

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: P776323

Luminaire Tested: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-4000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776323
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B009)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-4000K
Description: 4 INCH SQUARE MEDIUM LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3551.9 lumens
Efficiency: N/A
Efficacy: 92.3 lumens/watt
Spacing Criteria (0/90/45): 1.11 / 1.14 / 1.19
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

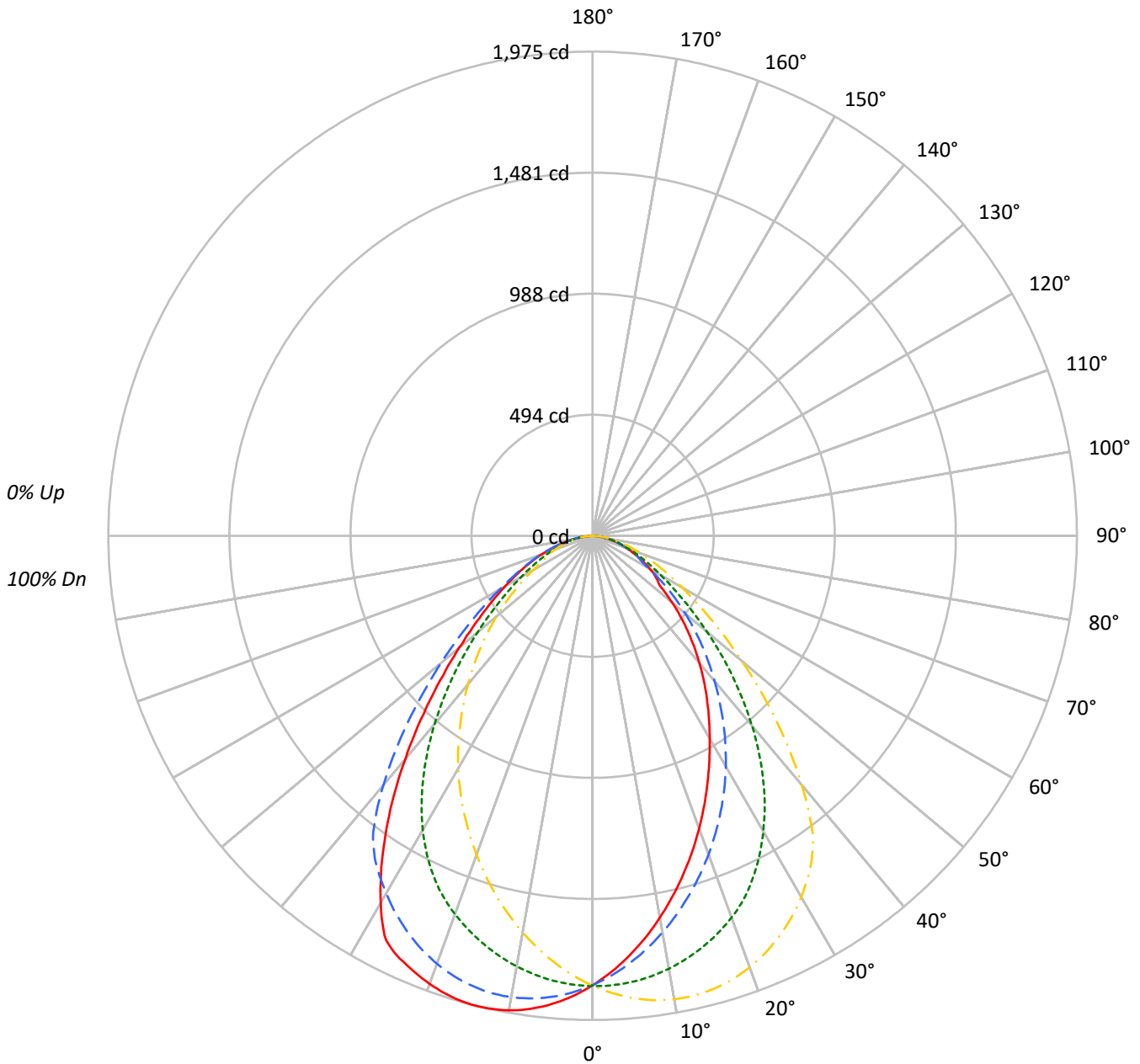
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20										
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88								
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76								
3	94	85	78	72	92	84	77	72	81	75	71	78	73	69	76	72	68	66								
4	87	77	69	63	85	75	68	63	73	67	62	71	65	61	69	64	60	58								
5	81	70	62	56	79	68	61	55	66	60	55	65	59	54	63	58	54	52								
6	75	63	55	50	74	62	55	49	61	54	49	59	53	49	58	52	48	46								
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	42								
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38								
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34								
10	58	46	38	34	57	45	38	34	44	38	33	43	37	33	43	37	33	32								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	230846	230846	230846	230846
5°	217175	230818	242277	230199
10°	202076	229104	251148	227928
15°	186170	226182	257165	224449
20°	170114	221916	260447	219921
25°	153996	214372	262376	212914
30°	138838	202327	251227	201325
35°	124874	186282	225596	184930
40°	111353	166109	195105	164581
45°	97461	143077	164950	142223
50°	82759	119058	139009	119842
55°	71528	97617	118922	100184
60°	68060	81047	103650	84798
65°	60957	68401	91688	73196
70°	54568	58874	80804	64209
75°	48187	50764	69387	56842
80°	37976	42325	53703	49645
85°	18627	30901	25558	40720

