

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: P776428

Luminaire Tested: HCDJBL3040CSD-HCD6TSQMB-4000lm-4000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776428
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B015-HCD6TSQMB)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD6TSQMB-4000lm-4000K
Description: 6 INCH SQUARE MEDIUM MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

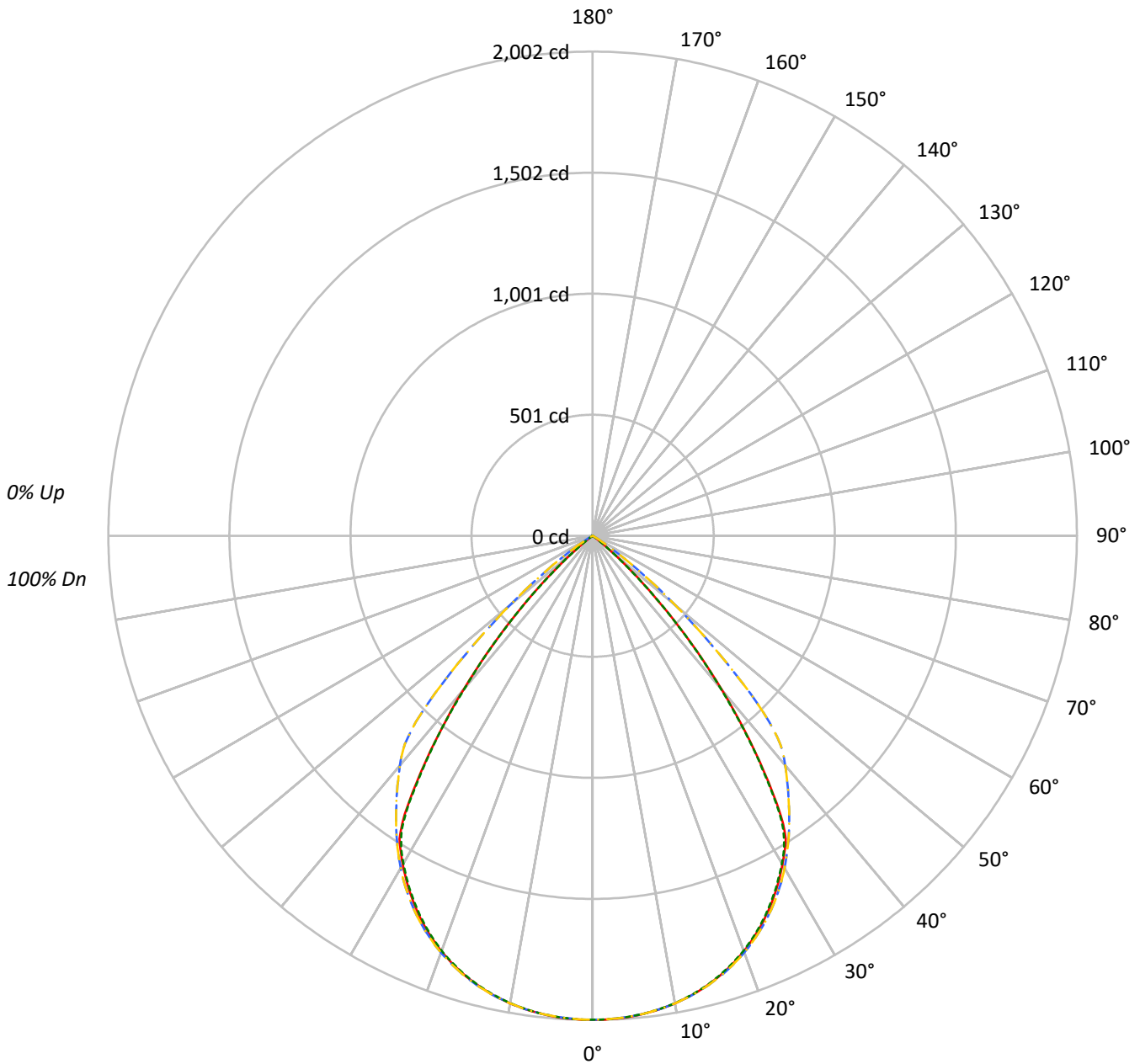
Lumens per Lamp: N/A
Luminaire Lumens: 2887.4 lumens
Efficiency: N/A
Efficacy: 75.0 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.23
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

