

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: P776560

Luminaire Tested: HCDJBS4050CSD-HCD41TRMB-5000lm-2700K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776560
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-2700K
Description: 4 INCH ROUND SHALLOW-WIDE MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

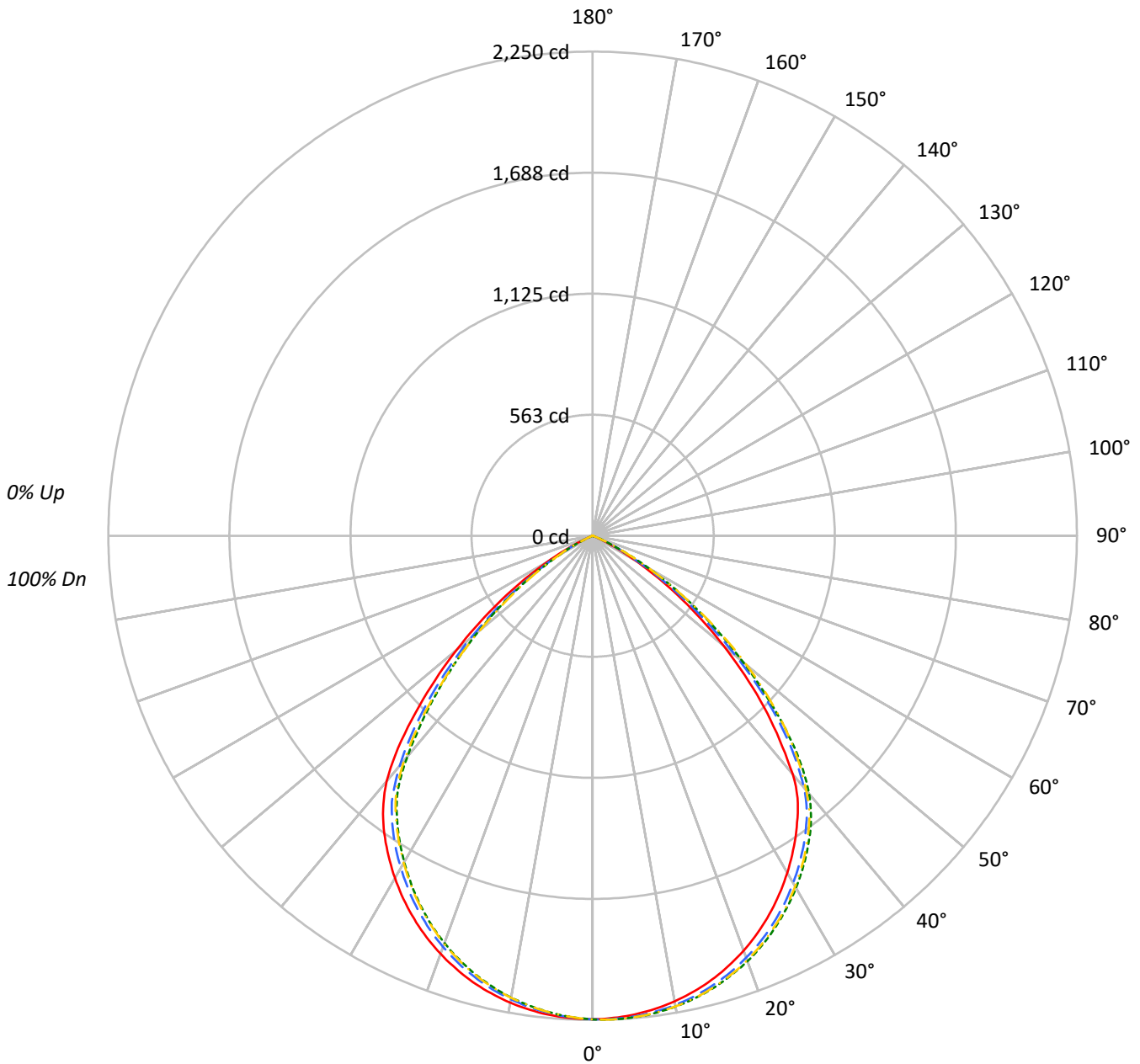
Lumens per Lamp: N/A
Luminaire Lumens: 4161.8 lumens
Efficiency: N/A
Efficacy: 86.7 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.26
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	282784	282784	282784	282784
5°	282147	283751	282488	280984
10°	280681	283888	281562	278419
15°	278337	283327	279757	274715
20°	274750	281768	276826	269688
25°	269555	278858	272651	263028
30°	262824	274609	266922	254337
35°	254050	268614	259304	243679
40°	237441	256991	244407	219764
45°	200279	225036	207185	180488
50°	155005	178832	161427	136092
55°	106415	128115	111703	89915
60°	57589	75485	62296	45432
65°	17659	27277	19416	12209
70°	1693	1840	1693	1693
75°	1750	1750	1750	1750
80°	1667	1667	1305	1667
85°	722	1300	722	1300

