

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: P776503

Luminaire Tested: HCDJBS3040CSD-HCD8TRMB-4000lm-4000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776503
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2310613A001)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD8TRMB-4000lm-4000K
Description: 8 INCH ROUND MEDIUM MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2972.0 lumens
Efficiency: N/A
Efficacy: 77.2 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.25 / 1.15
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

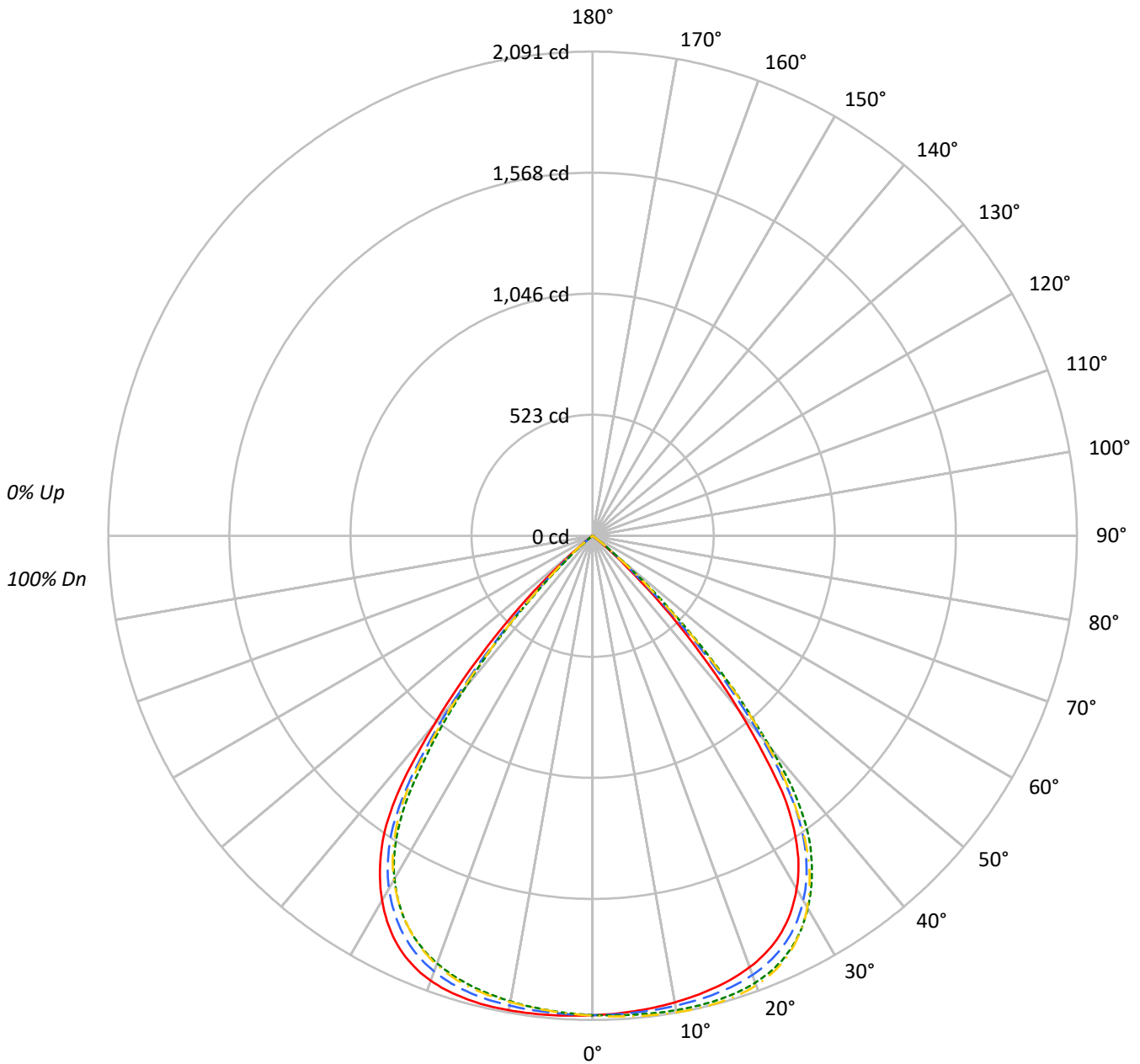
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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	100	100	100
1	113	110	107	105	111	108	106	103	104	102	100	100	99	97	97	95	94	93	93	93	93
2	107	102	97	94	105	100	96	92	97	93	90	94	91	89	91	89	87	85	85	85	85
3	101	94	88	84	99	92	87	83	90	85	82	87	84	81	85	82	79	78	78	78	78
4	95	87	81	76	93	85	80	76	83	78	75	81	77	74	79	76	73	71	71	71	71
5	89	80	74	69	88	79	73	69	77	72	68	76	71	67	74	70	67	65	65	65	65
6	84	74	68	63	83	74	67	63	72	66	62	70	66	62	69	65	61	60	60	60	60
7	79	69	62	58	78	68	62	58	67	61	57	66	61	57	65	60	57	55	55	55	55
8	75	64	58	53	73	64	57	53	63	57	53	61	56	53	60	56	52	51	51	51	51
9	71	60	53	49	69	59	53	49	58	53	49	57	52	49	57	52	48	47	47	47	47
10	67	56	50	45	66	56	49	45	55	49	45	54	49	45	53	48	45	43	43	43	43

