

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: P776275

Luminaire Tested: HCDJBL3040CSD-HCD42TRMB-4000lm-2700K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776275  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B051)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL3040CSD-HCD42TRMB-4000lm-2700K  
Description: 4 INCH ROUND NARROW MATTE BLACK TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

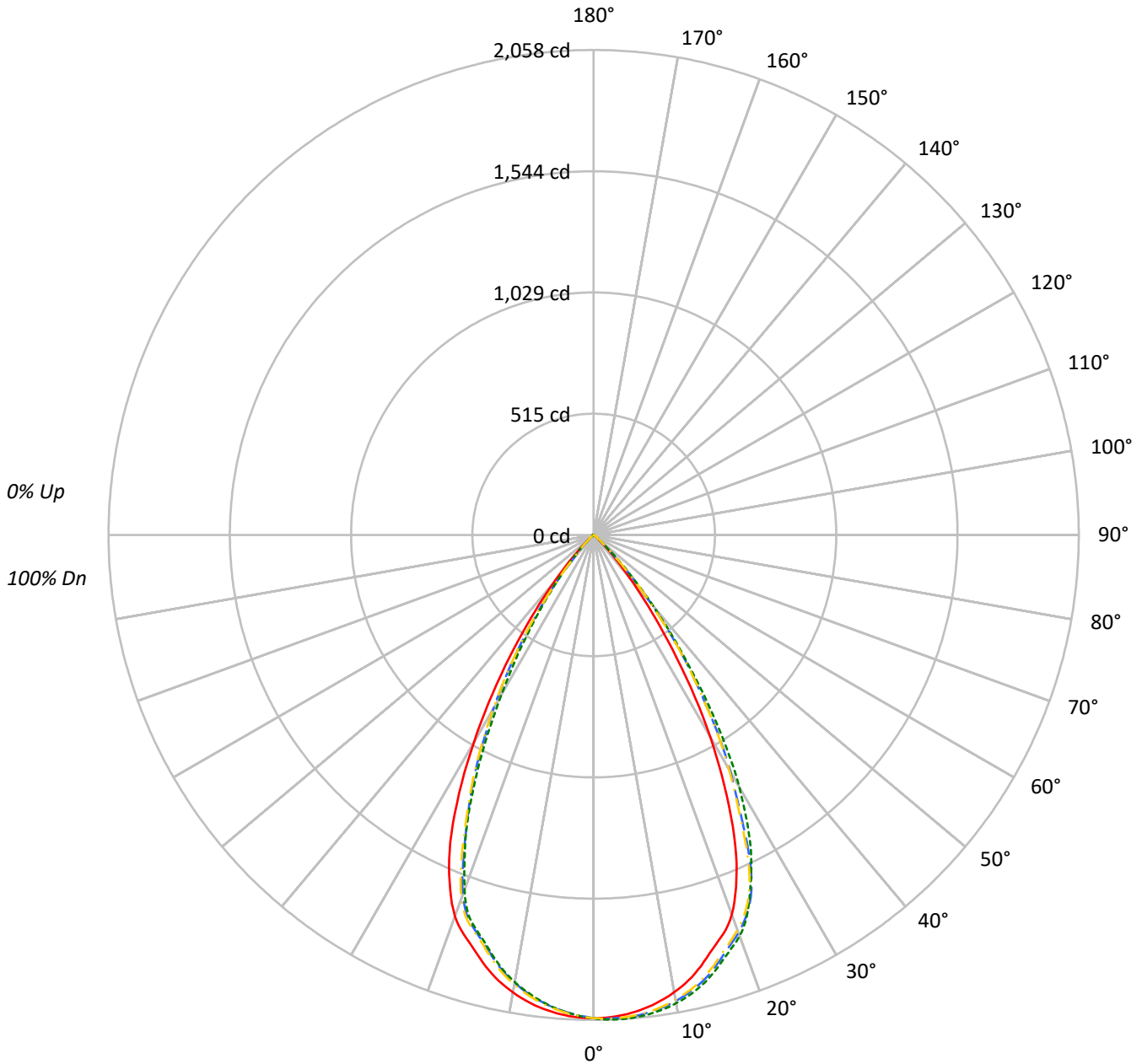
Lumens per Lamp: N/A  
Luminaire Lumens: 1810.8 lumens  
Efficiency: N/A  
Efficacy: 47.0 lumens/watt  
Spacing Criteria (0/90/45): 0.95 / 0.94 / 0.88  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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									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	114	111	109	106	111	109	107	105	105	103	101	101	100	98	98	97	96	94																			
2	108	103	100	96	106	102	98	95	99	96	93	96	93	91	93	91	89	88																			
3	103	97	92	88	101	95	91	87	93	89	86	90	87	85	88	85	83	82																			
4	98	91	85	81	96	89	84	81	87	83	80	85	82	79	83	80	78	76																			
5	93	85	79	75	91	84	79	75	82	78	74	81	77	73	79	76	73	71																			
6	89	80	74	70	87	79	74	70	78	73	69	76	72	69	75	71	68	67																			
7	84	75	69	65	83	74	69	65	73	68	65	72	68	64	71	67	64	63																			
8	80	71	65	61	79	70	65	61	69	64	61	68	64	60	67	63	60	59																			
9	76	67	61	57	75	67	61	57	66	61	57	65	60	57	64	60	57	55																			
10	73	63	58	54	72	63	58	54	62	57	54	61	57	54	61	56	53	52																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	258055	258055	258055	258055
5°	256565	259571	256666	254000
10°	251787	257870	251928	246254
15°	241869	251914	242520	233022
20°	229564	242608	230434	214457
25°	195890	219593	199778	169951
30°	143633	179527	147542	113654
35°	84852	120034	90859	64757
40°	38936	64022	43421	29423
45°	12014	21785	13722	8596
50°	3837	4346	3896	3309
55°	2348	2699	2348	2019
60°	1460	1636	1535	1359
65°	1042	1042	1042	923
70°	699	699	699	552
75°	389	583	389	389
80°	290	290	290	290