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 112.5°
 Vertical Angle: 45°
 Luminance: 226816 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	212.2	5.1
10°-20°	603.8	14.5
20°-30°	898.1	21.6
30°-40°	1038.0	24.9
40°-50°	875.9	21.0
50°-60°	445.6	10.7
60°-70°	83.4	2.0
70°-80°	3.7	0.1
80°-90°	1.0	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°	1714.1	41.2
0°-40°	2752.2	66.1
0°-60°	4073.7	97.9
0°-90°	4161.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4161.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2247	2247	2247	2247	2247	
5°	2233	2246	2236	2224	2233	212
15°	2136	2175	2147	2108	2136	602
25°	1941	2008	1964	1894	1941	893
35°	1654	1748	1688	1586	1654	1030
45°	1125	1264	1164	1014	1125	862
55°	485	584	509	410	485	437
65°	59	92	65	41	59	78
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°	2247.0	2247.0	2247.0	2247.0	2247.0	2247.0	2247.0	2247.0	2247.0	2247.0	2247.0
0.5°	2246.6	2246.6	2247.5	2247.9	2248.4	2248.4	2248.4	2246.6	2246.1	2246.6	2246.1
1°	2246.1	2247.0	2247.9	2248.4	2248.9	2249.3	2248.9	2247.0	2246.1	2246.1	2245.2
1.5°	2245.2	2246.6	2247.9	2248.9	2248.9	2249.8	2249.3	2247.5	2245.7	2244.7	2243.8
2°	2244.3	2246.1	2247.5	2249.3	2249.3	2250.2	2249.8	2247.5	2245.2	2243.8	2242.0
2.5°	2242.5	2244.7	2247.0	2249.3	2249.3	2249.8	2248.9	2247.0	2244.3	2242.5	2240.6
3°	2241.1	2243.8	2246.1	2248.4	2249.3	2249.8	2248.9	2245.7	2243.4	2241.1	2238.4
3.5°	2239.3	2242.5	2245.7	2247.9	2248.4	2249.3	2248.9	2245.2	2241.6	2238.8	2236.5
4°	2237.9	2241.1	2244.3	2247.0	2247.9	2248.9	2247.9	2244.7	2240.2	2237.0	2234.3
4.5°	2235.6	2239.3	2243.4	2245.7	2247.0	2247.9	2246.6	2243.8	2238.4	2234.3	2231.1
5°	2233.4	2237.5	2241.6	2244.7	2246.1	2246.6	2245.2	2242.0	2236.1	2232.0	2228.3
5.5°	2230.6	2235.2	2239.7	2243.4	2244.3	2245.7	2244.3	2240.2	2234.3	2229.7	2225.2
6°	2227.4	2232.9	2238.4	2241.6	2242.9	2243.8	2242.5	2238.4	2231.5	2226.5	2222.0
6.5°	2224.2	2230.2	2235.6	2239.7	2241.1	2242.0	2240.2	2236.5	2228.8	2223.8	2218.8
7°	2221.5	2227.4	2233.4	2237.9	2238.8	2239.7	2237.9	2234.3	2225.6	2219.7	2215.1
7.5°	2217.9	2224.2	2230.6	2235.2	2236.1	2237.9	2235.6	2231.5	2222.4	2216.5	2211.0
8°	2214.2	2221.0	2227.9	2232.9	2233.8	2235.2	2232.9	2228.3	2218.8	2212.4	2206.9
8.5°	2210.1	2217.4	2224.7	2229.7	2231.1	2232.4	2230.2	2225.2	2215.1	2208.3	2202.4
9°	2205.6	2213.8	2221.5	2226.5	2227.9	2229.7	2227.4	2222.0	2211.5	2204.2	2197.3
9.5°	2201.0	2209.7	2217.9	2223.3	2224.7	2226.5	2223.8	2218.8	2207.8	2199.6	2192.3
10°	2196.4	2205.6	2213.8	2220.1	2221.5	2223.3	2220.6	2215.1	2203.3	2195.1	2187.3
10.5°	2191.4	2201.0	2209.7	2216.0	2217.9	2219.7	2216.5	2211.0	2198.7	2190.1	2181.9
11°	2186.4	2196.0	2205.6	2211.9	2213.8	2215.6	2212.8	2206.9	2194.2	2184.6	2176.4
11.5°	2181.4	2191.0	2201.0	2207.8	2209.7	2211.5	2208.3	2202.4	2189.1	2179.1	2170.5
12°	2175.0	2186.0	2196.0	2203.3	2205.6	2206.9	2204.2	2197.3	2183.7	2173.6	2164.1
12.5°	2169.5	2180.5	2191.0	2198.7	2201.0	2202.4	2199.2	2192.3	2177.7	2167.7	2157.7
13°	2163.2	2175.0	2185.5	2194.2	2196.0	2197.8	2194.6	2187.8	2172.3	2161.3	2150.9
13.5°	2157.2	2169.1	2180.0	2188.7	2191.0	2192.3	2189.1	2182.3	2166.4	2155.0	2144.0
14°	2150.4	2162.7	2174.6	2183.2	2185.5	2187.8	2184.1	2176.4	2160.0	2148.6	2137.2
14.5°	2143.6	2156.3	2168.2	2177.7	2180.0	2181.9	2178.2	2170.5	2154.0	2141.7	2129.4
15°	2136.3	2149.5	2161.8	2171.8	2174.6	2176.4	2172.3	2164.5	2147.2	2134.4	2121.7
15.5°	2129.0	2141.7	2155.9	2165.4	2168.6	2170.0	2165.9	2157.7	2140.4	2127.2	2114.4
16°	2121.2	2135.4	2149.0	2159.1	2162.3	2164.1	2159.5	2151.3	2133.1	2119.4	2106.6
16.5°	2113.5	2128.1	2141.7	2152.7	2155.4	2157.2	2153.1	2144.5	2125.8	2111.7	2098.0
17°	2105.7	2120.3	2134.9	2145.8	2149.0	2150.4	2146.3	2137.6	2118.0	2103.9	2089.3
17.5°	2097.1	2112.1	2127.6	2138.6	2141.7	2143.1	2139.0	2130.3	2109.8	2095.3	2080.2
18°	2088.0	2103.9	2119.4	2131.3	2134.4	2135.8	2131.7	2122.1	2101.6	2086.6	2071.1
18.5°	2079.3	2095.7	2111.2	2124.0	2126.7	2129.0	2124.0	2114.4	2093.9	2077.9	2062.0
19°	2070.2	2086.6	2103.5	2115.8	2119.4	2121.2	2115.8	2106.6	2085.2	2068.8	2052.9
19.5°	2061.1	2077.9	2094.8	2108.0	2111.7	2113.0	2107.6	2098.4	2076.6	2059.7	2042.8
20°	2051.5	2068.8	2086.1	2099.8	2103.9	2104.8	2099.4	2089.8	2067.0	2050.1	2032.8
20.5°	2041.5	2059.7	2077.5	2091.1	2095.3	2096.6	2090.7	2081.1	2058.3	2040.6	2022.3
21°	2031.4	2049.7	2068.4	2082.5	2087.0	2088.4	2082.0	2072.0	2048.3	2030.1	2011.8