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	63219	63219	63219	63219
5°	63163	63635	63672	63102
10°	63432	64495	64507	63295
15°	63935	65629	65550	63654
20°	64424	66727	66425	63832
25°	64216	67039	66308	63115
30°	62102	65497	64091	60340
35°	55861	61090	58448	52391
40°	39097	47479	42405	34036
45°	18618	26553	21683	14058
50°	3790	7120	4037	1800
55°	170	255	149	106
60°	49	49	49	49
65°	29	29	29	29
70°	36	36	36	36
75°	0	0	0	0
80°	0	0	0	0
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 26553 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	197.3	6.6
10°-20°	579.0	19.5
20°-30°	886.9	29.8
30°-40°	922.9	31.1
40°-50°	372.6	12.5
50°-60°	12.7	0.4
60°-70°	0.5	0.0
70°-80°	0.1	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°	1663.2	56.0
0°-40°	2586.1	87.0
0°-60°	2971.4	100.0
0°-90°	2972.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2972.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2071	2071	2071	2071	2071	
5°	2061	2076	2078	2059	2061	196
15°	2023	2076	2074	2014	2023	572
25°	1906	1990	1968	1874	1906	874
35°	1499	1639	1568	1406	1499	901
45°	431	615	502	326	431	347
55°	3	5	3	2	3	11
65°	0	0	0	0	0	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°	2070.7	2070.7	2070.7	2070.7	2070.7	2070.7	2070.7	2070.7	2070.7	2070.7	2070.7
0.5°	2069.9	2069.1	2069.9	2070.3	2070.7	2072.7	2073.5	2073.5	2071.5	2070.3	2069.9
1°	2069.1	2069.1	2069.9	2070.7	2071.5	2073.9	2074.7	2074.3	2072.3	2070.7	2069.5
1.5°	2068.3	2068.3	2069.9	2071.1	2072.3	2074.7	2076.0	2075.6	2073.1	2070.7	2069.5
2°	2067.5	2067.9	2069.5	2071.5	2073.1	2075.6	2076.8	2076.4	2073.5	2071.1	2069.5
2.5°	2066.7	2067.1	2069.5	2071.9	2073.5	2076.4	2078.0	2077.2	2074.3	2071.5	2069.1
3°	2065.5	2066.7	2069.1	2071.9	2073.9	2077.6	2078.8	2078.4	2075.2	2071.9	2068.7
3.5°	2064.7	2065.9	2069.1	2071.9	2074.7	2078.0	2079.6	2079.2	2076.0	2071.9	2068.3
4°	2063.5	2065.1	2068.3	2072.3	2075.2	2078.8	2080.8	2080.0	2076.8	2071.9	2068.3
4.5°	2062.3	2064.3	2067.9	2072.3	2075.6	2080.0	2081.6	2080.8	2077.2	2072.3	2067.5
5°	2061.0	2063.5	2067.5	2072.3	2076.4	2080.8	2082.4	2082.0	2077.6	2072.3	2067.1
5.5°	2059.8	2062.3	2067.1	2072.7	2076.8	2081.6	2083.6	2082.8	2078.4	2072.3	2066.7
6°	2058.6	2061.4	2066.7	2072.7	2077.2	2082.4	2084.4	2083.2	2078.8	2072.7	2066.3
6.5°	2057.4	2060.2	2065.9	2072.7	2078.0	2083.2	2085.2	2084.0	2079.2	2072.7	2065.9
