

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: P776252

Luminaire Tested: HCDJBL3040CSD-HCD41TRMB-4000lm-3500K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776252
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B031)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD41TRMB-4000lm-3500K
Description: 4 INCH ROUND SHALLOW-WIDE MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

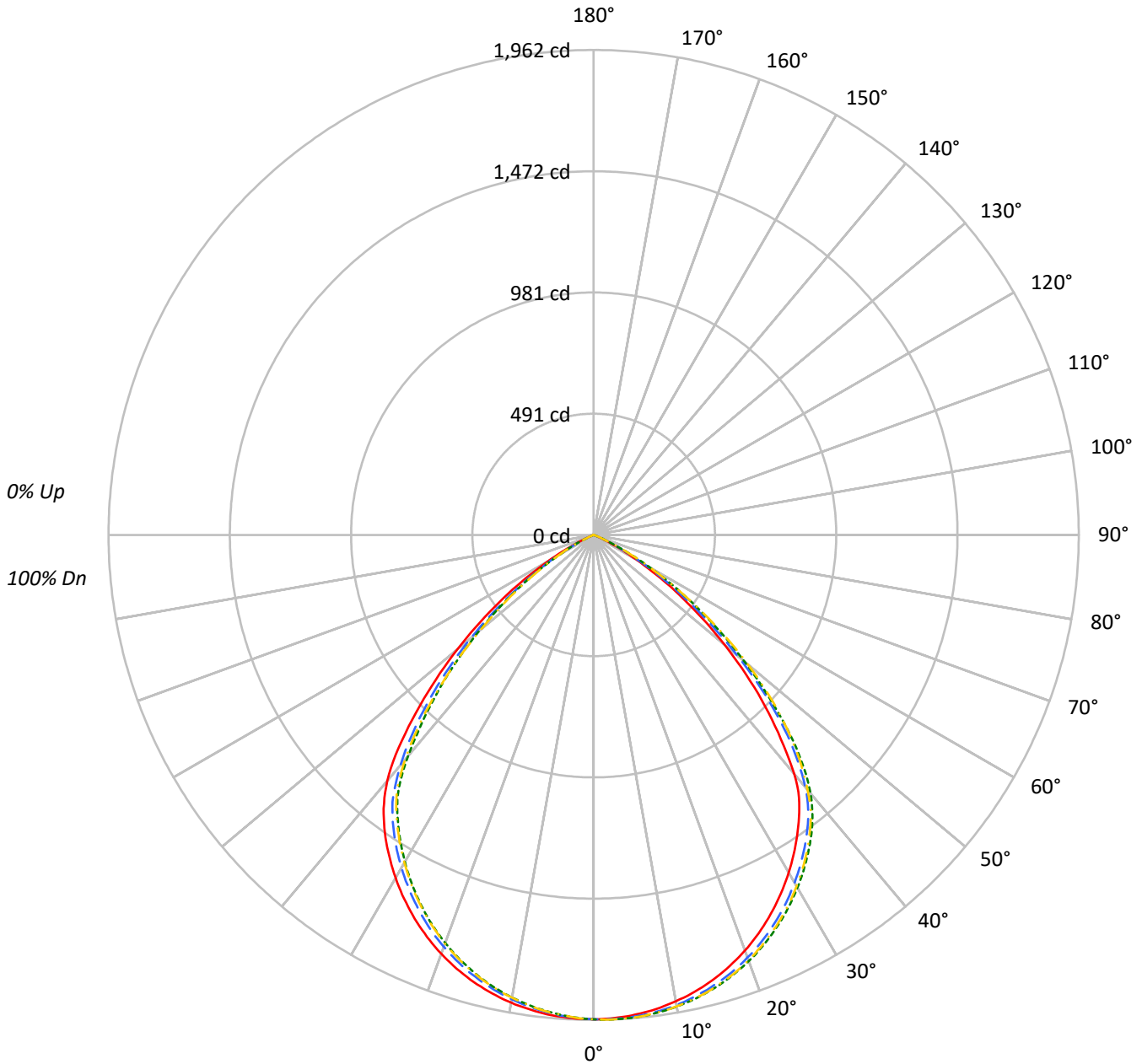
Lumens per Lamp: N/A
Luminaire Lumens: 3629.9 lumens
Efficiency: N/A
Efficacy: 94.3 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.26
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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					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	112	109	106	103	109	106	104	101	102	100	98	99	97	95	95	94	92	90				
2	105	98	93	89	102	97	92	88	93	89	86	90	87	84	87	85	82	81				
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	76	73	72				
4	90	81	74	68	88	80	73	68	77	72	67	75	70	66	73	69	65	64				
5	84	74	66	61	82	73	66	60	71	64	60	69	63	59	67	62	59	57				
6	78	67	60	54	77	66	59	54	65	58	54	63	57	53	62	57	53	51				
7	73	62	54	49	72	61	54	49	59	53	48	58	52	48	57	52	48	46				
8	69	57	49	44	67	56	49	44	55	48	44	54	48	44	53	47	43	42				
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	43	40	38				
10	60	49	42	37	59	48	41	37	47	41	37	46	41	36	45	40	36	35				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	246653	246653	246653	246653
5°	246079	247494	246382	245081
10°	244810	247608	245576	242829
15°	242768	247107	244006	239602
20°	239635	245755	241443	235215
25°	235104	243213	237811	229424
30°	229226	239514	232815	221829
35°	221587	234277	226165	212538
40°	207098	224134	213177	191688
45°	174686	196275	180702	157422
50°	135191	155984	140791	118686
55°	92811	111725	97419	78418
60°	50239	65845	54342	39618
65°	15396	23793	16914	10661
70°	1472	1619	1472	1472
75°	1556	1556	1556	1556
80°	1449	1449	1160	1449
85°	578	1155	578	1155

