

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: P776324

Luminaire Tested: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-5000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776324
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-5000K
Description: 4 INCH SQUARE MEDIUM LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3604.5 lumens
Efficiency: N/A
Efficacy: 93.6 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

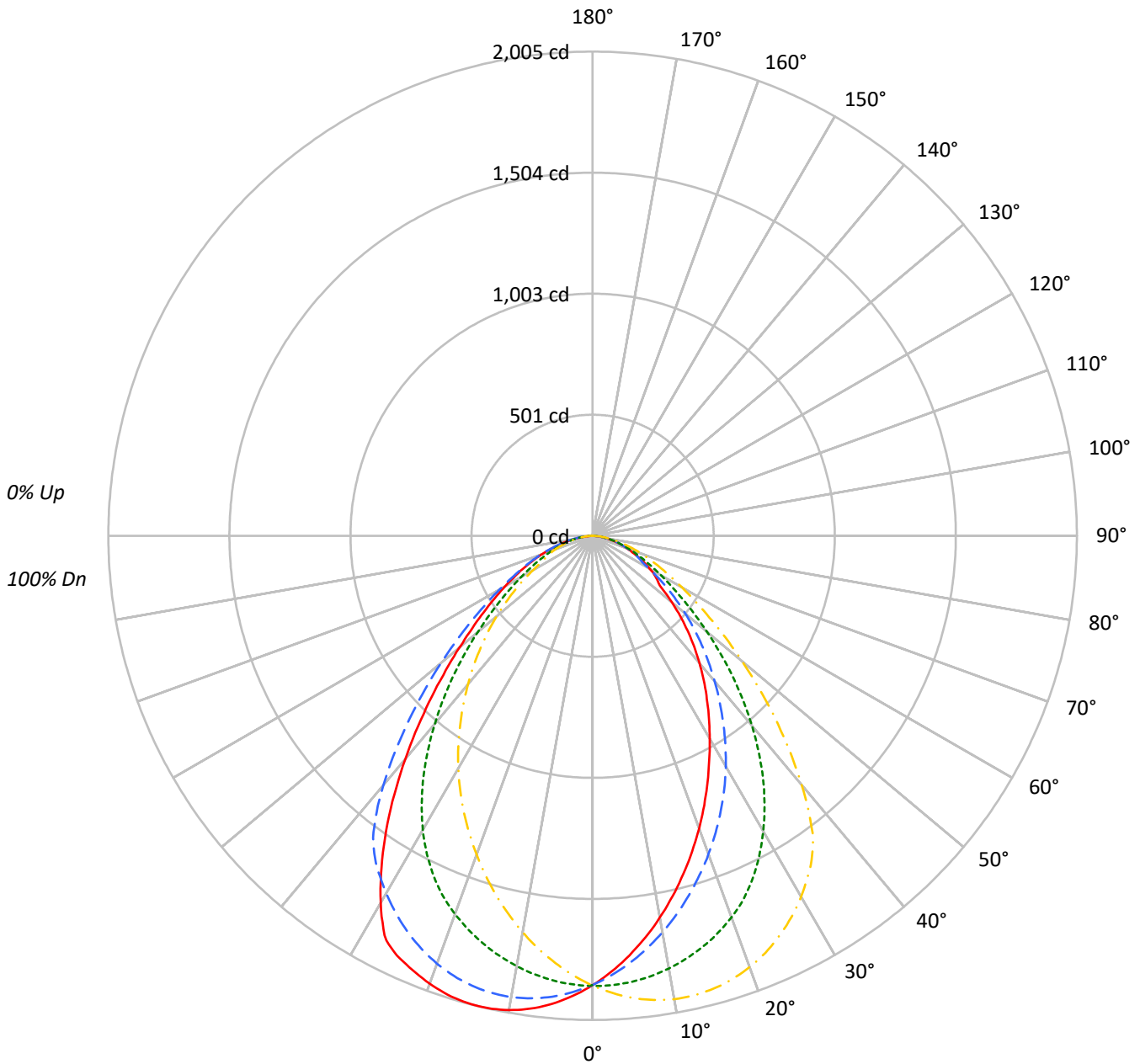
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	234269	234269	234269	234269
5°	220384	234229	245852	233610
10°	205067	232503	254867	231302
15°	188933	229531	260969	227772
20°	172631	225211	264304	223175
25°	156273	217552	266264	216066
30°	140901	205321	254947	204304
35°	126718	189047	228946	187664
40°	112995	168557	197980	167012
45°	98903	145195	167407	144323
50°	83993	120820	141084	121623
55°	72582	99065	120677	101654
60°	69066	82230	105185	86056
65°	61850	69414	93028	74298
70°	55378	59720	82018	65166
75°	48916	51493	70408	57669
80°	38556	42977	54500	50369
85°	18916	31334	25991	41297

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 225°
 Vertical Angle: 45°
 Luminance: 190829 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	175.0	4.9
10°-20°	489.6	13.6
20°-30°	707.1	19.6
30°-40°	760.7	21.1
40°-50°	631.3	17.5
50°-60°	424.7	11.8
60°-70°	257.0	7.1
70°-80°	129.9	3.6
80°-90°	29.2	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°	1371.7	38.1
0°-40°	2132.3	59.2
0°-60°	3188.3	88.5
0°-90°	3604.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3604.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1862	1862	1862	1862	1862	
5°	1744	1854	1946	1849	1744	162
15°	1450	1762	2003	1748	1450	406
25°	1125	1567	1918	1556	1125	517
35°	825	1230	1490	1222	825	515
45°	556	816	941	811	556	428
55°	331	452	550	463	331	302
65°	208	233	312	250	208	207
75°	101	106	145	119	101	107
85°	13	22	18	29	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°	1861.5	1861.5	1861.5	1861.5	1861.5	1861.5	1861.5	1861.5	1861.5	1861.5	1861.5
0.5°	1850.5	1850.5	1852.5	1856.6	1864.4	1867.2	1869.7	1870.9	1870.9	1869.3	1866.8
1°	1839.8	1840.6	1845.1	1852.5	1864.4	1870.9	1876.6	1879.9	1880.7	1878.3	1873.4
1.5°	1828.8	1830.4	1837.4	1848.0	1864.0	1874.2	1883.2	1888.5	1890.1	1886.4	1879.5
2°	1817.7	1820.2	1829.2	1843.1	1863.1	1877.4	1889.3	1897.1	1899.1	1894.6	1886.0
