

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: P776836

Luminaire Tested: HCDJBS4050CSD-HCD8TSQMB-5000lm-3000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776836
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B024-HCD8TSQMB)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD8TSQMB-5000lm-3000K
Description: 8 INCH SQUARE MEDIUM MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

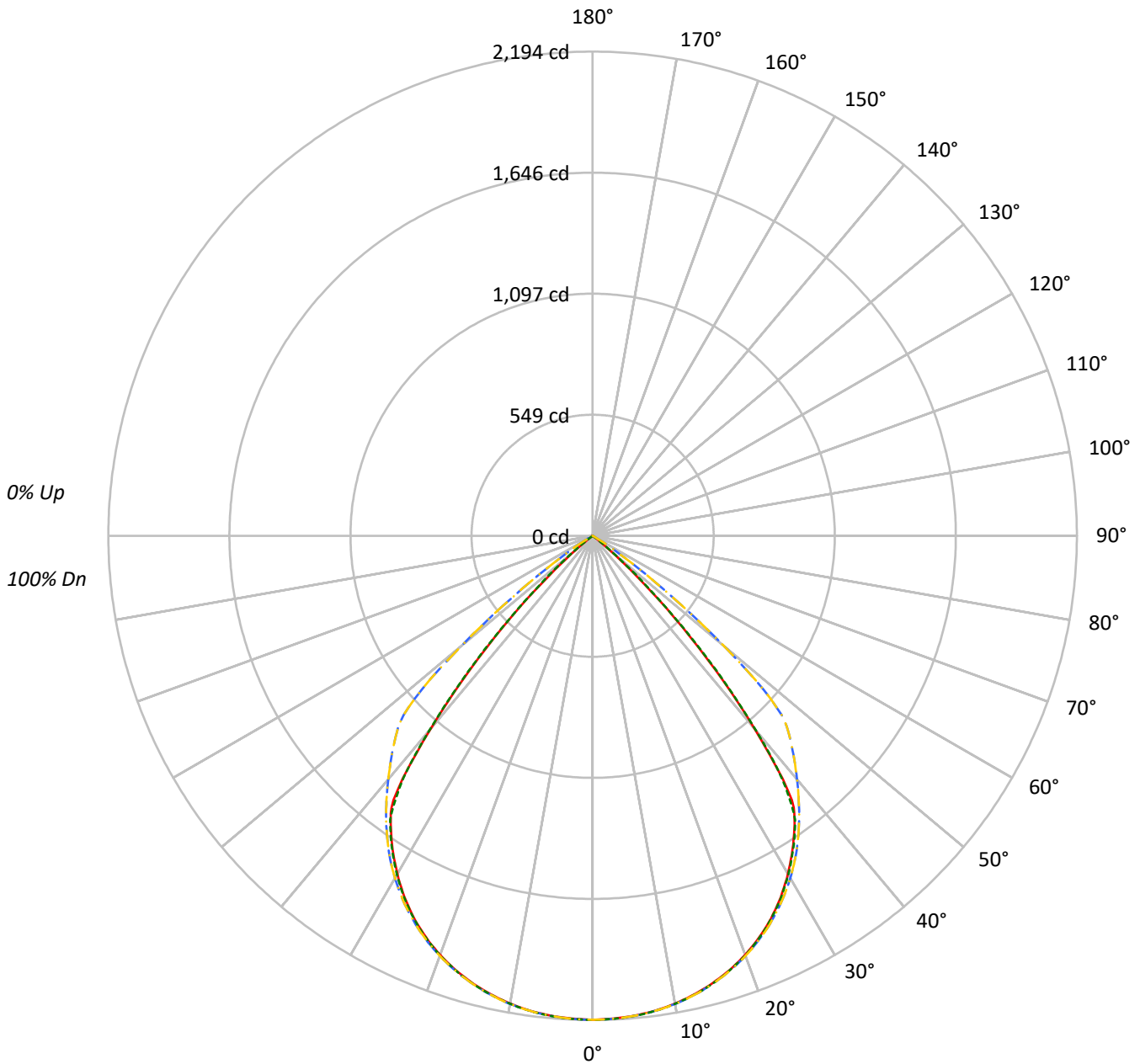
Lumens per Lamp: N/A
Luminaire Lumens: 3408.0 lumens
Efficiency: N/A
Efficacy: 71.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.2 / 1.28
Luminous Opening: Rectangular (W 0.67' x L: 0.67' x H: 0')CIE Type: Direct