7°	2056.2	2059.0	2065.5	2072.7	2078.4	2083.6	2086.0	2084.8	2079.6	2072.3	2065.1
7.5°	2054.6	2057.8	2065.1	2073.1	2078.8	2084.4	2086.8	2085.6	2080.0	2072.3	2064.7
8°	2053.0	2056.6	2064.3	2072.7	2079.2	2085.2	2087.6	2086.0	2080.4	2072.7	2063.9
8.5°	2051.4	2055.0	2063.5	2073.1	2079.6	2085.6	2088.0	2086.8	2080.4	2072.3	2063.1
9°	2049.8	2053.8	2062.7	2072.7	2080.0	2086.0	2088.9	2087.2	2080.8	2071.9	2062.7
9.5°	2047.7	2052.2	2061.9	2072.7	2080.0	2086.4	2089.3	2087.6	2080.8	2071.9	2061.4
10°	2046.1	2050.6	2061.0	2072.3	2080.4	2086.8	2089.7	2088.0	2080.8	2071.5	2060.6
10.5°	2044.1	2049.0	2060.2	2072.3	2080.4	2087.2	2090.1	2088.0	2080.8	2071.1	2059.4
11°	2042.1	2047.3	2059.0	2071.9	2080.4	2087.6	2090.5	2088.5	2080.4	2070.3	2058.2
11.5°	2040.1	2045.3	2057.8	2071.5	2080.4	2087.6	2090.5	2088.5	2080.4	2069.5	2057.0
12°	2038.1	2043.3	2057.0	2071.1	2080.4	2087.6	2090.9	2088.5	2080.0	2068.7	2055.4
12.5°	2035.7	2041.7	2055.8	2070.7	2080.0	2087.6	2090.9	2088.0	2079.2	2067.9	2054.2
13°	2033.2	2039.3	2054.2	2069.9	2079.6	2087.6	2090.5	2088.0	2078.8	2066.7	2052.2
13.5°	2030.8	2037.3	2053.0	2069.1	2078.8	2087.6	2090.1	2087.6	2078.0	2065.1	2050.6
14°	2028.0	2035.3	2051.4	2068.3	2078.0	2086.8	2089.7	2087.2	2076.8	2063.9	2048.1
14.5°	2025.6	2032.8	2049.8	2067.1	2077.6	2086.4	2089.3	2086.4	2075.6	2062.3	2046.1
15°	2022.8	2030.4	2047.7	2065.9	2076.4	2085.6	2088.5	2085.6	2073.9	2060.2	2043.7
15.5°	2019.5	2028.0	2045.7	2064.3	2075.6	2084.8	2087.2	2084.4	2072.3	2058.2	2040.9
16°	2016.3	2025.2	2043.7	2062.7	2073.9	2083.6	2086.0	2082.8	2070.3	2055.8	2038.1
16.5°	2013.1	2022.4	2041.3	2061.0	2072.3	2082.0	2084.8	2081.2	2068.3	2053.0	2034.8
17°	2009.5	2019.1	2038.9	2058.6	2070.7	2080.4	2082.8	2078.8	2065.9	2050.2	2031.2
17.5°	2005.4	2015.9	2036.1	2056.2	2068.7	2078.4	2080.8	2076.8	2063.5	2046.9	2027.2
18°	2001.4	2012.7	2032.8	2053.4	2066.3	2076.0	2078.8	2073.9	2060.2	2043.3	2022.8
18.5°	1997.4	2008.7	2030.0	2050.6	2063.9	2073.1	2076.0	2070.7	2057.0	2039.3	2018.3
19°	1992.5	2005.0	2026.4	2047.3	2060.6	2069.9	2073.1	2067.5	2053.0	2034.8	2013.5
19.5°	1987.7	2000.6	2022.4	2043.3	2057.4	2066.7	2069.9	2063.5	2049.0	2030.0	2007.8
20°	1982.9	1996.2	2018.3	2039.3	2053.8	2063.1	2065.9	2059.4	2044.5	2024.8	2001.8
20.5°	1977.2	1991.3	2013.5	2034.8	2049.8	2058.6	2061.9	2054.6	2039.3	2019.1	1995.4
21°	1971.2	1986.1	2008.7	2030.0	2044.9	2053.8	2057.0	2049.8	2034.0	2012.7	1988.9