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 225°

Vertical Angle: 45°

Luminance: 188052 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.5	4.9
10°-20°	482.4	13.6
20°-30°	696.8	19.6
30°-40°	749.6	21.1
40°-50°	622.1	17.5
50°-60°	418.5	11.8
60°-70°	253.3	7.1
70°-80°	128.0	3.6
80°-90°	28.8	0.8
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°	1351.7	38.1
0°-40°	2101.2	59.2
0°-60°	3141.8	88.5
0°-90°	3551.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3551.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1834	1834	1834	1834	1834	
5°	1719	1827	1918	1822	1719	160
15°	1429	1736	1974	1723	1429	400
25°	1109	1544	1890	1533	1109	509
35°	813	1212	1468	1204	813	508
45°	548	804	927	799	548	422
55°	326	445	542	457	326	298
65°	205	230	308	246	205	204
75°	99	104	143	117	99	105
85°	13	21	18	28	13	19
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°	1834.3	1834.3	1834.3	1834.3	1834.3	1834.3	1834.3	1834.3	1834.3	1834.3	1834.3
0.5°	1823.5	1823.5	1825.5	1829.5	1837.2	1840.0	1842.4	1843.6	1843.6	1842.0	1839.6
1°	1813.0	1813.8	1818.2	1825.5	1837.2	1843.6	1849.2	1852.5	1853.3	1850.9	1846.0
1.5°	1802.1	1803.7	1810.6	1821.0	1836.8	1846.8	1855.7	1860.9	1862.5	1858.9	1852.1
2°	1791.2	1793.6	1802.5	1816.2	1835.9	1850.1	1861.7	1869.4	1871.4	1867.0	1858.5
2.5°	1779.5	1782.8	1794.0	1811.4	1835.1	1852.9	1867.8	1877.0	1879.9	1875.0	1864.2
3°	1768.2	1772.3	1786.0	1806.1	1833.9	1855.7	1873.4	1884.7	1888.3	1882.3	1869.4
3.5°	1756.2	1761.0	1777.1	1800.9	1832.7	1857.7	1878.7	1892.4	1896.0	1889.5	1874.6
4°	1744.1	1750.1	1767.8	1795.2	1830.7	1860.1	1883.9	1899.2	1903.6	1896.4	1879.5
4.5°	1731.6	1738.0	1758.6	1789.2	1829.1	1861.7	1888.7	1905.7	1910.9	1902.8	1883.5
5°	1719.1	1726.7	1749.3	1783.2	1827.1	1863.3	1893.2	1912.1	1917.8	1908.9	1887.9
5.5°	1705.8	1714.7	1739.2	1776.7	1824.7	1864.6	1897.2	1918.2	1924.2	1914.5	1891.6
6°	1692.9	1702.2	1729.6	1770.3	1822.2	1865.8	1900.8	1923.8	1930.2	1920.2	1895.2
6.5°	1680.0	1689.3	1719.5	1763.4	1819.4	1866.2	1904.5	1928.6	1935.9	1925.0	1898.4
7°	1666.3	1677.2	1709.0	1757.0	1816.2	1866.6	1907.7	1933.5	1941.5	1929.4	1901.2
7.5°	1652.2	1663.9	1698.1	1749.3	1813.0	1866.6	1910.5	1937.9	1946.4	1933.9	1903.6
8°	1638.9	1651.0	1687.7	1742.1	1809.4	1866.6	1912.9	1942.3	1950.8	1937.9	1905.7
8.5°	1624.8	1637.7	1676.8	1734.4	1805.3	1866.2	1914.9	1946.0	1955.2	1941.1	1907.3
9°	1610.3	1624.4	1665.5	1726.7	1801.3	1865.4	1916.9	1949.2	1958.9	1944.3	1908.9
9.5°	1595.8	1610.3	1653.8	1718.3	1797.3	1864.2	1918.6	1952.0	1962.1	1947.2	1910.1
10°	1581.3	1596.6	1642.5	1710.2	1792.8	1862.9	1919.8	1954.8	1965.3	1949.6	1910.9
10.5°	1566.4	1582.9	1630.8	1701.8	1788.0	1861.3	1920.6	1957.2	1967.7	1951.6	1911.7
11°	1551.9	1568.8	1619.1	1693.3	1783.2	1859.7	1921.0	1958.9	1970.1	1953.2	1911.7
11.5°	1536.9	1554.7	1607.1	1684.0	1777.9	1857.7	1921.0	1960.5	1971.7	1954.4	1911.3
12°	1521.2	1540.6	1594.6	1675.2	1772.7	1855.3	1921.0	1961.7	1973.4	1955.2	1910.9
12.5°	1506.3	1525.7	1582.5	1665.9	1767.0	1852.9	1920.6	1962.1	1974.6	1956.0	1910.1
13°	1491.4	1511.1	1570.0	1656.6	1761.4	1850.1	1919.4	1962.5	1975.0	1956.0	1908.9
13.5°	1475.7	1496.6	1557.5	1647.4	1755.4	1846.8	1918.2	1962.5	1975.4	1955.6	1907.3
14°	1460.4	1482.1	1544.2	1637.7	1749.3	1843.2	1916.5	1962.1	1975.4	1954.8	1905.3
14.5°	1444.7	1467.2	1531.3	1627.6	1742.9	1840.0	1914.9	1961.3	1974.6	1953.6	1902.8
15°	1428.9	1451.5	1518.4	1617.5	1736.0	1835.9	1912.5	1960.1	1973.8	1952.4	1900.4
15.5°	1413.2	1436.6	1505.5	1607.5	1729.2	1831.9	1910.1	1958.5	1972.6	1950.8	1897.6
16°	1397.5	1421.7	1492.2	1597.4	1722.3	1827.1	1907.3	1956.4	1970.9	1948.8	1894.4
16.5°	1382.2	1406.4	1478.5	1586.9	1715.1	1822.6	1904.0	1954.4	1968.9	1946.4	1890.8
17°	1366.1	1391.5	1465.2	1576.0	1707.4	1817.4	1900.8	1952.0	1966.5	1943.1	1887.1
17.5°	1350.4	1375.3	1451.5	1565.1	1699.3	1812.2	1896.8	1948.8	1963.7	1939.9	1882.7
18°	1334.2	1360.0	1438.2	1554.3	1691.3	1806.1	1892.8	1945.2	1960.5	1936.3	1878.3
18.5°	1318.5	1344.7	1424.5	1543.0	1683.2	1800.5	1888.3	1941.5	1956.8	1932.3	1873.4
19°	1302.4	1329.0	1410.4	1531.3	1674.8	1794.4	1883.5	1937.5	1953.2	1928.2	1868.6
19.5°	1285.9	1313.3	1396.7	1520.0	1665.9	1787.6	1878.3	1933.1	1949.2	1923.4	1863.3
20°	1270.2	1298.0	1382.2	1508.3	1657.0	1781.1	1873.0	1928.2	1944.7	1918.6	1857.7
20.5°	1254.1	1282.3	1368.5	1496.2	1647.8	1773.9	1867.4	1923.0	1939.9	1913.3	1851.3
21°	1237.9	1266.5	1354.4	1484.2	1638.1	1766.6	1861.3	1917.8	1935.1	1907.7	1845.2