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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°	1999.5	2019.6	2039.2	2054.7	2058.8	2060.2	2053.8	2043.7	2018.2	1998.6	1979.0
23°	1988.6	2009.1	2029.2	2045.1	2049.2	2050.6	2044.2	2033.7	2007.7	1988.1	1967.6
23.5°	1977.2	1997.7	2019.1	2035.5	2039.6	2040.1	2034.2	2023.2	1997.3	1976.7	1955.3
24°	1965.4	1986.8	2008.7	2025.1	2029.2	2030.5	2023.7	2013.2	1986.3	1965.4	1943.9
24.5°	1953.5	1975.8	1997.7	2014.6	2019.1	2019.6	2013.2	2002.3	1975.4	1954.0	1931.6
25°	1941.2	1964.4	1986.3	2003.6	2008.2	2009.1	2002.3	1991.3	1963.5	1941.7	1919.3
25.5°	1928.9	1952.6	1975.4	1993.2	1997.7	1998.2	1991.3	1980.4	1951.7	1929.8	1906.1
26°	1916.6	1940.3	1963.5	1981.8	1986.8	1987.2	1980.4	1969.0	1939.8	1917.0	1893.3
26.5°	1904.3	1928.0	1952.1	1970.4	1975.4	1975.4	1968.5	1957.1	1927.5	1904.3	1880.1
27°	1891.1	1915.7	1939.8	1959.0	1963.5	1964.0	1956.7	1945.3	1915.2	1892.0	1866.9
27.5°	1877.8	1902.9	1928.0	1947.6	1951.7	1952.1	1944.8	1933.0	1902.9	1878.8	1853.2
28°	1864.2	1890.1	1915.7	1935.3	1940.3	1940.7	1933.0	1920.7	1890.6	1865.5	1839.1
28.5°	1850.5	1876.5	1902.5	1923.0	1928.0	1928.0	1920.7	1907.9	1877.4	1852.3	1825.4
29°	1836.8	1863.3	1889.2	1910.2	1915.7	1915.2	1907.5	1895.6	1863.7	1838.2	1811.8
29.5°	1822.7	1849.6	1876.5	1897.9	1902.9	1902.5	1894.7	1882.9	1850.5	1824.5	1796.7
30°	1808.6	1836.4	1863.3	1885.1	1889.7	1889.7	1881.5	1869.2	1836.8	1810.4	1781.7
30.5°	1794.0	1822.2	1849.6	1871.9	1876.9	1875.6	1868.3	1856.0	1823.1	1796.3	1767.5
31°	1779.4	1808.1	1835.9	1857.8	1863.3	1862.3	1854.1	1842.3	1808.6	1781.7	1752.5
31.5°	1763.9	1793.5	1821.8	1844.6	1849.6	1848.7	1840.5	1828.6	1794.0	1766.6	1737.0
32°	1748.9	1778.9	1807.7	1830.9	1835.9	1835.0	1826.8	1814.5	1779.4	1752.0	1722.0
32.5°	1733.4	1763.4	1793.1	1816.8	1821.3	1820.4	1812.7	1800.4	1764.8	1736.5	1705.6
33°	1717.9	1748.4	1778.5	1802.2	1807.7	1805.8	1798.5	1785.8	1750.2	1721.5	1690.1
33.5°	1702.4	1732.9	1763.4	1788.1	1793.1	1791.2	1783.9	1770.7	1734.7	1706.0	1673.6
34°	1686.4	1717.9	1748.9	1773.0	1778.5	1777.1	1768.5	1756.1	1719.2	1689.6	1658.2
34.5°	1670.0	1701.9	1733.4	1758.4	1763.4	1761.6	1753.0	1740.6	1703.7	1673.6	1640.8
35°	1653.6	1686.0	1717.4	1742.5	1748.4	1746.6	1737.5	1724.7	1687.8	1657.2	1624.0
35.5°	1636.3	1669.5	1701.5	1727.4	1732.4	1731.1	1722.0	1709.2	1671.4	1640.4	1605.7
36°	1619.9	1653.1	1685.5	1711.0	1716.9	1715.1	1705.6	1693.2	1654.1	1622.6	1588.0
36.5°	1602.1	1636.3	1669.1	1695.1	1701.0	1698.7	1689.1	1676.4	1636.3	1604.4	1569.3
37°	1584.3	1619.0	1652.2	1678.2	1683.7	1681.4	1671.8	1659.1	1618.5	1586.1	1549.7
37.5°	1565.2	1600.3	1634.0	1660.4	1665.9	1663.6	1654.5	1641.3	1599.4	1566.1	1526.0
38°	1546.0	1581.6	1615.3	1642.7	1647.7	1645.4	1636.3	1622.6	1578.8	1544.2	1501.4
38.5°	1524.2	1560.6	1596.2	1623.5	1628.5	1625.8	1615.3	1603.0	1557.9	1520.5	1475.4
39°	1500.5	1537.4	1575.2	1604.4	1608.0	1604.4	1592.5	1581.6	1535.5	1495.4	1448.9
39.5°	1474.5	1511.8	1551.5	1583.4	1587.0	1580.7	1568.4	1558.3	1511.8	1469.9	1421.1
40°	1445.3	1485.0	1526.0	1561.1	1564.3	1555.6	1543.7	1533.3	1487.7	1442.6	1392.9
40.5°	1412.9	1457.6	1500.0	1537.4	1539.6	1530.5	1517.8	1507.7	1460.8	1414.8	1363.3
41°	1381.5	1429.3	1473.1	1511.8	1514.1	1504.1	1491.8	1481.3	1432.5	1386.5	1333.6
41.5°	1349.6	1400.2	1444.8	1485.0	1486.8	1477.7	1465.8	1453.5	1401.5	1356.9	1303.1
42°	1317.2	1369.2	1417.0	1455.8	1457.6	1450.3	1439.4	1425.2	1371.0	1326.8	1271.6