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 112.5°
 Vertical Angle: 45°
 Luminance: 197823 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	185.1	5.1
10°-20°	526.6	14.5
20°-30°	783.3	21.6
30°-40°	905.4	24.9
40°-50°	764.0	21.0
50°-60°	388.7	10.7
60°-70°	72.7	2.0
70°-80°	3.2	0.1
80°-90°	0.9	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°	1495.1	41.2
0°-40°	2400.4	66.1
0°-60°	3553.1	97.9
0°-90°	3629.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3629.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1960	1960	1960	1960	1960	
5°	1948	1959	1950	1940	1948	185
15°	1863	1897	1873	1839	1863	525
25°	1693	1752	1713	1652	1693	779
35°	1442	1525	1472	1383	1442	898
45°	982	1103	1015	884	982	752
55°	423	509	444	357	423	381
65°	52	80	57	36	52	68
75°	3	3	3	3	3	3
85°	0	1	0	1	0	1
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°	1959.9	1959.9	1959.9	1959.9	1959.9	1959.9	1959.9	1959.9	1959.9	1959.9	1959.9
0.5°	1959.5	1959.5	1960.2	1960.6	1961.0	1961.0	1961.0	1959.5	1959.1	1959.5	1959.1
1°	1959.1	1959.9	1960.6	1961.0	1961.4	1961.8	1961.4	1959.9	1959.1	1959.1	1958.3
1.5°	1958.3	1959.5	1960.6	1961.4	1961.4	1962.2	1961.8	1960.2	1958.7	1957.9	1957.1
2°	1957.5	1959.1	1960.2	1961.8	1961.8	1962.6	1962.2	1960.2	1958.3	1957.1	1955.5
2.5°	1955.9	1957.9	1959.9	1961.8	1961.8	1962.2	1961.4	1959.9	1957.5	1955.9	1954.3
3°	1954.7	1957.1	1959.1	1961.0	1961.8	1962.2	1961.4	1958.7	1956.7	1954.7	1952.3
3.5°	1953.1	1955.9	1958.7	1960.6	1961.0	1961.8	1961.4	1958.3	1955.1	1952.7	1950.7
4°	1951.9	1954.7	1957.5	1959.9	1960.6	1961.4	1960.6	1957.9	1953.9	1951.1	1948.7
4.5°	1949.9	1953.1	1956.7	1958.7	1959.9	1960.6	1959.5	1957.1	1952.3	1948.7	1945.9
5°	1947.9	1951.5	1955.1	1957.9	1959.1	1959.5	1958.3	1955.5	1950.3	1946.7	1943.6
5.5°	1945.5	1949.5	1953.5	1956.7	1957.5	1958.7	1957.5	1953.9	1948.7	1944.7	1940.8
6°	1942.8	1947.5	1952.3	1955.1	1956.3	1957.1	1955.9	1952.3	1946.3	1942.0	1938.0
6.5°	1940.0	1945.1	1949.9	1953.5	1954.7	1955.5	1953.9	1950.7	1944.0	1939.6	1935.2
7°	1937.6	1942.8	1947.9	1951.9	1952.7	1953.5	1951.9	1948.7	1941.2	1936.0	1932.0
7.5°	1934.4	1940.0	1945.5	1949.5	1950.3	1951.9	1949.9	1946.3	1938.4	1933.2	1928.4
8°	1931.2	1937.2	1943.2	1947.5	1948.3	1949.5	1947.5	1943.6	1935.2	1929.6	1924.9
8.5°	1927.7	1934.0	1940.4	1944.7	1945.9	1947.1	1945.1	1940.8	1932.0	1926.1	1920.9
9°	1923.7	1930.8	1937.6	1942.0	1943.2	1944.7	1942.8	1938.0	1928.8	1922.5	1916.5
9.5°	1919.7	1927.3	1934.4	1939.2	1940.4	1942.0	1939.6	1935.2	1925.7	1918.5	1912.1
10°	1915.7	1923.7	1930.8	1936.4	1937.6	1939.2	1936.8	1932.0	1921.7	1914.5	1907.8
10.5°	1911.4	1919.7	1927.3	1932.8	1934.4	1936.0	1933.2	1928.4	1917.7	1910.2	1903.0
11°	1907.0	1915.3	1923.7	1929.2	1930.8	1932.4	1930.0	1924.9	1913.7	1905.4	1898.2
11.5°	1902.6	1911.0	1919.7	1925.7	1927.3	1928.8	1926.1	1920.9	1909.4	1900.6	1893.1
12°	1897.0	1906.6	1915.3	1921.7	1923.7	1924.9	1922.5	1916.5	1904.6	1895.8	1887.5
12.5°	1892.3	1901.8	1911.0	1917.7	1919.7	1920.9	1918.1	1912.1	1899.4	1890.7	1881.9
13°	1886.7	1897.0	1906.2	1913.7	1915.3	1916.9	1914.1	1908.2	1894.7	1885.1	1876.0
13.5°	1881.5	1891.9	1901.4	1909.0	1911.0	1912.1	1909.4	1903.4	1889.5	1879.5	1870.0
14°	1875.6	1886.3	1896.6	1904.2	1906.2	1908.2	1905.0	1898.2	1883.9	1874.0	1864.0
14.5°	1869.6	1880.7	1891.1	1899.4	1901.4	1903.0	1899.8	1893.1	1878.8	1868.0	1857.3
15°	1863.3	1874.8	1885.5	1894.3	1896.6	1898.2	1894.7	1887.9	1872.8	1861.7	1850.5
15.5°	1856.9	1868.0	1880.3	1888.7	1891.5	1892.7	1889.1	1881.9	1866.8	1855.3	1844.2
16°	1850.1	1862.5	1874.4	1883.1	1885.9	1887.5	1883.5	1876.4	1860.5	1848.5	1837.4
16.5°	1843.4	1856.1	1868.0	1877.6	1879.9	1881.5	1878.0	1870.4	1854.1	1841.8	1829.9
17°	1836.6	1849.3	1862.1	1871.6	1874.4	1875.6	1872.0	1864.4	1847.3	1835.0	1822.3
17.5°	1829.1	1842.2	1855.7	1865.2	1868.0	1869.2	1865.6	1858.1	1840.2	1827.5	1814.4
18°	1821.1	1835.0	1848.5	1858.9	1861.7	1862.9	1859.3	1850.9	1833.0	1819.9	1806.4
18.5°	1813.6	1827.9	1841.4	1852.5	1854.9	1856.9	1852.5	1844.2	1826.3	1812.4	1798.5
19°	1805.6	1819.9	1834.6	1845.4	1848.5	1850.1	1845.4	1837.4	1818.7	1804.4	1790.5
19.5°	1797.7	1812.4	1827.1	1838.6	1841.8	1843.0	1838.2	1830.3	1811.2	1796.5	1781.8
20°	1789.3	1804.4	1819.5	1831.4	1835.0	1835.8	1831.0	1822.7	1802.8	1788.1	1773.0
20.5°	1780.6	1796.5	1812.0	1823.9	1827.5	1828.7	1823.5	1815.1	1795.3	1779.8	1763.9
21°	1771.8	1787.7	1804.0	1816.3	1820.3	1821.5	1815.9	1807.2	1786.5	1770.6	1754.7