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	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	113	110	107	104	110	107	105	103	103	101	100	100	98	97	96	95	94	92					92			
2	106	101	96	92	104	99	95	91	96	92	89	92	90	87	90	87	85	84					84			
3	100	92	87	82	98	91	86	81	88	84	80	86	82	79	83	80	77	76					76			
4	93	85	78	73	91	84	78	73	81	76	72	79	75	71	77	74	70	69					69			
5	88	78	71	66	86	77	71	66	75	70	65	73	68	65	72	67	64	62					62			
6	82	72	65	60	81	71	64	60	69	64	59	68	63	59	67	62	58	57					57			
7	77	66	59	55	76	66	59	54	64	58	54	63	58	54	62	57	53	52					52			
8	72	62	55	50	71	61	54	50	60	54	50	59	53	49	58	53	49	47					47			
9	68	57	50	46	67	57	50	46	56	50	45	55	49	45	54	49	45	44					44			
10	64	53	47	42	63	53	46	42	52	46	42	51	46	42	50	45	42	40					40			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	52587	52587	52587	52587
5°	52530	52564	52530	52564
10°	52402	52437	52402	52437
15°	52101	52146	52101	52146
20°	51563	51611	51563	51611
25°	50600	50660	50600	50660
30°	48977	49082	48977	49082
35°	46669	46803	46669	46803
40°	35771	36075	35771	36075
45°	17739	18193	17739	18193
50°	3898	4749	3898	4749
55°	59	79	59	79
60°	43	67	43	67
65°	51	51	51	51
70°	35	35	35	35
75°	46	46	46	46
80°	0	0	0	0
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°

Vertical Angle: 45°

Luminance: 42483 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.5	6.1
10°-20°	592.4	17.4
20°-30°	882.0	25.9
30°-40°	997.7	29.3
40°-50°	636.7	18.7
50°-60°	90.3	2.7
60°-70°	1.0	0.0
70°-80°	0.4	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°	1681.9	49.4
0°-40°	2679.6	78.6
0°-60°	3406.6	100.0
0°-90°	3408.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3408.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2193	2193	2193	2193	2193	
5°	2182	2184	2182	2184	2182	207
15°	2099	2101	2099	2101	2099	592
25°	1912	1915	1912	1915	1912	879
35°	1594	1599	1594	1599	1594	968
45°	523	536	523	536	523	418
55°	1	2	1	2	1	13
65°	1	1	1	1	1	1
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°	2193.1	2193.1	2193.1	2193.1	2193.1	2193.1	2193.1	2193.1	2193.1	2193.1	2193.1
0.5°	2192.1	2192.6	2193.1	2193.5	2193.5	2193.5	2193.1	2192.6	2192.1	2192.6	2193.1
1°	2191.7	2192.1	2192.6	2193.1	2193.1	2193.1	2192.6	2192.1	2191.7	2192.1	2192.6
1.5°	2191.2	2191.7	2192.1	2192.6	2192.6	2192.6	2192.1	2191.7	2191.2	2191.7	2192.1
2°	2190.7	2190.7	2191.7	2192.1	2191.7	2192.1	2191.7	2190.7	2190.7	2190.7	2191.7
2.5°	2189.8	2190.3	2190.7	2191.2	2191.2	2191.2	2190.7	2190.3	2189.8	2190.3	2190.7
3°	2188.9	2188.9	2189.8	2190.3	2189.8	2190.3	2189.8	2188.9	2188.9	2188.9	2189.8
3.5°	2187.5	2188.0	2188.4	2188.9	2188.9	2188.9	2188.4	2188.0	2187.5	2188.0	2188.4
4°	2186.1	2186.6	2187.0	2187.5	2187.0	2187.5	2187.0	2186.6	2186.1	2186.6	2187.0