42.5°	1285.3	1338.2	1387.4	1425.7	1428.4	1423.0	1412.0	1397.0	1337.7	1295.8	1238.8
43°	1253.9	1306.7	1357.3	1395.2	1397.9	1394.7	1383.8	1366.0	1303.6	1263.4	1206.0
43.5°	1221.5	1274.4	1326.3	1362.8	1366.0	1365.5	1354.6	1335.9	1268.9	1230.2	1172.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1125.3	1175.5	1227.4	1258.9	1264.4	1274.4	1264.8	1239.3	1164.1	1128.1	1072.9
45.5°	1093.0	1141.7	1192.3	1221.5	1228.8	1242.9	1232.9	1206.9	1129.4	1093.0	1039.6
46°	1060.2	1108.9	1158.2	1185.5	1193.2	1210.1	1201.5	1172.3	1094.8	1056.5	1006.4
46.5°	1026.9	1075.2	1122.6	1149.5	1157.7	1177.8	1170.0	1139.5	1059.7	1020.5	972.6
47°	992.7	1041.9	1087.5	1112.6	1121.2	1143.6	1136.7	1103.9	1026.4	984.5	939.8
47.5°	958.5	1008.7	1052.0	1075.2	1086.1	1109.8	1104.4	1069.3	992.7	948.9	906.1
48°	924.8	974.9	1014.6	1039.2	1051.5	1075.7	1070.2	1034.6	959.0	913.4	873.3
48.5°	890.6	940.7	978.1	1003.2	1016.9	1041.5	1037.4	1002.7	925.2	876.9	840.5
49°	857.3	907.9	941.2	967.6	981.8	1006.8	1002.7	966.7	891.5	841.8	807.2
49.5°	824.1	874.2	905.2	932.1	947.1	971.7	969.5	932.5	857.8	806.7	773.9
50°	791.7	840.0	868.7	897.9	913.4	936.2	934.4	898.4	824.5	773.0	740.7
50.5°	758.9	805.8	832.7	861.9	879.2	901.1	899.7	865.1	791.2	738.4	706.9
51°	727.4	771.2	796.3	827.7	845.0	866.0	863.7	832.3	759.3	705.6	674.6
51.5°	695.1	737.9	761.6	793.1	811.3	831.4	830.4	799.5	726.1	672.7	642.2
52°	664.1	703.7	727.4	759.8	778.0	796.3	795.3	766.6	693.7	640.8	609.8
52.5°	633.5	670.9	694.2	724.7	744.3	762.1	760.7	733.4	662.3	609.4	577.9
53°	603.0	638.1	660.0	693.3	711.5	727.9	726.5	701.5	630.8	578.8	546.5
53.5°	572.5	605.7	627.2	660.4	679.1	694.2	692.8	669.6	599.4	548.3	516.0
54°	542.4	572.9	595.3	628.1	646.8	660.9	658.6	638.1	568.8	519.6	486.3
54.5°	513.2	541.0	563.8	594.8	614.4	627.6	625.3	606.7	539.2	492.2	457.6
55°	485.0	510.5	533.3	565.2	583.9	595.3	593.0	576.1	509.1	463.1	428.9
55.5°	456.7	479.5	502.7	535.1	553.3	563.4	559.7	545.1	479.9	434.8	402.9
56°	428.9	450.3	473.6	504.6	522.3	531.9	527.8	516.0	451.2	409.3	376.5
56.5°	401.5	421.6	444.8	474.0	492.2	500.5	496.8	485.4	424.3	383.8	350.5
57°	375.1	392.9	417.0	447.1	463.1	470.8	466.7	456.7	397.9	358.7	324.1
57.5°	349.1	365.5	389.7	418.9	434.8	441.2	437.1	428.9	371.5	333.2	299.9
58°	323.2	339.1	362.4	391.5	407.5	412.9	409.3	401.5	344.6	307.7	276.2
58.5°	299.0	313.6	336.4	365.1	380.1	384.7	381.0	373.7	318.1	284.9	253.9
59°	274.4	289.4	311.8	339.6	352.8	356.4	353.2	345.9	293.5	261.2	232.5
59.5°	251.6	265.7	287.6	314.9	325.9	328.2	325.4	318.6	270.7	239.7	211.9
60°	228.8	242.5	263.9	290.8	299.9	302.6	299.5	293.5	247.5	218.3	192.3
60.5°	207.8	221.1	241.1	268.0	275.8	277.6	274.8	268.9	225.2	198.3	172.7
61°	186.9	199.6	220.1	244.8	251.6	253.4	250.2	244.3	203.7	178.2	155.0
61.5°	167.3	180.0	199.2	222.9	228.3	229.7	227.0	221.5	184.1	160.0	138.6
62°	150.4	160.9	179.6	202.4	206.0	207.4	205.1	199.2	163.6	141.7	121.7
62.5°	134.0	145.4	160.9	181.9	184.1	186.0	183.7	176.8	144.9	124.9	106.7
63°	117.1	129.9	145.4	162.7	163.6	165.5	163.2	155.9	126.7	108.9	92.5
63.5°	100.7	114.4	129.9	145.9	144.0	145.9	143.6	136.7	109.8	94.3	79.8
64°	84.3	98.9	114.4	129.0	125.3	127.2	125.8	118.5	93.9	80.2	67.5
64.5°	71.1	83.9	98.9	112.6	107.6	109.8	108.5	101.2	79.3	67.5	56.5
65°	59.3	71.1	83.4	95.7	91.6	93.9	92.5	85.2	65.2	58.3	48.3
65.5°	49.2	59.7	70.6	79.3	76.6	78.4	77.5	71.1	54.7	48.8	40.6
66°	40.1	48.8	58.8	65.6	62.9	64.7	63.8	60.6	44.7	39.2	32.8



