

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: P776351

Luminaire Tested: HCDJBL3040CSD-HCD61TRMB-4000lm-3000K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776351  
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-3000K  
Description: 6 INCH ROUND SHALLOW-WIDE MATTE BLACK TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

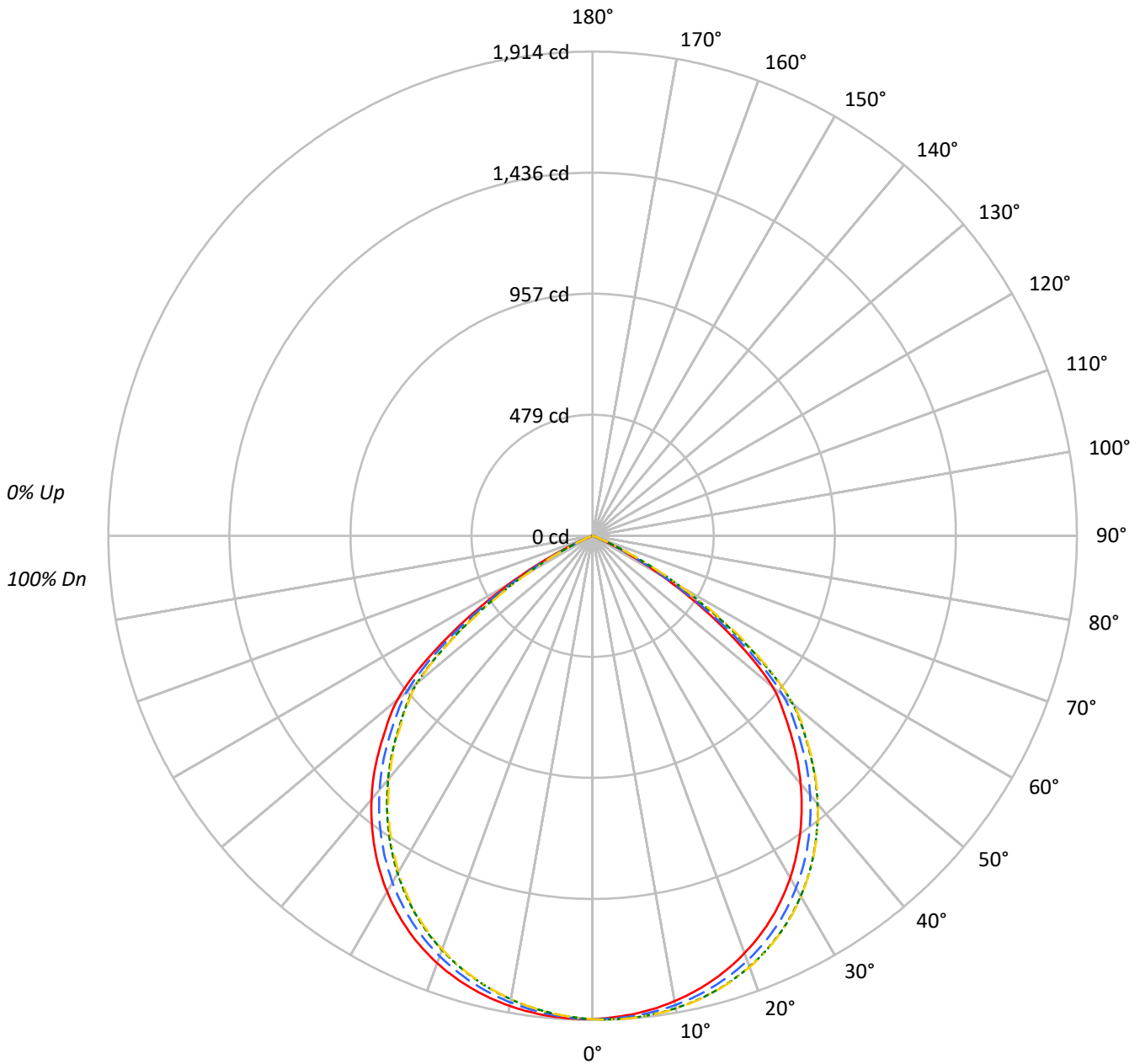
Lumens per Lamp: N/A  
Luminaire Lumens: 3997.9 lumens  
Efficiency: N/A  
Efficacy: 103.8 lumens/watt  
Spacing Criteria (0/90/45): 1.24 / 1.24 / 1.32  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (A<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					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								
1	112	108	105	102	109	106	103	100	102	99	97	98	96	94	95	93	92	90								
2	104	97	92	88	101	96	91	87	92	88	85	89	86	83	86	83	81	79								
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	71	69								
4	89	79	72	66	87	78	71	65	75	69	65	73	68	64	71	67	63	61								
5	82	71	64	58	81	70	63	58	68	62	57	66	61	56	65	60	56	54								
6	77	65	57	51	75	64	57	51	62	56	51	61	55	50	59	54	50	48								
7	71	59	51	46	70	58	51	46	57	50	45	56	50	45	54	49	45	43								
8	67	54	47	41	65	54	46	41	52	46	41	51	45	41	50	45	40	39								
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35								
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32								