2.5°	1805.9	1809.2	1820.6	1838.2	1862.3	1880.3	1895.4	1904.8	1907.7	1902.8	1891.8
3°	1794.4	1798.5	1812.4	1832.9	1861.1	1883.2	1901.2	1912.6	1916.3	1910.2	1897.1
3.5°	1782.2	1787.1	1803.4	1827.6	1859.9	1885.2	1906.5	1920.4	1924.1	1917.5	1902.4
4°	1769.9	1776.0	1794.0	1821.8	1857.8	1887.7	1911.8	1927.3	1931.8	1924.5	1907.3
4.5°	1757.2	1763.8	1784.6	1815.7	1856.2	1889.3	1916.7	1933.9	1939.2	1931.0	1911.4
5°	1744.5	1752.3	1775.2	1809.6	1854.1	1890.9	1921.2	1940.4	1946.1	1937.2	1915.9
5.5°	1731.0	1740.0	1765.0	1803.0	1851.7	1892.2	1925.3	1946.6	1952.7	1942.9	1919.6
6°	1718.0	1727.4	1755.2	1796.5	1849.2	1893.4	1929.0	1952.3	1958.8	1948.6	1923.2
6.5°	1704.9	1714.3	1744.9	1789.5	1846.4	1893.8	1932.7	1957.2	1964.5	1953.5	1926.5
7°	1691.0	1702.0	1734.3	1783.0	1843.1	1894.2	1935.9	1962.1	1970.3	1958.0	1929.4
7.5°	1676.7	1688.5	1723.3	1775.2	1839.8	1894.2	1938.8	1966.6	1975.2	1962.5	1931.8
8°	1663.2	1675.4	1712.6	1767.8	1836.1	1894.2	1941.2	1971.1	1979.7	1966.6	1933.9
8.5°	1648.8	1661.9	1701.6	1760.1	1832.1	1893.8	1943.3	1974.8	1984.2	1969.9	1935.5
9°	1634.1	1648.4	1690.2	1752.3	1828.0	1893.0	1945.3	1978.0	1987.9	1973.1	1937.2
9.5°	1619.4	1634.1	1678.3	1743.7	1823.9	1891.8	1947.0	1980.9	1991.1	1976.0	1938.4
10°	1604.7	1620.2	1666.8	1735.5	1819.4	1890.5	1948.2	1983.8	1994.4	1978.5	1939.2
10.5°	1589.6	1606.3	1655.0	1727.0	1814.5	1888.9	1949.0	1986.2	1996.9	1980.5	1940.0
11°	1574.8	1592.0	1643.1	1718.4	1809.6	1887.3	1949.4	1987.9	1999.3	1982.1	1940.0
11.5°	1559.7	1577.7	1630.9	1709.0	1804.2	1885.2	1949.4	1989.5	2000.9	1983.4	1939.6
12°	1543.7	1563.4	1618.2	1700.0	1798.9	1882.8	1949.4	1990.7	2002.6	1984.2	1939.2
12.5°	1528.6	1548.2	1605.9	1690.6	1793.2	1880.3	1949.0	1991.1	2003.8	1985.0	1938.4
13°	1513.5	1533.5	1593.2	1681.2	1787.5	1877.4	1947.8	1991.5	2004.2	1985.0	1937.2
13.5°	1497.5	1518.8	1580.6	1671.7	1781.3	1874.2	1946.6	1991.5	2004.6	1984.6	1935.5
14°	1482.0	1504.1	1567.1	1661.9	1775.2	1870.5	1944.9	1991.1	2004.6	1983.8	1933.5
14.5°	1466.1	1489.0	1554.0	1651.7	1768.7	1867.2	1943.3	1990.3	2003.8	1982.5	1931.0
15°	1450.1	1473.0	1540.9	1641.5	1761.7	1863.1	1940.8	1989.1	2003.0	1981.3	1928.6
15.5°	1434.2	1457.9	1527.8	1631.3	1754.8	1859.0	1938.4	1987.5	2001.8	1979.7	1925.7
16°	1418.2	1442.7	1514.3	1621.0	1747.8	1854.1	1935.5	1985.4	2000.1	1977.6	1922.4
16.5°	1402.7	1427.2	1500.4	1610.4	1740.5	1849.6	1932.2	1983.4	1998.1	1975.2	1918.7