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



TEST NUMBER: P776428
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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									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	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92																			
2	106	101	96	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84																			
3	100	93	87	83	98	91	86	82	89	84	81	86	83	80	84	81	78	77																			
4	94	86	79	75	92	84	79	74	82	77	73	80	76	72	78	74	71	70																			
5	88	79	72	67	87	78	72	67	76	71	66	74	70	66	73	69	65	64																			
6	83	73	66	61	81	72	66	61	71	65	61	69	64	60	68	63	60	58																			
7	78	68	61	56	77	67	60	56	66	60	56	64	59	55	63	58	55	53																			
8	74	63	56	51	72	62	56	51	61	55	51	60	55	51	59	54	51	49																			
9	69	58	52	47	68	58	52	47	57	51	47	56	51	47	55	50	47	45																			
10	65	55	48	44	64	54	48	44	53	47	43	52	47	43	52	47	43	42																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	86154	86154	86154	86154
5°	86120	86086	86120	86086
10°	85831	85774	85831	85774
15°	85097	85026	85097	85026
20°	83743	83633	83743	83633
25°	81445	81236	81445	81236
30°	78020	77781	78020	77781
35°	68288	67846	68288	67846
40°	46628	46336	46628	46336
45°	24277	24301	24277	24301
50°	7073	6993	7073	6993
55°	210	270	210	270
60°	69	69	69	69
65°	41	41	41	41
70°	50	50	50	50
75°	0	67	0	67
80°	0	0	0	0
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 56134 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.2	6.6
10°-20°	538.1	18.6
20°-30°	789.8	27.4
30°-40°	838.1	29.0
40°-50°	467.9	16.2
50°-60°	63.3	2.2
60°-70°	0.7	0.0
70°-80°	0.2	0.0
80°-90°	0.0	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°	1517.2	52.5
0°-40°	2355.3	81.6
0°-60°	2886.5	100.0
0°-90°	2887.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2887.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2001	2001	2001	2001	2001	
5°	1993	1992	1993	1992	1993	189
15°	1909	1908	1909	1908	1909	538
25°	1714	1710	1714	1710	1714	787
35°	1299	1291	1299	1291	1299	785
45°	399	399	399	399	399	318
55°	3	4	3	4	3	18
65°	0	0	0	0	0	0
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
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°	2001.0	2001.0	2001.0	2001.0	2001.0	2001.0	2001.0	2001.0	2001.0	2001.0	2001.0
0.5°	2001.9	2001.0	2001.0	2000.6	2001.0	2000.6	2001.0	2001.0	2001.9	2001.0	2001.0
1°	2001.5	2001.0	2000.6	2000.6	2001.0	2000.6	2000.6	2001.0	2001.5	2001.0	2000.6
1.5°	2001.0	2000.2	2000.2	2000.2	2000.2	2000.2	2000.2	2000.2	2001.0	2000.2	2000.2
2°	2000.2	1999.8	1999.4	1999.4	1999.8	1999.4	1999.4	1999.8	2000.2	1999.8	1999.4
2.5°	1999.4	1999.0	1998.6	1998.6	1999.0	1998.6	1998.6	1999.0	1999.4	1999.0	1998.6
3°	1998.6	1997.8	1997.8	1997.8	1997.8	1997.8	1997.8	1997.8	1998.6	1997.8	1997.8
3.5°	1997.4	1997.0	1996.6	1996.6	1996.6	1996.6	1996.6	1997.0	1997.4	1997.0	1996.6