4.5°	2184.2	2184.7	2185.2	2185.6	2185.6	2185.6	2185.2	2184.7	2184.2	2184.7	2185.2
5°	2182.4	2182.8	2183.8	2183.8	2183.8	2183.8	2183.8	2182.8	2182.4	2182.8	2183.8
5.5°	2180.5	2181.0	2181.4	2181.9	2181.4	2181.9	2181.4	2181.0	2180.5	2181.0	2181.4
6°	2178.2	2178.7	2179.1	2179.6	2179.6	2179.6	2179.1	2178.7	2178.2	2178.7	2179.1
6.5°	2175.9	2176.3	2176.8	2177.3	2176.8	2177.3	2176.8	2176.3	2175.9	2176.3	2176.8
7°	2173.1	2173.6	2174.5	2174.5	2174.5	2174.5	2174.5	2173.6	2173.1	2173.6	2174.5
7.5°	2170.3	2170.8	2171.2	2171.7	2171.2	2171.7	2171.2	2170.8	2170.3	2170.8	2171.2
8°	2167.0	2167.5	2168.4	2168.4	2168.4	2168.4	2168.4	2167.5	2167.0	2167.5	2168.4
8.5°	2163.8	2164.3	2165.2	2165.2	2164.7	2165.2	2165.2	2164.3	2163.8	2164.3	2165.2
9°	2160.1	2160.5	2161.5	2161.9	2161.5	2161.9	2161.5	2160.5	2160.1	2160.5	2161.5
9.5°	2156.4	2156.8	2157.8	2158.2	2157.3	2158.2	2157.8	2156.8	2156.4	2156.8	2157.8
10°	2152.2	2153.1	2154.0	2154.0	2153.6	2154.0	2154.0	2153.1	2152.2	2153.1	2154.0
10.5°	2148.0	2148.9	2149.9	2149.9	2149.4	2149.9	2149.9	2148.9	2148.0	2148.9	2149.9
11°	2143.4	2144.3	2145.7	2145.2	2144.7	2145.2	2145.7	2144.3	2143.4	2144.3	2145.7
11.5°	2138.7	2139.6	2141.0	2140.6	2140.1	2140.6	2141.0	2139.6	2138.7	2139.6	2141.0
12°	2133.6	2134.5	2135.9	2135.9	2135.0	2135.9	2135.9	2134.5	2133.6	2134.5	2135.9
12.5°	2128.5	2129.4	2130.8	2130.8	2129.9	2130.8	2130.8	2129.4	2128.5	2129.4	2130.8
13°	2122.9	2124.3	2125.7	2125.7	2124.8	2125.7	2125.7	2124.3	2122.9	2124.3	2125.7
13.5°	2117.3	2118.7	2120.1	2120.1	2119.2	2120.1	2120.1	2118.7	2117.3	2118.7	2120.1
14°	2111.3	2112.7	2114.1	2114.1	2113.2	2114.1	2114.1	2112.7	2111.3	2112.7	2114.1
14.5°	2105.3	2106.7	2108.1	2108.1	2107.1	2108.1	2108.1	2106.7	2105.3	2106.7	2108.1
15°	2098.8	2100.2	2102.0	2101.5	2100.6	2101.5	2102.0	2100.2	2098.8	2100.2	2102.0
15.5°	2092.3	2093.7	2095.5	2095.0	2094.1	2095.0	2095.5	2093.7	2092.3	2093.7	2095.5
16°	2085.3	2086.7	2088.5	2088.5	2087.1	2088.5	2088.5	2086.7	2085.3	2086.7	2088.5
16.5°	2078.3	2079.7	2081.6	2081.6	2080.2	2081.6	2081.6	2079.7	2078.3	2079.7	2081.6
17°	2070.4	2072.3	2074.6	2074.1	2072.7	2074.1	2074.6	2072.3	2070.4	2072.3	2074.6
17.5°	2063.0	2064.8	2066.7	2066.7	2065.3	2066.7	2066.7	2064.8	2063.0	2064.8	2066.7
18°	2055.1	2057.0	2059.3	2058.8	2057.0	2058.8	2059.3	2057.0	2055.1	2057.0	2059.3
18.5°	2046.7	2049.1	2050.9	2050.4	2048.6	2050.4	2050.9	2049.1	2046.7	2049.1	2050.9
19°	2038.4	2040.7	2042.6	2042.1	2040.2	2042.1	2042.6	2040.7	2038.4	2040.7	2042.6
19.5°	2029.5	2031.9	2034.2	2033.7	2031.9	2033.7	2034.2	2031.9	2029.5	2031.9	2034.2
20°	2020.7	2023.0	2025.4	2024.9	2022.6	2024.9	2025.4	2023.0	2020.7	2023.0	2025.4
20.5°	2011.0	2013.8	2016.5	2015.6	2013.3	2015.6	2016.5	2013.8	2011.0	2013.8	2016.5
21°	2001.2	2004.5	2007.2	2006.3	2003.5	2006.3	2007.2	2004.5	2001.2	2004.5	2007.2