85°	0	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 22728 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	191.9	10.6
10°-20°	522.0	28.8
20°-30°	633.6	35.0
30°-40°	373.3	20.6
40°-50°	75.1	4.1
50°-60°	10.2	0.6
60°-70°	3.5	0.2
70°-80°	1.1	0.1
80°-90°	0.1	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1347.5	74.4
0°-40°	1720.8	95.0
0°-60°	1806.1	99.7
0°-90°	1810.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1810.8	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2050	2050	2050	2050	2050	
5°	2031	2055	2032	2011	2031	192
15°	1856	1934	1861	1788	1856	522
25°	1411	1581	1439	1224	1411	632
35°	552	781	591	422	552	351
45°	68	122	77	48	68	66
55°	11	12	11	9	11	10
65°	4	4	4	3	4	3
75°	1	1	1	1	1	1
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°	2050.5	2050.5	2050.5	2050.5	2050.5	2050.5	2050.5	2050.5	2050.5	2050.5	2050.5
0.5°	2050.8	2052.0	2050.8	2050.1	2054.3	2052.8	2051.6	2051.2	2050.8	2050.5	2047.4
1°	2050.1	2052.0	2052.0	2051.6	2055.8	2054.3	2052.8	2051.6	2050.5	2048.9	2044.7
1.5°	2049.3	2052.0	2053.1	2053.1	2057.0	2055.4	2053.1	2051.2	2049.3	2047.0	2042.0
2°	2047.8	2051.2	2053.5	2053.9	2057.7	2056.2	2053.5	2050.8	2048.2	2045.1	2038.6
2.5°	2045.9	2050.5	2053.5	2054.3	2058.5	2056.6	2053.1	2050.1	2046.2	2042.4	2034.7
3°	2043.6	2048.9	2053.1	2054.7	2058.5	2056.6	2052.8	2048.5	2044.3	2039.3	2030.9
3.5°	2041.3	2047.4	2052.8	2054.3	2058.1	2055.8	2051.6	2047.0	2041.6	2035.9	2026.7
4°	2038.2	2045.1	2051.6	2053.5	2057.4	2055.1	2050.5	2044.7	2038.6	2032.1	2021.7
4.5°	2034.7	2042.8	2050.5	2052.8	2056.2	2053.9	2048.5	2042.4	2035.5	2028.2	2016.3
5°	2030.9	2039.7	2048.5	2051.2	2054.7	2052.0	2046.6	2039.7	2031.7	2023.6	2010.6
5.5°	2026.7	2036.7	2046.2	2049.7	2052.8	2050.1	2043.9	2036.7	2027.4	2018.6	2004.8
6°	2022.1	2032.8	2043.6	2047.4	2050.5	2047.4	2040.9	2032.8	2022.8	2013.3	1998.3
6.5°	2017.1	2029.0	2040.5	2044.7	2048.2	2044.7	2037.4	2028.6	2017.9	2007.1	1991.4
7°	2012.1	2024.4	2037.0	2041.6	2044.7	2041.3	2034.0	2024.0	2012.9	2001.0	1983.7
7.5°	2006.0	2019.4	2033.2	2038.6	2041.3	2037.4	2030.1	2019.4	2007.1	1994.1	1976.1
8°	1999.8	2014.0	2029.4	2034.7	2037.4	2033.6	2025.1	2014.0	2000.6	1987.2	1968.0