4°	1996.2	1995.4	1995.0	1995.0	1995.4	1995.0	1995.0	1995.4	1996.2	1995.4	1995.0
4.5°	1994.6	1993.8	1993.8	1993.4	1993.8	1993.4	1993.8	1993.8	1994.6	1993.8	1993.8
5°	1992.6	1992.2	1991.8	1991.8	1991.8	1991.8	1991.8	1992.2	1992.6	1992.2	1991.8
5.5°	1990.6	1990.2	1989.8	1989.8	1989.8	1989.8	1989.8	1990.2	1990.6	1990.2	1989.8
6°	1988.6	1988.1	1987.7	1987.3	1987.7	1987.3	1987.7	1988.1	1988.6	1988.1	1987.7
6.5°	1986.1	1985.7	1985.3	1985.3	1985.3	1985.3	1985.3	1985.7	1986.1	1985.7	1985.3
7°	1983.7	1983.3	1982.9	1982.5	1982.5	1982.5	1982.9	1983.3	1983.7	1983.3	1982.9
7.5°	1980.9	1980.5	1980.1	1979.7	1979.7	1979.7	1980.1	1980.5	1980.9	1980.5	1980.1
8°	1977.7	1977.3	1977.3	1976.9	1976.9	1976.9	1977.3	1977.3	1977.7	1977.3	1977.3
8.5°	1974.4	1974.0	1974.0	1973.6	1973.2	1973.6	1974.0	1974.0	1974.4	1974.0	1974.0
9°	1970.8	1970.8	1970.4	1970.0	1969.6	1970.0	1970.4	1970.8	1970.8	1970.8	1970.4
9.5°	1967.2	1967.2	1966.8	1966.4	1966.0	1966.4	1966.8	1967.2	1967.2	1967.2	1966.8
10°	1963.2	1963.2	1963.2	1962.3	1961.9	1962.3	1963.2	1963.2	1963.2	1963.2	1963.2
10.5°	1959.1	1959.1	1959.1	1958.3	1957.9	1958.3	1959.1	1959.1	1959.1	1959.1	1959.1
11°	1954.3	1954.7	1954.7	1953.9	1953.1	1953.9	1954.7	1954.7	1954.3	1954.7	1954.7
11.5°	1949.9	1950.3	1950.3	1949.0	1948.2	1949.0	1950.3	1950.3	1949.9	1950.3	1950.3
12°	1945.0	1945.4	1945.4	1944.2	1943.4	1944.2	1945.4	1945.4	1945.0	1945.4	1945.4
12.5°	1939.8	1940.2	1940.6	1939.0	1938.2	1939.0	1940.6	1940.2	1939.8	1940.2	1940.6
13°	1934.1	1934.9	1935.3	1933.7	1932.5	1933.7	1935.3	1934.9	1934.1	1934.9	1935.3
13.5°	1928.5	1929.3	1929.7	1928.1	1926.9	1928.1	1929.7	1929.3	1928.5	1929.3	1929.7
14°	1922.0	1923.2	1924.1	1922.0	1920.8	1922.0	1924.1	1923.2	1922.0	1923.2	1924.1
14.5°	1916.0	1917.2	1918.0	1916.0	1914.4	1916.0	1918.0	1917.2	1916.0	1917.2	1918.0
15°	1909.1	1910.8	1911.6	1909.5	1907.5	1909.5	1911.6	1910.8	1909.1	1910.8	1911.6
15.5°	1902.7	1903.9	1905.1	1902.7	1900.7	1902.7	1905.1	1903.9	1902.7	1903.9	1905.1
16°	1895.4	1897.0	1898.3	1895.8	1893.4	1895.8	1898.3	1897.0	1895.4	1897.0	1898.3
16.5°	1888.2	1889.8	1891.0	1888.6	1886.2	1888.6	1891.0	1889.8	1888.2	1889.8	1891.0
17°	1880.1	1882.5	1883.7	1880.9	1878.1	1880.9	1883.7	1882.5	1880.1	1882.5	1883.7
17.5°	1872.5	1874.5	1876.1	1873.3	1870.0	1873.3	1876.1	1874.5	1872.5	1874.5	1876.1
18°	1864.0	1866.4	1868.0	1864.8	1861.6	1864.8	1868.0	1866.4	1864.0	1866.4	1868.0
18.5°	1855.5	1858.3	1860.0	1856.7	1853.1	1856.7	1860.0	1858.3	1855.5	1858.3	1860.0
19°	1846.7	1849.5	1851.5	1847.5	1843.8	1847.5	1851.5	1849.5	1846.7	1849.5	1851.5
19.5°	1837.4	1840.6	1842.6	1838.6	1835.0	1838.6	1842.6	1840.6	1837.4	1840.6	1842.6
20°	1827.7	1831.3	1833.8	1829.3	1825.3	1829.3	1833.8	1831.3	1827.7	1831.3	1833.8
20.5°	1818.0	1822.1	1824.5	1819.6	1815.2	1819.6	1824.5	1822.1	1818.0	1822.1	1824.5
21°	1808.0	1812.0	1814.8	1810.0	1804.7	1810.0	1814.8	1812.0	1808.0	1812.0	1814.8