TEST NUMBER: P776560

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	19.6	24.2	30.5	32.4	34.2	35.6	34.6	30.1	13.7	15.0	12.3
68°	16.4	18.2	23.2	24.2	24.6	25.5	24.6	20.1	8.2	10.5	8.7
68.5°	13.7	14.6	16.9	17.8	15.5	16.0	15.0	13.7	5.5	6.8	6.4
69°	10.5	11.4	13.7	14.6	10.5	10.9	10.0	9.1	5.0	5.5	5.0
69.5°	7.7	8.2	10.9	11.4	7.3	7.3	6.8	6.4	5.0	5.0	5.0
70°	4.6	5.0	7.7	7.7	5.0	5.0	5.0	5.0	4.6	4.6	4.6
70.5°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
71°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
71.5°	4.1	4.1	4.1	4.6	4.1	4.1	4.6	4.6	4.6	4.6	4.6
72°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
72.5°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
73°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
73.5°	3.6	3.6	3.6	3.6	3.6	3.6	4.1	4.1	3.6	3.6	4.1
74°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
74.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
75°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
75.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.2	3.2	3.2
76°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
76.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
77°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.7	2.7	3.2
77.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
78°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
78.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.3	2.3	2.7
79°	2.3	2.3	2.7	2.7	2.7	2.7	2.7	2.7	2.3	2.3	2.3
79.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
80°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.8	1.8	2.3
80.5°	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.8	1.8	2.3
81°	1.8	1.8	2.3	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8
81.5°	1.8	1.8	1.8	2.3	1.8	1.8	1.8	1.8	1.4	1.4	1.8
82°	1.4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.4	1.4	1.8
82.5°	1.4	1.4	1.8	1.8	1.8	1.8	1.8	1.4	0.9	1.4	1.4
83°	1.4	1.4	1.8	1.8	1.8	1.8	1.8	1.4	0.9	0.9	1.4
83.5°	0.9	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.9	0.9	1.4
84°	0.9	0.9	1.4	1.4	1.4	1.4	1.4	0.9	0.5	0.5	0.9
84.5°	0.5	0.9	1.4	1.4	1.4	1.4	1.4	0.9	0.5	0.5	0.9
85°	0.5	0.9	0.9	1.4	0.9	1.4	0.9	0.9	0.5	0.5	0.9
85.5°	0.5	0.5	0.9	0.9	0.9	0.9	0.9	0.5	0.0	0.5	0.9
86°	0.5	0.5	0.9	0.9	0.9	0.9	0.9	0.5	0.0	0.5	0.5
86.5°	0.0	0.5	0.9	0.9	0.5	0.9	0.9	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: P776560
CATALOG NUMBER: HCDJBL4050CSD-HCD41TRMB-5000lm-2700K