8.5°	1992.9	2008.3	2024.4	2030.5	2033.2	2029.0	2020.2	2008.3	1994.1	1979.9	1959.2
9°	1986.0	2002.1	2019.4	2025.9	2028.6	2024.4	2014.8	2002.1	1987.2	1971.8	1950.4
9.5°	1978.4	1995.2	2014.0	2020.9	2023.6	2019.0	2009.0	1995.6	1979.5	1963.8	1940.4
10°	1970.3	1988.3	2008.3	2015.6	2017.9	2013.6	2002.9	1988.7	1971.4	1954.6	1930.4
10.5°	1961.5	1980.7	2002.1	2009.8	2012.1	2007.1	1996.4	1981.0	1963.0	1945.4	1920.1
11°	1953.0	1973.0	1995.2	2003.3	2005.6	2000.6	1989.1	1973.0	1954.6	1935.4	1908.9
11.5°	1943.5	1964.5	1987.9	1996.8	1998.7	1993.3	1981.4	1964.5	1945.0	1925.0	1896.7
12°	1933.1	1955.3	1980.3	1989.9	1991.4	1986.0	1973.4	1955.7	1935.0	1913.9	1884.0
12.5°	1922.0	1945.4	1972.2	1981.8	1983.7	1977.6	1964.5	1946.1	1924.3	1902.0	1870.6
13°	1910.1	1935.4	1963.0	1973.8	1974.9	1969.1	1955.3	1936.2	1913.2	1889.8	1856.4
13.5°	1897.4	1923.9	1954.2	1964.9	1965.7	1959.6	1945.4	1925.0	1900.9	1876.7	1841.8
14°	1884.4	1912.4	1944.2	1955.3	1956.1	1949.6	1934.6	1913.5	1888.2	1862.5	1826.1
14.5°	1870.6	1899.7	1933.5	1945.0	1945.0	1938.1	1923.5	1901.3	1875.2	1847.9	1811.1
15°	1856.4	1886.3	1922.0	1933.9	1933.5	1927.0	1911.2	1888.6	1861.4	1833.4	1796.2
15.5°	1842.2	1872.5	1909.7	1922.0	1922.0	1914.7	1898.6	1875.2	1847.2	1818.8	1782.7
16°	1828.8	1859.1	1896.7	1909.7	1909.3	1902.0	1885.5	1861.4	1833.0	1804.6	1769.7
16.5°	1816.5	1845.6	1883.2	1896.7	1895.9	1889.0	1872.1	1847.9	1819.9	1791.6	1756.7
17°	1803.8	1833.4	1869.8	1884.0	1883.2	1875.9	1858.7	1834.9	1807.3	1779.3	1743.6
17.5°	1791.9	1821.1	1857.2	1871.0	1871.0	1863.7	1846.0	1822.6	1795.0	1766.6	1730.6
18°	1779.7	1809.2	1844.5	1859.1	1859.8	1851.8	1834.5	1810.4	1782.4	1753.6	1715.2
18.5°	1766.6	1796.6	1832.6	1847.6	1847.9	1840.3	1821.9	1797.3	1769.3	1739.8	1697.6
19°	1751.3	1784.3	1820.3	1835.7	1836.4	1828.4	1809.6	1785.4	1755.1	1723.7	1676.1
19.5°	1733.6	1770.5	1808.4	1823.4	1824.9	1816.5	1797.3	1771.6	1739.0	1704.5	1651.6
20°	1714.1	1754.7	1795.8	1811.9	1811.5	1803.5	1784.3	1757.0	1720.6	1682.6	1622.8
20.5°	1691.5	1737.1	1782.7	1798.5	1796.2	1788.9	1770.1	1740.9	1699.5	1658.5	1590.6
21°	1666.9	1718.3	1768.2	1783.5	1778.5	1772.0	1754.7	1722.9	1677.3	1631.2	1553.4



