

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: P776350

Luminaire Tested: HCDJBL3040CSD-HCD61TRMB-4000lm-2700K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776350
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B038)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD61TRMB-4000lm-2700K
Description: 6 INCH ROUND SHALLOW-WIDE MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

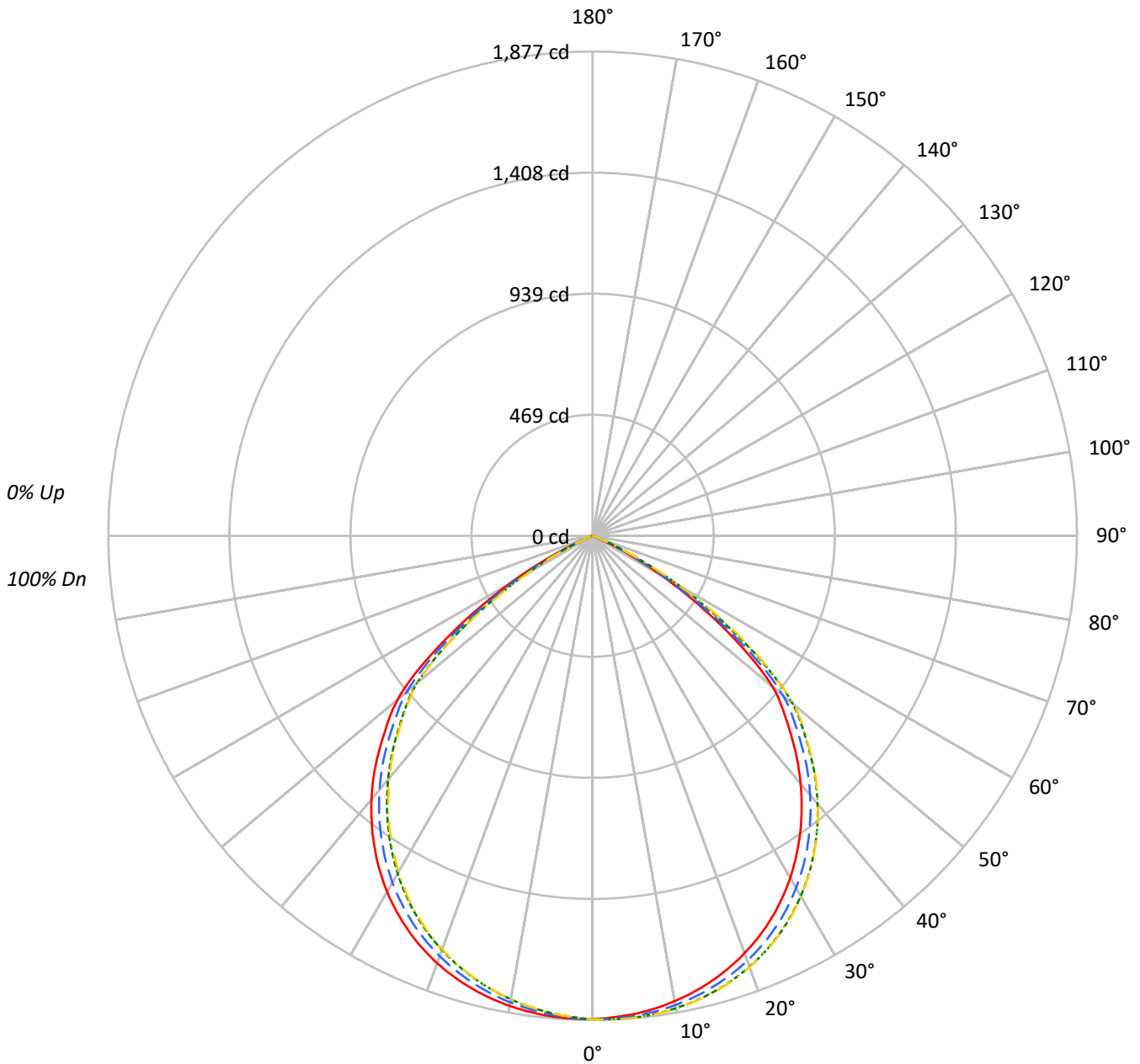
Lumens per Lamp: N/A
Luminaire Lumens: 3920.7 lumens
Efficiency: N/A
Efficacy: 101.8 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.24 / 1.32
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