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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°	1744.0	1761.5	1778.6	1792.1	1795.7	1796.9	1791.3	1782.6	1760.3	1743.2	1726.1
23°	1734.4	1752.3	1769.8	1783.7	1787.3	1788.5	1782.9	1773.8	1751.1	1734.1	1716.2
23.5°	1724.5	1742.4	1761.1	1775.4	1779.0	1779.4	1774.2	1764.7	1742.0	1724.1	1705.4
24°	1714.2	1732.9	1751.9	1766.3	1769.8	1771.0	1765.1	1755.9	1732.5	1714.2	1695.5
24.5°	1703.8	1723.3	1742.4	1757.1	1761.1	1761.5	1755.9	1746.4	1722.9	1704.2	1684.8
25°	1693.1	1713.4	1732.5	1747.6	1751.5	1752.3	1746.4	1736.8	1712.6	1693.5	1674.0
25.5°	1682.4	1703.0	1722.9	1738.4	1742.4	1742.8	1736.8	1727.3	1702.2	1683.2	1662.5
26°	1671.6	1692.3	1712.6	1728.5	1732.9	1733.3	1727.3	1717.4	1691.9	1672.0	1651.4
26.5°	1660.9	1681.6	1702.6	1718.5	1722.9	1722.9	1717.0	1707.0	1681.2	1660.9	1639.8
27°	1649.4	1670.8	1691.9	1708.6	1712.6	1713.0	1706.6	1696.7	1670.4	1650.2	1628.3
27.5°	1637.8	1659.7	1681.6	1698.7	1702.2	1702.6	1696.3	1685.9	1659.7	1638.6	1616.4
28°	1625.9	1648.6	1670.8	1687.9	1692.3	1692.7	1685.9	1675.2	1649.0	1627.1	1604.1
28.5°	1614.0	1636.7	1659.3	1677.2	1681.6	1681.6	1675.2	1664.1	1637.4	1615.6	1592.1
29°	1602.1	1625.1	1647.8	1666.1	1670.8	1670.4	1663.7	1653.4	1625.5	1603.3	1580.2
29.5°	1589.7	1613.2	1636.7	1655.3	1659.7	1659.3	1652.6	1642.2	1614.0	1591.3	1567.1
30°	1577.4	1601.7	1625.1	1644.2	1648.2	1648.2	1641.0	1630.3	1602.1	1579.0	1554.0
30.5°	1564.7	1589.3	1613.2	1632.7	1637.1	1635.9	1629.5	1618.8	1590.1	1566.7	1541.6
31°	1552.0	1577.0	1601.3	1620.4	1625.1	1624.3	1617.2	1606.8	1577.4	1554.0	1528.5
31.5°	1538.5	1564.3	1589.0	1608.8	1613.2	1612.4	1605.2	1594.9	1564.7	1540.8	1515.0
32°	1525.3	1551.6	1576.6	1596.9	1601.3	1600.5	1593.3	1582.6	1552.0	1528.1	1501.9
32.5°	1511.8	1538.1	1563.9	1584.6	1588.6	1587.8	1581.0	1570.3	1539.3	1514.6	1487.6
33°	1498.3	1524.9	1551.2	1571.9	1576.6	1575.0	1568.7	1557.5	1526.5	1501.5	1474.1
33.5°	1484.8	1511.4	1538.1	1559.5	1563.9	1562.3	1556.0	1544.4	1513.0	1488.0	1459.8
34°	1470.9	1498.3	1525.3	1546.4	1551.2	1550.0	1542.4	1531.7	1499.5	1473.7	1446.2
34.5°	1456.6	1484.4	1511.8	1533.7	1538.1	1536.5	1528.9	1518.2	1486.0	1459.8	1431.1
35°	1442.3	1470.5	1497.9	1519.8	1524.9	1523.4	1515.4	1504.3	1472.1	1445.4	1416.4
35.5°	1427.2	1456.2	1484.0	1506.7	1511.0	1509.8	1501.9	1490.8	1457.8	1430.7	1400.5
36°	1412.8	1441.9	1470.1	1492.3	1497.5	1495.9	1487.6	1476.8	1442.7	1415.2	1385.0
36.5°	1397.3	1427.2	1455.8	1478.4	1483.6	1481.6	1473.3	1462.1	1427.2	1399.3	1368.7
37°	1381.8	1412.0	1441.1	1463.7	1468.5	1466.5	1458.2	1447.0	1411.6	1383.4	1351.6
37.5°	1365.1	1395.7	1425.2	1448.2	1453.0	1451.0	1443.1	1431.5	1395.0	1365.9	1330.9
38°	1348.4	1379.4	1408.9	1432.7	1437.1	1435.1	1427.2	1415.2	1377.1	1346.9	1309.5
38.5°	1329.4	1361.2	1392.2	1416.0	1420.4	1418.0	1408.9	1398.1	1358.8	1326.2	1286.8
39°	1308.7	1340.9	1373.9	1399.3	1402.5	1399.3	1389.0	1379.4	1339.3	1304.3	1263.8
39.5°	1286.0	1318.6	1353.2	1381.0	1384.2	1378.7	1367.9	1359.2	1318.6	1282.1	1239.5
40°	1260.6	1295.2	1330.9	1361.6	1364.3	1356.8	1346.5	1337.3	1297.6	1258.2	1214.9
40.5°	1232.4	1271.3	1308.3	1340.9	1342.9	1334.9	1323.8	1315.0	1274.1	1234.0	1189.0
41°	1204.9	1246.7	1284.8	1318.6	1320.6	1311.9	1301.1	1292.0	1249.5	1209.3	1163.2
41.5°	1177.1	1221.2	1260.2	1295.2	1296.8	1288.8	1278.5	1267.7	1222.4	1183.5	1136.6
42°	1148.9	1194.2	1235.9	1269.7	1271.3	1265.0	1255.4	1243.1	1195.8	1157.2	1109.1