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

	0°	90°	180°	270°
0°	104739	104739	104739	104739
5°	104408	105184	104903	104215
10°	103984	105570	105047	103566
15°	103372	105789	105080	102770
20°	102442	105756	104840	101643
25°	101008	105272	104177	99967
30°	98844	104143	102832	97578
35°	95720	102111	100619	94254
40°	91514	99000	97289	89976
45°	85885	94196	92289	84272
50°	79153	87903	85729	77319
55°	59821	69321	67047	57986
60°	34679	43352	41674	33989
65°	10663	16448	15086	11532
70°	192	321	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: 94529 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	180.8	4.5
10°-20°	518.3	13.0
20°-30°	780.8	19.5
30°-40°	915.8	22.9
40°-50°	886.9	22.2
50°-60°	590.0	14.8
60°-70°	124.5	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°	1480.0	37.0
0°-40°	2395.8	59.9
0°-60°	3872.7	96.9
0°-90°	3997.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3997.9	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1911	1911	1911	1911	1911	
5°	1897	1911	1906	1894	1897	180
15°	1821	1864	1852	1811	1821	514
25°	1670	1740	1722	1653	1670	768
35°	1430	1526	1504	1408	1430	893
45°	1108	1215	1190	1087	1108	854
55°	626	725	702	607	626	555
65°	82	127	116	89	82	104
75°	0	1	0	0	0	1
85°	0	0	0	0	0	0
90°	0	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°	1910.6	1910.6	1910.6	1910.6	1910.6	1910.6	1910.6	1910.6	1910.6	1910.6	1910.6
0.5°	1909.5	1909.5	1910.6	1911.8	1911.4	1911.8	1911.8	1911.4	1910.2	1909.8	1910.2
1°	1908.7	1909.5	1910.6	1912.2	1912.2	1912.6	1912.6	1911.8	1910.6	1909.5	1909.5
1.5°	1907.9	1908.7	1910.6	1911.8	1912.6	1913.0	1913.0	1912.2	1910.6	1909.5	1909.1
2°	1906.7	1907.9	1910.2	1911.8	1913.0	1913.8	1913.8	1912.2	1910.6	1908.7	1908.3
2.5°	1905.5	1907.1	1909.5	1911.8	1913.0	1913.8	1913.8	1912.2	1910.2	1908.3	1907.1
3°	1904.0	1906.3	1909.1	1911.4	1913.0	1913.8	1913.8	1912.2	1909.8	1907.5	1905.9
3.5°	1902.8	1905.1	1908.3	1911.0	1912.6	1913.8	1913.8	1912.2	1909.1	1906.3	1904.4
4°	1900.8	1903.6	1907.5	1910.2	1912.6	1913.4	1913.4	1911.4	1908.3	1905.5	1903.2
4.5°	1899.3	1902.4	1906.3	1909.5	1911.8	1913.0	1913.0	1911.0	1907.5	1904.4	1901.6
5°	1897.3	1900.8	1904.8	1908.7	1911.4	1912.6	1912.2	1910.2	1906.3	1902.8	1899.7
5.5°	1895.4	1898.9	1903.6	1907.9	1910.6	1911.8	1911.4	1909.1	1905.1	1901.2	1897.7
6°	1892.6	1896.9	1902.4	1906.7	1909.5	1911.0	1910.6	1907.9	1904.0	1899.3	1895.4
6.5°	1890.3	1895.0	1900.5	1905.1	1908.7	1909.8	1909.5	1906.7	1902.4	1897.7	1893.0