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



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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	112	108	105	102	109	106	103	100	102	99	97	98	96	94	95	93	92	90					90			
2	104	97	92	88	101	96	91	87	92	88	85	89	86	83	86	83	81	79					79			
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	71	69					69			
4	89	79	72	66	87	78	71	65	75	69	65	73	68	64	71	67	63	61					61			
5	82	71	64	58	81	70	63	58	68	62	57	66	61	56	65	60	56	54					54			
6	77	65	57	51	75	64	57	51	62	56	51	61	55	50	59	54	50	48					48			
7	71	59	51	46	70	58	51	46	57	50	45	56	50	45	54	49	45	43					43			
8	67	54	47	41	65	54	46	41	52	46	41	51	45	41	50	45	40	39					39			
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35					35			
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32					32			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	102717	102717	102717	102717
5°	102394	103153	102878	102201
10°	101974	103533	103021	101568
15°	101374	103752	103054	100784
20°	100465	103714	102816	99683
25°	99054	103234	102169	98038
30°	96933	102136	100845	95692
35°	93873	100144	98678	92434
40°	89747	97082	95407	88237
45°	84226	92382	90506	82644
50°	77626	86206	84074	75827
55°	58665	67983	65747	56868
60°	34010	42508	40874	33331
65°	10455	16137	14788	11298
70°	192	305	192	192
75°	85	169	85	85
80°	126	126	0	126
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 112.5°
 Vertical Angle: 45°
 Luminance: 92707 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	177.3	4.5
10°-20°	508.3	13.0
20°-30°	765.7	19.5
30°-40°	898.2	22.9
40°-50°	869.7	22.2
50°-60°	578.6	14.8
60°-70°	122.1	3.1
70°-80°	0.7	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°	1451.4	37.0
0°-40°	2349.6	59.9
0°-60°	3797.9	96.9
0°-90°	3920.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3920.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1874	1874	1874	1874	1874	
5°	1861	1874	1870	1857	1861	177
15°	1786	1828	1816	1776	1786	504
25°	1638	1707	1689	1621	1638	754
35°	1403	1496	1474	1381	1403	875
45°	1086	1192	1167	1066	1086	838
55°	614	711	688	595	614	544
65°	81	124	114	87	81	102
75°	0	1	0	0	0	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°	1873.7	1873.7	1873.7	1873.7	1873.7	1873.7	1873.7	1873.7	1873.7	1873.7	1873.7
0.5°	1872.6	1872.6	1873.7	1874.9	1874.5	1874.9	1874.9	1874.5	1873.4	1873.0	1873.4
1°	1871.8	1872.6	1873.7	1875.3	1875.3	1875.7	1875.7	1874.9	1873.7	1872.6	1872.6
1.5°	1871.0	1871.8	1873.7	1874.9	1875.7	1876.0	1876.0	1875.3	1873.7	1872.6	1872.2
2°	1869.9	1871.0	1873.4	1874.9	1876.0	1876.8	1876.8	1875.3	1873.7	1871.8	1871.4
2.5°	1868.7	1870.3	1872.6	1874.9	1876.0	1876.8	1876.8	1875.3	1873.4	1871.4	1870.3
3°	1867.2	1869.5	1872.2	1874.5	1876.0	1876.8	1876.8	1875.3	1873.0	1870.7	1869.1
3.5°	1866.1	1868.4	1871.4	1874.1	1875.7	1876.8	1876.8	1875.3	1872.2	1869.5	1867.6
4°	1864.1	1866.8	1870.7	1873.4	1875.7	1876.4	1876.4	1874.5	1871.4	1868.7	1866.4
4.5°	1862.6	1865.7	1869.5	1872.6	1874.9	1876.0	1876.0	1874.1	1870.7	1867.6	1864.9
5°	1860.7	1864.1	1868.0	1871.8	1874.5	1875.7	1875.3	1873.4	1869.5	1866.1	1863.0