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: P776560

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2247.0	2247.0	2247.0	2247.0	2247.0	2247.0
0.5°	2245.7	2245.7	2246.6	2246.1	2245.2	2246.6
1°	2244.3	2244.3	2245.2	2244.7	2244.3	2246.1
1.5°	2242.5	2242.5	2243.4	2243.4	2242.9	2245.2
2°	2241.1	2240.6	2241.1	2241.6	2240.6	2244.3
2.5°	2239.3	2238.4	2239.3	2238.8	2238.8	2242.5
3°	2237.0	2236.1	2236.5	2236.5	2237.0	2241.1
3.5°	2234.3	2233.8	2233.8	2234.3	2234.7	2239.3
4°	2231.5	2231.1	2231.1	2231.5	2232.4	2237.9
4.5°	2228.3	2227.9	2227.9	2228.3	2229.7	2235.6
5°	2225.2	2224.2	2224.2	2225.2	2226.5	2233.4
5.5°	2222.0	2221.0	2220.6	2221.5	2223.8	2230.6
6°	2218.3	2216.9	2216.5	2218.3	2220.1	2227.4
6.5°	2214.7	2213.3	2212.4	2214.2	2216.5	2224.2
7°	2210.6	2209.2	2208.7	2210.1	2212.8	2221.5
7.5°	2206.0	2204.6	2204.2	2205.6	2209.2	2217.9
8°	2201.5	2199.6	2199.6	2200.5	2204.6	2214.2
8.5°	2196.4	2195.1	2194.6	2196.0	2199.6	2210.1
9°	2191.4	2189.6	2189.1	2191.0	2194.6	2205.6
9.5°	2186.4	2184.1	2183.7	2185.5	2189.6	2201.0
10°	2180.9	2178.7	2177.7	2180.0	2184.1	2196.4
10.5°	2175.0	2173.2	2172.3	2174.6	2179.1	2191.4
11°	2169.1	2167.3	2166.4	2168.6	2172.7	2186.4
11.5°	2162.7	2160.4	2160.0	2161.8	2166.8	2181.4
12°	2156.3	2154.0	2153.1	2155.4	2160.9	2175.0
12.5°	2149.9	2147.2	2146.3	2148.6	2154.0	2169.5
13°	2142.7	2139.9	2138.6	2141.7	2147.2	2163.2
13.5°	2135.4	2132.6	2131.3	2134.4	2140.4	2157.2
14°	2128.1	2124.9	2124.0	2127.2	2133.1	2150.4
14.5°	2120.3	2117.1	2115.8	2119.4	2125.8	2143.6
15°	2112.1	2108.5	2107.6	2110.7	2117.6	2136.3
15.5°	2103.9	2100.3	2099.4	2102.5	2109.4	2129.0
16°	2095.3	2091.6	2091.1	2094.3	2101.2	2121.2
16.5°	2087.0	2082.9	2082.0	2085.7	2092.5	2113.5
17°	2077.9	2073.4	2072.5	2076.6	2083.9	2105.7
17.5°	2068.8	2064.3	2063.3	2067.4	2074.7	2097.1
18°	2059.2	2054.7	2053.8	2057.4	2066.1	2088.0
18.5°	2049.2	2044.7	2043.7	2047.8	2056.5	2079.3
19°	2039.6	2034.6	2033.3	2037.8	2046.0	2070.2
19.5°	2029.2	2024.1	2023.2	2027.3	2036.5	2061.1
20°	2018.7	2013.7	2012.8	2016.9	2026.9	2051.5
20.5°	2008.2	2002.7	2001.4	2005.9	2015.9	2041.5
21°	1997.3	1991.3	1990.4	1995.0	2005.0	2031.4