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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°	1189.6	1219.4	1311.3	1447.1	1606.3	1742.9	1841.6	1899.6	1918.6	1889.1	1824.3
23°	1173.1	1203.3	1296.4	1433.8	1595.0	1733.6	1834.3	1893.2	1912.9	1882.7	1817.0
23.5°	1157.3	1188.0	1282.3	1420.9	1582.5	1724.3	1826.7	1886.3	1906.9	1875.8	1809.4
24°	1141.2	1171.8	1267.4	1406.4	1570.0	1714.2	1818.2	1879.9	1901.2	1869.0	1801.3
24.5°	1124.7	1156.1	1252.8	1392.7	1557.1	1703.4	1810.2	1872.6	1895.6	1861.3	1792.8
25°	1109.0	1140.4	1237.5	1378.2	1543.8	1692.1	1801.7	1865.4	1889.5	1854.1	1784.4
25.5°	1093.3	1124.3	1223.0	1363.7	1530.5	1680.4	1793.2	1858.5	1881.5	1846.8	1775.1
26°	1077.6	1108.6	1208.1	1348.3	1516.4	1668.7	1784.0	1851.7	1872.6	1840.0	1766.2
26.5°	1061.8	1093.3	1193.2	1333.8	1501.9	1655.8	1774.7	1844.4	1863.3	1832.3	1756.6
27°	1046.1	1077.1	1178.3	1318.5	1487.0	1642.5	1765.0	1836.8	1853.7	1824.7	1746.9
27.5°	1030.8	1061.8	1163.4	1303.2	1471.7	1629.2	1755.4	1826.7	1838.4	1814.6	1737.2
28°	1015.1	1046.1	1148.1	1287.5	1456.3	1615.1	1745.3	1816.6	1817.4	1804.1	1727.1
28.5°	1000.2	1030.8	1133.2	1271.8	1440.6	1600.6	1734.8	1806.5	1796.1	1793.6	1716.7
29°	985.3	1015.1	1117.4	1255.7	1424.9	1585.7	1723.9	1795.2	1776.3	1782.4	1705.8
29.5°	970.0	1000.6	1102.1	1239.9	1408.4	1570.0	1712.6	1777.9	1752.5	1765.0	1694.9
30°	955.4	985.7	1086.4	1223.4	1392.3	1553.9	1701.4	1756.2	1728.8	1744.1	1684.0
30.5°	940.5	970.4	1070.7	1207.3	1374.9	1538.1	1689.3	1735.2	1705.0	1722.7	1672.7
31°	926.0	954.2	1055.0	1190.8	1358.4	1522.0	1676.8	1715.1	1680.8	1702.2	1661.5
31.5°	911.5	940.5	1038.9	1174.3	1340.7	1504.7	1663.9	1691.3	1654.2	1679.2	1649.8
32°	897.0	925.6	1023.1	1157.7	1323.4	1487.8	1651.4	1667.5	1628.8	1655.8	1638.1
32.5°	882.9	911.5	1007.4	1141.2	1305.6	1470.0	1638.9	1643.3	1603.4	1632.8	1626.4
33°	868.8	897.0	991.7	1124.3	1287.5	1452.3	1625.6	1620.0	1576.8	1608.7	1614.3
33.5°	854.7	882.9	976.0	1107.8	1268.6	1434.2	1611.9	1594.6	1549.8	1584.5	1601.8
34°	841.0	868.8	959.9	1090.4	1250.8	1415.6	1597.4	1569.6	1522.4	1558.7	1587.7
34.5°	826.5	854.3	943.8	1073.5	1231.5	1395.9	1581.3	1543.4	1495.4	1534.1	1572.4
35°	812.8	839.4	928.0	1056.2	1212.5	1377.4	1565.1	1518.4	1468.4	1508.7	1556.3
35.5°	799.1	826.5	912.3	1039.3	1193.2	1357.2	1547.8	1491.8	1440.6	1483.7	1540.6
36°	785.8	812.4	897.0	1021.9	1173.1	1337.5	1530.1	1465.6	1412.4	1457.6	1524.0
36.5°	772.1	798.7	880.9	1005.0	1153.3	1317.3	1508.3	1438.6	1385.4	1431.4	1503.9
37°	758.4	785.0	865.6	987.7	1134.0	1296.4	1482.9	1412.4	1357.2	1406.0	1479.3
37.5°	744.7	770.9	849.9	970.0	1113.4	1275.0	1457.6	1385.4	1328.6	1379.8	1455.5
38°	731.0	757.2	834.6	952.6	1092.9	1253.7	1433.0	1358.4	1299.6	1353.2	1431.4
38.5°	717.7	743.5	819.6	934.9	1072.3	1232.3	1407.6	1330.2	1273.0	1326.2	1407.2
39°	704.8	730.2	804.3	917.6	1052.2	1210.5	1380.6	1304.8	1245.2	1300.8	1380.6
39.5°	691.1	716.9	789.0	899.8	1031.6	1188.4	1353.6	1277.0	1216.6	1274.6	1354.4
40°	677.8	702.8	774.1	882.1	1011.1	1165.8	1326.6	1249.2	1187.6	1247.6	1327.4
40.5°	664.5	689.5	759.2	864.8	989.7	1143.6	1299.6	1221.8	1162.6	1220.2	1300.8
41°	651.2	676.2	744.7	847.0	969.2	1121.1	1271.8	1196.4	1135.6	1195.6	1274.2
41.5°	638.3	662.9	729.8	829.7	948.2	1098.5	1244.4	1169.4	1107.0	1169.4	1246.0
42°	625.0	649.6	715.3	812.0	927.6	1075.9	1216.6	1141.2	1080.8	1142.0	1219.0