7°	1887.5	1892.6	1898.5	1903.6	1907.1	1908.7	1908.3	1905.1	1900.8	1895.4	1890.7
7.5°	1884.8	1890.3	1896.5	1902.0	1905.9	1907.5	1907.1	1903.6	1898.5	1893.4	1888.3
8°	1882.1	1887.9	1894.2	1900.1	1904.4	1905.9	1905.5	1902.0	1896.9	1891.1	1885.6
8.5°	1878.5	1885.2	1891.8	1898.1	1902.4	1904.4	1904.0	1900.1	1894.6	1888.3	1882.4
9°	1875.4	1882.1	1889.1	1895.8	1900.8	1902.4	1902.0	1898.1	1892.2	1886.0	1879.7
9.5°	1871.9	1878.9	1886.4	1893.4	1898.5	1900.5	1900.1	1895.8	1889.9	1882.8	1876.2
10°	1868.0	1875.8	1883.6	1890.7	1896.5	1898.1	1897.7	1893.8	1887.1	1879.7	1873.0
10.5°	1864.4	1872.3	1880.5	1887.9	1893.8	1895.8	1895.4	1891.1	1884.4	1876.6	1869.5
11°	1860.1	1868.7	1877.4	1885.2	1891.4	1893.4	1892.6	1888.3	1881.7	1873.4	1865.6
11.5°	1856.2	1864.8	1873.8	1881.7	1888.7	1890.7	1889.9	1885.2	1878.1	1869.9	1862.1
12°	1851.5	1860.9	1870.3	1878.5	1885.6	1887.9	1887.1	1882.4	1875.0	1866.4	1857.8
12.5°	1847.2	1856.6	1866.4	1875.0	1882.4	1884.8	1884.0	1879.3	1871.9	1862.5	1853.9
13°	1842.1	1852.3	1862.5	1871.5	1878.9	1881.7	1880.5	1875.8	1868.0	1858.6	1849.2
13.5°	1837.4	1847.6	1858.6	1867.6	1875.8	1878.1	1877.4	1872.3	1864.0	1854.3	1844.5
14°	1832.3	1842.9	1853.9	1863.7	1871.9	1874.6	1873.4	1868.4	1860.1	1850.0	1839.8
14.5°	1826.9	1838.2	1849.6	1859.7	1868.0	1870.7	1869.5	1864.4	1855.8	1845.3	1835.1
15°	1821.4	1832.7	1844.9	1855.0	1864.0	1866.8	1865.6	1860.1	1851.5	1840.6	1830.0
15.5°	1815.5	1827.6	1840.2	1850.7	1859.7	1862.5	1861.7	1856.2	1846.8	1835.9	1824.9
16°	1810.0	1822.2	1835.1	1846.0	1855.4	1858.2	1857.0	1851.5	1842.1	1830.8	1819.0
16.5°	1803.8	1816.3	1829.6	1841.3	1850.7	1853.5	1852.3	1846.8	1837.4	1825.3	1813.2
17°	1797.5	1810.4	1824.1	1835.9	1846.0	1848.8	1847.6	1841.7	1832.3	1819.8	1807.3
17.5°	1791.2	1804.5	1818.6	1830.4	1841.0	1844.1	1842.9	1837.0	1826.9	1813.9	1801.0
18°	1784.6	1798.7	1812.8	1824.9	1835.5	1838.6	1837.4	1831.2	1821.4	1808.1	1794.8
18.5°	1777.5	1792.0	1806.9	1819.4	1830.4	1833.1	1831.9	1825.7	1815.5	1802.2	1788.5
19°	1770.5	1785.0	1800.2	1813.6	1824.5	1827.6	1826.5	1819.8	1809.6	1795.9	1781.8
19.5°	1763.4	1778.3	1794.0	1807.3	1819.0	1822.2	1820.6	1813.9	1803.4	1789.7	1775.2
20°	1756.0	1771.7	1787.3	1801.0	1812.8	1815.9	1814.7	1808.1	1797.1	1783.0	1768.5
20.5°	1748.2	1764.2	1780.3	1794.8	1806.5	1809.6	1808.5	1801.4	1790.8	1776.0	1760.7
21°	1740.7	1756.4	1773.6	1788.1	1799.9	1803.4	1801.8	1795.2	1784.2	1768.9	1753.7