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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°	1951.0	1968.4	1990.9	2012.7	2029.2	2036.5	2039.3	2030.8	2013.9	1991.3	1965.1
23°	1943.4	1961.5	1984.1	2005.8	2022.8	2029.6	2032.4	2023.6	2006.2	1982.9	1956.3
23.5°	1934.9	1954.2	1976.8	1998.2	2015.1	2022.0	2024.8	2015.1	1997.8	1973.6	1947.0
24°	1926.0	1946.2	1968.8	1990.5	2008.3	2013.9	2016.7	2006.6	1988.9	1964.3	1936.9
24.5°	1916.8	1938.1	1960.3	1981.7	2000.2	2005.0	2007.0	1997.4	1978.8	1953.8	1926.0
25°	1906.3	1928.9	1951.4	1972.4	1990.1	1995.8	1997.8	1987.3	1968.4	1943.0	1914.7
25.5°	1895.8	1919.2	1941.3	1962.7	1980.8	1985.3	1986.9	1976.4	1957.1	1931.3	1903.1
26°	1884.1	1908.3	1930.9	1952.2	1970.8	1974.4	1975.6	1964.7	1945.0	1918.8	1890.2
26.5°	1872.0	1897.4	1920.0	1940.9	1959.5	1961.9	1963.1	1952.2	1932.1	1905.5	1876.5
27°	1858.7	1884.9	1907.9	1929.3	1946.6	1949.4	1949.8	1938.9	1918.4	1891.8	1862.4
27.5°	1844.6	1872.4	1895.0	1916.8	1934.5	1936.1	1936.1	1924.8	1903.9	1876.9	1846.6
28°	1829.7	1858.3	1881.3	1903.1	1920.8	1921.2	1921.6	1909.5	1888.6	1861.1	1830.9
28.5°	1814.0	1843.4	1867.2	1889.4	1906.3	1905.9	1905.5	1893.4	1872.0	1844.2	1814.4
29°	1797.1	1827.7	1851.9	1874.4	1891.0	1889.8	1889.4	1876.5	1855.1	1827.3	1796.7
29.5°	1780.1	1811.6	1836.2	1858.7	1875.3	1872.4	1871.6	1858.7	1837.0	1809.2	1778.1
30°	1761.6	1793.8	1819.2	1842.6	1857.9	1854.3	1853.1	1840.2	1818.0	1790.6	1758.8
30.5°	1742.7	1775.3	1801.5	1825.3	1840.6	1835.4	1833.7	1820.4	1798.3	1770.9	1738.6
31°	1721.7	1755.2	1783.0	1806.7	1821.7	1814.8	1812.8	1799.5	1777.7	1749.9	1716.9
31.5°	1699.9	1734.6	1763.6	1787.8	1801.9	1794.2	1791.8	1777.7	1756.4	1728.2	1693.9
32°	1677.0	1712.0	1742.3	1768.5	1781.8	1772.5	1768.1	1754.8	1733.4	1705.6	1669.3
32.5°	1652.4	1687.8	1719.7	1747.1	1761.2	1748.7	1743.5	1730.2	1709.2	1681.8	1642.3
33°	1625.4	1662.5	1695.9	1725.3	1738.2	1724.1	1718.1	1704.0	1684.2	1656.4	1614.9
33.5°	1597.6	1634.7	1670.1	1702.4	1715.3	1698.7	1690.7	1677.0	1658.4	1629.8	1585.5
34°	1566.5	1606.4	1644.3	1678.2	1691.1	1672.1	1662.1	1648.0	1630.6	1601.2	1554.0
34.5°	1533.9	1575.4	1615.3	1652.8	1665.7	1643.1	1631.0	1617.3	1600.4	1569.8	1519.8
35°	1498.8	1541.6	1585.5	1625.0	1639.1	1612.1	1597.6	1584.3	1568.2	1534.7	1480.3
35.5°	1462.6	1504.9	1552.4	1595.2	1609.7	1577.4	1562.5	1548.4	1532.7	1495.6	1438.8
36°	1422.7	1465.8	1518.2	1562.5	1578.6	1542.0	1525.4	1510.1	1494.0	1454.5	1394.5
36.5°	1375.9	1423.5	1479.5	1525.4	1544.4	1502.1	1485.5	1470.2	1452.1	1409.0	1345.3
37°	1322.3	1374.3	1437.2	1487.1	1505.7	1462.6	1445.2	1428.3	1406.5	1359.8	1293.7
37.5°	1264.7	1319.5	1391.6	1444.4	1465.4	1418.6	1403.3	1385.2	1355.8	1304.2	1238.1
38°	1207.4	1263.9	1343.3	1402.1	1422.7	1373.5	1361.0	1339.6	1300.1	1244.9	1182.5
38.5°	1148.6	1209.5	1292.1	1352.5	1375.9	1324.3	1316.7	1292.9	1241.3	1184.5	1124.0
39°	1092.2	1157.9	1238.5	1303.4	1319.5	1274.4	1269.9	1243.3	1181.3	1121.2	1063.2
39.5°	1036.6	1105.1	1182.1	1248.6	1255.4	1220.3	1217.5	1190.9	1121.2	1059.1	1001.1