42.5°	612.1	636.3	700.8	795.1	907.1	1052.6	1189.6	1115.8	1055.8	1117.0	1191.2
43°	599.2	623.0	686.3	777.7	886.1	1030.0	1162.2	1090.4	1029.6	1092.1	1164.6
43.5°	585.9	610.1	671.8	760.4	865.2	1007.0	1134.8	1063.0	1000.6	1065.9	1136.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	547.6	571.0	629.4	709.2	803.9	938.1	1053.0	987.7	926.8	992.5	1056.6
45.5°	534.7	558.1	615.3	692.3	783.4	915.6	1025.2	959.9	903.1	965.9	1030.0
46°	522.7	545.6	601.6	675.8	763.2	893.0	998.2	936.1	881.7	940.9	1003.4
46.5°	509.4	532.7	587.5	658.9	743.1	870.0	972.4	913.5	857.5	920.4	978.4
47°	496.9	519.8	573.8	642.7	722.9	847.5	946.2	888.2	831.3	896.2	952.2
47.5°	484.4	506.9	559.7	626.2	703.2	824.9	919.6	861.6	812.8	870.0	926.8
48°	472.3	494.4	546.8	610.1	683.4	802.7	893.0	841.8	792.6	849.5	901.5
48.5°	459.4	481.6	533.1	594.0	664.5	781.0	869.2	819.2	768.9	828.9	878.5
49°	447.3	469.5	519.8	578.7	645.6	759.2	844.6	793.9	747.9	805.1	853.9
49.5°	435.2	457.0	506.5	563.0	627.0	737.8	819.2	771.7	730.2	781.8	829.7
50°	422.7	444.5	493.2	547.2	608.1	715.7	794.7	751.9	710.0	763.2	805.5
50.5°	410.2	432.0	480.3	531.9	590.4	695.1	772.5	729.8	687.5	742.7	784.6
51°	398.5	419.9	467.4	517.4	572.6	673.8	748.7	706.0	672.2	718.1	761.6
51.5°	386.5	407.8	454.6	502.5	555.7	654.0	725.4	689.5	655.6	701.6	739.1
52°	374.8	395.7	442.1	488.0	538.4	633.1	704.8	670.1	634.3	683.0	717.3
52.5°	363.1	383.6	429.6	473.9	521.4	613.7	683.4	647.2	619.0	662.1	698.8
53°	352.2	371.5	417.5	459.8	505.3	593.6	660.9	630.7	604.1	642.3	676.2
53.5°	341.7	359.9	405.0	446.1	490.0	574.6	640.3	614.1	586.7	627.0	655.2
54°	335.3	348.6	392.9	432.4	474.3	555.3	621.0	594.8	569.8	608.5	636.7
54.5°	330.8	337.3	381.2	419.1	459.4	536.8	601.2	577.1	556.9	588.7	618.6
55°	326.0	326.8	369.5	406.6	444.9	519.0	581.1	562.6	542.0	575.0	598.4
55.5°	321.6	316.7	358.2	394.1	430.8	500.9	564.2	546.0	525.5	559.3	580.3
56°	316.3	311.5	346.6	382.0	417.1	484.0	545.6	528.7	513.8	540.4	563.4
56.5°	311.1	307.1	335.3	369.9	403.8	467.9	527.1	515.4	500.5	527.1	545.6
57°	306.3	302.2	324.4	358.2	390.5	451.7	511.0	500.5	485.2	513.4	527.9
57.5°	300.6	297.4	313.5	346.6	378.4	436.0	494.9	484.4	474.3	496.9	513.4
58°	295.4	292.2	303.4	335.7	365.9	421.5	477.5	472.7	462.2	483.6	496.9
58.5°	289.3	287.3	293.0	325.2	354.6	407.0	463.0	459.4	448.1	471.5	480.7
59°	282.9	281.7	282.9	314.7	343.7	393.3	448.1	444.1	436.4	457.0	466.6
59.5°	276.8	276.4	272.8	304.2	332.9	379.6	432.8	433.2	423.9	444.1	452.1
60°	270.4	270.8	263.5	294.6	322.0	366.7	419.1	421.1	411.8	432.8	436.8
60.5°	263.5	264.8	253.9	284.5	311.1	354.2	405.8	407.4	400.6	419.1	423.9
61°	257.1	258.7	245.0	275.6	300.2	342.5	391.7	396.9	388.9	407.0	411.0
61.5°	250.6	252.7	237.4	266.4	290.5	331.2	379.6	384.8	378.0	395.7	397.3
62°	243.8	246.2	229.7	257.5	281.3	319.6	367.5	372.3	367.1	383.2	385.2
62.5°	237.4	239.8	225.3	249.0	272.0	307.9	354.6	361.9	357.0	372.3	373.6
63°	230.9	233.7	220.4	240.6	262.7	297.8	343.7	351.0	347.4	361.9	360.7
63.5°	224.5	227.3	216.0	232.5	254.3	287.7	332.9	340.1	337.3	349.8	350.2
64°	217.6	221.2	211.6	224.9	245.8	278.1	322.4	329.6	327.6	339.7	339.7
64.5°	211.2	214.8	206.7	216.8	237.4	268.4	311.5	319.2	317.5	329.6	328.8
65°	204.7	208.7	201.9	209.5	229.7	259.5	300.6	308.7	307.9	319.6	318.3
65.5°	198.3	202.3	197.1	202.7	221.6	250.6	290.5	300.2	298.2	309.5	307.5
66°	191.8	196.2	192.2	195.4	214.0	241.8	280.9	289.7	288.9	299.8	297.4