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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°	1715.7	1733.3	1750.9	1766.2	1779.5	1782.6	1781.1	1774.0	1762.3	1746.6	1729.8
23°	1707.1	1725.1	1743.1	1758.7	1772.1	1775.6	1773.6	1766.6	1754.8	1738.4	1721.2
23.5°	1698.1	1716.5	1735.3	1750.9	1764.6	1768.1	1766.6	1759.1	1747.4	1730.2	1712.9
24°	1689.1	1707.9	1726.7	1743.1	1756.8	1760.3	1758.4	1750.9	1739.2	1722.0	1704.3
24.5°	1679.3	1698.5	1718.0	1734.5	1749.0	1752.5	1750.5	1743.1	1731.0	1713.3	1695.3
25°	1669.9	1689.1	1709.0	1725.9	1740.4	1743.9	1741.9	1734.9	1722.3	1704.7	1685.9
25.5°	1660.1	1680.1	1700.0	1717.3	1732.1	1735.7	1733.7	1726.3	1713.7	1695.3	1676.5
26°	1650.3	1670.3	1691.0	1708.3	1723.5	1726.7	1725.1	1717.3	1704.7	1685.9	1667.2
26.5°	1639.8	1660.5	1681.2	1699.2	1714.5	1718.0	1716.1	1708.3	1695.7	1676.5	1657.0
27°	1629.6	1650.3	1671.5	1689.9	1705.1	1709.0	1706.7	1699.2	1685.9	1666.8	1647.2
27.5°	1618.6	1639.8	1661.3	1680.1	1696.1	1699.6	1697.7	1689.9	1676.5	1657.0	1637.0
28°	1607.7	1629.2	1651.1	1669.9	1686.3	1689.5	1687.9	1680.1	1666.4	1646.4	1626.4
28.5°	1596.3	1618.6	1640.9	1660.1	1676.2	1680.1	1678.1	1670.3	1656.2	1636.2	1615.9
29°	1584.9	1607.3	1630.0	1649.9	1666.0	1669.5	1667.9	1660.1	1646.4	1625.7	1604.9
29.5°	1573.6	1596.3	1619.0	1639.4	1656.2	1659.3	1657.4	1649.5	1635.4	1615.1	1593.6
30°	1561.5	1584.6	1608.0	1628.4	1645.2	1648.8	1646.8	1639.0	1624.5	1603.3	1582.2
30.5°	1549.3	1573.2	1596.7	1617.0	1634.3	1637.8	1636.2	1628.4	1613.5	1592.0	1570.9
31°	1537.2	1561.1	1584.9	1605.7	1623.3	1626.4	1624.9	1617.0	1602.2	1580.6	1558.7
31.5°	1524.3	1548.9	1573.2	1594.3	1612.0	1615.1	1613.1	1605.7	1590.4	1568.9	1547.0
32°	1511.7	1536.4	1561.1	1583.0	1600.2	1603.7	1601.8	1594.0	1578.7	1556.8	1534.5
32.5°	1498.4	1523.9	1548.5	1570.5	1588.5	1591.6	1590.4	1582.6	1566.9	1544.6	1521.9
33°	1485.5	1511.0	1536.4	1558.3	1576.7	1579.9	1578.3	1570.1	1554.8	1532.1	1509.4
33.5°	1472.2	1498.0	1523.5	1545.8	1564.2	1567.3	1565.8	1557.5	1542.3	1519.6	1496.5
34°	1458.5	1484.7	1510.6	1533.3	1551.7	1555.2	1553.2	1545.4	1529.4	1506.7	1483.2
34.5°	1444.4	1471.4	1497.3	1520.0	1538.8	1542.3	1540.7	1532.5	1516.4	1493.4	1469.9
35°	1430.3	1457.7	1483.6	1507.1	1525.8	1529.0	1527.4	1519.6	1503.5	1479.7	1456.2
35.5°	1416.2	1443.6	1470.3	1493.4	1512.5	1516.1	1514.1	1506.3	1489.8	1466.3	1442.5
36°	1401.4	1429.2	1456.2	1480.0	1499.2	1502.4	1500.8	1493.0	1476.1	1453.0	1428.4
36.5°	1387.3	1415.1	1442.1	1466.0	1485.5	1489.0	1487.5	1479.3	1462.4	1438.9	1414.3
37°	1372.0	1400.6	1427.6	1451.5	1471.8	1475.0	1473.4	1465.6	1448.3	1424.5	1399.8
37.5°	1356.7	1385.7	1413.1	1437.4	1457.3	1460.9	1458.9	1451.5	1433.9	1410.4	1385.7
38°	1341.1	1370.8	1398.2	1422.5	1443.2	1446.4	1444.8	1436.6	1419.8	1395.1	1370.8
38.5°	1326.2	1355.6	1383.7	1407.6	1428.8	1431.9	1430.7	1422.1	1404.9	1381.0	1355.6
39°	1310.9	1340.7	1368.5	1393.1	1413.9	1417.0	1415.8	1407.6	1389.6	1365.7	1340.7
39.5°	1294.9	1325.0	1352.8	1377.5	1398.6	1402.1	1400.6	1392.4	1374.7	1350.5	1325.0
40°	1278.8	1309.0	1337.6	1361.8	1383.4	1386.9	1385.3	1377.5	1359.5	1334.8	1309.8
40.5°	1262.8	1293.3	1321.5	1346.2	1367.7	1371.6	1370.0	1361.4	1343.8	1319.6	1294.1
41°	1246.4	1276.9	1305.5	1329.7	1352.0	1356.0	1354.4	1345.8	1328.2	1303.5	1278.1
41.5°	1229.5	1260.4	1289.0	1314.1	1335.6	1339.9	1338.7	1329.7	1311.7	1287.5	1262.0
42°	1213.1	1243.6	1272.6	1297.2	1319.6	1323.9	1322.3	1313.7	1295.7	1271.0	1245.6