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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°	1775.3	1780.5	1783.8	1778.1	1771.7	1778.1	1783.8	1780.5	1775.3	1780.5	1783.8
23°	1764.0	1769.3	1772.9	1766.8	1760.0	1766.8	1772.9	1769.3	1764.0	1769.3	1772.9
23.5°	1752.3	1758.0	1762.0	1755.1	1747.9	1755.1	1762.0	1758.0	1752.3	1758.0	1762.0
24°	1739.8	1746.3	1750.3	1743.1	1735.8	1743.1	1750.3	1746.3	1739.8	1746.3	1750.3
24.5°	1727.3	1733.8	1738.6	1731.0	1723.3	1731.0	1738.6	1733.8	1727.3	1733.8	1738.6
25°	1714.4	1721.3	1726.1	1718.1	1710.0	1718.1	1726.1	1721.3	1714.4	1721.3	1726.1
25.5°	1701.5	1708.4	1714.0	1705.2	1696.7	1705.2	1714.0	1708.4	1701.5	1708.4	1714.0
26°	1688.2	1695.5	1701.1	1692.3	1683.0	1692.3	1701.1	1695.5	1688.2	1695.5	1701.1
26.5°	1674.5	1681.8	1687.8	1678.6	1669.3	1678.6	1687.8	1681.8	1674.5	1681.8	1687.8
27°	1660.0	1668.5	1674.5	1664.9	1655.2	1664.9	1674.5	1668.5	1660.0	1668.5	1674.5
27.5°	1645.5	1654.4	1660.8	1650.3	1641.1	1650.3	1660.8	1654.4	1645.5	1654.4	1660.8
28°	1631.0	1639.9	1646.7	1636.2	1625.7	1636.2	1646.7	1639.9	1631.0	1639.9	1646.7
28.5°	1616.1	1625.3	1632.2	1621.7	1610.8	1621.7	1632.2	1625.3	1616.1	1625.3	1632.2
29°	1600.8	1610.8	1617.3	1606.8	1595.5	1606.8	1617.3	1610.8	1600.8	1610.8	1617.3
29.5°	1585.4	1595.5	1602.4	1591.9	1580.2	1591.9	1602.4	1595.5	1585.4	1595.5	1602.4
30°	1569.3	1580.2	1586.6	1576.6	1564.5	1576.6	1586.6	1580.2	1569.3	1580.2	1586.6
30.5°	1553.6	1564.9	1570.9	1561.3	1548.4	1561.3	1570.9	1564.9	1553.6	1564.9	1570.9
31°	1537.1	1549.2	1554.8	1545.5	1531.8	1545.5	1554.8	1549.2	1537.1	1549.2	1554.8
31.5°	1520.5	1533.4	1538.3	1529.4	1514.9	1529.4	1538.3	1533.4	1520.5	1533.4	1538.3
32°	1503.6	1516.9	1521.7	1513.3	1493.5	1513.3	1521.7	1516.9	1503.6	1516.9	1521.7
32.5°	1485.9	1500.4	1504.8	1496.8	1471.8	1496.8	1504.8	1500.4	1485.9	1500.4	1504.8
33°	1457.2	1483.9	1487.5	1480.2	1448.0	1480.2	1487.5	1483.9	1457.2	1483.9	1487.5
33.5°	1426.2	1467.3	1470.1	1463.3	1415.7	1463.3	1470.1	1467.3	1426.2	1467.3	1470.1
34°	1388.3	1450.4	1452.4	1442.7	1379.9	1442.7	1452.4	1450.4	1388.3	1450.4	1452.4
34.5°	1344.4	1432.3	1434.7	1420.2	1337.1	1420.2	1434.7	1432.3	1344.4	1432.3	1434.7
35°	1299.2	1405.2	1416.9	1397.2	1290.8	1397.2	1416.9	1405.2	1299.2	1405.2	1416.9
35.5°	1254.1	1378.6	1399.2	1368.2	1244.0	1368.2	1399.2	1378.6	1254.1	1378.6	1399.2
36°	1207.3	1342.8	1381.1	1335.9	1197.6	1335.9	1381.1	1342.8	1207.3	1342.8	1381.1
36.5°	1160.2	1304.9	1363.3	1296.8	1152.1	1296.8	1363.3	1304.9	1160.2	1304.9	1363.3
37°	1112.2	1261.7	1345.6	1255.3	1105.3	1255.3	1345.6	1261.7	1112.2	1261.7	1345.6
37.5°	1065.8	1218.6	1327.4	1211.4	1059.4	1211.4	1327.4	1218.6	1065.8	1218.6	1327.4
38°	1017.5	1174.3	1309.7	1166.6	1013.0	1166.6	1309.7	1174.3	1017.5	1174.3	1309.7
38.5°	970.7	1129.9	1291.6	1122.7	966.3	1122.7	1291.6	1129.9	970.7	1129.9	1291.6
39°	923.9	1084.8	1274.2	1079.1	918.7	1079.1	1274.2	1084.8	923.9	1084.8	1274.2
39.5°	877.2	1040.4	1256.5	1035.6	871.5	1035.6	1256.5	1040.4	877.2	1040.4	1256.5
40°	829.6	995.3	1238.8	991.7	824.4	991.7	1238.8	995.3	829.6	995.3	1238.8
40.5°	783.2	950.9	1221.0	947.3	778.4	947.3	1221.0	950.9	783.2	950.9	1221.0