5.5°	1858.8	1862.2	1866.8	1871.0	1873.7	1874.9	1874.5	1872.2	1868.4	1864.5	1861.1
6°	1856.1	1860.3	1865.7	1869.9	1872.6	1874.1	1873.7	1871.0	1867.2	1862.6	1858.8
6.5°	1853.8	1858.4	1863.8	1868.4	1871.8	1873.0	1872.6	1869.9	1865.7	1861.1	1856.5
7°	1851.1	1856.1	1861.8	1866.8	1870.3	1871.8	1871.4	1868.4	1864.1	1858.8	1854.2
7.5°	1848.4	1853.8	1859.9	1865.3	1869.1	1870.7	1870.3	1866.8	1861.8	1856.8	1851.9
8°	1845.7	1851.5	1857.6	1863.4	1867.6	1869.1	1868.7	1865.3	1860.3	1854.5	1849.2
8.5°	1842.3	1848.8	1855.3	1861.5	1865.7	1867.6	1867.2	1863.4	1858.0	1851.9	1846.1
9°	1839.2	1845.7	1852.6	1859.1	1864.1	1865.7	1865.3	1861.5	1855.7	1849.6	1843.4
9.5°	1835.7	1842.6	1849.9	1856.8	1861.8	1863.8	1863.4	1859.1	1853.4	1846.5	1840.0
10°	1831.9	1839.6	1847.2	1854.2	1859.9	1861.5	1861.1	1857.2	1850.7	1843.4	1836.9
10.5°	1828.4	1836.1	1844.2	1851.5	1857.2	1859.1	1858.8	1854.5	1848.0	1840.3	1833.4
11°	1824.2	1832.7	1841.1	1848.8	1854.9	1856.8	1856.1	1851.9	1845.3	1837.3	1829.6
11.5°	1820.4	1828.8	1837.7	1845.3	1852.2	1854.2	1853.4	1848.8	1841.9	1833.8	1826.1
12°	1815.8	1825.0	1834.2	1842.3	1849.2	1851.5	1850.7	1846.1	1838.8	1830.4	1821.9
12.5°	1811.5	1820.8	1830.4	1838.8	1846.1	1848.4	1847.6	1843.0	1835.7	1826.5	1818.1
13°	1806.6	1816.5	1826.5	1835.3	1842.6	1845.3	1844.2	1839.6	1831.9	1822.7	1813.5
13.5°	1801.9	1811.9	1822.7	1831.5	1839.6	1841.9	1841.1	1836.1	1828.1	1818.5	1808.9
14°	1797.0	1807.3	1818.1	1827.7	1835.7	1838.4	1837.3	1832.3	1824.2	1814.2	1804.3
14.5°	1791.6	1802.7	1813.9	1823.8	1831.9	1834.6	1833.4	1828.4	1820.0	1809.6	1799.6
15°	1786.2	1797.3	1809.2	1819.2	1828.1	1830.7	1829.6	1824.2	1815.8	1805.0	1794.7
15.5°	1780.5	1792.4	1804.6	1815.0	1823.8	1826.5	1825.8	1820.4	1811.2	1800.4	1789.7
16°	1775.1	1787.0	1799.6	1810.4	1819.6	1822.3	1821.1	1815.8	1806.6	1795.4	1783.9
16.5°	1768.9	1781.2	1794.3	1805.8	1815.0	1817.7	1816.5	1811.2	1801.9	1790.0	1778.1
17°	1762.8	1775.5	1788.9	1800.4	1810.4	1813.1	1811.9	1806.2	1797.0	1784.7	1772.4
17.5°	1756.7	1769.7	1783.5	1795.0	1805.4	1808.5	1807.3	1801.6	1791.6	1778.9	1766.2
18°	1750.1	1763.9	1777.8	1789.7	1800.0	1803.1	1801.9	1795.8	1786.2	1773.2	1760.1
18.5°	1743.2	1757.4	1772.0	1784.3	1795.0	1797.7	1796.6	1790.4	1780.5	1767.4	1754.0
19°	1736.3	1750.5	1765.5	1778.5	1789.3	1792.4	1791.2	1784.7	1774.7	1761.3	1747.4
19.5°	1729.4	1744.0	1759.3	1772.4	1783.9	1787.0	1785.4	1778.9	1768.6	1755.1	1740.9
20°	1722.1	1737.5	1752.8	1766.2	1777.8	1780.8	1779.7	1773.2	1762.4	1748.6	1734.4
20.5°	1714.4	1730.2	1745.9	1760.1	1771.6	1774.7	1773.5	1766.6	1756.3	1741.7	1726.7
21°	1707.1	1722.5	1739.4	1753.6	1765.1	1768.6	1767.0	1760.5	1749.7	1734.8	1719.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	1682.6	1699.8	1717.1	1732.1	1745.1	1748.2	1746.7	1739.8	1728.2	1712.9	1696.4
23°	1674.1	1691.8	1709.4	1724.8	1737.8	1741.3	1739.4	1732.5	1721.0	1704.8	1687.9
23.5°	1665.3	1683.3	1701.8	1717.1	1730.5	1734.0	1732.5	1725.2	1713.7	1696.8	1679.9
24°	1656.5	1674.9	1693.3	1709.4	1722.9	1726.3	1724.4	1717.1	1705.6	1688.7	1671.4
24.5°	1646.9	1665.7	1684.9	1701.0	1715.2	1718.6	1716.7	1709.4	1697.5	1680.3	1662.6
25°	1637.6	1656.5	1676.0	1692.5	1706.7	1710.2	1708.3	1701.4	1689.1	1671.8	1653.4