17°	1386.3	1412.1	1486.9	1599.4	1732.7	1844.3	1929.0	1980.9	1995.6	1971.9	1915.1
17.5°	1370.4	1395.7	1473.0	1588.3	1724.5	1839.0	1924.9	1977.6	1992.8	1968.6	1910.6
18°	1354.0	1380.2	1459.5	1577.3	1716.3	1832.9	1920.8	1974.0	1989.5	1965.0	1906.1
18.5°	1338.1	1364.6	1445.6	1565.8	1708.1	1827.1	1916.3	1970.3	1985.8	1960.9	1901.2
19°	1321.7	1348.7	1431.3	1554.0	1699.6	1821.0	1911.4	1966.2	1982.1	1956.8	1896.3
19.5°	1304.9	1332.7	1417.4	1542.5	1690.6	1814.1	1906.1	1961.7	1978.0	1951.9	1890.9
20°	1289.0	1317.2	1402.7	1530.7	1681.6	1807.5	1900.8	1956.8	1973.5	1947.0	1885.2
20.5°	1272.6	1301.2	1388.8	1518.4	1672.2	1800.2	1895.0	1951.5	1968.6	1941.6	1878.7
21°	1256.3	1285.3	1374.4	1506.1	1662.3	1792.8	1888.9	1946.1	1963.7	1935.9	1872.5



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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°	1207.2	1237.5	1330.7	1468.5	1630.0	1768.7	1868.9	1927.7	1947.0	1917.1	1851.3
23°	1190.4	1221.1	1315.6	1455.0	1618.6	1759.3	1861.5	1921.2	1941.2	1910.6	1843.9
23.5°	1174.5	1205.6	1301.2	1441.9	1605.9	1749.9	1853.7	1914.2	1935.1	1903.6	1836.1
24°	1158.1	1189.2	1286.1	1427.2	1593.2	1739.6	1845.1	1907.7	1929.4	1896.7	1828.0
24.5°	1141.4	1173.2	1271.4	1413.3	1580.1	1728.6	1837.0	1900.3	1923.7	1888.9	1819.4
25°	1125.4	1157.3	1255.9	1398.6	1566.7	1717.1	1828.4	1893.0	1917.5	1881.5	1810.8
25.5°	1109.5	1140.9	1241.1	1383.9	1553.2	1705.3	1819.8	1886.0	1909.3	1874.2	1801.4
26°	1093.5	1125.0	1226.0	1368.3	1538.8	1693.4	1810.4	1879.1	1900.3	1867.2	1792.4
26.5°	1077.6	1109.5	1210.9	1353.6	1524.1	1680.3	1801.0	1871.7	1890.9	1859.5	1782.6
27°	1061.6	1093.1	1195.7	1338.1	1509.0	1666.8	1791.2	1864.0	1881.1	1851.7	1772.8
27.5°	1046.1	1077.6	1180.6	1322.5	1493.5	1653.3	1781.3	1853.7	1865.6	1841.5	1762.9
28°	1030.1	1061.6	1165.1	1306.6	1477.9	1639.0	1771.1	1843.5	1844.3	1830.8	1752.7
28.5°	1015.0	1046.1	1149.9	1290.6	1462.0	1624.3	1760.5	1833.3	1822.6	1820.2	1742.1
29°	999.9	1030.1	1134.0	1274.3	1446.0	1609.2	1749.4	1821.8	1802.6	1808.7	1731.0
29.5°	984.3	1015.4	1118.5	1258.3	1429.2	1593.2	1738.0	1804.2	1778.5	1791.2	1720.0
30°	969.6	1000.3	1102.5	1241.5	1412.9	1576.9	1726.5	1782.2	1754.4	1769.9	1709.0
30.5°	954.5	984.7	1086.6	1225.2	1395.3	1560.9	1714.3	1760.9	1730.2	1748.2	1697.5
31°	939.7	968.4	1070.6	1208.4	1378.5	1544.6	1701.6	1740.5	1705.7	1727.4	1686.1
31.5°	925.0	954.5	1054.2	1191.7	1360.5	1527.0	1688.5	1716.3	1678.7	1704.1	1674.2