41°	738.1	906.6	1202.9	903.4	732.9	903.4	1202.9	906.6	738.1	906.6	1202.9
41.5°	692.9	862.3	1182.7	858.6	689.3	858.6	1182.7	862.3	692.9	862.3	1182.7
42°	647.8	817.9	1160.2	814.3	645.4	814.3	1160.2	817.9	647.8	817.9	1160.2
42.5°	604.7	774.4	1130.7	770.3	601.8	770.3	1130.7	774.4	604.7	774.4	1130.7
43°	561.5	730.4	1097.3	727.2	559.5	727.2	1097.3	730.4	561.5	730.4	1097.3
43.5°	519.6	687.7	1061.4	684.9	517.2	684.9	1061.4	687.7	519.6	687.7	1061.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	398.7	563.1	921.9	561.5	399.1	561.5	921.9	563.1	398.7	563.1	921.9
45.5°	362.4	522.8	869.5	521.6	362.4	521.6	869.5	522.8	362.4	522.8	869.5
46°	326.9	483.3	817.5	482.1	326.9	482.1	817.5	483.3	326.9	483.3	817.5
46.5°	291.9	444.6	766.3	443.4	291.0	443.4	766.3	444.6	291.9	444.6	766.3
47°	257.6	406.7	715.1	406.7	256.4	406.7	715.1	406.7	257.6	406.7	715.1
47.5°	224.5	370.9	666.3	371.3	224.9	371.3	666.3	370.9	224.5	370.9	666.3
48°	195.5	336.2	619.2	336.2	195.5	336.2	619.2	336.2	195.5	336.2	619.2
48.5°	168.9	302.3	573.6	301.9	168.5	301.9	573.6	302.3	168.9	302.3	573.6
49°	146.7	268.9	529.3	268.5	143.1	268.5	529.3	268.9	146.7	268.9	529.3
49.5°	125.8	236.6	486.2	236.6	123.4	236.6	486.2	236.6	125.8	236.6	486.2
50°	105.6	207.2	444.2	207.2	104.4	207.2	444.2	207.2	105.6	207.2	444.2
50.5°	87.1	181.4	403.9	179.0	86.3	179.0	403.9	181.4	87.1	181.4	403.9
51°	71.4	156.8	367.6	153.2	71.4	153.2	367.6	156.8	71.4	156.8	367.6
51.5°	57.2	135.4	332.2	132.2	56.0	132.2	332.2	135.4	57.2	135.4	332.2
52°	45.6	114.5	297.5	112.1	43.1	112.1	297.5	114.5	45.6	114.5	297.5
52.5°	34.3	95.1	263.6	92.7	30.6	92.7	263.6	95.1	34.3	95.1	263.6
53°	23.0	77.8	232.2	76.2	18.9	76.2	232.2	77.8	23.0	77.8	232.2
53.5°	15.3	62.1	203.6	59.7	11.3	59.7	203.6	62.1	15.3	62.1	203.6
54°	7.3	50.0	177.0	46.4	6.4	46.4	177.0	50.0	7.3	50.0	177.0
54.5°	4.4	38.3	154.0	34.3	4.8	34.3	154.0	38.3	4.4	38.3	154.0
55°	2.8	26.6	132.2	22.6	3.6	22.6	132.2	26.6	2.8	26.6	132.2
55.5°	1.2	16.9	112.1	15.3	2.4	15.3	112.1	16.9	1.2	16.9	112.1
56°	0.8	7.3	93.5	11.3	1.2	11.3	93.5	7.3	0.8	7.3	93.5
56.5°	0.8	3.6	75.8	6.9	0.8	6.9	75.8	3.6	0.8	3.6	75.8
57°	0.8	2.0	61.7	3.6	0.8	3.6	61.7	2.0	0.8	2.0	61.7
57.5°	0.8	1.6	49.6	1.6	0.8	1.6	49.6	1.6	0.8	1.6	49.6
58°	0.8	0.8	39.9	0.8	0.8	0.8	39.9	0.8	0.8	0.8	39.9
58.5°	0.8	0.8	31.0	0.8	0.8	0.8	31.0	0.8	0.8	0.8	31.0
59°	0.8	0.8	23.0	0.8	0.8	0.8	23.0	0.8	0.8	0.8	23.0
59.5°	0.8	0.8	16.9	0.8	0.8	0.8	16.9	0.8	0.8	0.8	16.9
60°	0.8	0.8	11.7	0.8	0.8	0.8	11.7	0.8	0.8	0.8	11.7
60.5°	0.8	0.8	8.1	0.8	0.8	0.8	8.1	0.8	0.8	0.8	8.1
61°	0.8	0.8	5.2	0.8	0.8	0.8	5.2	0.8	0.8	0.8	5.2
61.5°	0.8	0.8	3.2	0.8	0.8	0.8	3.2	0.8	0.8	0.8	3.2
62°	0.4	0.4	1.6	0.8	0.8	0.8	1.6	0.4	0.4	0.4	1.6
62.5°	0.4	0.4	1.2	0.4	0.4	0.4	1.2	0.4	0.4	0.4	1.2
63°	0.4	0.4	0.8	0.4	0.4	0.4	0.8	0.4	0.4	0.4	0.8
63.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
64°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
64.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
65°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
65.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
66°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4