25.5°	1628.1	1647.6	1667.2	1684.1	1698.7	1702.1	1700.2	1692.9	1680.6	1662.6	1644.2
26°	1618.5	1638.0	1658.4	1675.3	1690.2	1693.3	1691.8	1684.1	1671.8	1653.4	1635.0
26.5°	1608.1	1628.4	1648.8	1666.4	1681.4	1684.9	1682.9	1675.3	1663.0	1644.2	1625.0
27°	1598.1	1618.5	1639.2	1657.2	1672.2	1676.0	1673.7	1666.4	1653.4	1634.6	1615.4
27.5°	1587.4	1608.1	1629.2	1647.6	1663.4	1666.8	1664.9	1657.2	1644.2	1625.0	1605.4
28°	1576.6	1597.7	1619.2	1637.6	1653.8	1656.8	1655.3	1647.6	1634.2	1614.6	1595.0
28.5°	1565.5	1587.4	1609.2	1628.1	1643.8	1647.6	1645.7	1638.0	1624.2	1604.6	1584.7
29°	1554.3	1576.2	1598.5	1618.1	1633.8	1637.3	1635.7	1628.1	1614.6	1594.3	1573.9
29.5°	1543.2	1565.5	1587.7	1607.7	1624.2	1627.3	1625.4	1617.7	1603.9	1583.9	1562.8
30°	1531.3	1554.0	1577.0	1597.0	1613.5	1616.9	1615.0	1607.3	1593.1	1572.4	1551.7
30.5°	1519.4	1542.8	1565.9	1585.8	1602.7	1606.2	1604.6	1597.0	1582.4	1561.3	1540.5
31°	1507.5	1530.9	1554.3	1574.7	1592.0	1595.0	1593.5	1585.8	1571.2	1550.1	1528.6
31.5°	1494.8	1519.0	1542.8	1563.6	1580.8	1583.9	1582.0	1574.7	1559.7	1538.6	1517.1
32°	1482.6	1506.7	1530.9	1552.4	1569.3	1572.8	1570.9	1563.2	1548.2	1526.7	1504.8
32.5°	1469.5	1494.5	1518.6	1540.1	1557.8	1560.9	1559.7	1552.0	1536.7	1514.8	1492.5
33°	1456.8	1481.8	1506.7	1528.2	1546.3	1549.4	1547.8	1539.8	1524.8	1502.5	1480.3
33.5°	1443.8	1469.1	1494.1	1516.0	1534.0	1537.1	1535.5	1527.5	1512.5	1490.2	1467.6
34°	1430.4	1456.1	1481.4	1503.7	1521.7	1525.2	1523.3	1515.6	1499.8	1477.6	1454.5
34.5°	1416.5	1443.0	1468.4	1490.6	1509.0	1512.5	1511.0	1502.9	1487.2	1464.5	1441.5
35°	1402.7	1429.6	1454.9	1478.0	1496.4	1499.4	1497.9	1490.2	1474.5	1451.1	1428.0
35.5°	1388.9	1415.8	1441.9	1464.5	1483.3	1486.8	1484.9	1477.2	1461.1	1438.0	1414.6
36°	1374.3	1401.6	1428.0	1451.5	1470.3	1473.3	1471.8	1464.1	1447.6	1425.0	1400.8
36.5°	1360.5	1387.7	1414.2	1437.6	1456.8	1460.3	1458.8	1450.7	1434.2	1411.2	1387.0
37°	1345.5	1373.5	1400.0	1423.4	1443.4	1446.5	1444.9	1437.3	1420.4	1397.0	1372.8
37.5°	1330.5	1358.9	1385.8	1409.6	1429.2	1432.7	1430.7	1423.4	1406.2	1383.1	1358.9
38°	1315.2	1344.4	1371.2	1395.0	1415.4	1418.4	1416.9	1408.9	1392.3	1368.2	1344.4
38.5°	1300.6	1329.4	1357.0	1380.4	1401.2	1404.2	1403.1	1394.6	1377.8	1354.3	1329.4
39°	1285.6	1314.8	1342.1	1366.2	1386.6	1389.7	1388.5	1380.4	1362.8	1339.4	1314.8
39.5°	1269.9	1299.4	1326.7	1350.9	1371.6	1375.1	1373.5	1365.5	1348.2	1324.4	1299.4
40°	1254.1	1283.7	1311.7	1335.5	1356.6	1360.1	1358.6	1350.9	1333.2	1309.0	1284.5
40.5°	1238.4	1268.4	1296.0	1320.2	1341.3	1345.1	1343.6	1335.1	1317.9	1294.1	1269.1
41°	1222.3	1252.2	1280.3	1304.1	1325.9	1329.8	1328.2	1319.8	1302.5	1278.3	1253.4
41.5°	1205.8	1236.1	1264.1	1288.7	1309.8	1314.0	1312.9	1304.1	1286.4	1262.6	1237.6
42°	1189.7	1219.6	1248.0	1272.2	1294.1	1298.3	1296.8	1288.3	1270.7	1246.5	1221.5
42.5°	1173.1	1203.9	1231.5	1255.7	1277.9	1282.2	1281.0	1271.8	1254.1	1230.7	1205.4
43°	1155.9	1187.0	1214.6	1238.8	1261.4	1265.3	1264.5	1255.3	1237.6	1213.5	1188.9
43.5°	1139.0	1169.3	1197.7	1221.5	1244.2	1248.8	1247.6	1238.4	1220.7	1196.6	1172.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1086.4	1116.7	1144.4	1168.2	1191.6	1195.8	1195.4	1185.4	1167.4	1143.6	1119.0