TEST NUMBER: P776323

CATALOG NUMBER: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	174.9	177.7	176.5	175.7	192.6	217.2	252.3	262.7	261.9	272.0	268.8
68°	169.2	172.1	170.9	169.7	185.8	209.5	243.4	253.9	253.5	262.7	259.5
68.5°	164.0	166.4	165.6	163.6	178.9	202.3	234.5	245.0	244.6	253.9	250.2
69°	158.8	160.8	160.8	157.6	172.5	195.0	225.7	236.5	236.5	245.0	241.4
69.5°	153.5	155.5	155.5	151.9	166.0	187.4	217.6	228.1	228.1	236.5	232.5
70°	148.3	150.3	149.9	146.7	160.0	180.5	209.1	219.6	219.6	228.1	224.5
70.5°	143.5	144.3	145.1	141.4	153.5	173.7	201.1	212.0	212.0	219.6	216.0
71°	138.6	139.8	140.2	136.6	147.9	167.2	193.4	203.5	203.9	212.0	207.9
71.5°	133.8	135.0	135.0	131.4	141.8	160.4	185.4	195.8	195.8	203.5	199.9
72°	128.5	130.2	129.8	126.5	136.2	153.9	177.7	187.8	187.8	195.4	192.2
72.5°	123.7	125.3	124.9	121.3	130.6	147.9	170.5	180.1	180.1	187.4	184.2
73°	118.9	120.5	119.7	116.9	125.3	141.4	163.2	172.9	172.5	180.1	176.9
73.5°	113.6	115.7	114.8	112.4	119.7	135.4	156.0	165.2	164.8	172.1	169.2
74°	108.8	110.4	109.6	108.4	114.4	129.8	148.7	157.6	157.2	164.4	162.0
74.5°	104.0	105.6	105.2	104.8	109.2	123.7	141.8	150.3	149.9	157.2	154.7
75°	99.1	100.7	100.7	100.7	104.4	118.1	135.0	143.5	142.7	149.9	147.9
75.5°	94.3	95.9	95.9	96.7	99.1	112.8	128.1	136.2	135.4	142.2	140.6
76°	89.5	91.1	91.1	92.3	94.3	107.2	122.1	129.0	128.1	135.4	133.8
76.5°	84.6	86.2	86.6	88.3	89.5	101.5	115.3	121.7	120.9	128.1	126.9
77°	80.2	81.4	82.2	84.2	85.0	96.3	109.2	115.3	114.4	121.3	120.5
77.5°	75.4	76.6	77.8	79.8	80.2	91.1	102.8	108.4	107.2	114.0	114.0
78°	70.9	71.7	73.3	75.8	75.8	85.8	96.7	102.0	100.3	107.6	107.6
78.5°	66.1	67.3	68.9	71.7	71.3	80.6	90.7	95.1	93.9	100.7	101.5
79°	61.7	62.5	64.9	67.3	66.9	75.8	85.0	88.7	87.0	93.9	95.1
79.5°	56.8	57.6	60.4	63.3	62.9	70.9	79.4	81.8	80.6	87.4	89.1
80°	52.4	52.8	56.0	59.2	58.4	66.1	73.7	75.4	74.1	81.0	83.4
80.5°	48.0	48.4	52.0	55.2	54.4	61.3	68.1	69.3	67.7	74.6	77.4
81°	43.5	43.5	48.0	51.2	50.4	56.8	62.9	62.9	61.3	68.1	71.7
81.5°	39.1	39.1	43.9	47.1	46.7	52.4	57.6	56.8	55.2	62.1	66.5
82°	34.7	34.7	40.3	43.5	42.7	48.0	52.4	51.6	49.2	56.0	60.8
82.5°	30.2	31.0	36.3	39.5	39.1	43.9	47.6	45.9	43.5	50.4	56.0
83°	26.2	27.0	32.6	35.9	35.5	39.5	43.1	41.1	37.9	44.7	50.8
83.5°	21.8	23.4	29.4	32.2	31.8	35.9	38.7	36.7	32.2	40.3	45.9
84°	17.7	20.1	25.8	28.2	28.2	31.8	34.7	31.8	26.6	35.5	41.5
84.5°	14.5	16.9	22.6	24.6	24.6	27.8	30.2	27.0	21.0	31.0	37.5
85°	12.9	14.5	19.3	21.0	21.4	23.8	26.2	22.2	17.7	26.6	33.0
85.5°	10.9	12.5	16.1	17.3	17.7	19.7	21.8	18.9	15.3	21.8	29.0
86°	8.9	10.1	13.3	13.7	14.5	16.1	18.1	15.7	12.9	18.5	24.6
86.5°	7.3	8.1	10.1	10.5	11.3	12.5	14.1	12.9	10.9	15.7	20.6
87°	5.2	5.6	7.3	7.3	8.1	8.9	10.5	9.7	8.5	12.9	16.5
87.5°	3.6	3.6	4.0	4.4	4.8	5.6	6.9	6.9	6.4	9.7	12.9
88°	2.0	1.6	1.6	1.2	2.0	2.8	3.6	4.4	4.4	6.9	9.3
88.5°	0.8	0.4	0.4	0.4	0.4	0.8	1.2	2.0	2.0	4.0	5.6