TEST NUMBER: P776428

CATALOG NUMBER: HCDJBL3040CSD-HCD6TSQMB-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
68°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
68.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
69°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
69.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
70°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
70.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
71°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
71.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
72°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
72.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
73°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
73.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
74°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
74.5°	0.4	0.4	0.0	0.4	0.4	0.4	0.0	0.4	0.4	0.4	0.0
75°	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
75.5°	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
76°	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
76.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	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	0.0	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: P776428
CATALOG NUMBER: HCDJBL3040CSD-HCD6TSQMB-4000lm-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: P776428

CATALOG NUMBER: HCDJBL3040CSD-HCD6TSQMB-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2001.0	2001.0	2001.0	2001.0	2001.0	2001.0
0.5°	2000.6	2001.0	2000.6	2001.0	2001.0	2001.9
1°	2000.6	2001.0	2000.6	2000.6	2001.0	2001.5
1.5°	2000.2	2000.2	2000.2	2000.2	2000.2	2001.0
2°	1999.4	1999.8	1999.4	1999.4	1999.8	2000.2
2.5°	1998.6	1999.0	1998.6	1998.6	1999.0	1999.4
3°	1997.8	1997.8	1997.8	1997.8	1997.8	1998.6
3.5°	1996.6	1996.6	1996.6	1996.6	1997.0	1997.4
4°	1995.0	1995.4	1995.0	1995.0	1995.4	1996.2
4.5°	1993.4	1993.8	1993.4	1993.8	1993.8	1994.6
5°	1991.8	1991.8	1991.8	1991.8	1992.2	1992.6
5.5°	1989.8	1989.8	1989.8	1989.8	1990.2	1990.6
6°	1987.3	1987.7	1987.3	1987.7	1988.1	1988.6
6.5°	1985.3	1985.3	1985.3	1985.3	1985.7	1986.1
7°	1982.5	1982.5	1982.5	1982.9	1983.3	1983.7
7.5°	1979.7	1979.7	1979.7	1980.1	1980.5	1980.9
8°	1976.9	1976.9	1976.9	1977.3	1977.3	1977.7
8.5°	1973.6	1973.2	1973.6	1974.0	1974.0	1974.4
9°	1970.0	1969.6	1970.0	1970.4	1970.8	1970.8
9.5°	1966.4	1966.0	1966.4	1966.8	1967.2	1967.2
10°	1962.3	1961.9	1962.3	1963.2	1963.2	1963.2
10.5°	1958.3	1957.9	1958.3	1959.1	1959.1	1959.1
11°	1953.9	1953.1	1953.9	1954.7	1954.7	1954.3
11.5°	1949.0	1948.2	1949.0	1950.3	1950.3	1949.9
12°	1944.2	1943.4	1944.2	1945.4	1945.4	1945.0
12.5°	1939.0	1938.2	1939.0	1940.6	1940.2	1939.8
13°	1933.7	1932.5	1933.7	1935.3	1934.9	1934.1
13.5°	1928.1	1926.9	1928.1	1929.7	1929.3	1928.5
14°	1922.0	1920.8	1922.0	1924.1	1923.2	1922.0
14.5°	1916.0	1914.4	1916.0	1918.0	1917.2	1916.0
15°	1909.5	1907.5	1909.5	1911.6	1910.8	1909.1
15.5°	1902.7	1900.7	1902.7	1905.1	1903.9	1902.7
16°	1895.8	1893.4	1895.8	1898.3	1897.0	1895.4
16.5°	1888.6	1886.2	1888.6	1891.0	1889.8	1888.2
17°	1880.9	1878.1	1880.9	1883.7	1882.5	1880.1
17.5°	1873.3	1870.0	1873.3	1876.1	1874.5	1872.5
18°	1864.8	1861.6	1864.8	1868.0	1866.4	1864.0
18.5°	1856.7	1853.1	1856.7	1860.0	1858.3	1855.5
19°	1847.5	1843.8	1847.5	1851.5	1849.5	1846.7
19.5°	1838.6	1835.0	1838.6	1842.6	1840.6	1837.4
20°	1829.3	1825.3	1829.3	1833.8	1831.3	1827.7
20.5°	1819.6	1815.2	1819.6	1824.5	1822.1	1818.0
21°	1810.0	1804.7	1810.0	1814.8	1812.0	1808.0