TEST NUMBER: P776560

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1962.6	1957.1	1955.3	1959.9	1971.7	1999.5
23°	1950.8	1945.3	1943.5	1948.5	1959.4	1988.6
23.5°	1938.5	1932.5	1931.2	1936.2	1947.1	1977.2
24°	1926.2	1919.8	1918.0	1923.9	1935.3	1965.4
24.5°	1913.4	1907.0	1905.2	1910.7	1923.0	1953.5
25°	1900.6	1894.2	1892.4	1897.9	1910.7	1941.2
25.5°	1887.4	1880.6	1878.8	1884.2	1897.4	1928.9
26°	1874.2	1866.9	1865.1	1871.0	1884.2	1916.6
26.5°	1860.1	1853.2	1851.4	1857.8	1870.5	1904.3
27°	1846.8	1839.1	1837.7	1843.7	1856.9	1891.1
27.5°	1832.3	1825.0	1823.1	1829.5	1843.2	1877.8
28°	1818.1	1809.9	1808.6	1814.9	1829.1	1864.2
28.5°	1803.5	1795.8	1794.0	1800.8	1814.5	1850.5
29°	1789.0	1781.2	1778.9	1785.8	1800.4	1836.8
29.5°	1773.5	1766.2	1763.9	1771.2	1785.8	1822.7
30°	1758.9	1750.2	1748.9	1755.7	1771.2	1808.6
30.5°	1742.9	1735.2	1732.9	1740.6	1755.7	1794.0
31°	1727.4	1719.2	1716.9	1724.2	1740.2	1779.4
31.5°	1711.9	1703.7	1701.0	1709.2	1725.2	1763.9
32°	1696.0	1687.3	1684.6	1693.7	1709.7	1748.9
32.5°	1679.6	1671.4	1669.1	1677.3	1694.2	1733.4
33°	1662.7	1655.0	1652.7	1660.4	1677.8	1717.9
33.5°	1646.3	1638.1	1635.8	1644.5	1660.9	1702.4
34°	1629.4	1620.8	1619.0	1628.1	1644.5	1686.4
34.5°	1612.6	1603.9	1601.6	1610.8	1628.1	1670.0
35°	1594.8	1586.1	1584.3	1593.0	1610.3	1653.6
35.5°	1576.1	1568.4	1566.5	1575.7	1593.9	1636.3
36°	1557.9	1549.2	1547.9	1557.9	1576.1	1619.9
36.5°	1538.3	1529.6	1528.7	1539.2	1557.0	1602.1
37°	1516.9	1509.1	1508.7	1518.7	1537.8	1584.3
37.5°	1491.8	1485.4	1486.3	1498.6	1518.7	1565.2
38°	1464.9	1459.0	1460.3	1474.0	1494.5	1546.0
38.5°	1437.1	1429.8	1433.0	1447.1	1469.0	1524.2
39°	1407.0	1400.6	1404.3	1419.3	1442.6	1500.5
39.5°	1376.0	1369.6	1374.2	1389.7	1414.3	1474.5
40°	1344.6	1337.7	1342.7	1359.2	1384.7	1445.3
40.5°	1312.7	1304.9	1310.4	1328.2	1352.8	1412.9
41°	1281.7	1272.6	1278.5	1297.2	1320.4	1381.5
41.5°	1250.2	1238.8	1245.2	1264.4	1286.2	1349.6
42°	1218.8	1207.8	1212.4	1232.0	1253.0	1317.2
42.5°	1188.2	1175.0	1179.1	1199.2	1219.2	1285.3
43°	1157.2	1143.6	1144.9	1165.4	1184.1	1253.9
43.5°	1126.7	1109.8	1110.8	1131.3	1150.0	1221.5



TEST NUMBER: P776560

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1031.9	1014.1	1007.7	1026.0	1049.2	1125.3
45.5°	999.5	981.3	973.6	990.9	1015.0	1093.0
46°	966.7	949.9	941.2	955.8	982.2	1060.2
46.5°	933.0	916.1	907.5	920.7	948.9	1026.9
47°	900.2	885.1	874.2	885.6	916.1	992.7
47.5°	867.4	851.4	840.5	851.0	882.4	958.5
48°	834.1	820.9	809.0	816.8	849.6	924.8
48.5°	801.7	788.1	775.7	782.1	816.8	890.6
49°	769.8	757.1	744.3	749.3	784.4	857.3
49.5°	737.5	726.1	711.9	716.5	752.0	824.1
50°	705.6	695.1	680.5	683.7	719.7	791.7
50.5°	675.5	664.5	649.0	651.8	688.2	758.9
51°	644.9	634.0	619.0	621.2	657.2	727.4
51.5°	614.4	604.8	588.4	590.7	625.8	695.1
52°	583.9	575.7	559.3	561.1	596.2	664.1
52.5°	555.1	546.9	529.6	531.4	566.1	633.5
53°	525.5	517.8	501.8	503.6	536.9	603.0
53.5°	496.4	490.0	473.1	476.3	507.7	572.5
54°	467.6	462.2	446.2	448.9	479.5	542.4
54.5°	440.7	435.7	420.2	423.0	451.7	513.2
55°	414.3	409.8	394.7	397.9	425.2	485.0
55.5°	388.3	383.3	370.1	373.3	398.4	456.7
56°	362.4	357.8	345.5	349.6	372.4	428.9
56.5°	336.4	333.2	321.8	326.3	346.9	401.5
57°	310.4	309.0	299.5	303.6	323.2	375.1
57.5°	286.7	285.8	277.6	281.7	299.0	349.1
58°	263.0	262.5	256.6	261.2	276.7	323.2
58.5°	240.2	240.7	236.6	241.1	253.9	299.0
59°	218.3	219.7	217.0	221.5	233.4	274.4
59.5°	197.4	199.6	198.7	202.8	213.3	251.6
60°	177.8	180.5	180.9	185.5	194.2	228.8
60.5°	159.1	160.9	163.6	167.7	175.0	207.8
61°	141.3	145.4	149.0	153.6	157.2	186.9
61.5°	124.0	130.4	134.5	139.0	142.2	167.3
62°	108.0	114.9	119.9	124.4	126.7	150.4
62.5°	93.9	99.4	105.3	109.8	111.2	134.0
63°	80.2	84.3	90.7	95.3	96.2	117.1
63.5°	67.9	71.6	78.4	83.0	83.0	100.7
64°	56.5	60.2	67.0	71.6	71.1	84.3
64.5°	48.8	50.1	56.5	60.6	59.3	71.1
65°	41.5	41.0	47.4	50.6	49.7	59.3
65.5°	33.7	33.3	38.7	41.5	40.6	49.2
66°	26.4	26.4	30.5	33.7	32.4	40.1