TEST NUMBER: P776323

CATALOG NUMBER: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4	0.0



TEST NUMBER: P776323

CATALOG NUMBER: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1834.3	1834.3	1834.3	1834.3	1834.3	1834.3
0.5°	1837.2	1836.3	1831.9	1827.9	1825.1	1823.5
1°	1840.4	1835.9	1827.5	1820.2	1815.4	1813.0
1.5°	1843.6	1835.1	1823.1	1812.2	1805.3	1802.1
2°	1846.4	1833.9	1817.8	1804.5	1794.8	1791.2
2.5°	1848.8	1832.7	1812.6	1795.6	1784.0	1779.5
3°	1851.3	1831.1	1807.3	1787.2	1773.5	1768.2
3.5°	1853.3	1829.1	1801.7	1778.3	1762.6	1756.2
4°	1854.9	1827.1	1795.6	1769.5	1750.9	1744.1
4.5°	1856.1	1824.7	1789.6	1759.4	1739.2	1731.6
5°	1857.3	1822.2	1783.6	1750.1	1727.1	1719.1
5.5°	1858.1	1819.0	1777.1	1740.0	1715.5	1705.8
6°	1858.9	1816.2	1770.3	1730.0	1703.0	1692.9
6.5°	1859.3	1813.0	1763.0	1719.5	1690.5	1680.0
7°	1859.3	1809.4	1755.8	1709.8	1678.0	1666.3
7.5°	1858.9	1805.7	1748.5	1698.9	1665.1	1652.2
8°	1858.5	1801.7	1740.8	1688.1	1651.8	1638.9
8.5°	1857.7	1797.3	1733.2	1677.2	1638.5	1624.8
9°	1856.5	1792.8	1725.1	1665.9	1624.8	1610.3
9.5°	1855.3	1788.4	1716.7	1654.2	1611.5	1595.8
10°	1853.7	1783.6	1708.2	1642.5	1597.8	1581.3
10.5°	1851.7	1778.3	1699.7	1631.2	1584.1	1566.4
11°	1849.6	1773.1	1690.9	1619.1	1570.0	1551.9
11.5°	1847.2	1767.4	1682.0	1607.1	1555.5	1536.9
12°	1844.4	1761.4	1672.7	1595.0	1541.4	1521.2
12.5°	1841.6	1755.8	1663.5	1582.5	1526.9	1506.3
13°	1838.4	1749.7	1654.2	1570.0	1512.4	1491.4
13.5°	1834.3	1743.3	1644.5	1557.5	1497.9	1475.7
14°	1831.1	1736.8	1635.3	1545.0	1482.9	1460.4
14.5°	1827.1	1730.0	1625.2	1532.1	1468.0	1444.7
15°	1822.6	1722.7	1615.1	1518.8	1453.1	1428.9
15.5°	1818.2	1715.9	1605.0	1505.9	1437.8	1413.2
16°	1813.4	1708.6	1595.0	1492.6	1422.9	1397.5
16.5°	1808.5	1701.0	1584.5	1479.7	1408.0	1382.2
17°	1802.9	1693.3	1574.0	1466.4	1392.7	1366.1
17.5°	1797.3	1685.2	1563.1	1452.7	1377.4	1350.4
18°	1791.6	1677.2	1552.7	1439.0	1362.0	1334.2
18.5°	1785.6	1668.7	1541.4	1425.7	1346.3	1318.5
19°	1779.1	1659.8	1530.1	1411.6	1331.0	1302.4
19.5°	1772.7	1651.4	1518.8	1398.3	1316.1	1285.9
20°	1765.8	1642.1	1507.5	1384.6	1300.4	1270.2
20.5°	1758.2	1632.8	1495.8	1370.5	1285.1	1254.1
21°	1750.9	1623.2	1483.7	1356.4	1269.4	1237.9