42.5°	1196.2	1227.6	1255.7	1280.4	1303.1	1307.4	1306.2	1296.8	1278.8	1255.0	1229.1
43°	1178.6	1210.3	1238.5	1263.2	1286.3	1290.2	1289.4	1280.0	1262.0	1237.3	1212.3
43.5°	1161.4	1192.3	1221.3	1245.6	1268.7	1273.4	1272.2	1262.8	1244.8	1220.1	1195.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1107.8	1138.7	1166.9	1191.2	1215.0	1219.3	1219.0	1208.8	1190.4	1166.1	1141.1
45.5°	1089.8	1120.3	1148.9	1172.8	1196.6	1201.7	1200.9	1190.4	1172.0	1147.7	1122.7
46°	1072.2	1102.7	1130.9	1154.8	1178.6	1184.1	1182.9	1172.8	1154.0	1129.3	1105.0
46.5°	1054.9	1085.5	1113.3	1137.1	1161.0	1167.3	1166.1	1155.1	1135.6	1111.7	1087.0
47°	1038.1	1068.2	1096.0	1119.5	1143.4	1149.7	1148.9	1137.5	1118.0	1093.7	1069.4
47.5°	1021.3	1051.4	1078.8	1102.3	1126.2	1132.4	1131.7	1120.3	1100.7	1076.5	1052.6
48°	1004.4	1034.2	1061.2	1084.7	1109.0	1115.6	1114.8	1103.5	1083.5	1059.2	1035.8
48.5°	988.0	1017.0	1044.4	1067.5	1091.7	1099.6	1098.0	1086.3	1065.9	1042.4	1018.9
49°	970.0	998.6	1024.8	1047.9	1072.6	1080.4	1079.2	1067.5	1047.1	1023.2	999.7
49.5°	950.4	979.0	1004.4	1026.8	1052.2	1059.6	1058.5	1046.7	1026.4	1002.5	979.8
50°	928.1	957.5	982.1	1003.3	1030.7	1038.1	1037.3	1025.2	1005.2	981.3	957.9
50.5°	903.4	930.8	957.5	979.4	1006.8	1013.4	1011.5	1000.9	981.7	956.7	933.2
51°	876.4	903.4	930.1	952.8	980.6	986.8	985.3	975.5	955.9	930.1	906.2
51.5°	847.5	874.5	900.7	924.6	952.8	958.6	957.9	946.9	928.9	902.7	877.6
52°	816.5	844.7	870.6	894.1	922.6	930.1	929.3	917.9	899.1	873.3	849.0
52.5°	786.4	814.2	839.3	860.8	891.7	901.1	900.3	887.8	867.4	842.8	819.3
53°	755.1	782.1	806.8	827.1	859.6	869.8	869.8	856.9	834.9	811.5	788.8
53.5°	723.4	750.0	773.9	793.1	826.3	839.3	839.6	824.4	801.3	779.4	757.4
54°	690.9	717.5	739.4	758.2	792.7	807.5	807.9	791.9	768.0	746.9	725.0
54.5°	658.8	685.0	705.0	723.4	758.6	775.1	775.8	758.2	734.0	712.4	693.2
55°	625.9	651.8	670.1	688.2	725.3	743.3	744.1	725.0	701.5	679.5	661.1
55.5°	593.0	617.7	635.3	653.3	691.3	708.9	710.9	690.5	667.4	645.1	627.9
56°	560.9	584.8	600.1	617.7	656.4	675.2	677.2	657.2	634.5	610.6	595.8
56.5°	528.8	551.5	565.2	584.8	622.4	641.2	643.1	623.2	600.1	577.0	562.9
57°	496.0	518.3	530.4	550.4	588.7	607.1	609.5	590.3	568.0	542.9	530.4
57.5°	464.6	485.0	496.7	516.7	555.5	572.7	575.4	557.0	534.7	510.4	497.9
58°	433.7	452.5	463.1	484.2	522.2	538.6	541.4	524.1	503.0	477.2	465.8
58.5°	403.6	420.0	429.8	452.1	489.7	505.0	507.7	492.0	471.7	445.5	434.5
59°	373.8	388.3	398.5	420.8	457.6	471.3	474.0	460.7	440.4	414.1	404.0
59.5°	344.1	356.2	367.6	389.9	426.3	438.8	440.0	429.0	409.1	384.0	374.2
60°	316.3	326.1	338.2	359.3	395.4	406.7	407.1	398.1	380.1	355.8	344.9
60.5°	288.1	296.3	308.5	329.6	366.4	376.2	377.0	368.7	351.1	327.6	315.5
61°	260.7	267.7	280.3	301.0	337.4	346.0	346.4	339.4	322.5	299.5	286.5
61.5°	234.1	240.3	253.7	273.6	308.5	315.5	315.9	310.0	293.6	271.3	257.2
62°	208.6	214.5	227.0	246.6	279.5	285.4	285.4	280.7	264.6	245.4	231.7
62.5°	184.4	189.8	202.4	220.8	250.5	255.2	254.8	251.3	238.0	220.0	206.3
63°	161.3	166.0	178.1	196.9	223.1	227.0	226.6	223.9	212.6	196.1	182.4
63.5°	138.6	144.1	155.8	173.0	197.3	200.8	200.4	198.1	188.3	173.0	160.1
64°	119.8	126.4	134.3	150.7	172.6	175.4	175.4	173.0	163.6	151.1	139.4
64.5°	101.0	109.2	117.0	131.1	149.1	151.5	151.1	148.7	139.7	130.7	119.4
65°	82.2	91.6	99.4	112.7	126.8	128.8	128.8	126.4	116.3	110.8	101.4
65.5°	63.8	74.4	81.8	93.9	105.3	108.0	108.0	104.9	93.9	92.4	84.6
66°	45.0	56.8	64.6	75.5	85.7	88.1	88.1	84.9	73.2	75.2	68.9