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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°	1582.1	1647.3	1716.8	1727.5	1714.5	1711.8	1699.9	1658.1	1597.1	1533.4	1433.3
23°	1551.5	1619.4	1695.7	1705.3	1689.2	1687.2	1678.4	1632.4	1569.1	1496.6	1393.8
23.5°	1520.0	1589.8	1672.3	1680.3	1661.9	1660.8	1653.1	1603.6	1538.8	1458.3	1354.7
24°	1485.1	1558.4	1646.2	1652.7	1635.1	1633.9	1625.5	1573.3	1507.4	1419.5	1317.9
24.5°	1448.7	1525.0	1616.7	1624.3	1608.6	1604.4	1593.7	1541.9	1474.0	1380.8	1280.7
25°	1410.7	1490.5	1581.8	1593.7	1581.4	1575.2	1559.9	1508.1	1438.7	1344.0	1243.5
25.5°	1370.4	1453.7	1544.6	1563.7	1554.1	1546.1	1521.2	1472.1	1400.3	1307.5	1205.9
26°	1329.4	1413.8	1502.0	1531.5	1525.4	1516.2	1479.0	1433.7	1360.8	1271.9	1167.5
26.5°	1286.8	1370.8	1456.7	1498.5	1494.7	1482.8	1434.1	1393.1	1319.4	1235.0	1128.0
27°	1244.2	1326.3	1409.5	1462.9	1462.1	1448.3	1390.8	1350.1	1278.4	1197.8	1087.4
27.5°	1202.0	1279.5	1363.1	1426.8	1425.7	1411.8	1346.6	1305.2	1235.0	1160.2	1044.8
28°	1160.2	1231.6	1317.9	1386.5	1388.5	1374.3	1304.5	1257.3	1191.3	1121.5	1003.0
28.5°	1118.0	1184.0	1275.7	1345.5	1349.7	1332.8	1263.0	1211.3	1149.5	1081.6	961.9
29°	1074.7	1137.2	1235.4	1301.8	1312.5	1290.3	1225.8	1166.0	1104.2	1039.8	922.8
29.5°	1031.8	1089.7	1197.4	1257.3	1274.2	1246.2	1187.1	1121.9	1059.4	995.3	884.1
30°	988.4	1045.6	1159.1	1211.6	1235.4	1202.4	1149.1	1079.3	1015.3	952.0	845.7
30.5°	945.1	999.9	1120.7	1168.3	1194.0	1158.3	1110.8	1036.4	972.3	907.9	808.5
31°	899.8	956.2	1079.7	1125.3	1152.2	1116.1	1071.3	994.2	927.8	864.9	770.9
31.5°	855.3	911.7	1037.9	1082.8	1106.5	1073.9	1028.7	952.0	884.1	822.3	733.3
32°	810.4	868.7	994.2	1041.7	1060.5	1032.9	985.7	909.4	840.7	781.7	695.4
32.5°	765.6	826.9	949.7	1002.2	1013.3	990.7	942.4	866.1	798.9	741.8	655.1
33°	720.7	785.5	904.4	961.6	966.2	950.1	899.0	821.6	755.6	702.7	615.6
33.5°	676.2	744.1	860.7	920.5	919.8	907.5	856.1	779.0	713.4	663.2	576.9
34°	632.9	705.0	819.3	878.7	873.3	866.1	815.4	738.0	672.0	622.9	539.3
34.5°	591.4	665.5	779.8	836.9	827.3	822.7	777.5	697.7	631.7	582.6	501.7
35°	552.3	626.7	739.9	793.6	781.3	780.5	738.0	658.9	591.4	542.3	466.0
35.5°	514.7	589.9	702.3	750.6	736.8	739.5	700.4	621.4	553.1	503.2	431.5
36°	478.3	555.4	664.7	708.0	693.5	698.1	661.6	586.1	515.9	464.5	398.1
36.5°	442.6	520.9	627.1	667.8	650.5	656.3	622.5	551.2	480.2	427.7	365.1
37°	408.9	486.0	588.4	627.9	609.5	615.2	582.6	517.0	443.8	392.0	332.2
37.5°	377.0	452.6	550.4	589.5	570.3	574.9	543.1	482.9	411.2	360.9	299.2
38°	346.0	418.8	511.7	551.5	532.4	535.8	504.4	449.9	379.3	330.2	266.6
38.5°	316.0	385.9	474.5	512.8	495.5	496.7	466.8	416.9	350.6	299.2	236.3
39°	288.4	353.6	439.5	476.4	459.5	459.5	430.0	384.3	321.8	268.5	208.3
39.5°	262.0	322.6	405.8	439.9	424.2	422.7	395.8	353.6	293.0	243.2	182.6
40°	237.0	293.0	374.7	403.9	389.7	387.8	365.5	323.3	264.3	217.1	159.9
40.5°	213.6	264.6	343.7	368.6	358.6	354.8	335.2	293.0	238.6	193.3	140.0
41°	191.4	237.8	314.5	333.7	327.6	322.2	304.9	262.7	215.2	171.1	122.7
41.5°	171.4	213.3	285.7	301.1	296.5	289.6	274.6	235.9	192.5	150.4	107.8
42°	152.7	190.2	257.4	270.0	265.4	256.6	244.3	211.0	171.8	131.6	95.5
42.5°	135.4	168.8	229.7	241.3	239.0	228.2	216.7	186.8	152.7	115.4	84.8
43°	121.6	148.4	202.1	214.0	212.5	201.4	189.9	164.5	135.0	100.9	74.4
43.5°	108.2	131.6	176.4	188.7	188.7	176.8	164.9	144.6	118.5	88.2	65.6