40°	981.0	1053.5	1124.0	1192.9	1191.3	1164.3	1165.9	1135.3	1064.0	997.9	939.4
40.5°	923.3	996.7	1066.4	1130.9	1130.1	1105.1	1115.6	1079.3	1008.4	937.4	873.7
41°	864.9	937.4	1008.4	1068.0	1074.0	1047.0	1059.9	1022.1	951.9	878.6	810.1
41.5°	808.1	876.2	948.7	1004.7	1018.4	986.6	1003.1	962.4	894.7	818.5	748.0
42°	750.8	818.1	889.9	940.2	961.6	930.2	944.7	903.2	835.5	759.3	691.2
42.5°	695.6	760.9	830.6	875.4	904.4	873.3	884.6	844.3	778.2	700.0	629.9
43°	642.4	704.1	770.6	813.7	842.7	816.9	822.2	783.5	719.4	640.4	574.3
43.5°	588.0	648.5	708.9	750.8	782.7	759.3	762.1	724.6	664.2	584.0	518.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	431.2	480.4	525.1	577.9	615.0	587.2	578.3	554.6	502.2	435.7	373.6
45.5°	380.5	426.8	468.7	523.1	560.6	532.0	522.3	498.1	451.0	389.7	327.3
46°	334.1	375.6	415.9	473.1	507.0	478.0	465.1	444.5	402.6	344.2	280.9
46.5°	288.6	326.4	365.9	423.6	452.2	428.8	417.5	395.8	354.3	298.6	235.0
47°	245.4	280.1	318.8	376.0	405.4	379.2	370.0	347.4	305.9	252.7	199.1
47.5°	205.1	235.0	276.1	330.1	358.7	329.7	322.4	299.0	257.5	213.2	166.4
48°	169.7	194.7	235.8	284.9	311.9	280.1	274.9	250.3	216.0	176.9	137.4
48.5°	137.8	158.4	199.5	243.4	265.2	230.5	227.3	209.2	177.7	143.9	111.2
49°	118.5	129.0	167.3	205.5	224.9	188.2	190.2	170.1	142.7	114.1	89.1
49.5°	99.1	108.8	137.0	171.3	185.8	152.3	154.0	136.2	112.0	88.3	69.3
50°	79.8	88.7	116.9	139.8	149.9	120.9	120.9	106.4	85.0	73.3	57.2
50.5°	60.1	68.5	97.1	118.5	117.3	92.7	92.7	79.8	70.1	58.0	45.5
51°	41.1	48.8	77.4	97.5	88.7	76.6	76.2	65.7	55.2	43.1	33.5
51.5°	29.8	36.7	57.6	76.6	73.3	60.1	60.1	51.6	40.3	27.8	21.4
52°	20.6	26.2	37.9	55.6	58.0	43.9	43.5	37.5	25.4	12.5	9.7
52.5°	12.9	17.3	25.8	34.7	42.3	27.8	27.0	23.4	10.9	8.1	6.4
53°	10.9	14.9	16.1	22.2	27.0	12.1	10.9	8.9	7.3	6.0	5.2
53.5°	8.5	12.1	13.3	12.9	12.1	7.7	7.3	6.4	5.6	4.8	4.0
54°	6.0	9.3	10.1	10.5	7.7	6.0	5.6	5.2	4.4	3.6	3.2
54.5°	4.0	6.4	7.3	8.1	6.0	4.8	4.4	4.0	3.2	2.8	2.4
55°	3.2	3.6	4.4	6.0	4.8	3.6	3.6	3.2	2.8	2.4	2.0
55.5°	2.4	2.8	3.2	3.6	3.6	2.8	2.8	2.4	2.0	2.0	1.6
56°	2.0	2.4	2.8	2.8	2.8	2.0	2.0	2.0	1.6	1.6	1.6
56.5°	1.6	2.0	2.0	2.4	2.0	1.6	1.6	1.6	1.6	1.2	1.2
57°	1.6	1.6	1.6	2.0	1.6	1.6	1.6	1.6	1.2	1.2	1.2
57.5°	1.2	1.2	1.6	1.6	1.6	1.2	1.2	1.2	1.2	1.2	1.2
58°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.8
58.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8
59°	0.8	1.2	1.2	1.2	1.2	0.8	0.8	0.8	0.8	0.8	0.8
59.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
60°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
60.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
61°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
61.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
62°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4
62.5°	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4	0.4
63°	0.4	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4
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: P776503