TEST NUMBER: P776560
 CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	10.5	13.2	14.6	14.6	14.6	19.6
68°	7.7	10.5	11.4	12.3	10.5	16.4
68.5°	5.9	7.7	8.2	9.6	9.6	13.7
69°	5.0	5.0	5.0	7.3	8.2	10.5
69.5°	5.0	5.0	4.6	5.0	6.8	7.7
70°	4.6	4.6	4.6	4.6	5.5	4.6
70.5°	4.6	4.6	4.6	4.6	4.6	4.6
71°	4.6	4.6	4.6	4.6	4.1	4.6
71.5°	4.1	4.1	4.1	4.1	4.1	4.1
72°	4.1	4.1	4.1	4.1	4.1	4.1
72.5°	4.1	4.1	4.1	4.1	4.1	4.1
73°	4.1	4.1	4.1	4.1	3.6	4.1
73.5°	3.6	3.6	3.6	3.6	3.6	3.6
74°	3.6	3.6	3.6	3.6	3.6	3.6
74.5°	3.6	3.6	3.6	3.6	3.6	3.6
75°	3.6	3.6	3.6	3.6	3.2	3.6
75.5°	3.2	3.2	3.2	3.2	3.2	3.2
76°	3.2	3.2	3.2	3.2	3.2	3.2
76.5°	3.2	3.2	3.2	3.2	3.2	3.2
77°	3.2	3.2	3.2	3.2	2.7	3.2
77.5°	2.7	2.7	2.7	2.7	2.7	2.7
78°	2.7	2.7	2.7	2.7	2.7	2.7
78.5°	2.7	2.7	2.7	2.7	2.3	2.7
79°	2.7	2.7	2.7	2.3	2.3	2.3
79.5°	2.3	2.3	2.3	2.3	2.3	2.3
80°	2.3	2.3	2.3	2.3	1.8	2.3
80.5°	2.3	2.3	2.3	2.3	1.8	1.8
81°	1.8	2.3	2.3	1.8	1.8	1.8
81.5°	1.8	1.8	1.8	1.8	1.4	1.8
82°	1.8	1.8	1.8	1.8	1.4	1.4
82.5°	1.8	1.8	1.8	1.4	1.4	1.4
83°	1.4	1.4	1.4	1.4	0.9	1.4
83.5°	1.4	1.4	1.4	1.4	0.9	0.9
84°	1.4	1.4	1.4	1.4	0.9	0.9
84.5°	0.9	0.9	0.9	0.9	0.5	0.5
85°	0.9	0.9	0.9	0.9	0.5	0.5
85.5°	0.9	0.9	0.9	0.9	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: P776560

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-2700K

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
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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°	2021.0	2040.1	2059.2	2073.4	2077.5	2078.8	2072.5	2062.9	2038.7	2020.0	2001.4
22°	2010.5	2030.1	2049.2	2064.3	2068.4	2069.3	2063.8	2053.8	2028.3	2010.0	1990.4



44°	1190.1	1242.0	1294.0	1328.6	1333.6	1335.9	1325.4	1304.5	1234.3	1196.4	1139.9
44.5°	1157.7	1208.3	1260.3	1294.0	1298.5	1305.8	1296.3	1273.9	1198.7	1162.7	1106.7



66.5°	31.9	39.7	48.3	53.3	53.3	55.2	53.8	50.6	34.2	30.1	24.6
67°	25.5	31.4	38.7	41.9	43.8	45.1	44.2	40.1	24.2	20.5	16.9



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°	1985.9	1980.4	1978.6	1983.6	1993.6	2021.0
22°	1974.5	1969.0	1967.2	1971.7	1982.7	2010.5



44°	1094.8	1078.4	1076.1	1096.2	1116.2	1190.1
44.5°	1063.8	1045.6	1041.9	1061.1	1082.9	1157.7



66.5°	19.1	21.0	23.7	26.4	25.1	31.9
67°	14.6	16.0	17.8	20.1	19.6	25.5

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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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(END OF REPORT)