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	67.5	86.7	114.7	127.7	122.4	115.1	103.9	92.8	77.1	58.3	43.7
45.5°	57.9	72.1	99.0	112.0	103.6	98.6	87.8	79.4	66.0	50.2	39.1
46°	49.1	61.0	83.6	96.3	87.4	83.6	74.4	66.7	55.6	43.0	34.9
46.5°	41.0	51.0	67.9	80.5	72.9	70.6	62.5	56.4	46.8	38.7	30.3
47°	34.5	42.2	57.1	65.2	60.2	58.7	52.2	46.8	41.8	34.1	26.1
47.5°	28.8	34.9	47.2	54.1	49.5	48.7	47.2	41.8	36.8	29.9	21.5
48°	24.9	28.8	39.1	44.5	44.1	43.3	42.2	36.8	31.8	25.7	19.9
48.5°	22.6	24.9	32.2	36.1	38.4	38.4	37.2	32.2	26.8	21.5	19.2
49°	21.5	22.6	27.2	29.5	33.0	33.0	32.2	27.2	21.9	20.3	18.4
49.5°	20.3	21.5	24.2	25.3	27.6	27.6	26.8	22.6	20.7	19.2	17.6
50°	19.6	20.3	22.2	23.0	22.2	22.6	21.9	21.1	19.9	18.4	16.5
50.5°	18.4	19.6	21.1	21.5	21.1	21.5	21.1	20.3	18.8	17.6	15.7
51°	17.6	18.4	20.3	20.7	20.3	20.3	19.9	19.2	18.0	16.5	14.6
51.5°	16.5	17.6	19.2	19.6	19.2	19.2	18.8	18.0	16.9	15.7	13.8
52°	15.7	16.5	18.4	18.8	18.4	18.4	18.0	16.9	15.7	14.6	13.0
52.5°	14.6	15.3	17.3	17.6	17.3	17.3	16.9	16.1	15.0	13.8	12.3
53°	13.8	14.6	16.1	16.5	16.1	16.1	15.7	15.0	13.8	13.0	11.5
53.5°	13.0	13.4	15.0	15.3	15.0	15.0	14.6	14.2	13.0	12.3	10.7
54°	12.3	12.7	14.2	14.6	14.2	14.2	13.8	13.0	12.3	11.5	10.4
54.5°	11.5	11.9	13.4	13.8	13.0	13.0	13.0	12.3	11.5	10.7	9.6
55°	10.7	11.5	12.3	12.7	12.3	12.3	12.3	11.5	10.7	10.4	9.2
55.5°	10.0	10.7	11.5	11.9	11.5	11.5	11.5	10.7	10.4	9.6	8.4
56°	9.6	10.0	10.7	11.1	10.7	10.7	10.7	10.4	9.6	9.2	8.1
56.5°	8.8	9.2	10.4	10.4	10.4	10.4	10.0	9.6	9.2	8.4	7.7
57°	8.4	8.8	9.6	10.0	9.6	9.6	9.6	9.2	8.4	8.1	7.3
57.5°	7.7	8.1	8.8	9.2	8.8	8.8	8.8	8.4	8.1	7.7	6.9
58°	7.3	7.7	8.4	8.8	8.4	8.4	8.4	8.1	7.7	7.3	6.5
58.5°	6.9	7.3	8.1	8.1	8.1	8.1	7.7	7.7	7.3	6.9	6.1
59°	6.5	6.9	7.3	7.7	7.3	7.3	7.3	7.3	6.9	6.5	5.8
59.5°	6.1	6.5	6.9	7.3	6.9	6.9	6.9	6.5	6.5	6.1	5.4
60°	5.8	6.1	6.5	6.9	6.5	6.5	6.5	6.1	6.1	5.8	5.0
60.5°	5.4	5.8	6.1	6.5	6.1	6.1	6.1	5.8	5.8	5.4	5.0
61°	5.4	5.4	5.8	6.1	5.8	5.8	5.8	5.8	5.4	5.0	4.6
61.5°	5.0	5.0	5.4	5.8	5.4	5.4	5.4	5.4	5.0	4.6	4.2
62°	4.6	4.6	5.4	5.4	5.4	5.4	5.0	5.0	4.6	4.6	4.2
62.5°	4.2	4.6	5.0	5.0	5.0	5.0	5.0	4.6	4.6	4.2	3.8
63°	4.2	4.2	4.6	4.6	4.6	4.6	4.6	4.6	4.2	4.2	3.8
63.5°	3.8	3.8	4.2	4.6	4.2	4.2	4.2	4.2	3.8	3.8	3.5
64°	3.8	3.8	4.2	4.2	4.2	4.2	4.2	3.8	3.8	3.5	3.5
64.5°	3.5	3.5	3.8	3.8	3.8	3.8	3.8	3.8	3.5	3.5	3.1
65°	3.5	3.5	3.8	3.8	3.5	3.5	3.5	3.5	3.5	3.1	3.1
65.5°	3.1	3.1	3.5	3.5	3.5	3.5	3.5	3.5	3.1	3.1	2.7
66°	3.1	3.1	3.1	3.5	3.1	3.1	3.1	3.1	3.1	2.7	2.7