42.5°	1121.1	1167.2	1210.1	1243.5	1245.9	1241.1	1231.6	1218.4	1166.8	1130.2	1080.5
43°	1093.6	1139.7	1183.9	1216.9	1219.2	1216.5	1206.9	1191.4	1137.0	1102.0	1051.9
43.5°	1065.4	1111.5	1156.8	1188.6	1191.4	1191.0	1181.5	1165.2	1106.7	1072.9	1022.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	981.5	1025.2	1070.6	1098.0	1102.8	1111.5	1103.2	1080.9	1015.3	983.9	935.8
45.5°	953.3	995.8	1040.0	1065.4	1071.8	1084.1	1075.3	1052.7	985.1	953.3	906.8
46°	924.7	967.2	1010.1	1034.0	1040.7	1055.5	1047.9	1022.5	954.9	921.5	877.8
46.5°	895.6	937.8	979.1	1002.6	1009.7	1027.2	1020.5	993.8	924.3	890.1	848.3
47°	865.8	908.8	948.5	970.4	977.9	997.4	991.5	962.8	895.3	858.7	819.7
47.5°	836.0	879.7	917.5	937.8	947.3	968.0	963.2	932.6	865.8	827.7	790.3
48°	806.6	850.3	884.9	906.4	917.1	938.2	933.4	902.4	836.4	796.7	761.7
48.5°	776.8	820.5	853.1	875.0	886.9	908.4	904.8	874.6	807.0	764.9	733.1
49°	747.8	791.9	820.9	844.0	856.3	878.2	874.6	843.2	777.6	734.2	704.0
49.5°	718.7	762.5	789.5	813.0	826.1	847.5	845.6	813.4	748.2	703.6	675.0
50°	690.5	732.7	757.7	783.1	796.7	816.5	814.9	783.5	719.1	674.2	646.0
50.5°	661.9	702.8	726.3	751.7	766.8	785.9	784.7	754.5	690.1	644.0	616.6
51°	634.5	672.6	694.5	721.9	737.0	755.3	753.3	725.9	662.3	615.4	588.4
51.5°	606.2	643.6	664.3	691.7	707.6	725.1	724.3	697.3	633.3	586.8	560.1
52°	579.2	613.8	634.5	662.7	678.6	694.5	693.7	668.7	605.0	558.9	531.9
52.5°	552.6	585.2	605.4	632.1	649.2	664.7	663.5	639.6	577.6	531.5	504.1
53°	525.9	556.6	575.6	604.7	620.6	634.9	633.7	611.8	550.2	504.9	476.6
53.5°	499.3	528.3	547.0	576.0	592.3	605.4	604.3	584.0	522.8	478.2	450.0
54°	473.1	499.7	519.2	547.8	564.1	576.4	574.4	556.6	496.1	453.2	424.2
54.5°	447.6	471.9	491.8	518.8	535.9	547.4	545.4	529.1	470.3	429.3	399.1
55°	423.0	445.2	465.1	492.9	509.2	519.2	517.2	502.5	444.0	403.9	374.1
55.5°	398.3	418.2	438.5	466.7	482.6	491.4	488.2	475.5	418.6	379.2	351.4
56°	374.1	392.8	413.0	440.1	455.6	463.9	460.3	450.0	393.6	357.0	328.4
56.5°	350.2	367.7	388.0	413.4	429.3	436.5	433.3	423.4	370.1	334.7	305.7
57°	327.2	342.7	363.7	390.0	403.9	410.7	407.1	398.3	347.0	312.9	282.6
57.5°	304.5	318.8	339.9	365.3	379.2	384.8	381.2	374.1	324.0	290.6	261.6
58°	281.9	295.8	316.0	341.5	355.4	360.2	357.0	350.2	300.5	268.3	240.9
58.5°	260.8	273.5	293.4	318.4	331.5	335.5	332.3	326.0	277.5	248.5	221.4
59°	239.3	252.4	271.9	296.2	307.7	310.9	308.1	301.7	256.0	227.8	202.7
59.5°	219.4	231.8	250.8	274.7	284.2	286.2	283.8	277.9	236.1	209.1	184.9
60°	199.6	211.5	230.2	253.6	261.6	264.0	261.2	256.0	215.9	190.4	167.8
60.5°	181.3	192.8	210.3	233.8	240.5	242.1	239.7	234.5	196.4	172.9	150.7
61°	163.0	174.1	192.0	213.5	219.4	221.0	218.2	213.1	177.7	155.4	135.2
61.5°	145.9	157.0	173.7	194.4	199.2	200.4	198.0	193.2	160.6	139.5	120.9
62°	131.2	140.3	156.6	176.5	179.7	180.9	178.9	173.7	142.7	123.6	106.1
62.5°	116.9	126.8	140.3	158.6	160.6	162.2	160.2	154.2	126.4	108.9	93.0
63°	102.2	113.3	126.8	141.9	142.7	144.3	142.3	136.0	110.5	95.0	80.7
63.5°	87.9	99.8	113.3	127.2	125.6	127.2	125.2	119.3	95.8	82.3	69.6
64°	73.5	86.3	99.8	112.5	109.3	110.9	109.7	103.4	81.9	70.0	58.8
64.5°	62.0	73.1	86.3	98.2	93.8	95.8	94.6	88.3	69.2	58.8	49.3
65°	51.7	62.0	72.7	83.5	79.9	81.9	80.7	74.3	56.8	50.9	42.1
65.5°	42.9	52.1	61.6	69.2	66.8	68.4	67.6	62.0	47.7	42.5	35.4
66°	35.0	42.5	51.3	57.2	54.9	56.5	55.7	52.9	39.0	34.2	28.6