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMB-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	0.0	0.0	0.0	0.0
71.5°	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0
72°	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
73°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
73.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76°	0.0	0.0	0.0	0.0	0.0	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: P776503

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMB-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: P776503

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMB-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2070.7	2070.7	2070.7	2070.7	2070.7	2070.7
0.5°	2069.5	2069.1	2070.7	2071.5	2071.5	2069.9
1°	2069.1	2068.3	2069.5	2070.3	2070.3	2069.1
1.5°	2068.3	2067.1	2068.3	2069.1	2069.1	2068.3
2°	2067.5	2066.3	2067.1	2067.9	2067.9	2067.5
2.5°	2067.1	2065.1	2066.3	2066.7	2067.1	2066.7
3°	2066.3	2064.3	2065.1	2065.5	2065.5	2065.5
3.5°	2065.1	2063.1	2063.5	2064.3	2064.3	2064.7
4°	2064.7	2061.9	2062.3	2063.1	2063.1	2063.5
4.5°	2063.5	2060.2	2061.0	2061.9	2061.9	2062.3
5°	2062.7	2059.0	2059.4	2060.2	2061.0	2061.0
5.5°	2061.4	2057.8	2058.2	2059.0	2059.4	2059.8
6°	2060.6	2056.2	2056.6	2057.8	2058.2	2058.6
6.5°	2059.4	2054.6	2055.4	2056.2	2057.0	2057.4
7°	2057.8	2053.0	2053.8	2055.0	2055.8	2056.2
7.5°	2056.6	2051.4	2052.2	2053.4	2054.2	2054.6
8°	2055.4	2049.8	2050.6	2052.2	2053.0	2053.0
8.5°	2053.8	2047.7	2048.6	2050.6	2051.4	2051.4
9°	2052.2	2045.7	2046.9	2049.0	2049.8	2049.8
9.5°	2051.0	2043.7	2044.9	2047.3	2048.1	2047.7
10°	2049.0	2041.7	2042.9	2045.7	2046.5	2046.1
10.5°	2047.3	2039.3	2040.9	2043.7	2044.5	2044.1
11°	2045.3	2037.3	2038.9	2042.1	2042.9	2042.1
11.5°	2043.3	2034.4	2036.5	2040.1	2040.9	2040.1
12°	2041.3	2032.0	2034.0	2038.1	2038.9	2038.1
12.5°	2038.9	2029.6	2031.2	2035.7	2036.9	2035.7
13°	2036.5	2026.8	2028.4	2033.2	2034.4	2033.2
13.5°	2033.6	2024.0	2026.0	2030.8	2031.6	2030.8
14°	2031.2	2020.7	2022.8	2028.0	2029.2	2028.0
14.5°	2028.0	2017.5	2019.5	2024.8	2026.4	2025.6
15°	2025.2	2013.9	2016.3	2021.6	2023.2	2022.8
15.5°	2022.0	2010.3	2012.3	2018.3	2019.9	2019.5
16°	2017.9	2006.2	2008.7	2014.3	2016.3	2016.3
16.5°	2014.3	2002.2	2004.6	2010.3	2012.7	2013.1
17°	2010.3	1997.8	1999.8	2005.8	2008.7	2009.5
17.5°	2005.8	1992.9	1995.4	2001.0	2004.2	2005.4
18°	2001.0	1987.7	1990.1	1995.8	1999.4	2001.4
18.5°	1995.8	1982.9	1984.9	1990.1	1994.1	1997.4
19°	1990.5	1977.2	1979.2	1984.1	1988.9	1992.5
19.5°	1984.9	1970.8	1973.2	1977.6	1982.9	1987.7
20°	1978.4	1964.7	1966.7	1970.8	1976.4	1982.9
20.5°	1972.0	1957.9	1959.9	1963.5	1969.6	1977.2
21°	1964.7	1950.6	1952.6	1955.5	1962.7	1971.2