TEST NUMBER: P776275

CATALOG NUMBER: HCDJBL3040CSD-HCD42TRMB-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	2.3	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.3	2.3
68°	2.3	2.3	2.7	2.7	2.7	2.7	2.7	2.3	2.3	2.3	1.9
68.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.9
69°	1.9	1.9	2.3	2.3	2.3	2.3	2.3	2.3	1.9	1.9	1.9
69.5°	1.9	1.9	2.3	2.3	2.3	2.3	1.9	1.9	1.9	1.9	1.9
70°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5
70.5°	1.5	1.5	1.9	1.9	1.9	1.9	1.9	1.9	1.5	1.5	1.5
71°	1.5	1.5	1.9	1.9	1.9	1.9	1.9	1.5	1.5	1.5	1.5
71.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
72°	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.2
72.5°	1.2	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.2	1.2	1.2
73°	1.2	1.2	1.5	1.5	1.5	1.5	1.5	1.2	1.2	1.2	1.2
73.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
74°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
74.5°	0.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8
75°	0.8	0.8	1.2	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8
75.5°	0.8	0.8	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8	0.8
76°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
76.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4
78°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4
78.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4
79°	0.4	0.4	0.4	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
81°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
81.5°	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
82°	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0
82.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0
83°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	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: P776275  
CATALOG NUMBER: HCDJBL3040CSD-HCD42TRMB-4000lm-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: P776275

CATALOG NUMBER: HCDJBL3040CSD-HCD42TRMB-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2050.5	2050.5	2050.5	2050.5	2050.5	2050.5
0.5°	2045.5	2049.7	2048.5	2048.5	2049.3	2050.8
1°	2042.4	2047.0	2046.2	2046.2	2048.2	2050.1
1.5°	2039.3	2043.9	2043.2	2043.9	2046.2	2049.3
2°	2035.5	2040.1	2039.7	2040.9	2043.9	2047.8
2.5°	2031.3	2036.3	2035.9	2037.4	2041.3	2045.9
3°	2027.1	2032.1	2031.7	2034.0	2038.2	2043.6
3.5°	2022.1	2027.1	2027.1	2029.7	2035.1	2041.3
4°	2016.7	2022.1	2022.1	2025.1	2030.9	2038.2
4.5°	2011.3	2016.3	2016.7	2020.2	2026.7	2034.7
5°	2004.8	2010.6	2011.0	2015.2	2022.1	2030.9
5.5°	1998.7	2004.1	2004.4	2009.4	2017.5	2026.7
6°	1991.4	1997.1	1997.9	2003.3	2011.7	2022.1
6.5°	1984.5	1989.9	1991.0	1996.4	2006.0	2017.1
7°	1976.4	1982.2	1983.3	1989.9	1999.8	2012.1
7.5°	1968.0	1974.1	1975.7	1982.2	1992.9	2006.0
8°	1959.6	1965.3	1967.2	1974.1	1986.0	1999.8
8.5°	1950.4	1956.5	1958.4	1965.7	1978.4	1992.9
9°	1940.8	1946.9	1949.2	1957.3	1970.3	1986.0
9.5°	1931.2	1937.3	1939.6	1947.7	1961.9	1978.4
10°	1920.4	1927.0	1929.3	1938.5	1953.0	1970.3
10.5°	1909.7	1915.8	1918.5	1928.1	1943.5	1961.5
11°	1897.4	1904.3	1907.4	1917.0	1933.1	1953.0
11.5°	1885.2	1891.7	1894.7	1905.1	1922.4	1943.5
12°	1872.1	1879.0	1881.7	1892.8	1910.8	1933.1
12.5°	1857.9	1864.8	1867.5	1878.6	1898.2	1922.0
13°	1843.3	1849.9	1852.5	1864.8	1885.5	1910.1
13.5°	1828.0	1834.9	1838.0	1850.2	1871.3	1897.4
14°	1811.9	1819.2	1822.2	1834.9	1857.2	1884.4
14.5°	1796.6	1803.5	1806.5	1819.9	1842.2	1870.6
15°	1782.4	1788.5	1791.6	1804.2	1827.6	1856.4
15.5°	1768.9	1774.7	1778.1	1790.4	1813.0	1842.2
16°	1755.5	1761.6	1765.1	1777.4	1800.0	1828.8
16.5°	1742.1	1748.6	1751.7	1764.7	1787.7	1816.5
17°	1729.0	1735.6	1738.6	1752.1	1775.5	1803.8
17.5°	1714.9	1721.8	1725.2	1739.4	1762.8	1791.9
18°	1696.4	1706.0	1709.9	1725.6	1750.1	1779.7
18.5°	1675.7	1684.9	1689.9	1709.5	1735.6	1766.6
19°	1652.0	1661.5	1668.4	1689.9	1718.3	1751.3
19.5°	1624.7	1633.5	1642.4	1667.3	1698.4	1733.6
20°	1594.0	1601.3	1613.2	1640.1	1675.3	1714.1
20.5°	1560.7	1567.2	1580.6	1610.1	1648.5	1691.5
21°	1525.4	1531.5	1545.7	1576.0	1618.6	1666.9