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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°	1970.5	1974.3	1977.5	1976.1	1972.9	1976.1	1977.5	1974.3	1970.5	1974.3	1977.5
23°	1959.4	1963.6	1967.3	1965.4	1961.7	1965.4	1967.3	1963.6	1959.4	1963.6	1967.3
23.5°	1948.3	1952.9	1956.6	1954.3	1950.6	1954.3	1956.6	1952.9	1948.3	1952.9	1956.6
24°	1937.1	1941.3	1945.5	1943.1	1939.0	1943.1	1945.5	1941.3	1937.1	1941.3	1945.5
24.5°	1925.0	1929.7	1934.3	1931.5	1927.3	1931.5	1934.3	1929.7	1925.0	1929.7	1934.3
25°	1912.5	1918.1	1922.7	1919.5	1914.8	1919.5	1922.7	1918.1	1912.5	1918.1	1922.7
25.5°	1899.5	1906.0	1911.1	1907.4	1902.3	1907.4	1911.1	1906.0	1899.5	1906.0	1911.1
26°	1886.9	1893.4	1899.0	1894.8	1889.7	1894.8	1899.0	1893.4	1886.9	1893.4	1899.0
26.5°	1873.0	1880.4	1886.5	1881.8	1876.2	1881.8	1886.5	1880.4	1873.0	1880.4	1886.5
27°	1859.5	1867.0	1873.9	1868.4	1862.3	1868.4	1873.9	1867.0	1859.5	1867.0	1873.9
27.5°	1845.6	1853.5	1860.9	1854.9	1848.4	1854.9	1860.9	1853.5	1845.6	1853.5	1860.9
28°	1830.7	1839.6	1847.4	1840.9	1834.0	1840.9	1847.4	1839.6	1830.7	1839.6	1847.4
28.5°	1815.9	1825.2	1834.0	1827.0	1819.1	1827.0	1834.0	1825.2	1815.9	1825.2	1834.0
29°	1800.5	1810.3	1820.0	1812.1	1804.2	1812.1	1820.0	1810.3	1800.5	1810.3	1820.0
29.5°	1785.2	1795.4	1805.6	1797.3	1788.5	1797.3	1805.6	1795.4	1785.2	1795.4	1805.6
30°	1768.9	1780.1	1791.2	1782.4	1772.7	1782.4	1791.2	1780.1	1768.9	1780.1	1791.2
30.5°	1752.7	1764.8	1776.4	1766.6	1756.9	1766.6	1776.4	1764.8	1752.7	1764.8	1776.4
31°	1736.4	1748.5	1761.0	1750.8	1740.6	1750.8	1761.0	1748.5	1736.4	1748.5	1761.0
31.5°	1719.7	1732.7	1745.7	1735.0	1723.4	1735.0	1745.7	1732.7	1719.7	1732.7	1745.7
32°	1703.0	1716.4	1729.9	1718.8	1706.7	1718.8	1729.9	1716.4	1703.0	1716.4	1729.9
32.5°	1685.8	1699.7	1713.7	1702.0	1689.5	1702.0	1713.7	1699.7	1685.8	1699.7	1713.7
33°	1668.1	1683.0	1697.4	1685.3	1672.3	1685.3	1697.4	1683.0	1668.1	1683.0	1697.4
33.5°	1650.0	1665.8	1680.2	1668.6	1654.7	1668.6	1680.2	1665.8	1650.0	1665.8	1680.2
34°	1631.4	1649.1	1663.0	1651.4	1636.6	1651.4	1663.0	1649.1	1631.4	1649.1	1663.0
34.5°	1612.9	1631.4	1645.8	1633.8	1618.0	1633.8	1645.8	1631.4	1612.9	1631.4	1645.8
35°	1594.3	1613.8	1627.7	1616.1	1598.9	1616.1	1627.7	1613.8	1594.3	1613.8	1627.7
35.5°	1574.8	1596.1	1610.1	1598.5	1579.4	1598.5	1610.1	1596.1	1574.8	1596.1	1610.1
36°	1555.3	1578.0	1592.0	1580.3	1548.3	1580.3	1592.0	1578.0	1555.3	1578.0	1592.0
36.5°	1532.0	1559.0	1573.4	1561.8	1513.9	1561.8	1573.4	1559.0	1532.0	1559.0	1573.4
37°	1500.0	1539.9	1554.8	1543.2	1473.5	1543.2	1554.8	1539.9	1500.0	1539.9	1554.8
37.5°	1451.2	1520.9	1535.7	1523.7	1434.5	1523.7	1535.7	1520.9	1451.2	1520.9	1535.7
38°	1398.2	1501.8	1516.7	1501.8	1389.9	1501.8	1516.7	1501.8	1398.2	1501.8	1516.7
38.5°	1335.5	1481.4	1497.7	1470.7	1338.8	1470.7	1497.7	1481.4	1335.5	1481.4	1497.7
39°	1271.9	1454.5	1479.1	1434.5	1281.6	1434.5	1479.1	1454.5	1271.9	1454.5	1479.1
39.5°	1207.3	1417.8	1459.6	1396.9	1218.0	1396.9	1459.6	1417.8	1207.3	1417.8	1459.6
40°	1142.8	1370.4	1440.1	1356.0	1152.5	1356.0	1440.1	1370.4	1142.8	1370.4	1440.1
40.5°	1077.7	1315.1	1421.5	1310.0	1085.6	1310.0	1421.5	1315.1	1077.7	1315.1	1421.5