TEST NUMBER: P776252

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	17.1	21.1	26.6	28.2	29.8	31.0	30.2	26.2	11.9	13.1	10.7
68°	14.3	15.9	20.3	21.1	21.5	22.3	21.5	17.5	7.2	9.1	7.6
68.5°	11.9	12.7	14.7	15.5	13.5	13.9	13.1	11.9	4.8	6.0	5.6
69°	9.1	9.9	11.9	12.7	9.1	9.5	8.7	8.0	4.4	4.8	4.4
69.5°	6.8	7.2	9.5	9.9	6.4	6.4	6.0	5.6	4.4	4.4	4.4
70°	4.0	4.4	6.8	6.8	4.4	4.4	4.4	4.4	4.0	4.0	4.0
70.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
71°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
71.5°	3.6	3.6	3.6	4.0	3.6	3.6	4.0	4.0	4.0	4.0	4.0
72°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
72.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
73°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
73.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.2	3.2	3.6
74°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
74.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
75°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
75.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.2	2.8	2.8	2.8
76°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
76.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
77°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.4	2.4	2.8
77.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
78°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
78.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.0	2.0	2.4
79°	2.0	2.0	2.4	2.4	2.4	2.4	2.4	2.4	2.0	2.0	2.0
79.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.6	1.6	2.0
80.5°	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.6	1.6	2.0
81°	1.6	1.6	2.0	2.0	2.0	2.0	2.0	1.6	1.6	1.6	1.6
81.5°	1.6	1.6	1.6	2.0	1.6	1.6	1.6	1.6	1.2	1.2	1.6
82°	1.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.2	1.2	1.6
82.5°	1.2	1.2	1.6	1.6	1.6	1.6	1.6	1.2	0.8	1.2	1.2
83°	1.2	1.2	1.6	1.6	1.6	1.6	1.6	1.2	0.8	0.8	1.2
83.5°	0.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.8	0.8	1.2
84°	0.8	0.8	1.2	1.2	1.2	1.2	1.2	0.8	0.4	0.4	0.8
84.5°	0.4	0.8	1.2	1.2	1.2	1.2	1.2	0.8	0.4	0.4	0.8
85°	0.4	0.8	0.8	1.2	0.8	1.2	0.8	0.8	0.4	0.4	0.8
85.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.4	0.0	0.4	0.8
86°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.4	0.0	0.4	0.4
86.5°	0.0	0.4	0.8	0.8	0.4	0.8	0.8	0.4	0.0	0.4	0.4
87°	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.4
87.5°	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0
88°	0.0	0.0	0.4	0.4	0.0	0.4	0.4	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: P776252
CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-3500K