TEST NUMBER: P776428

CATALOG NUMBER: HCDJBL3040CSD-HCD6TSQMB-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1778.1	1771.7	1778.1	1783.8	1780.5	1775.3
23°	1766.8	1760.0	1766.8	1772.9	1769.3	1764.0
23.5°	1755.1	1747.9	1755.1	1762.0	1758.0	1752.3
24°	1743.1	1735.8	1743.1	1750.3	1746.3	1739.8
24.5°	1731.0	1723.3	1731.0	1738.6	1733.8	1727.3
25°	1718.1	1710.0	1718.1	1726.1	1721.3	1714.4
25.5°	1705.2	1696.7	1705.2	1714.0	1708.4	1701.5
26°	1692.3	1683.0	1692.3	1701.1	1695.5	1688.2
26.5°	1678.6	1669.3	1678.6	1687.8	1681.8	1674.5
27°	1664.9	1655.2	1664.9	1674.5	1668.5	1660.0
27.5°	1650.3	1641.1	1650.3	1660.8	1654.4	1645.5
28°	1636.2	1625.7	1636.2	1646.7	1639.9	1631.0
28.5°	1621.7	1610.8	1621.7	1632.2	1625.3	1616.1
29°	1606.8	1595.5	1606.8	1617.3	1610.8	1600.8
29.5°	1591.9	1580.2	1591.9	1602.4	1595.5	1585.4
30°	1576.6	1564.5	1576.6	1586.6	1580.2	1569.3
30.5°	1561.3	1548.4	1561.3	1570.9	1564.9	1553.6
31°	1545.5	1531.8	1545.5	1554.8	1549.2	1537.1
31.5°	1529.4	1514.9	1529.4	1538.3	1533.4	1520.5
32°	1513.3	1493.5	1513.3	1521.7	1516.9	1503.6
32.5°	1496.8	1471.8	1496.8	1504.8	1500.4	1485.9
33°	1480.2	1448.0	1480.2	1487.5	1483.9	1457.2
33.5°	1463.3	1415.7	1463.3	1470.1	1467.3	1426.2
34°	1442.7	1379.9	1442.7	1452.4	1450.4	1388.3
34.5°	1420.2	1337.1	1420.2	1434.7	1432.3	1344.4
35°	1397.2	1290.8	1397.2	1416.9	1405.2	1299.2
35.5°	1368.2	1244.0	1368.2	1399.2	1378.6	1254.1
36°	1335.9	1197.6	1335.9	1381.1	1342.8	1207.3
36.5°	1296.8	1152.1	1296.8	1363.3	1304.9	1160.2
37°	1255.3	1105.3	1255.3	1345.6	1261.7	1112.2
37.5°	1211.4	1059.4	1211.4	1327.4	1218.6	1065.8
38°	1166.6	1013.0	1166.6	1309.7	1174.3	1017.5
38.5°	1122.7	966.3	1122.7	1291.6	1129.9	970.7
39°	1079.1	918.7	1079.1	1274.2	1084.8	923.9
39.5°	1035.6	871.5	1035.6	1256.5	1040.4	877.2
40°	991.7	824.4	991.7	1238.8	995.3	829.6
40.5°	947.3	778.4	947.3	1221.0	950.9	783.2
41°	903.4	732.9	903.4	1202.9	906.6	738.1
41.5°	858.6	689.3	858.6	1182.7	862.3	692.9
42°	814.3	645.4	814.3	1160.2	817.9	647.8
42.5°	770.3	601.8	770.3	1130.7	774.4	604.7
43°	727.2	559.5	727.2	1097.3	730.4	561.5
43.5°	684.9	517.2	684.9	1061.4	687.7	519.6