41°	1011.8	1255.2	1402.4	1258.9	1021.5	1258.9	1402.4	1255.2	1011.8	1255.2	1402.4
41.5°	948.1	1194.8	1383.8	1202.7	958.3	1202.7	1383.8	1194.8	948.1	1194.8	1383.8
42°	883.5	1133.9	1365.3	1141.8	896.5	1141.8	1365.3	1133.9	883.5	1133.9	1365.3
42.5°	821.3	1073.5	1346.7	1080.0	835.2	1080.0	1346.7	1073.5	821.3	1073.5	1346.7
43°	759.0	1011.8	1328.1	1017.3	773.0	1017.3	1328.1	1011.8	759.0	1011.8	1328.1
43.5°	698.2	950.0	1309.1	956.9	711.2	956.9	1309.1	950.0	698.2	950.0	1309.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	523.1	768.8	1252.8	780.4	536.5	780.4	1252.8	768.8	523.1	768.8	1252.8
45.5°	467.8	710.7	1233.8	721.4	482.6	721.4	1233.8	710.7	467.8	710.7	1233.8
46°	415.8	653.6	1209.2	664.3	431.1	664.3	1209.2	653.6	415.8	653.6	1209.2
46.5°	365.1	596.9	1180.4	608.1	380.9	608.1	1180.4	596.9	365.1	596.9	1180.4
47°	315.0	541.2	1140.0	552.8	336.8	552.8	1140.0	541.2	315.0	541.2	1140.0
47.5°	267.1	486.8	1094.9	499.4	299.2	499.4	1094.9	486.8	267.1	486.8	1094.9
48°	225.3	435.7	1040.6	447.8	262.0	447.8	1040.6	435.7	225.3	435.7	1040.6
48.5°	187.2	386.5	981.1	398.6	224.8	398.6	981.1	386.5	187.2	386.5	981.1
49°	157.9	337.7	913.7	351.7	187.7	351.7	913.7	337.7	157.9	337.7	913.7
49.5°	130.5	290.3	845.5	308.0	154.7	308.0	845.5	290.3	130.5	290.3	845.5
50°	104.5	245.7	774.8	269.9	127.3	269.9	774.8	245.7	104.5	245.7	774.8
50.5°	83.2	205.8	705.6	234.1	100.3	234.1	705.6	205.8	83.2	205.8	705.6
51°	62.2	171.9	638.3	199.7	76.2	199.7	638.3	171.9	62.2	171.9	638.3
51.5°	44.6	143.5	575.6	167.7	59.9	167.7	575.6	143.5	44.6	143.5	575.6
52°	26.9	116.6	514.2	138.4	47.8	138.4	514.2	116.6	26.9	116.6	514.2
52.5°	9.8	93.8	455.2	112.0	35.8	112.0	455.2	93.8	9.8	93.8	455.2
53°	5.6	72.9	399.0	89.2	24.2	89.2	399.0	72.9	5.6	72.9	399.0
53.5°	4.2	53.9	349.3	67.8	13.9	67.8	349.3	53.9	4.2	53.9	349.3
54°	2.8	37.2	302.4	49.7	3.7	49.7	302.4	37.2	2.8	37.2	302.4
54.5°	1.4	20.4	258.7	37.2	1.9	37.2	258.7	20.4	1.4	20.4	258.7
55°	1.4	7.0	219.3	25.1	1.9	25.1	219.3	7.0	1.4	7.0	219.3
55.5°	1.4	4.2	181.6	15.3	1.9	15.3	181.6	4.2	1.4	4.2	181.6
56°	1.4	3.3	148.7	9.3	1.4	9.3	148.7	3.3	1.4	3.3	148.7
56.5°	1.4	1.9	122.6	3.7	1.4	3.7	122.6	1.9	1.4	1.9	122.6
57°	1.4	1.4	98.0	2.3	1.4	2.3	98.0	1.4	1.4	1.4	98.0
57.5°	1.4	1.4	76.2	1.4	1.4	1.4	76.2	1.4	1.4	1.4	76.2
58°	1.4	1.4	56.7	1.4	1.4	1.4	56.7	1.4	1.4	1.4	56.7
58.5°	0.9	0.9	40.9	1.4	1.4	1.4	40.9	0.9	0.9	0.9	40.9
59°	0.9	0.9	31.1	0.9	1.4	0.9	31.1	0.9	0.9	0.9	31.1
59.5°	0.9	0.9	22.8	0.9	1.4	0.9	22.8	0.9	0.9	0.9	22.8
60°	0.9	0.9	14.9	0.9	1.4	0.9	14.9	0.9	0.9	0.9	14.9
60.5°	0.9	0.9	8.8	0.9	0.9	0.9	8.8	0.9	0.9	0.9	8.8
61°	0.9	0.9	5.6	0.9	0.9	0.9	5.6	0.9	0.9	0.9	5.6
61.5°	0.9	0.9	3.3	0.9	0.9	0.9	3.3	0.9	0.9	0.9	3.3
62°	0.9	0.9	1.4	0.9	0.9	0.9	1.4	0.9	0.9	0.9	1.4
62.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
63°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
63.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
64°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
64.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
65°	0.9	0.9	0.5	0.9	0.9	0.5	0.9	0.9	0.9	0.9	0.5
65.5°	0.5	0.5	0.5	0.5	0.9	0.5	0.5	0.5	0.5	0.5	0.5
66°	0.5	0.5	0.5	0.5	0.9	0.5	0.5	0.5	0.5	0.5	0.5