32°	910.3	939.3	1038.3	1174.9	1343.0	1509.8	1675.8	1692.2	1652.9	1680.3	1662.3
32.5°	896.0	925.0	1022.4	1158.1	1325.0	1491.8	1663.2	1667.7	1627.2	1657.0	1650.5
33°	881.7	910.3	1006.4	1140.9	1306.6	1473.8	1649.7	1643.9	1600.2	1632.5	1638.2
33.5°	867.4	896.0	990.5	1124.2	1287.3	1455.4	1635.8	1618.2	1572.8	1608.0	1625.5
34°	853.5	881.7	974.1	1106.6	1269.4	1436.6	1621.0	1592.8	1545.0	1581.8	1611.2
34.5°	838.7	867.0	957.7	1089.4	1249.7	1416.6	1604.7	1566.2	1517.6	1556.8	1595.7
35°	824.8	851.8	941.8	1071.8	1230.5	1397.8	1588.3	1540.9	1490.2	1531.1	1579.3
35.5°	810.9	838.7	925.8	1054.7	1210.9	1377.3	1570.7	1513.9	1462.0	1505.7	1563.4
36°	797.4	824.4	910.3	1037.1	1190.4	1357.3	1552.7	1487.3	1433.3	1479.1	1546.6
36.5°	783.5	810.5	893.9	1019.9	1170.4	1336.8	1530.7	1459.9	1405.9	1452.6	1526.2
37°	769.6	796.6	878.4	1002.3	1150.8	1315.6	1504.9	1433.3	1377.3	1426.8	1501.2
37.5°	755.7	782.3	862.5	984.3	1129.9	1293.9	1479.1	1405.9	1348.3	1400.2	1477.1
38°	741.8	768.4	846.9	966.7	1109.0	1272.2	1454.2	1378.5	1318.8	1373.2	1452.6
38.5°	728.3	754.5	831.8	948.7	1088.2	1250.5	1428.4	1349.9	1291.8	1345.8	1428.0
39°	715.2	741.0	816.2	931.2	1067.7	1228.5	1401.0	1324.1	1263.6	1320.1	1401.0
39.5°	701.3	727.5	800.7	913.2	1046.9	1206.0	1373.6	1295.9	1234.6	1293.5	1374.4
40°	687.8	713.2	785.6	895.2	1026.0	1183.1	1346.2	1267.7	1205.1	1266.1	1347.0
40.5°	674.3	699.7	770.4	877.6	1004.4	1160.6	1318.8	1239.9	1179.8	1238.3	1320.1
41°	660.8	686.2	755.7	859.6	983.5	1137.7	1290.6	1214.1	1152.4	1213.3	1293.1
41.5°	647.8	672.7	740.6	842.0	962.2	1114.8	1262.8	1186.7	1123.4	1186.7	1264.4
42°	634.3	659.2	725.9	824.0	941.4	1091.9	1234.6	1158.1	1096.8	1158.9	1237.0
42.5°	621.2	645.7	711.1	806.8	920.5	1068.2	1207.2	1132.4	1071.4	1133.6	1208.8
43°	608.1	632.2	696.4	789.3	899.3	1045.3	1179.4	1106.6	1044.8	1108.2	1181.8
43.5°	594.6	619.1	681.7	771.7	878.0	1021.9	1151.6	1078.8	1015.4	1081.6	1153.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	555.7	579.5	638.8	719.7	815.8	952.0	1068.6	1002.3	940.6	1007.2	1072.2
45.5°	542.7	566.4	624.5	702.6	795.0	929.1	1040.3	974.1	916.4	980.2	1045.3
46°	530.4	553.7	610.5	685.8	774.5	906.2	1012.9	950.0	894.8	954.9	1018.3
46.5°	516.9	540.6	596.2	668.6	754.1	882.9	986.8	927.1	870.2	934.0	992.9
47°	504.2	527.5	582.3	652.3	733.6	860.0	960.2	901.3	843.6	909.5	966.3
47.5°	491.5	514.4	568.0	635.5	713.6	837.1	933.2	874.3	824.8	882.9	940.6