TEST NUMBER: P776503

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMB-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1940.9	1926.0	1927.6	1928.9	1937.7	1951.0
23°	1932.1	1916.8	1918.4	1918.8	1928.5	1943.4
23.5°	1922.0	1907.1	1908.3	1908.7	1918.4	1934.9
24°	1911.9	1896.6	1898.2	1897.8	1907.9	1926.0
24.5°	1901.0	1885.3	1886.9	1886.1	1897.0	1916.8
25°	1889.4	1873.6	1875.3	1873.6	1885.3	1906.3
25.5°	1877.3	1861.1	1862.4	1861.1	1872.8	1895.8
26°	1864.0	1848.3	1849.1	1847.4	1860.3	1884.1
26.5°	1850.3	1834.1	1835.4	1833.7	1846.6	1872.0
27°	1835.8	1818.8	1820.8	1818.8	1832.5	1858.7
27.5°	1820.0	1803.1	1805.5	1803.5	1817.2	1844.6
28°	1803.5	1786.6	1789.4	1786.6	1801.5	1829.7
28.5°	1786.2	1768.9	1772.5	1770.5	1784.6	1814.0
29°	1768.5	1750.7	1754.8	1752.3	1767.2	1797.1
29.5°	1749.5	1731.4	1736.6	1734.6	1749.9	1780.1
30°	1729.4	1711.6	1716.9	1715.3	1731.4	1761.6
30.5°	1707.6	1689.5	1697.1	1696.3	1712.0	1742.7
31°	1683.8	1666.9	1675.4	1675.0	1691.5	1721.7
31.5°	1658.8	1641.5	1652.4	1653.2	1669.3	1699.9
32°	1632.2	1615.3	1627.0	1628.2	1645.1	1677.0
32.5°	1603.2	1586.3	1600.8	1602.4	1619.3	1652.4
33°	1573.8	1556.1	1571.8	1574.2	1591.9	1625.4
33.5°	1540.7	1523.4	1543.2	1546.4	1564.5	1597.6
34°	1506.9	1487.1	1512.1	1516.2	1534.7	1566.5
34.5°	1469.8	1448.5	1478.7	1482.7	1502.5	1533.9
35°	1429.1	1405.7	1442.4	1446.0	1467.0	1498.8
35.5°	1383.2	1358.6	1400.9	1406.5	1428.3	1462.6
36°	1334.8	1306.2	1354.6	1361.8	1386.0	1422.7
36.5°	1280.4	1251.4	1302.6	1312.6	1338.0	1375.9
37°	1225.6	1198.2	1245.7	1259.0	1284.8	1322.3
37.5°	1168.0	1146.6	1184.5	1203.4	1227.2	1264.7
38°	1113.5	1093.4	1122.4	1143.8	1168.8	1207.4
38.5°	1057.5	1040.6	1063.6	1084.1	1109.5	1148.6
39°	1003.5	978.9	1006.7	1020.4	1049.5	1092.2
39.5°	947.9	916.9	952.3	959.6	988.6	1036.6
40°	890.7	854.0	895.5	898.3	926.1	981.0
40.5°	831.0	799.6	836.3	836.7	866.9	923.3
41°	769.8	745.6	777.8	775.4	809.3	864.9
41.5°	708.1	693.2	720.6	714.2	751.6	808.1
42°	648.9	638.0	665.0	656.5	694.4	750.8
42.5°	589.2	582.4	611.0	601.7	636.0	695.6
43°	530.8	527.6	558.6	548.5	580.3	642.4
43.5°	474.8	473.1	506.6	497.3	526.3	588.0