TEST NUMBER: P776323

CATALOG NUMBER: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1726.7	1593.0	1447.5	1314.5	1222.6	1189.6
23°	1718.3	1582.1	1434.6	1300.4	1206.5	1173.1
23.5°	1709.0	1570.8	1422.5	1286.3	1191.6	1157.3
24°	1699.7	1558.3	1409.6	1271.8	1175.9	1141.2
24.5°	1690.1	1546.6	1396.3	1257.7	1160.2	1124.7
25°	1680.0	1533.3	1382.6	1243.2	1144.0	1109.0
25.5°	1669.5	1520.4	1369.3	1228.7	1129.1	1093.3
26°	1658.2	1506.3	1355.2	1214.2	1113.4	1077.6
26.5°	1646.5	1492.6	1340.7	1199.7	1097.7	1061.8
27°	1634.5	1478.9	1326.2	1185.1	1082.4	1046.1
27.5°	1621.6	1464.0	1311.3	1170.2	1067.1	1030.8
28°	1607.9	1448.3	1296.0	1155.3	1051.4	1015.1
28.5°	1594.2	1433.8	1281.1	1140.8	1036.0	1000.2
29°	1580.1	1418.1	1265.7	1126.3	1021.1	985.3
29.5°	1565.1	1401.9	1250.4	1111.4	1006.2	970.0
30°	1550.6	1385.4	1234.3	1096.1	991.3	955.4
30.5°	1535.3	1368.5	1219.0	1081.2	976.4	940.5
31°	1519.2	1351.2	1202.5	1065.9	961.5	926.0
31.5°	1502.3	1333.4	1186.4	1050.6	946.6	911.5
32°	1485.4	1316.1	1169.8	1035.6	932.5	897.0
32.5°	1468.0	1298.0	1153.7	1019.9	918.0	882.9
33°	1449.9	1279.0	1136.8	1004.6	903.5	868.8
33.5°	1431.8	1260.5	1119.9	989.3	889.4	854.7
34°	1412.4	1242.0	1102.9	973.6	875.3	841.0
34.5°	1393.5	1222.6	1086.0	957.9	861.6	826.5
35°	1374.1	1203.7	1068.7	942.2	847.5	812.8
35.5°	1354.4	1183.5	1051.8	926.8	833.8	799.1
36°	1334.2	1164.6	1034.4	911.9	819.6	785.8
36.5°	1313.3	1144.8	1017.1	896.6	806.3	772.1
37°	1292.7	1124.3	999.8	881.3	792.6	758.4
37.5°	1271.8	1104.5	982.4	865.6	779.4	744.7
38°	1250.4	1083.6	965.1	850.3	765.2	731.0
38.5°	1228.7	1063.4	947.4	835.4	751.9	717.7
39°	1207.3	1042.9	930.1	820.5	739.1	704.8
39.5°	1185.5	1022.7	912.7	805.9	725.8	691.1
40°	1163.4	1001.8	895.4	790.6	711.7	677.8
40.5°	1140.8	981.2	877.7	775.7	698.8	664.5
41°	1118.3	960.7	860.3	761.2	685.9	651.2
41.5°	1096.1	940.1	842.6	746.3	672.2	638.3
42°	1073.1	920.0	825.3	731.8	659.3	625.0
42.5°	1051.4	899.4	808.0	717.3	646.0	612.1
43°	1028.4	878.9	791.0	702.8	633.5	599.2
43.5°	1005.4	858.7	773.7	688.3	619.8	585.9



TEST NUMBER: P776323

CATALOG NUMBER: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	938.5	799.1	723.3	646.0	581.9	547.6
45.5°	916.4	779.4	706.4	632.3	568.6	534.7
46°	893.8	760.0	690.7	618.6	556.5	522.7
46.5°	872.0	740.7	673.8	604.5	543.6	509.4
47°	849.9	721.7	657.7	590.8	531.1	496.9
47.5°	828.5	702.8	641.5	577.1	518.2	484.4
48°	806.8	684.2	626.2	563.8	506.1	472.3
48.5°	785.8	665.7	610.5	550.5	493.6	459.4
49°	764.4	648.0	594.8	537.2	481.2	447.3
49.5°	743.9	630.3	579.5	523.9	468.7	435.2
50°	722.9	612.1	565.0	510.6	456.6	422.7
50.5°	702.8	595.2	549.7	497.7	444.5	410.2
51°	683.0	578.3	535.1	484.8	432.0	398.5
51.5°	663.7	561.7	520.6	472.3	419.9	386.5
52°	644.0	545.6	506.5	459.4	408.2	374.8
52.5°	624.2	529.5	492.4	447.3	396.5	363.1
53°	605.3	514.2	479.1	434.8	384.4	352.2
53.5°	587.1	499.3	465.0	422.7	372.3	341.7
54°	568.6	484.4	451.7	410.6	361.1	335.3
54.5°	551.3	470.3	439.2	398.9	349.8	330.8
55°	534.3	456.6	426.3	387.3	338.9	326.0
55.5°	517.4	442.9	414.3	376.0	328.0	321.6
56°	501.3	430.0	401.8	364.7	317.9	316.3
56.5°	485.6	417.1	390.1	353.4	312.3	311.1
57°	470.7	404.6	378.4	342.5	307.9	306.3
57.5°	455.8	392.5	367.5	331.6	303.0	300.6
58°	441.7	380.8	356.6	321.2	298.2	295.4
58.5°	428.0	369.5	345.8	311.1	293.0	289.3
59°	414.3	358.6	335.3	301.0	287.7	282.9
59.5°	401.4	347.8	325.2	290.9	282.9	276.8
60°	388.9	336.9	315.1	281.3	277.2	270.4
60.5°	376.8	326.8	305.5	272.0	271.6	263.5
61°	365.1	316.7	295.8	262.7	266.0	257.1
61.5°	353.4	307.5	286.9	254.3	259.9	250.6
62°	342.9	297.8	278.1	245.8	253.5	243.8
62.5°	332.5	288.5	269.6	237.8	247.4	237.4
63°	322.0	279.7	260.7	230.5	241.4	230.9
63.5°	311.5	270.8	252.7	224.9	235.3	224.5
64°	301.0	261.9	244.2	220.4	228.9	217.6
64.5°	290.9	253.9	236.5	216.0	222.8	211.2
65°	281.7	245.8	228.9	211.6	216.8	204.7
65.5°	272.4	238.2	221.6	206.7	210.8	198.3
66°	263.5	230.1	214.4	201.9	204.3	191.8