TEST NUMBER: P776428

CATALOG NUMBER: HCDJBL3040CSD-HCD6TSQMB-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	561.5	399.1	561.5	921.9	563.1	398.7
45.5°	521.6	362.4	521.6	869.5	522.8	362.4
46°	482.1	326.9	482.1	817.5	483.3	326.9
46.5°	443.4	291.0	443.4	766.3	444.6	291.9
47°	406.7	256.4	406.7	715.1	406.7	257.6
47.5°	371.3	224.9	371.3	666.3	370.9	224.5
48°	336.2	195.5	336.2	619.2	336.2	195.5
48.5°	301.9	168.5	301.9	573.6	302.3	168.9
49°	268.5	143.1	268.5	529.3	268.9	146.7
49.5°	236.6	123.4	236.6	486.2	236.6	125.8
50°	207.2	104.4	207.2	444.2	207.2	105.6
50.5°	179.0	86.3	179.0	403.9	181.4	87.1
51°	153.2	71.4	153.2	367.6	156.8	71.4
51.5°	132.2	56.0	132.2	332.2	135.4	57.2
52°	112.1	43.1	112.1	297.5	114.5	45.6
52.5°	92.7	30.6	92.7	263.6	95.1	34.3
53°	76.2	18.9	76.2	232.2	77.8	23.0
53.5°	59.7	11.3	59.7	203.6	62.1	15.3
54°	46.4	6.4	46.4	177.0	50.0	7.3
54.5°	34.3	4.8	34.3	154.0	38.3	4.4
55°	22.6	3.6	22.6	132.2	26.6	2.8
55.5°	15.3	2.4	15.3	112.1	16.9	1.2
56°	11.3	1.2	11.3	93.5	7.3	0.8
56.5°	6.9	0.8	6.9	75.8	3.6	0.8
57°	3.6	0.8	3.6	61.7	2.0	0.8
57.5°	1.6	0.8	1.6	49.6	1.6	0.8
58°	0.8	0.8	0.8	39.9	0.8	0.8
58.5°	0.8	0.8	0.8	31.0	0.8	0.8
59°	0.8	0.8	0.8	23.0	0.8	0.8
59.5°	0.8	0.8	0.8	16.9	0.8	0.8
60°	0.8	0.8	0.8	11.7	0.8	0.8
60.5°	0.8	0.8	0.8	8.1	0.8	0.8
61°	0.8	0.8	0.8	5.2	0.8	0.8
61.5°	0.8	0.8	0.8	3.2	0.8	0.8
62°	0.8	0.8	0.8	1.6	0.4	0.4
62.5°	0.4	0.4	0.4	1.2	0.4	0.4
63°	0.4	0.4	0.4	0.8	0.4	0.4
63.5°	0.4	0.4	0.4	0.4	0.4	0.4
64°	0.4	0.4	0.4	0.4	0.4	0.4
64.5°	0.4	0.4	0.4	0.4	0.4	0.4
65°	0.4	0.4	0.4	0.4	0.4	0.4
65.5°	0.4	0.4	0.4	0.4	0.4	0.4
66°	0.4	0.4	0.4	0.4	0.4	0.4



TEST NUMBER: P776428
 CATALOG NUMBER: HCDJBL3040CSD-HCD6TSQMB-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	0.4	0.4	0.4	0.4	0.4	0.4
68°	0.4	0.4	0.4	0.4	0.4	0.4
68.5°	0.4	0.4	0.4	0.4	0.4	0.4
69°	0.4	0.4	0.4	0.4	0.4	0.4
69.5°	0.4	0.4	0.4	0.4	0.4	0.4
70°	0.4	0.4	0.4	0.4	0.4	0.4
70.5°	0.4	0.4	0.4	0.4	0.4	0.4
71°	0.4	0.4	0.4	0.4	0.4	0.4
71.5°	0.4	0.4	0.4	0.4	0.4	0.4
72°	0.4	0.4	0.4	0.4	0.4	0.4
72.5°	0.4	0.4	0.4	0.4	0.4	0.4
73°	0.4	0.4	0.4	0.4	0.4	0.4
73.5°	0.4	0.4	0.4	0.4	0.4	0.4
74°	0.4	0.4	0.4	0.4	0.4	0.4
74.5°	0.4	0.4	0.4	0.0	0.4	0.4
75°	0.4	0.4	0.4	0.0	0.0	0.0
75.5°	0.4	0.4	0.4	0.0	0.0	0.0
76°	0.0	0.4	0.0	0.0	0.0	0.0
76.5°	0.0	0.0	0.0	0.0	0.0	0.0
77°	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0
78°	0.0	0.0	0.0	0.0	0.0	0.0
78.5°	0.0	0.0	0.0	0.0	0.0	0.0
79°	0.0	0.0	0.0	0.0	0.0	0.0
79.5°	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0
80.5°	0.0	0.0	0.0	0.0	0.0	0.0
81°	0.0	0.0	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	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: P776428
CATALOG NUMBER: HCDJBL3040CSD-HCD6TSQMB-4000lm-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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— 0°-180° - - 45°-225° - - - - 90°-270° - · - 135°-315°

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21.5°	1797.5	1801.9	1804.7	1799.5	1793.8	1799.5	1804.7	1801.9	1797.5	1801.9	1804.7
22°	1786.6	1791.4	1794.3	1789.0	1783.0	1789.0	1794.3	1791.4	1786.6	1791.4	1794.3



44°	478.1	645.0	1017.9	643.0	476.1	643.0	1017.9	645.0	478.1	645.0	1017.9
44.5°	438.2	603.9	970.7	602.2	436.6	602.2	970.7	603.9	438.2	603.9	970.7



66.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
67°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4



89°	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

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21.5°	1799.5	1793.8	1799.5	1804.7	1801.9	1797.5
22°	1789.0	1783.0	1789.0	1794.3	1791.4	1786.6



44°	643.0	476.1	643.0	1017.9	645.0	478.1
44.5°	602.2	436.6	602.2	970.7	603.9	438.2

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66.5°	0.4	0.4	0.4	0.4	0.4	0.4
67°	0.4	0.4	0.4	0.4	0.4	0.4

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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)