TEST NUMBER: P776836

CATALOG NUMBER: HCDJBL54050CSD-HCD8TSQMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
68°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
68.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
69°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
69.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
70°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
70.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
71°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
71.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
72°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
72.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
73°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
73.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
74°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
74.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
75°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
75.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
76°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
76.5°	0.5	0.5	0.0	0.5	0.5	0.5	0.0	0.5	0.5	0.5	0.0
77°	0.5	0.5	0.0	0.5	0.5	0.5	0.0	0.5	0.5	0.5	0.0
77.5°	0.0	0.5	0.0	0.5	0.5	0.5	0.0	0.5	0.0	0.5	0.0
78°	0.0	0.0	0.0	0.0	0.5	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: P776836
CATALOG NUMBER: HCDJBL54050CSD-HCD8TSQMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

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



TEST NUMBER: P776836

CATALOG NUMBER: HCDJBL54050CSD-HCD8TSQMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2193.1	2193.1	2193.1	2193.1	2193.1	2193.1
0.5°	2193.5	2193.5	2193.5	2193.1	2192.6	2192.1
1°	2193.1	2193.1	2193.1	2192.6	2192.1	2191.7
1.5°	2192.6	2192.6	2192.6	2192.1	2191.7	2191.2
2°	2192.1	2191.7	2192.1	2191.7	2190.7	2190.7
2.5°	2191.2	2191.2	2191.2	2190.7	2190.3	2189.8
3°	2190.3	2189.8	2190.3	2189.8	2188.9	2188.9
3.5°	2188.9	2188.9	2188.9	2188.4	2188.0	2187.5
4°	2187.5	2187.0	2187.5	2187.0	2186.6	2186.1
4.5°	2185.6	2185.6	2185.6	2185.2	2184.7	2184.2
5°	2183.8	2183.8	2183.8	2183.8	2182.8	2182.4
5.5°	2181.9	2181.4	2181.9	2181.4	2181.0	2180.5
6°	2179.6	2179.6	2179.6	2179.1	2178.7	2178.2
6.5°	2177.3	2176.8	2177.3	2176.8	2176.3	2175.9
7°	2174.5	2174.5	2174.5	2174.5	2173.6	2173.1
7.5°	2171.7	2171.2	2171.7	2171.2	2170.8	2170.3
8°	2168.4	2168.4	2168.4	2168.4	2167.5	2167.0
8.5°	2165.2	2164.7	2165.2	2165.2	2164.3	2163.8
9°	2161.9	2161.5	2161.9	2161.5	2160.5	2160.1
9.5°	2158.2	2157.3	2158.2	2157.8	2156.8	2156.4
10°	2154.0	2153.6	2154.0	2154.0	2153.1	2152.2
10.5°	2149.9	2149.4	2149.9	2149.9	2148.9	2148.0
11°	2145.2	2144.7	2145.2	2145.7	2144.3	2143.4
11.5°	2140.6	2140.1	2140.6	2141.0	2139.6	2138.7
12°	2135.9	2135.0	2135.9	2135.9	2134.5	2133.6
12.5°	2130.8	2129.9	2130.8	2130.8	2129.4	2128.5
13°	2125.7	2124.8	2125.7	2125.7	2124.3	2122.9
13.5°	2120.1	2119.2	2120.1	2120.1	2118.7	2117.3
14°	2114.1	2113.2	2114.1	2114.1	2112.7	2111.3
14.5°	2108.1	2107.1	2108.1	2108.1	2106.7	2105.3
15°	2101.5	2100.6	2101.5	2102.0	2100.2	2098.8
15.5°	2095.0	2094.1	2095.0	2095.5	2093.7	2092.3
16°	2088.5	2087.1	2088.5	2088.5	2086.7	2085.3
16.5°	2081.6	2080.2	2081.6	2081.6	2079.7	2078.3
17°	2074.1	2072.7	2074.1	2074.6	2072.3	2070.4
17.5°	2066.7	2065.3	2066.7	2066.7	2064.8	2063.0
18°	2058.8	2057.0	2058.8	2059.3	2057.0	2055.1
18.5°	2050.4	2048.6	2050.4	2050.9	2049.1	2046.7
19°	2042.1	2040.2	2042.1	2042.6	2040.7	2038.4
19.5°	2033.7	2031.9	2033.7	2034.2	2031.9	2029.5
20°	2024.9	2022.6	2024.9	2025.4	2023.0	2020.7
20.5°	2015.6	2013.3	2015.6	2016.5	2013.8	2011.0
21°	2006.3	2003.5	2006.3	2007.2	2004.5	2001.2



