4
84.5°	44.7	38.3	40.8	35.9	25.7	17.5
85°	39.8	34.0	35.9	31.5	21.8	15.5
85.5°	34.9	29.6	31.5	27.2	18.9	13.1
86°	30.1	25.7	26.7	23.3	16.0	10.7
86.5°	24.8	21.4	22.3	18.9	13.1	8.7
87°	20.4	17.5	18.0	15.0	10.2	6.3
87.5°	16.0	13.6	13.6	11.6	7.3	4.4
88°	11.6	9.7	9.7	7.8	4.9	2.4
88.5°	7.3	5.8	5.8	3.9	2.4	1.0



TEST NUMBER: P776634

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

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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Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
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°	1471.2	1506.6	1613.9	1773.1	1960.9	2118.7	2234.2	2302.7	2324.5	2290.5	2214.3
22°	1452.3	1487.7	1596.4	1758.1	1948.3	2109.0	2226.4	2295.9	2317.7	2283.2	2206.5



44°	690.7	719.3	792.1	895.5	1017.4	1185.3	1332.4	1247.4	1178.0	1250.8	1335.8
44.5°	675.2	703.8	775.2	874.7	992.6	1158.1	1300.3	1219.8	1148.9	1224.1	1303.7



66.5°	224.2	229.1	224.7	227.2	249.0	281.0	326.2	338.3	336.9	349.5	346.6
67°	217.0	221.3	218.4	219.4	240.3	271.3	315.0	327.1	326.2	338.8	334.4



89°	0.0	0.5	0.0	0.0	0.0	0.0	0.5	0.5	0.5	1.9	2.9
89.5°	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	1.0

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21.5°	2099.8	1943.5	1772.6	1617.3	1510.0	1471.2
22°	2090.1	1930.8	1758.1	1600.3	1491.1	1452.3



44°	1183.8	1010.6	911.5	812.0	732.0	690.7
44.5°	1157.6	986.3	891.2	795.1	715.9	675.2



66.5°	306.8	268.4	250.0	237.8	238.8	224.2
67°	296.6	259.2	241.7	232.0	231.5	217.0



89°	3.4	1.9	1.9	1.5	0.5	0.0
89.5°	1.0	0.5	0.5	0.5	0.5	0.0

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(END OF REPORT)