45.5°	1068.7	1098.7	1126.7	1150.1	1173.5	1178.5	1177.8	1167.4	1149.3	1125.5	1101.0
46°	1051.5	1081.4	1109.0	1132.5	1155.9	1161.2	1160.1	1150.1	1131.7	1107.5	1083.7
46.5°	1034.6	1064.5	1091.8	1115.2	1138.6	1144.7	1143.6	1132.8	1113.6	1090.2	1066.0
47°	1018.1	1047.6	1074.9	1097.9	1121.3	1127.5	1126.7	1115.6	1096.4	1072.6	1048.8
47.5°	1001.6	1031.1	1058.0	1081.0	1104.4	1110.6	1109.8	1098.7	1079.5	1055.7	1032.3
48°	985.0	1014.2	1040.7	1063.7	1087.5	1094.1	1093.3	1082.2	1062.6	1038.8	1015.8
48.5°	968.9	997.3	1024.2	1046.9	1070.7	1078.3	1076.8	1065.3	1045.3	1022.3	999.2
49°	951.3	979.3	1005.0	1027.7	1051.8	1059.5	1058.4	1046.9	1026.9	1003.5	980.4
49.5°	932.1	960.1	985.0	1006.9	1031.9	1039.2	1038.0	1026.5	1006.5	983.1	960.9
50°	910.2	939.0	963.2	983.9	1010.8	1018.1	1017.3	1005.4	985.8	962.4	939.4
50.5°	886.0	912.9	939.0	960.5	987.3	993.9	992.0	981.6	962.8	938.2	915.2
51°	859.5	886.0	912.1	934.4	961.6	967.8	966.2	956.6	937.4	912.1	888.7
51.5°	831.1	857.6	883.3	906.7	934.4	940.1	939.4	928.6	911.0	885.2	860.7
52°	800.8	828.4	853.8	876.8	904.8	912.1	911.3	900.2	881.8	856.4	832.6
52.5°	771.2	798.5	823.0	844.2	874.5	883.7	882.9	870.6	850.7	826.5	803.5
53°	740.5	767.0	791.2	811.1	843.0	853.0	853.0	840.3	818.8	795.8	773.5
53.5°	709.4	735.5	758.9	777.7	810.4	823.0	823.4	808.5	785.8	764.3	742.8
54°	677.6	703.7	725.2	743.6	777.4	792.0	792.3	776.6	753.2	732.4	711.0
54.5°	646.1	671.8	691.4	709.4	744.0	760.1	760.9	743.6	719.8	698.7	679.9
55°	613.8	639.2	657.2	674.9	711.3	729.0	729.8	711.0	687.9	666.4	648.4
55.5°	581.6	605.8	623.0	640.7	677.9	695.2	697.1	677.2	654.5	632.6	615.7
56°	550.1	573.5	588.5	605.8	643.8	662.2	664.1	644.5	622.3	598.9	584.3
56.5°	518.6	540.9	554.3	573.5	610.4	628.8	630.7	611.1	588.5	565.8	552.0
57°	486.4	508.3	520.2	539.7	577.4	595.4	597.7	578.9	557.0	532.4	520.2
57.5°	455.7	475.6	487.1	506.7	544.7	561.6	564.3	546.3	524.4	500.6	488.3
58°	425.3	443.8	454.1	474.9	512.1	528.2	530.9	514.0	493.3	468.0	456.8
58.5°	395.8	411.9	421.5	443.4	480.2	495.2	497.9	482.5	462.6	436.9	426.1
59°	366.6	380.8	390.8	412.7	448.8	462.2	464.9	451.8	431.9	406.1	396.2
59.5°	337.4	349.3	360.5	382.3	418.0	430.3	431.5	420.7	401.2	376.6	367.0
60°	310.2	319.8	331.7	352.4	387.7	398.9	399.2	390.4	372.8	349.0	338.2
60.5°	282.5	290.6	302.5	323.2	359.3	368.9	369.7	361.6	344.3	321.3	309.4
61°	255.7	262.6	274.9	295.2	330.9	339.4	339.7	332.8	316.3	293.7	281.0
61.5°	229.6	235.7	248.8	268.3	302.5	309.4	309.8	304.0	287.9	266.0	252.2
62°	204.6	210.4	222.7	241.8	274.1	279.9	279.9	275.2	259.5	240.7	227.3
62.5°	180.8	186.2	198.5	216.5	245.7	250.3	249.9	246.5	233.4	215.7	202.3
63°	158.2	162.8	174.7	193.1	218.8	222.7	222.3	219.6	208.4	192.3	178.9
63.5°	135.9	141.3	152.8	169.7	193.5	196.9	196.5	194.2	184.6	169.7	157.0
64°	117.5	124.0	131.7	147.8	169.3	172.0	172.0	169.7	160.5	148.2	136.7
64.5°	99.0	107.1	114.8	128.6	146.3	148.6	148.2	145.9	137.0	128.2	117.1
65°	80.6	89.8	97.5	110.6	124.4	126.3	126.3	124.0	114.0	108.6	99.4
65.5°	62.6	72.9	80.2	92.1	103.3	106.0	106.0	102.9	92.1	90.6	82.9
66°	44.1	55.7	63.3	74.1	84.1	86.4	86.4	83.3	71.8	73.7	67.6