TEST NUMBER: P776351

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMB-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	14.5	24.3	28.2	30.9	44.6	46.2	46.2	43.8	32.9	39.5	36.4
68°	11.0	16.8	19.6	20.7	32.9	34.1	34.1	32.5	19.6	29.7	25.4
68.5°	7.8	13.7	12.1	12.9	21.1	21.9	21.9	20.7	6.3	19.6	14.9
69°	4.3	10.6	9.4	9.8	9.8	10.2	9.8	9.8	2.0	9.4	8.6
69.5°	1.2	7.4	6.7	7.0	4.7	4.7	4.7	4.7	1.2	4.7	4.3
70°	1.2	4.3	3.9	3.9	2.0	2.0	2.0	2.0	1.2	2.0	2.0
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: P776351

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMB-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

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



TEST NUMBER: P776351

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMB-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1910.6	1910.6	1910.6	1910.6	1910.6	1910.6
0.5°	1910.2	1909.8	1909.8	1910.2	1909.8	1909.5
1°	1909.5	1908.7	1908.7	1909.1	1909.1	1908.7
1.5°	1908.7	1907.5	1907.1	1907.9	1907.9	1907.9
2°	1907.5	1905.9	1905.5	1906.3	1906.3	1906.7
2.5°	1906.3	1904.0	1904.0	1904.4	1904.8	1905.5
3°	1904.8	1902.4	1902.0	1902.8	1903.2	1904.0
3.5°	1903.2	1900.5	1900.1	1900.8	1901.6	1902.8
4°	1901.2	1898.5	1897.7	1898.5	1899.7	1900.8
4.5°	1899.3	1896.1	1895.4	1896.1	1897.3	1899.3
5°	1897.3	1893.8	1893.0	1893.8	1895.0	1897.3
5.5°	1895.0	1891.1	1890.3	1891.1	1892.6	1895.4
6°	1892.6	1888.3	1887.5	1888.3	1889.9	1892.6
6.5°	1889.9	1885.6	1884.4	1885.2	1887.5	1890.3
7°	1887.1	1882.4	1881.3	1882.4	1884.4	1887.5
7.5°	1884.4	1878.9	1878.1	1878.9	1881.3	1884.8
8°	1881.3	1875.8	1874.2	1875.4	1878.1	1882.1
8.5°	1877.7	1872.3	1870.7	1871.9	1874.6	1878.5
9°	1874.6	1868.4	1866.8	1868.0	1870.7	1875.4
9.5°	1870.7	1864.8	1863.3	1864.0	1867.2	1871.9
10°	1867.2	1860.5	1859.0	1860.1	1863.3	1868.0
10.5°	1863.3	1856.2	1854.7	1855.8	1859.0	1864.4
11°	1859.3	1851.9	1850.0	1851.5	1854.7	1860.1
11.5°	1855.0	1847.6	1845.3	1846.4	1850.3	1856.2
12°	1850.7	1842.5	1840.6	1841.7	1845.6	1851.5
12.5°	1846.0	1837.8	1835.5	1836.6	1841.0	1847.2
13°	1841.3	1832.7	1830.4	1831.6	1835.9	1842.1
13.5°	1836.3	1827.6	1824.9	1826.1	1830.4	1837.4
14°	1831.6	1822.2	1819.4	1820.6	1825.3	1832.3
14.5°	1826.1	1816.3	1813.9	1815.1	1819.4	1826.9
15°	1820.6	1810.8	1807.7	1809.2	1813.9	1821.4
15.5°	1815.1	1804.5	1801.4	1803.0	1807.7	1815.5
16°	1808.9	1798.7	1795.2	1796.7	1801.8	1810.0
16.5°	1803.4	1792.0	1788.9	1790.5	1795.5	1803.8
17°	1797.1	1785.4	1782.2	1783.4	1788.9	1797.5
17.5°	1790.5	1778.7	1775.2	1776.8	1782.2	1791.2
18°	1784.2	1771.7	1768.1	1769.7	1775.2	1784.6
18.5°	1777.1	1764.6	1760.7	1762.3	1768.1	1777.5
19°	1770.1	1757.6	1753.3	1754.8	1760.7	1770.5
19.5°	1763.1	1750.1	1745.4	1747.0	1753.7	1763.4
20°	1755.6	1742.3	1737.6	1739.2	1745.8	1756.0
20.5°	1748.2	1734.1	1729.4	1731.0	1737.6	1748.2
21°	1740.4	1725.9	1721.2	1722.3	1729.4	1740.7