TEST NUMBER: P776836

CATALOG NUMBER: HCDJBL54050CSD-HCD8TSQMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1976.1	1972.9	1976.1	1977.5	1974.3	1970.5
23°	1965.4	1961.7	1965.4	1967.3	1963.6	1959.4
23.5°	1954.3	1950.6	1954.3	1956.6	1952.9	1948.3
24°	1943.1	1939.0	1943.1	1945.5	1941.3	1937.1
24.5°	1931.5	1927.3	1931.5	1934.3	1929.7	1925.0
25°	1919.5	1914.8	1919.5	1922.7	1918.1	1912.5
25.5°	1907.4	1902.3	1907.4	1911.1	1906.0	1899.5
26°	1894.8	1889.7	1894.8	1899.0	1893.4	1886.9
26.5°	1881.8	1876.2	1881.8	1886.5	1880.4	1873.0
27°	1868.4	1862.3	1868.4	1873.9	1867.0	1859.5
27.5°	1854.9	1848.4	1854.9	1860.9	1853.5	1845.6
28°	1840.9	1834.0	1840.9	1847.4	1839.6	1830.7
28.5°	1827.0	1819.1	1827.0	1834.0	1825.2	1815.9
29°	1812.1	1804.2	1812.1	1820.0	1810.3	1800.5
29.5°	1797.3	1788.5	1797.3	1805.6	1795.4	1785.2
30°	1782.4	1772.7	1782.4	1791.2	1780.1	1768.9
30.5°	1766.6	1756.9	1766.6	1776.4	1764.8	1752.7
31°	1750.8	1740.6	1750.8	1761.0	1748.5	1736.4
31.5°	1735.0	1723.4	1735.0	1745.7	1732.7	1719.7
32°	1718.8	1706.7	1718.8	1729.9	1716.4	1703.0
32.5°	1702.0	1689.5	1702.0	1713.7	1699.7	1685.8
33°	1685.3	1672.3	1685.3	1697.4	1683.0	1668.1
33.5°	1668.6	1654.7	1668.6	1680.2	1665.8	1650.0
34°	1651.4	1636.6	1651.4	1663.0	1649.1	1631.4
34.5°	1633.8	1618.0	1633.8	1645.8	1631.4	1612.9
35°	1616.1	1598.9	1616.1	1627.7	1613.8	1594.3
35.5°	1598.5	1579.4	1598.5	1610.1	1596.1	1574.8
36°	1580.3	1548.3	1580.3	1592.0	1578.0	1555.3
36.5°	1561.8	1513.9	1561.8	1573.4	1559.0	1532.0
37°	1543.2	1473.5	1543.2	1554.8	1539.9	1500.0
37.5°	1523.7	1434.5	1523.7	1535.7	1520.9	1451.2
38°	1501.8	1389.9	1501.8	1516.7	1501.8	1398.2
38.5°	1470.7	1338.8	1470.7	1497.7	1481.4	1335.5
39°	1434.5	1281.6	1434.5	1479.1	1454.5	1271.9
39.5°	1396.9	1218.0	1396.9	1459.6	1417.8	1207.3
40°	1356.0	1152.5	1356.0	1440.1	1370.4	1142.8
40.5°	1310.0	1085.6	1310.0	1421.5	1315.1	1077.7
41°	1258.9	1021.5	1258.9	1402.4	1255.2	1011.8
41.5°	1202.7	958.3	1202.7	1383.8	1194.8	948.1
42°	1141.8	896.5	1141.8	1365.3	1133.9	883.5
42.5°	1080.0	835.2	1080.0	1346.7	1073.5	821.3
43°	1017.3	773.0	1017.3	1328.1	1011.8	759.0
43.5°	956.9	711.2	956.9	1309.1	950.0	698.2