TEST NUMBER: P776323

CATALOG NUMBER: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	238.2	208.3	193.8	187.4	186.2	174.9
68°	229.7	201.1	187.4	182.1	180.1	169.2
68.5°	222.0	194.2	181.3	177.3	174.5	164.0
69°	214.4	187.4	174.9	172.1	168.8	158.8
69.5°	206.7	180.9	168.8	166.8	163.2	153.5
70°	199.5	174.5	163.2	161.6	158.0	148.3
70.5°	192.2	168.4	157.6	156.4	152.7	143.5
71°	185.4	162.0	151.5	151.1	147.5	138.6
71.5°	178.1	156.0	146.7	145.9	142.7	133.8
72°	171.7	149.9	141.4	141.0	137.4	128.5
72.5°	164.8	145.1	136.2	135.8	132.6	123.7
73°	158.4	139.4	131.4	131.0	127.3	118.9
73.5°	151.9	133.8	126.1	125.7	122.5	113.6
74°	145.9	127.7	121.3	120.9	117.3	108.8
74.5°	139.4	122.1	116.5	116.1	112.4	104.0
75°	133.4	116.9	112.0	111.2	107.2	99.1
75.5°	127.7	111.6	107.6	106.8	102.4	94.3
76°	121.7	106.4	103.6	102.0	97.1	89.5
76.5°	116.1	101.5	99.5	97.1	92.3	84.6
77°	110.4	96.3	95.5	92.7	87.4	80.2
77.5°	104.8	91.5	91.5	87.8	82.6	75.4
78°	99.5	86.6	87.0	83.4	77.8	70.9
78.5°	93.9	82.2	83.0	79.0	72.9	66.1
79°	88.7	77.4	78.6	74.6	68.1	61.7
79.5°	83.4	72.9	74.6	70.1	63.3	56.8
80°	78.2	68.5	70.1	65.7	58.4	52.4
80.5°	73.3	64.1	66.1	61.3	54.0	48.0
81°	68.5	59.6	61.7	57.2	49.2	43.5
81.5°	63.7	55.6	57.6	52.8	44.7	39.1
82°	58.8	51.6	53.6	48.8	40.7	34.7
82.5°	54.4	47.6	49.6	44.7	36.3	30.2
83°	50.0	43.5	45.5	41.1	32.2	26.2
83.5°	45.5	39.5	41.5	37.1	28.2	21.8
84°	41.1	35.9	37.9	33.4	24.6	17.7
84.5°	37.1	31.8	33.8	29.8	21.4	14.5
85°	33.0	28.2	29.8	26.2	18.1	12.9
85.5°	29.0	24.6	26.2	22.6	15.7	10.9
86°	25.0	21.4	22.2	19.3	13.3	8.9
86.5°	20.6	17.7	18.5	15.7	10.9	7.3
87°	16.9	14.5	14.9	12.5	8.5	5.2
87.5°	13.3	11.3	11.3	9.7	6.0	3.6
88°	9.7	8.1	8.1	6.4	4.0	2.0
88.5°	6.0	4.8	4.8	3.2	2.0	0.8



TEST NUMBER: P776323

CATALOG NUMBER: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.4	0.0



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Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

Scaled Data Report





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

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21.5°	1221.4	1250.8	1339.9	1472.1	1628.0	1759.0	1854.9	1911.7	1929.8	1901.6	1838.4
22°	1205.7	1235.1	1325.4	1459.6	1617.5	1750.9	1848.4	1906.1	1924.2	1895.6	1831.9



44°	573.4	597.2	657.7	743.5	844.6	984.1	1106.2	1035.6	978.0	1038.5	1109.0
44.5°	560.5	584.3	643.5	726.2	824.1	961.5	1079.6	1012.7	953.8	1016.3	1082.4



66.5°	186.2	190.2	186.6	188.6	206.7	233.3	270.8	280.9	279.7	290.1	287.7
67°	180.1	183.8	181.3	182.1	199.5	225.3	261.5	271.6	270.8	281.3	277.6



89°	0.0	0.4	0.0	0.0	0.0	0.0	0.4	0.4	0.4	1.6	2.4
89.5°	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4	0.8

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21.5°	1743.3	1613.5	1471.7	1342.7	1253.7	1221.4
22°	1735.2	1603.0	1459.6	1328.6	1237.9	1205.7



44°	982.9	839.0	756.8	674.2	607.7	573.4
44.5°	961.1	818.8	739.9	660.1	594.4	560.5



66.5°	254.7	222.8	207.5	197.5	198.3	186.2
67°	246.2	215.2	200.7	192.6	192.2	180.1

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89°	2.8	1.6	1.6	1.2	0.4	0.0
89.5°	0.8	0.4	0.4	0.4	0.4	0.0

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(END OF REPORT)