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: P776252

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1959.9	1959.9	1959.9	1959.9	1959.9	1959.9
0.5°	1958.7	1958.7	1959.5	1959.1	1958.3	1959.5
1°	1957.5	1957.5	1958.3	1957.9	1957.5	1959.1
1.5°	1955.9	1955.9	1956.7	1956.7	1956.3	1958.3
2°	1954.7	1954.3	1954.7	1955.1	1954.3	1957.5
2.5°	1953.1	1952.3	1953.1	1952.7	1952.7	1955.9
3°	1951.1	1950.3	1950.7	1950.7	1951.1	1954.7
3.5°	1948.7	1948.3	1948.3	1948.7	1949.1	1953.1
4°	1946.3	1945.9	1945.9	1946.3	1947.1	1951.9
4.5°	1943.6	1943.2	1943.2	1943.6	1944.7	1949.9
5°	1940.8	1940.0	1940.0	1940.8	1942.0	1947.9
5.5°	1938.0	1937.2	1936.8	1937.6	1939.6	1945.5
6°	1934.8	1933.6	1933.2	1934.8	1936.4	1942.8
6.5°	1931.6	1930.4	1929.6	1931.2	1933.2	1940.0
7°	1928.0	1926.9	1926.5	1927.7	1930.0	1937.6
7.5°	1924.1	1922.9	1922.5	1923.7	1926.9	1934.4
8°	1920.1	1918.5	1918.5	1919.3	1922.9	1931.2
8.5°	1915.7	1914.5	1914.1	1915.3	1918.5	1927.7
9°	1911.4	1909.8	1909.4	1911.0	1914.1	1923.7
9.5°	1907.0	1905.0	1904.6	1906.2	1909.8	1919.7
10°	1902.2	1900.2	1899.4	1901.4	1905.0	1915.7
10.5°	1897.0	1895.5	1894.7	1896.6	1900.6	1911.4
11°	1891.9	1890.3	1889.5	1891.5	1895.1	1907.0
11.5°	1886.3	1884.3	1883.9	1885.5	1889.9	1902.6
12°	1880.7	1878.8	1878.0	1879.9	1884.7	1897.0
12.5°	1875.2	1872.8	1872.0	1874.0	1878.8	1892.3
13°	1868.8	1866.4	1865.2	1868.0	1872.8	1886.7
13.5°	1862.5	1860.1	1858.9	1861.7	1866.8	1881.5
14°	1856.1	1853.3	1852.5	1855.3	1860.5	1875.6
14.5°	1849.3	1846.6	1845.4	1848.5	1854.1	1869.6
15°	1842.2	1839.0	1838.2	1841.0	1847.0	1863.3
15.5°	1835.0	1831.8	1831.0	1833.8	1839.8	1856.9
16°	1827.5	1824.3	1823.9	1826.7	1832.6	1850.1
16.5°	1820.3	1816.7	1815.9	1819.1	1825.1	1843.4
17°	1812.4	1808.4	1807.6	1811.2	1817.5	1836.6
17.5°	1804.4	1800.4	1799.6	1803.2	1809.6	1829.1
18°	1796.1	1792.1	1791.3	1794.5	1802.0	1821.1
18.5°	1787.3	1783.3	1782.6	1786.1	1793.7	1813.6
19°	1779.0	1774.6	1773.4	1777.4	1784.5	1805.6
19.5°	1769.8	1765.5	1764.7	1768.2	1776.2	1797.7
20°	1760.7	1756.3	1755.5	1759.1	1767.8	1789.3
20.5°	1751.5	1746.8	1745.6	1749.6	1758.3	1780.6
21°	1742.0	1736.8	1736.0	1740.0	1748.8	1771.8