TEST NUMBER: P776351

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMB-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1715.3	1700.0	1694.6	1696.1	1703.6	1715.7
23°	1707.1	1691.0	1685.2	1686.7	1694.6	1707.1
23.5°	1698.1	1682.0	1676.2	1677.3	1685.5	1698.1
24°	1689.1	1672.6	1666.4	1667.5	1675.8	1689.1
24.5°	1679.7	1662.5	1656.6	1657.8	1666.0	1679.3
25°	1670.3	1652.7	1646.4	1647.6	1656.2	1669.9
25.5°	1660.5	1642.9	1635.8	1637.4	1646.0	1660.1
26°	1650.7	1632.3	1625.3	1626.8	1635.8	1650.3
26.5°	1640.1	1621.4	1614.3	1615.9	1624.9	1639.8
27°	1629.6	1610.4	1603.7	1604.9	1614.3	1629.6
27.5°	1619.4	1599.8	1592.8	1593.6	1603.3	1618.6
28°	1608.4	1588.5	1581.0	1582.2	1592.0	1607.7
28.5°	1597.1	1576.7	1569.3	1570.5	1580.3	1596.3
29°	1586.1	1565.4	1557.5	1559.1	1568.9	1584.9
29.5°	1574.8	1553.2	1545.4	1546.6	1557.2	1573.6
30°	1562.6	1541.5	1533.3	1534.5	1544.6	1561.5
30.5°	1550.9	1529.0	1520.4	1521.5	1532.5	1549.3
31°	1538.8	1516.1	1507.8	1509.0	1519.6	1537.2
31.5°	1526.2	1503.5	1494.5	1495.7	1506.7	1524.3
32°	1513.3	1490.6	1481.6	1482.8	1493.7	1511.7
32.5°	1500.8	1477.3	1468.3	1469.1	1480.8	1498.4
33°	1487.5	1464.0	1454.6	1455.8	1467.1	1485.5
33.5°	1474.6	1450.7	1440.9	1442.5	1453.4	1472.2
34°	1460.9	1437.0	1427.2	1428.0	1439.7	1458.5
34.5°	1447.6	1422.5	1412.7	1413.9	1425.6	1444.4
35°	1433.1	1408.4	1398.2	1399.8	1411.1	1430.3
35.5°	1419.4	1393.9	1384.1	1385.3	1396.7	1416.2
36°	1405.3	1379.8	1369.7	1370.8	1382.6	1401.4
36.5°	1391.2	1365.0	1355.2	1356.0	1368.1	1387.3
37°	1376.3	1350.1	1340.3	1341.1	1352.8	1372.0
37.5°	1361.4	1335.2	1324.6	1326.2	1337.9	1356.7
38°	1346.6	1319.9	1309.8	1310.9	1322.3	1341.1
38.5°	1330.9	1304.7	1294.5	1295.7	1307.0	1326.2
39°	1316.0	1289.0	1279.2	1280.0	1291.8	1310.9
39.5°	1300.4	1273.8	1263.6	1264.7	1276.1	1294.9
40°	1284.7	1257.3	1247.9	1248.7	1259.7	1278.8
40.5°	1269.1	1241.7	1231.9	1233.0	1243.6	1262.8
41°	1252.6	1225.2	1215.8	1217.0	1227.6	1246.4
41.5°	1236.6	1208.8	1199.0	1200.6	1211.1	1229.5
42°	1220.1	1192.3	1182.9	1184.1	1194.7	1213.1
42.5°	1203.7	1175.5	1166.5	1167.3	1177.8	1196.2
43°	1186.9	1158.3	1148.9	1150.4	1160.2	1178.6
43.5°	1169.2	1140.7	1131.7	1132.8	1142.6	1161.4