TEST NUMBER: P776836

CATALOG NUMBER: HCDJBL54050CSD-HCD8TSQMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	780.4	536.5	780.4	1252.8	768.8	523.1
45.5°	721.4	482.6	721.4	1233.8	710.7	467.8
46°	664.3	431.1	664.3	1209.2	653.6	415.8
46.5°	608.1	380.9	608.1	1180.4	596.9	365.1
47°	552.8	336.8	552.8	1140.0	541.2	315.0
47.5°	499.4	299.2	499.4	1094.9	486.8	267.1
48°	447.8	262.0	447.8	1040.6	435.7	225.3
48.5°	398.6	224.8	398.6	981.1	386.5	187.2
49°	351.7	187.7	351.7	913.7	337.7	157.9
49.5°	308.0	154.7	308.0	845.5	290.3	130.5
50°	269.9	127.3	269.9	774.8	245.7	104.5
50.5°	234.1	100.3	234.1	705.6	205.8	83.2
51°	199.7	76.2	199.7	638.3	171.9	62.2
51.5°	167.7	59.9	167.7	575.6	143.5	44.6
52°	138.4	47.8	138.4	514.2	116.6	26.9
52.5°	112.0	35.8	112.0	455.2	93.8	9.8
53°	89.2	24.2	89.2	399.0	72.9	5.6
53.5°	67.8	13.9	67.8	349.3	53.9	4.2
54°	49.7	3.7	49.7	302.4	37.2	2.8
54.5°	37.2	1.9	37.2	258.7	20.4	1.4
55°	25.1	1.9	25.1	219.3	7.0	1.4
55.5°	15.3	1.9	15.3	181.6	4.2	1.4
56°	9.3	1.4	9.3	148.7	3.3	1.4
56.5°	3.7	1.4	3.7	122.6	1.9	1.4
57°	2.3	1.4	2.3	98.0	1.4	1.4
57.5°	1.4	1.4	1.4	76.2	1.4	1.4
58°	1.4	1.4	1.4	56.7	1.4	1.4
58.5°	1.4	1.4	1.4	40.9	0.9	0.9
59°	0.9	1.4	0.9	31.1	0.9	0.9
59.5°	0.9	1.4	0.9	22.8	0.9	0.9
60°	0.9	1.4	0.9	14.9	0.9	0.9
60.5°	0.9	0.9	0.9	8.8	0.9	0.9
61°	0.9	0.9	0.9	5.6	0.9	0.9
61.5°	0.9	0.9	0.9	3.3	0.9	0.9
62°	0.9	0.9	0.9	1.4	0.9	0.9
62.5°	0.9	0.9	0.9	0.9	0.9	0.9
63°	0.9	0.9	0.9	0.9	0.9	0.9
63.5°	0.9	0.9	0.9	0.9	0.9	0.9
64°	0.9	0.9	0.9	0.9	0.9	0.9
64.5°	0.9	0.9	0.9	0.9	0.9	0.9
65°	0.9	0.9	0.9	0.5	0.9	0.9
65.5°	0.5	0.9	0.5	0.5	0.5	0.5
66°	0.5	0.9	0.5	0.5	0.5	0.5



TEST NUMBER: P776836

CATALOG NUMBER: HCDJBL54050CSD-HCD8TSQMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	0.5	0.5	0.5	0.5	0.5	0.5
68°	0.5	0.5	0.5	0.5	0.5	0.5
68.5°	0.5	0.5	0.5	0.5	0.5	0.5
69°	0.5	0.5	0.5	0.5	0.5	0.5
69.5°	0.5	0.5	0.5	0.5	0.5	0.5
70°	0.5	0.5	0.5	0.5	0.5	0.5
70.5°	0.5	0.5	0.5	0.5	0.5	0.5
71°	0.5	0.5	0.5	0.5	0.5	0.5
71.5°	0.5	0.5	0.5	0.5	0.5	0.5
72°	0.5	0.5	0.5	0.5	0.5	0.5
72.5°	0.5	0.5	0.5	0.5	0.5	0.5
73°	0.5	0.5	0.5	0.5	0.5	0.5
73.5°	0.5	0.5	0.5	0.5	0.5	0.5
74°	0.5	0.5	0.5	0.5	0.5	0.5
74.5°	0.5	0.5	0.5	0.5	0.5	0.5
75°	0.5	0.5	0.5	0.5	0.5	0.5
75.5°	0.5	0.5	0.5	0.5	0.5	0.5
76°	0.5	0.5	0.5	0.5	0.5	0.5
76.5°	0.5	0.5	0.5	0.0	0.5	0.5
77°	0.5	0.5	0.5	0.0	0.5	0.5
77.5°	0.5	0.5	0.5	0.0	0.5	0.0
78°	0.0	0.5	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: P776836
CATALOG NUMBER: HCDJBL54050CSD-HCD8TSQMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

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



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Cooper Lighting Solutions Photometric Lab
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— 0°-180° - - 45°-225° - - - - 90°-270° - · - 135°-315°

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21.5°	1991.5	1994.7	1997.5	1996.6	1993.8	1996.6	1997.5	1994.7	1991.5	1994.7	1997.5
22°	1981.2	1984.5	1987.7	1986.3	1983.6	1986.3	1987.7	1984.5	1981.2	1984.5	1987.7



44°	637.8	889.1	1290.5	897.5	651.3	897.5	1290.5	889.1	637.8	889.1	1290.5
44.5°	579.7	828.7	1271.9	838.5	593.2	838.5	1271.9	828.7	579.7	828.7	1271.9



66.5°	0.5	0.5	0.5	0.5	0.9	0.5	0.5	0.5	0.5	0.5	0.5
67°	0.5	0.5	0.5	0.5	0.9	0.5	0.5	0.5	0.5	0.5	0.5



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°	1996.6	1993.8	1996.6	1997.5	1994.7	1991.5
22°	1986.3	1983.6	1986.3	1987.7	1984.5	1981.2



44°	897.5	651.3	897.5	1290.5	889.1	637.8
44.5°	838.5	593.2	838.5	1271.9	828.7	579.7

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66.5°	0.5	0.9	0.5	0.5	0.5	0.5
67°	0.5	0.9	0.5	0.5	0.5	0.5

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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)