TEST NUMBER: P776252

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1711.8	1707.0	1705.4	1709.4	1719.7	1744.0
23°	1701.5	1696.7	1695.1	1699.5	1709.0	1734.4
23.5°	1690.7	1685.6	1684.4	1688.7	1698.3	1724.5
24°	1680.0	1674.4	1672.8	1678.0	1687.9	1714.2
24.5°	1668.9	1663.3	1661.7	1666.5	1677.2	1703.8
25°	1657.7	1652.2	1650.6	1655.3	1666.5	1693.1
25.5°	1646.2	1640.2	1638.6	1643.4	1654.9	1682.4
26°	1634.7	1628.3	1626.7	1631.9	1643.4	1671.6
26.5°	1622.3	1616.4	1614.8	1620.4	1631.5	1660.9
27°	1610.8	1604.1	1602.9	1608.0	1619.6	1649.4
27.5°	1598.1	1591.7	1590.1	1595.7	1607.6	1637.8
28°	1585.8	1578.6	1577.4	1583.0	1595.3	1625.9
28.5°	1573.0	1566.3	1564.7	1570.7	1582.6	1614.0
29°	1560.3	1553.6	1551.6	1557.5	1570.3	1602.1
29.5°	1546.8	1540.5	1538.5	1544.8	1557.5	1589.7
30°	1534.1	1526.5	1525.3	1531.3	1544.8	1577.4
30.5°	1520.2	1513.4	1511.4	1518.2	1531.3	1564.7
31°	1506.7	1499.5	1497.5	1503.9	1517.8	1552.0
31.5°	1493.1	1486.0	1483.6	1490.8	1504.7	1538.5
32°	1479.2	1471.7	1469.3	1477.2	1491.2	1525.3
32.5°	1464.9	1457.8	1455.8	1462.9	1477.6	1511.8
33°	1450.2	1443.5	1441.5	1448.2	1463.3	1498.3
33.5°	1435.9	1428.7	1426.8	1434.3	1448.6	1484.8
34°	1421.2	1413.6	1412.0	1420.0	1434.3	1470.9
34.5°	1406.5	1398.9	1396.9	1404.9	1420.0	1456.6
35°	1391.0	1383.4	1381.8	1389.4	1404.5	1442.3
35.5°	1374.7	1367.9	1366.3	1374.3	1390.2	1427.2
36°	1358.8	1351.2	1350.0	1358.8	1374.7	1412.8
36.5°	1341.7	1334.1	1333.3	1342.5	1358.0	1397.3
37°	1323.0	1316.2	1315.8	1324.6	1341.3	1381.8
37.5°	1301.1	1295.6	1296.4	1307.1	1324.6	1365.1
38°	1277.7	1272.5	1273.7	1285.6	1303.5	1348.4
38.5°	1253.4	1247.1	1249.9	1262.2	1281.3	1329.4
39°	1227.2	1221.6	1224.8	1237.9	1258.2	1308.7
39.5°	1200.2	1194.6	1198.6	1212.1	1233.6	1286.0
40°	1172.7	1166.8	1171.1	1185.5	1207.7	1260.6
40.5°	1144.9	1138.1	1142.9	1158.4	1179.9	1232.4
41°	1117.9	1109.9	1115.1	1131.4	1151.7	1204.9
41.5°	1090.4	1080.5	1086.1	1102.8	1121.8	1177.1
42°	1063.0	1053.5	1057.4	1074.5	1092.8	1148.9
42.5°	1036.4	1024.8	1028.4	1045.9	1063.4	1121.1
43°	1009.3	997.4	998.6	1016.5	1032.8	1093.6
43.5°	982.7	968.0	968.8	986.7	1003.0	1065.4

TEST NUMBER: P776252

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	900.0	884.5	879.0	894.9	915.1	981.5
45.5°	871.8	855.9	849.1	864.2	885.3	953.3
46°	843.2	828.5	820.9	833.6	856.7	924.7
46.5°	813.8	799.0	791.5	803.0	827.7	895.6
47°	785.1	772.0	762.5	772.4	799.0	865.8
47.5°	756.5	742.6	733.1	742.2	769.6	836.0
48°	727.5	716.0	705.6	712.4	741.0	806.6
48.5°	699.3	687.3	676.6	682.2	712.4	776.8
49°	671.4	660.3	649.2	653.5	684.2	747.8
49.5°	643.2	633.3	621.0	624.9	655.9	718.7
50°	615.4	606.2	593.5	596.3	627.7	690.5
50.5°	589.1	579.6	566.1	568.5	600.3	661.9
51°	562.5	553.0	539.9	541.8	573.2	634.5
51.5°	535.9	527.5	513.2	515.2	545.8	606.2
52°	509.2	502.1	487.8	489.4	520.0	579.2
52.5°	484.2	477.0	461.9	463.5	493.7	552.6
53°	458.4	451.6	437.7	439.3	468.3	525.9
53.5°	432.9	427.4	412.6	415.4	442.9	499.3
54°	407.9	403.1	389.2	391.6	418.2	473.1
54.5°	384.4	380.0	366.5	368.9	394.0	447.6
55°	361.4	357.4	344.3	347.0	370.9	423.0
55.5°	338.7	334.3	322.8	325.6	347.4	398.3
56°	316.0	312.1	301.3	304.9	324.8	374.1
56.5°	293.4	290.6	280.7	284.6	302.5	350.2
57°	270.7	269.5	261.2	264.8	281.9	327.2
57.5°	250.1	249.3	242.1	245.7	260.8	304.5
58°	229.4	229.0	223.8	227.8	241.3	281.9
58.5°	209.5	209.9	206.3	210.3	221.4	260.8
59°	190.4	191.6	189.2	193.2	203.5	239.3
59.5°	172.1	174.1	173.3	176.9	186.0	219.4
60°	155.0	157.4	157.8	161.8	169.4	199.6
60.5°	138.7	140.3	142.7	146.3	152.7	181.3
61°	123.2	126.8	130.0	134.0	137.1	163.0
61.5°	108.1	113.7	117.3	121.2	124.0	145.9
62°	94.2	100.2	104.6	108.5	110.5	131.2
62.5°	81.9	86.7	91.8	95.8	97.0	116.9
63°	70.0	73.5	79.1	83.1	83.9	102.2
63.5°	59.2	62.4	68.4	72.4	72.4	87.9
64°	49.3	52.5	58.4	62.4	62.0	73.5
64.5°	42.5	43.7	49.3	52.9	51.7	62.0
65°	36.2	35.8	41.3	44.1	43.3	51.7
65.5°	29.4	29.0	33.8	36.2	35.4	42.9
66°	23.1	23.1	26.6	29.4	28.2	35.0