TEST NUMBER: P776351

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMB-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1116.0	1087.0	1078.8	1079.6	1089.0	1107.8
45.5°	1098.0	1069.4	1060.8	1062.0	1071.0	1089.8
46°	1080.4	1051.8	1043.2	1044.4	1053.8	1072.2
46.5°	1062.4	1035.0	1026.4	1027.1	1036.5	1054.9
47°	1045.5	1018.1	1009.9	1010.7	1019.3	1038.1
47.5°	1028.7	1001.3	993.1	994.3	1002.5	1021.3
48°	1012.3	984.9	976.3	977.8	986.0	1004.4
48.5°	995.4	968.0	959.8	960.6	969.2	988.0
49°	977.4	949.6	941.4	942.6	951.6	970.0
49.5°	957.9	929.7	922.2	923.4	932.0	950.4
50°	936.3	906.6	899.5	901.9	910.9	928.1
50.5°	910.9	880.7	874.5	877.2	885.4	903.4
51°	883.9	853.0	847.1	849.4	858.8	876.4
51.5°	855.3	824.8	818.1	820.1	830.6	847.5
52°	826.7	794.6	788.0	789.9	800.1	816.5
52.5°	796.6	764.1	757.4	758.6	768.4	786.4
53°	766.4	732.4	725.0	726.1	736.7	755.1
53.5°	735.1	701.5	692.5	694.0	704.6	723.4
54°	705.0	670.1	660.0	661.1	671.7	690.9
54.5°	672.9	638.4	628.3	628.7	639.6	658.8
55°	642.0	606.7	595.4	595.8	606.7	625.9
55.5°	609.5	576.2	563.3	562.5	574.2	593.0
56°	578.6	545.3	531.2	529.2	542.5	560.9
56.5°	546.5	514.7	499.9	497.5	511.2	528.8
57°	515.1	483.4	468.6	465.4	479.5	496.0
57.5°	484.2	453.7	437.6	434.5	448.6	464.6
58°	453.7	423.9	407.9	404.8	418.5	433.7
58.5°	423.1	395.0	378.5	374.6	387.9	403.6
59°	393.0	366.0	349.9	346.0	359.7	373.8
59.5°	364.4	337.4	322.5	318.2	331.6	344.1
60°	335.5	310.0	294.8	291.6	303.8	316.3
60.5°	306.9	283.0	268.9	265.8	277.1	288.1
61°	278.3	256.4	243.9	241.1	251.3	260.7
61.5°	252.1	231.7	220.4	217.6	226.3	234.1
62°	226.3	207.1	197.7	196.1	202.4	208.6
62.5°	201.2	183.2	176.1	174.6	179.3	184.4
63°	176.9	161.3	155.8	154.6	157.0	161.3
63.5°	154.2	140.1	135.8	135.0	136.2	138.6
64°	132.7	122.9	119.8	119.0	119.4	119.8
64.5°	112.7	105.7	103.7	103.3	102.6	101.0
65°	94.3	88.9	87.7	87.3	85.7	82.2
65.5°	77.5	71.6	71.6	71.6	68.9	63.8
66°	61.5	54.8	57.9	58.7	54.8	45.0



TEST NUMBER: P776351

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMB-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	32.1	22.7	25.8	26.6	23.1	14.5
68°	22.3	15.7	18.0	18.4	16.0	11.0
68.5°	12.9	12.1	11.4	11.7	12.1	7.8
69°	7.8	8.6	8.6	9.0	8.6	4.3
69.5°	3.9	4.7	6.3	6.3	4.7	1.2
70°	2.0	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: P776351  
CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMB-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

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



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Scaled Data Report





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

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Scaled Data Report





21.5°	1732.1	1749.0	1766.2	1781.1	1793.6	1796.7	1795.2	1788.5	1777.1	1761.5	1745.8
22°	1724.3	1741.1	1758.7	1774.0	1786.5	1790.1	1788.1	1781.1	1770.1	1754.1	1738.0



44°	1143.4	1174.3	1202.5	1228.0	1250.7	1255.4	1254.6	1244.8	1226.4	1202.5	1177.1
44.5°	1125.4	1156.7	1184.9	1209.6	1233.0	1238.5	1236.2	1227.2	1208.4	1184.5	1159.1



66.5°	32.5	44.2	50.9	57.2	68.1	70.5	70.5	66.9	59.9	59.9	57.9
67°	22.3	33.3	38.8	43.1	56.4	58.3	58.3	55.2	46.6	49.7	47.4



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°	1732.1	1717.6	1712.6	1713.7	1721.2	1732.1
22°	1723.9	1709.0	1703.9	1705.1	1712.6	1724.3



44°	1151.6	1122.7	1114.0	1114.8	1125.0	1143.4
44.5°	1134.0	1105.0	1096.4	1097.2	1107.0	1125.4

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66.5°	51.7	41.9	46.2	46.2	42.7	32.5
67°	41.9	31.3	35.2	35.6	32.1	22.3

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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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Scaled Data Report



(END OF REPORT)