TEST NUMBER: P776503

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMB-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	330.1	325.6	358.3	357.1	380.5	431.2
45.5°	281.7	279.3	313.1	316.8	336.5	380.5
46°	233.3	233.3	271.6	278.9	296.2	334.1
46.5°	195.9	192.6	233.3	243.0	258.7	288.6
47°	163.2	155.2	197.5	210.0	223.3	245.4
47.5°	133.8	133.8	164.4	178.9	191.0	205.1
48°	108.8	112.8	135.0	151.9	161.6	169.7
48.5°	86.6	91.9	114.5	131.0	134.6	137.8
49°	68.5	70.9	94.3	110.4	114.5	118.5
49.5°	56.8	50.0	74.6	90.3	94.3	99.1
50°	45.5	37.9	54.4	69.7	73.8	79.8
50.5°	34.3	27.8	40.3	49.2	54.0	60.1
51°	23.0	19.3	29.4	35.9	39.5	41.1
51.5°	11.7	12.1	19.7	24.2	27.4	29.8
52°	7.7	9.7	12.5	14.9	17.7	20.6
52.5°	5.6	7.7	10.1	12.1	14.9	12.9
53°	4.8	6.0	8.1	9.3	12.1	10.9
53.5°	3.6	4.0	6.0	6.9	9.3	8.5
54°	2.8	3.2	4.0	4.0	6.4	6.0
54.5°	2.4	2.4	3.2	3.2	3.6	4.0
55°	2.0	2.0	2.4	2.4	2.8	3.2
55.5°	1.6	1.6	2.0	2.0	2.4	2.4
56°	1.6	1.6	1.6	1.6	2.0	2.0
56.5°	1.2	1.2	1.6	1.6	1.6	1.6
57°	1.2	1.2	1.2	1.2	1.2	1.6
57.5°	1.2	1.2	1.2	1.2	1.2	1.2
58°	0.8	0.8	1.2	1.2	1.2	1.2
58.5°	0.8	0.8	0.8	1.2	1.2	1.2
59°	0.8	0.8	0.8	0.8	0.8	0.8
59.5°	0.8	0.8	0.8	0.8	0.8	0.8
60°	0.8	0.8	0.8	0.8	0.8	0.8
60.5°	0.8	0.8	0.8	0.8	0.8	0.8
61°	0.8	0.8	0.8	0.8	0.8	0.8
61.5°	0.8	0.8	0.8	0.8	0.8	0.8
62°	0.4	0.8	0.8	0.8	0.8	0.8
62.5°	0.4	0.4	0.8	0.8	0.8	0.8
63°	0.4	0.4	0.4	0.4	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: P776503

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMB-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°	0.0	0.4	0.4	0.4	0.4	0.4
72°	0.0	0.0	0.4	0.4	0.4	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0
73°	0.0	0.0	0.0	0.0	0.0	0.0
73.5°	0.0	0.0	0.0	0.0	0.0	0.0
74°	0.0	0.0	0.0	0.0	0.0	0.0
74.5°	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0
75.5°	0.0	0.0	0.0	0.0	0.0	0.0
76°	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
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: P776503

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRMB-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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Scaled Data Report





— 0°-180° - - 45°-225° - - - - 90°-270° - · - 135°-315°

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21.5°	1965.1	1980.8	2003.4	2024.8	2040.1	2048.6	2051.8	2043.7	2028.0	2006.2	1981.7
22°	1958.3	1974.8	1997.4	2018.7	2035.3	2042.9	2045.7	2037.7	2021.1	1999.0	1974.0



44°	534.4	593.2	646.0	691.6	724.6	701.7	698.4	668.2	609.8	530.8	465.9
44.5°	482.0	536.8	584.0	632.7	668.2	644.0	640.0	611.0	556.6	481.2	419.5



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°	1957.5	1943.0	1945.0	1947.4	1954.6	1965.1
22°	1949.4	1934.9	1936.5	1938.5	1946.6	1958.3



44°	426.4	421.6	456.2	446.9	474.8	534.4
44.5°	378.4	373.2	405.8	400.6	426.4	482.0

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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)