TEST NUMBER: P776275

CATALOG NUMBER: HCDJBL3040CSD-HCD42TRMB-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1405.7	1425.3	1429.9	1457.1	1511.6	1582.1
23°	1363.9	1390.0	1390.0	1415.3	1471.3	1551.5
23.5°	1321.7	1351.6	1349.3	1373.9	1432.9	1520.0
24°	1281.4	1311.4	1306.8	1332.8	1394.6	1485.1
24.5°	1239.6	1268.8	1264.2	1294.5	1357.8	1448.7
25°	1199.0	1223.9	1222.4	1254.6	1322.1	1410.7
25.5°	1159.5	1180.2	1180.2	1216.2	1286.4	1370.4
26°	1120.4	1134.5	1136.8	1177.5	1250.0	1329.4
26.5°	1079.7	1090.8	1094.3	1139.5	1212.8	1286.8
27°	1039.4	1044.8	1052.8	1098.9	1173.7	1244.2
27.5°	998.4	999.9	1011.4	1057.8	1133.0	1202.0
28°	958.5	955.8	969.6	1015.3	1089.3	1160.2
28.5°	917.8	910.9	930.1	972.7	1045.6	1118.0
29°	877.2	865.7	888.7	930.5	999.1	1074.7
29.5°	836.5	823.5	848.4	890.6	956.6	1031.8
30°	796.3	782.1	807.0	849.9	912.1	988.4
30.5°	755.2	741.0	766.0	810.4	870.7	945.1
31°	715.3	701.9	722.6	771.3	829.2	899.8
31.5°	675.0	665.1	681.2	734.5	789.0	855.3
32°	636.3	628.3	641.7	697.3	749.1	810.4
32.5°	597.6	592.6	603.7	660.1	711.1	765.6
33°	561.1	556.5	567.3	621.4	671.6	720.7
33.5°	524.7	520.1	532.4	583.4	631.3	676.2
34°	489.8	486.0	497.8	545.8	590.3	632.9
34.5°	456.4	453.0	464.9	507.8	550.8	591.4
35°	423.4	421.5	431.9	471.4	510.5	552.3
35.5°	391.2	391.6	401.6	436.1	471.4	514.7
36°	363.2	364.4	370.9	402.0	433.8	478.3
36.5°	335.6	337.1	341.4	369.0	398.1	442.6
37°	307.6	311.8	313.4	336.8	364.4	408.9
37.5°	280.0	286.9	286.9	305.3	332.2	377.0
38°	252.0	262.3	262.3	274.6	301.5	346.0
38.5°	229.4	239.7	238.6	245.5	271.9	316.0
39°	206.7	218.2	216.7	218.2	244.3	288.4
39.5°	185.6	197.9	196.0	192.5	218.2	262.0
40°	165.3	179.1	176.4	168.4	192.5	237.0
40.5°	147.7	160.7	157.6	147.7	169.9	213.6
41°	130.0	144.2	140.0	130.8	148.8	191.4
41.5°	114.7	130.4	126.6	117.8	130.4	171.4
42°	100.5	117.0	113.1	104.7	117.4	152.7
42.5°	88.2	103.6	100.1	92.1	104.3	135.4
43°	77.1	90.1	86.7	79.0	91.3	121.6
43.5°	67.1	76.7	73.3	69.8	78.2	108.2



TEST NUMBER: P776275

CATALOG NUMBER: HCDJBL3040CSD-HCD42TRMB-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	44.5	48.3	46.8	46.8	52.2	67.5
45.5°	39.1	40.7	39.5	40.7	45.6	57.9
46°	33.4	33.8	33.8	34.9	39.1	49.1
46.5°	28.0	28.0	28.4	29.9	33.4	41.0
47°	22.6	24.2	24.2	25.7	28.4	34.5
47.5°	20.7	21.9	21.9	23.0	24.9	28.8
48°	19.6	20.3	20.7	21.5	22.6	24.9
48.5°	18.8	19.6	19.6	20.3	21.1	22.6
49°	18.0	18.8	18.8	19.6	20.3	21.5
49.5°	16.9	17.6	18.0	18.4	19.6	20.3
50°	16.1	16.9	16.9	17.6	18.4	19.6
50.5°	15.0	15.7	16.1	16.5	17.6	18.4
51°	14.2	15.0	15.0	15.7	16.5	17.6
51.5°	13.4	14.2	14.2	14.6	15.7	16.5
52°	12.7	13.0	13.4	13.8	14.6	15.7
52.5°	11.9	12.3	12.7	13.0	13.8	14.6
53°	11.1	11.5	11.9	12.3	13.0	13.8
53.5°	10.7	11.1	11.1	11.5	12.3	13.0
54°	10.0	10.4	10.4	11.1	11.5	12.3
54.5°	9.6	9.6	10.0	10.4	10.7	11.5
55°	8.8	9.2	9.2	9.6	10.4	10.7
55.5°	8.4	8.8	8.8	9.2	9.6	10.0
56°	8.1	8.1	8.4	8.8	9.2	9.6
56.5°	7.3	7.7	7.7	8.1	8.4	8.8
57°	6.9	7.3	7.3	7.7	8.1	8.4
57.5°	6.5	6.9	6.9	7.3	7.7	7.7
58°	6.1	6.5	6.5	6.9	7.3	7.3
58.5°	6.1	6.1	6.1	6.5	6.9	6.9
59°	5.8	5.8	5.8	6.1	6.5	6.5
59.5°	5.4	5.4	5.8	5.8	6.1	6.1
60°	5.0	5.4	5.4	5.4	5.8	5.8
60.5°	4.6	5.0	5.0	5.0	5.4	5.4
61°	4.6	4.6	4.6	5.0	5.0	5.4
61.5°	4.2	4.2	4.6	4.6	4.6	5.0
62°	4.2	4.2	4.2	4.2	4.6	4.6
62.5°	3.8	3.8	3.8	4.2	4.2	4.2
63°	3.5	3.8	3.8	3.8	3.8	4.2
63.5°	3.5	3.5	3.5	3.8	3.8	3.8
64°	3.1	3.5	3.5	3.5	3.5	3.8
64.5°	3.1	3.1	3.1	3.1	3.5	3.5
65°	3.1	3.1	3.1	3.1	3.1	3.5
65.5°	2.7	2.7	2.7	3.1	3.1	3.1
66°	2.7	2.7	2.7	2.7	2.7	3.1