TEST NUMBER: P776350

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMB-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	14.2	23.8	27.6	30.3	43.8	45.3	45.3	43.0	32.2	38.8	35.7
68°	10.7	16.5	19.2	20.3	32.2	33.4	33.4	31.9	19.2	29.2	25.0
68.5°	7.7	13.4	11.9	12.7	20.7	21.5	21.5	20.3	6.1	19.2	14.6
69°	4.2	10.4	9.2	9.6	9.6	10.0	9.6	9.6	1.9	9.2	8.4
69.5°	1.2	7.3	6.5	6.9	4.6	4.6	4.6	4.6	1.2	4.6	4.2
70°	1.2	4.2	3.8	3.8	1.9	1.9	1.9	1.9	1.2	1.9	1.9
70.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
71°	0.8	0.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
71.5°	0.8	0.8	0.8	0.8	1.2	1.2	1.2	0.8	0.8	0.8	0.8
72°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
72.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
73°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
73.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
74°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
74.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.8	0.8
75°	0.4	0.4	0.4	0.4	0.8	0.8	0.8	0.4	0.4	0.4	0.4
75.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
76°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
76.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
77°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
78°	0.4	0.4	0.4	0.4	0.4	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	0.4	0.4	0.4	0.4	0.4
79°	0.4	0.4	0.4	0.4	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	0.0	0.4	0.4
80.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
81°	0.0	0.0	0.0	0.0	0.0	0.4	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: P776350
CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMB-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: P776350

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMB-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1873.7	1873.7	1873.7	1873.7	1873.7	1873.7
0.5°	1873.4	1873.0	1873.0	1873.4	1873.0	1872.6
1°	1872.6	1871.8	1871.8	1872.2	1872.2	1871.8
1.5°	1871.8	1870.7	1870.3	1871.0	1871.0	1871.0
2°	1870.7	1869.1	1868.7	1869.5	1869.5	1869.9
2.5°	1869.5	1867.2	1867.2	1867.6	1868.0	1868.7
3°	1868.0	1865.7	1865.3	1866.1	1866.4	1867.2
3.5°	1866.4	1863.8	1863.4	1864.1	1864.9	1866.1
4°	1864.5	1861.8	1861.1	1861.8	1863.0	1864.1
4.5°	1862.6	1859.5	1858.8	1859.5	1860.7	1862.6
5°	1860.7	1857.2	1856.5	1857.2	1858.4	1860.7
5.5°	1858.4	1854.5	1853.8	1854.5	1856.1	1858.8
6°	1856.1	1851.9	1851.1	1851.9	1853.4	1856.1
6.5°	1853.4	1849.2	1848.0	1848.8	1851.1	1853.8
7°	1850.7	1846.1	1844.9	1846.1	1848.0	1851.1
7.5°	1848.0	1842.6	1841.9	1842.6	1844.9	1848.4
8°	1844.9	1839.6	1838.0	1839.2	1841.9	1845.7
8.5°	1841.5	1836.1	1834.6	1835.7	1838.4	1842.3
9°	1838.4	1832.3	1830.7	1831.9	1834.6	1839.2
9.5°	1834.6	1828.8	1827.3	1828.1	1831.1	1835.7
10°	1831.1	1824.6	1823.1	1824.2	1827.3	1831.9
10.5°	1827.3	1820.4	1818.8	1820.0	1823.1	1828.4
11°	1823.4	1816.2	1814.2	1815.8	1818.8	1824.2
11.5°	1819.2	1811.9	1809.6	1810.8	1814.6	1820.4
12°	1815.0	1806.9	1805.0	1806.2	1810.0	1815.8
12.5°	1810.4	1802.3	1800.0	1801.2	1805.4	1811.5
13°	1805.8	1797.3	1795.0	1796.2	1800.4	1806.6
13.5°	1800.8	1792.4	1789.7	1790.8	1795.0	1801.9
14°	1796.2	1787.0	1784.3	1785.4	1790.0	1797.0
14.5°	1790.8	1781.2	1778.9	1780.1	1784.3	1791.6
15°	1785.4	1775.8	1772.8	1774.3	1778.9	1786.2
15.5°	1780.1	1769.7	1766.6	1768.2	1772.8	1780.5
16°	1773.9	1763.9	1760.5	1762.0	1767.0	1775.1
16.5°	1768.6	1757.4	1754.3	1755.9	1760.9	1768.9
17°	1762.4	1750.9	1747.8	1749.0	1754.3	1762.8
17.5°	1755.9	1744.4	1740.9	1742.4	1747.8	1756.7
18°	1749.7	1737.5	1734.0	1735.5	1740.9	1750.1
18.5°	1742.8	1730.5	1726.7	1728.2	1734.0	1743.2
19°	1735.9	1723.6	1719.4	1721.0	1726.7	1736.3
19.5°	1729.0	1716.3	1711.7	1713.3	1719.8	1729.4
20°	1721.7	1708.7	1704.1	1705.6	1712.1	1722.1
20.5°	1714.4	1700.6	1696.0	1697.5	1704.1	1714.4
21°	1706.7	1692.5	1687.9	1689.1	1696.0	1707.1