TEST NUMBER: P776252

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	9.1	11.5	12.7	12.7	12.7	17.1
68°	6.8	9.1	9.9	10.7	9.1	14.3
68.5°	5.2	6.8	7.2	8.3	8.3	11.9
69°	4.4	4.4	4.4	6.4	7.2	9.1
69.5°	4.4	4.4	4.0	4.4	6.0	6.8
70°	4.0	4.0	4.0	4.0	4.8	4.0
70.5°	4.0	4.0	4.0	4.0	4.0	4.0
71°	4.0	4.0	4.0	4.0	3.6	4.0
71.5°	3.6	3.6	3.6	3.6	3.6	3.6
72°	3.6	3.6	3.6	3.6	3.6	3.6
72.5°	3.6	3.6	3.6	3.6	3.6	3.6
73°	3.6	3.6	3.6	3.6	3.2	3.6
73.5°	3.2	3.2	3.2	3.2	3.2	3.2
74°	3.2	3.2	3.2	3.2	3.2	3.2
74.5°	3.2	3.2	3.2	3.2	3.2	3.2
75°	3.2	3.2	3.2	3.2	2.8	3.2
75.5°	2.8	2.8	2.8	2.8	2.8	2.8
76°	2.8	2.8	2.8	2.8	2.8	2.8
76.5°	2.8	2.8	2.8	2.8	2.8	2.8
77°	2.8	2.8	2.8	2.8	2.4	2.8
77.5°	2.4	2.4	2.4	2.4	2.4	2.4
78°	2.4	2.4	2.4	2.4	2.4	2.4
78.5°	2.4	2.4	2.4	2.4	2.0	2.4
79°	2.4	2.4	2.4	2.0	2.0	2.0
79.5°	2.0	2.0	2.0	2.0	2.0	2.0
80°	2.0	2.0	2.0	2.0	1.6	2.0
80.5°	2.0	2.0	2.0	2.0	1.6	1.6
81°	1.6	2.0	2.0	1.6	1.6	1.6
81.5°	1.6	1.6	1.6	1.6	1.2	1.6
82°	1.6	1.6	1.6	1.6	1.2	1.2
82.5°	1.6	1.6	1.6	1.2	1.2	1.2
83°	1.2	1.2	1.2	1.2	0.8	1.2
83.5°	1.2	1.2	1.2	1.2	0.8	0.8
84°	1.2	1.2	1.2	1.2	0.8	0.8
84.5°	0.8	0.8	0.8	0.8	0.4	0.4
85°	0.8	0.8	0.8	0.8	0.4	0.4
85.5°	0.8	0.8	0.8	0.8	0.4	0.4
86°	0.4	0.4	0.4	0.4	0.4	0.4
86.5°	0.4	0.4	0.4	0.4	0.4	0.0
87°	0.4	0.4	0.4	0.4	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: P776252

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-3500K

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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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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Scaled Data Report



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Scaled Data Report





21.5°	1762.7	1779.4	1796.1	1808.4	1812.0	1813.2	1807.6	1799.2	1778.2	1761.9	1745.6
22°	1753.5	1770.6	1787.3	1800.4	1804.0	1804.8	1800.0	1791.3	1769.0	1753.1	1736.0



44°	1038.0	1083.3	1128.6	1158.8	1163.2	1165.2	1156.0	1137.7	1076.5	1043.5	994.2
44.5°	1009.7	1053.9	1099.2	1128.6	1132.6	1138.9	1130.6	1111.1	1045.5	1014.1	965.2



66.5°	27.8	34.6	42.1	46.5	46.5	48.1	46.9	44.1	29.8	26.2	21.5
67°	22.3	27.4	33.8	36.6	38.2	39.4	38.6	35.0	21.1	17.9	14.7



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	1727.3	1725.7	1730.1	1738.8	1762.7
22°	1722.1	1717.4	1715.8	1719.7	1729.3	1753.5



44°	954.9	940.6	938.6	956.1	973.6	1038.0
44.5°	927.8	911.9	908.8	925.5	944.5	1009.7

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66.5°	16.7	18.3	20.7	23.1	21.9	27.8
67°	12.7	13.9	15.5	17.5	17.1	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)