TEST NUMBER: P776275

CATALOG NUMBER: HCDJBL3040CSD-HCD42TRMB-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	2.3	2.3	2.3	2.3	2.3	2.3
68°	1.9	2.3	2.3	2.3	2.3	2.3
68.5°	1.9	1.9	1.9	1.9	1.9	2.3
69°	1.9	1.9	1.9	1.9	1.9	1.9
69.5°	1.5	1.9	1.9	1.9	1.9	1.9
70°	1.5	1.5	1.5	1.5	1.9	1.9
70.5°	1.5	1.5	1.5	1.5	1.5	1.5
71°	1.5	1.5	1.5	1.5	1.5	1.5
71.5°	1.5	1.5	1.5	1.5	1.5	1.5
72°	1.2	1.2	1.2	1.2	1.2	1.2
72.5°	1.2	1.2	1.2	1.2	1.2	1.2
73°	1.2	1.2	1.2	1.2	1.2	1.2
73.5°	1.2	1.2	1.2	1.2	1.2	1.2
74°	1.2	1.2	1.2	1.2	1.2	1.2
74.5°	0.8	0.8	0.8	0.8	0.8	0.8
75°	0.8	0.8	0.8	0.8	0.8	0.8
75.5°	0.8	0.8	0.8	0.8	0.8	0.8
76°	0.8	0.8	0.8	0.8	0.8	0.8
76.5°	0.8	0.8	0.8	0.8	0.8	0.8
77°	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.4	0.8	0.8	0.8	0.4	0.4
78°	0.4	0.4	0.4	0.4	0.4	0.4
78.5°	0.4	0.4	0.4	0.4	0.4	0.4
79°	0.4	0.4	0.4	0.4	0.4	0.4
79.5°	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.4	0.4	0.4	0.4	0.4	0.4
80.5°	0.4	0.4	0.4	0.4	0.4	0.4
81°	0.4	0.4	0.4	0.4	0.4	0.4
81.5°	0.4	0.4	0.4	0.4	0.0	0.0
82°	0.4	0.4	0.4	0.4	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: P776275  
CATALOG NUMBER: HCDJBL3040CSD-HCD42TRMB-4000lm-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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— 0°-180°    - - 45°-225°    - - - - 90°-270°    - · - 135°-315°

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21.5°	1640.1	1696.8	1752.4	1766.3	1759.3	1754.0	1737.9	1703.3	1652.0	1600.9	1514.6
22°	1611.3	1673.0	1734.8	1748.2	1737.9	1733.6	1720.2	1682.3	1625.1	1568.3	1474.0



44°	94.7	116.6	152.3	165.3	164.5	153.8	142.3	125.4	103.2	77.1	57.9
44.5°	80.9	101.6	130.4	143.4	142.7	133.5	122.0	108.2	89.4	67.1	50.6



66.5°	2.7	2.7	3.1	3.1	3.1	3.1	3.1	3.1	2.7	2.7	2.3
67°	2.7	2.7	3.1	3.1	2.7	2.7	2.7	2.7	2.7	2.7	2.3



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°	1487.8	1495.8	1508.9	1538.4	1585.6	1640.1
22°	1448.3	1459.8	1470.1	1498.9	1549.2	1611.3



44°	58.3	66.4	63.3	61.4	68.7	94.7
44.5°	49.9	57.1	54.8	54.1	60.2	80.9



66.5°	2.3	2.7	2.7	2.7	2.7	2.7
67°	2.3	2.3	2.3	2.3	2.7	2.7

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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)