TEST NUMBER: P776350

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMB-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1682.2	1667.2	1661.8	1663.4	1670.7	1682.6
23°	1674.1	1658.4	1652.6	1654.2	1661.8	1674.1
23.5°	1665.3	1649.5	1643.8	1644.9	1653.0	1665.3
24°	1656.5	1640.3	1634.2	1635.3	1643.4	1656.5
24.5°	1647.2	1630.4	1624.6	1625.7	1633.8	1646.9
25°	1638.0	1620.8	1614.6	1615.8	1624.2	1637.6
25.5°	1628.4	1611.2	1604.2	1605.8	1614.2	1628.1
26°	1618.8	1600.8	1593.9	1595.4	1604.2	1618.5
26.5°	1608.5	1590.0	1583.1	1584.7	1593.5	1608.1
27°	1598.1	1579.3	1572.8	1573.9	1583.1	1598.1
27.5°	1588.1	1568.9	1562.0	1562.8	1572.4	1587.4
28°	1577.4	1557.8	1550.5	1551.7	1561.3	1576.6
28.5°	1566.2	1546.3	1539.0	1540.1	1549.7	1565.5
29°	1555.5	1535.2	1527.5	1529.0	1538.6	1554.3
29.5°	1544.4	1523.3	1515.6	1516.7	1527.1	1543.2
30°	1532.5	1511.7	1503.7	1504.8	1514.8	1531.3
30.5°	1520.9	1499.4	1491.0	1492.2	1502.9	1519.4
31°	1509.0	1486.8	1478.7	1479.9	1490.2	1507.5
31.5°	1496.8	1474.5	1465.7	1466.8	1477.6	1494.8
32°	1484.1	1461.8	1453.0	1454.2	1464.9	1482.6
32.5°	1471.8	1448.8	1439.9	1440.7	1452.2	1469.5
33°	1458.8	1435.7	1426.5	1427.7	1438.8	1456.8
33.5°	1446.1	1422.7	1413.1	1414.6	1425.4	1443.8
34°	1432.7	1409.2	1399.6	1400.4	1411.9	1430.4
34.5°	1419.6	1395.0	1385.4	1386.6	1398.1	1416.5
35°	1405.4	1381.2	1371.2	1372.8	1383.9	1402.7
35.5°	1392.0	1367.0	1357.4	1358.6	1369.7	1388.9
36°	1378.1	1353.2	1343.2	1344.4	1355.9	1374.3
36.5°	1364.3	1338.6	1329.0	1329.8	1341.7	1360.5
37°	1349.7	1324.0	1314.4	1315.2	1326.7	1345.5
37.5°	1335.1	1309.4	1299.1	1300.6	1312.1	1330.5
38°	1320.6	1294.5	1284.5	1285.6	1296.8	1315.2
38.5°	1305.2	1279.5	1269.5	1270.7	1281.8	1300.6
39°	1290.6	1264.1	1254.5	1255.3	1266.8	1285.6
39.5°	1275.3	1249.2	1239.2	1240.3	1251.5	1269.9
40°	1259.9	1233.0	1223.8	1224.6	1235.3	1254.1
40.5°	1244.6	1217.7	1208.1	1209.2	1219.6	1238.4
41°	1228.4	1201.6	1192.3	1193.5	1203.9	1222.3
41.5°	1212.7	1185.4	1175.8	1177.4	1187.7	1205.8
42°	1196.6	1169.3	1160.1	1161.2	1171.6	1189.7
42.5°	1180.4	1152.8	1144.0	1144.7	1155.1	1173.1
43°	1163.9	1135.9	1126.7	1128.2	1137.8	1155.9
43.5°	1146.7	1118.6	1109.8	1111.0	1120.6	1139.0

TEST NUMBER: P776350

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMB-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1094.5	1066.0	1058.0	1058.8	1068.0	1086.4
45.5°	1076.8	1048.8	1040.3	1041.5	1050.3	1068.7
46°	1059.5	1031.5	1023.0	1024.2	1033.4	1051.5
46.5°	1041.9	1015.0	1006.5	1007.3	1016.5	1034.6
47°	1025.4	998.5	990.4	991.2	999.6	1018.1
47.5°	1008.8	982.0	973.9	975.1	983.1	1001.6
48°	992.7	965.9	957.4	958.9	967.0	985.0
48.5°	976.2	949.3	941.3	942.1	950.5	968.9
49°	958.6	931.3	923.2	924.4	933.2	951.3
49.5°	939.4	911.7	904.4	905.6	914.0	932.1
50°	918.2	889.1	882.2	884.5	893.3	910.2
50.5°	893.3	863.7	857.6	860.3	868.3	886.0
51°	866.8	836.5	830.7	833.0	842.2	859.5
51.5°	838.8	808.8	802.3	804.2	814.6	831.1
52°	810.8	779.3	772.8	774.7	784.7	800.8
52.5°	781.2	749.3	742.8	744.0	753.6	771.2
53°	751.6	718.2	711.0	712.1	722.5	740.5
53.5°	720.9	687.9	679.1	680.6	691.0	709.4
54°	691.4	657.2	647.2	648.4	658.7	677.6
54.5°	659.9	626.1	616.1	616.5	627.3	646.1
55°	629.6	595.0	583.9	584.3	595.0	613.8
55.5°	597.7	565.1	552.4	551.6	563.2	581.6
56°	567.4	534.7	520.9	519.0	532.1	550.1
56.5°	535.9	504.8	490.2	487.9	501.4	518.6
57°	505.2	474.1	459.5	456.4	470.3	486.4
57.5°	474.9	444.9	429.2	426.1	439.9	455.7
58°	444.9	415.7	400.0	396.9	410.4	425.3
58.5°	415.0	387.3	371.2	367.4	380.4	395.8
59°	385.4	358.9	343.2	339.4	352.8	366.6
59.5°	357.4	330.9	316.3	312.1	325.1	337.4
60°	329.0	304.0	289.1	286.0	297.9	310.2
60.5°	301.0	277.5	263.7	260.7	271.8	282.5
61°	272.9	251.4	239.2	236.5	246.5	255.7
61.5°	247.2	227.3	216.1	213.4	221.9	229.6
62°	221.9	203.1	193.9	192.3	198.5	204.6
62.5°	197.3	179.7	172.7	171.2	175.8	180.8
63°	173.5	158.2	152.8	151.6	153.9	158.2
63.5°	151.3	137.4	133.2	132.4	133.6	135.9
64°	130.1	120.5	117.5	116.7	117.1	117.5
64.5°	110.6	103.6	101.7	101.3	100.6	99.0
65°	92.5	87.1	86.0	85.6	84.1	80.6
65.5°	76.0	70.3	70.3	70.3	67.6	62.6
66°	60.3	53.7	56.8	57.6	53.7	44.1



TEST NUMBER: P776350
 CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMB-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	31.5	22.3	25.3	26.1	22.6	14.2
68°	21.9	15.4	17.7	18.0	15.7	10.7
68.5°	12.7	11.9	11.1	11.5	11.9	7.7
69°	7.7	8.4	8.4	8.8	8.4	4.2
69.5°	3.8	4.6	6.1	6.1	4.6	1.2
70°	1.9	1.2	3.5	3.5	1.2	1.2
70.5°	1.2	1.2	1.2	1.2	1.2	1.2
71°	0.8	0.8	0.8	0.8	0.8	0.8
71.5°	0.8	0.8	0.8	0.8	0.8	0.8
72°	0.8	0.8	0.8	0.8	0.8	0.8
72.5°	0.8	0.8	0.8	0.8	0.8	0.8
73°	0.8	0.8	0.8	0.8	0.8	0.8
73.5°	0.8	0.8	0.8	0.8	0.8	0.8
74°	0.8	0.8	0.8	0.8	0.8	0.8
74.5°	0.8	0.4	0.4	0.4	0.4	0.4
75°	0.4	0.4	0.4	0.4	0.4	0.4
75.5°	0.4	0.4	0.4	0.4	0.4	0.4
76°	0.4	0.4	0.4	0.4	0.4	0.4
76.5°	0.4	0.4	0.4	0.4	0.4	0.4
77°	0.4	0.4	0.4	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	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	0.0	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: P776350
CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMB-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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Scaled Data Report





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

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Scaled Data Report





21.5°	1698.7	1715.2	1732.1	1746.7	1759.0	1762.0	1760.5	1754.0	1742.8	1727.5	1712.1
22°	1691.0	1707.5	1724.8	1739.8	1752.0	1755.5	1753.6	1746.7	1735.9	1720.2	1704.4



44°	1121.3	1151.7	1179.3	1204.2	1226.5	1231.1	1230.3	1220.7	1202.7	1179.3	1154.3
44.5°	1103.7	1134.4	1162.0	1186.2	1209.2	1214.6	1212.3	1203.5	1185.0	1161.6	1136.7



66.5°	31.9	43.4	49.9	56.0	66.8	69.1	69.1	65.6	58.7	58.7	56.8
67°	21.9	32.6	38.0	42.2	55.3	57.2	57.2	54.1	45.7	48.8	46.4



89°	0.0	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	0.0

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21.5°	1698.7	1684.5	1679.5	1680.6	1687.9	1698.7
22°	1690.6	1676.0	1671.0	1672.2	1679.5	1691.0



44°	1129.4	1101.0	1092.5	1093.3	1103.3	1121.3
44.5°	1112.1	1083.7	1075.3	1076.0	1085.6	1103.7

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66.5°	50.7	41.1	45.3	45.3	41.8	31.9
67°	41.1	30.7	34.5	34.9	31.5	21.9

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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)