48°	479.3	501.8	554.9	619.1	693.6	814.6	906.2	854.3	804.4	862.0	914.8
48.5°	466.2	488.7	541.0	602.8	674.3	792.5	882.1	831.4	780.3	841.2	891.5
49°	453.9	476.4	527.5	587.2	655.1	770.4	857.1	805.6	759.0	817.1	866.5
49.5°	441.7	463.7	514.0	571.3	636.3	748.8	831.4	783.1	741.0	793.3	842.0
50°	429.0	451.1	500.5	555.3	617.1	726.3	806.4	763.1	720.6	774.5	817.5
50.5°	416.3	438.4	487.5	539.8	599.1	705.4	783.9	740.6	697.7	753.7	796.2
51°	404.4	426.1	474.4	525.1	581.1	683.7	759.8	716.5	682.1	728.7	772.9
51.5°	392.2	413.8	461.3	509.9	563.9	663.7	736.1	699.7	665.3	712.0	750.0
52°	380.3	401.6	448.6	495.2	546.3	642.4	715.2	680.1	643.7	693.2	727.9
52.5°	368.5	389.3	435.9	480.9	529.2	622.8	693.6	656.8	628.1	671.9	709.1
53°	357.4	377.0	423.7	466.6	512.8	602.4	670.7	640.0	613.0	651.9	686.2
53.5°	346.8	365.2	411.0	452.7	497.3	583.1	649.8	623.2	595.4	636.3	664.9
54°	340.2	353.7	398.7	438.8	481.3	563.5	630.2	603.6	578.2	617.5	646.1
54.5°	335.7	342.3	386.9	425.3	466.2	544.7	610.1	585.6	565.2	597.5	627.7
55°	330.8	331.7	375.0	412.6	451.5	526.7	589.7	570.9	550.0	583.6	607.3
55.5°	326.3	321.4	363.5	399.9	437.2	508.3	572.5	554.1	533.3	567.6	588.9
56°	321.0	316.1	351.7	387.7	423.3	491.1	553.7	536.5	521.4	548.4	571.7
56.5°	315.7	311.6	340.2	375.4	409.8	474.8	534.9	523.0	507.9	534.9	553.7
57°	310.8	306.7	329.2	363.5	396.3	458.4	518.5	507.9	492.4	521.0	535.7
57.5°	305.1	301.8	318.2	351.7	384.0	442.5	502.2	491.5	481.3	504.2	521.0
58°	299.8	296.5	307.9	340.6	371.3	427.8	484.6	479.7	469.1	490.7	504.2
58.5°	293.6	291.6	297.3	330.0	359.9	413.0	469.9	466.2	454.7	478.5	487.9
59°	287.1	285.8	287.1	319.4	348.8	399.1	454.7	450.7	442.9	463.7	473.6
59.5°	280.9	280.5	276.9	308.7	337.8	385.2	439.2	439.6	430.2	450.7	458.8
60°	274.4	274.8	267.4	298.9	326.7	372.1	425.3	427.3	417.9	439.2	443.3
60.5°	267.4	268.7	257.6	288.7	315.7	359.5	411.8	413.4	406.5	425.3	430.2
61°	260.9	262.5	248.6	279.7	304.7	347.6	397.5	402.8	394.6	413.0	417.1
61.5°	254.4	256.4	240.9	270.3	294.8	336.1	385.2	390.5	383.6	401.6	403.2
62°	247.4	249.9	233.1	261.3	285.4	324.3	373.0	377.9	372.5	388.9	390.9
62.5°	240.9	243.3	228.6	252.7	276.0	312.4	359.9	367.2	362.3	377.9	379.1
63°	234.3	237.2	223.7	244.1	266.6	302.2	348.8	356.2	352.5	367.2	366.0
63.5°	227.8	230.6	219.2	236.0	258.0	292.0	337.8	345.1	342.3	355.0	355.4
64°	220.8	224.5	214.7	228.2	249.5	282.2	327.2	334.5	332.5	344.7	344.7
64.5°	214.3	218.0	209.8	220.0	240.9	272.4	316.1	323.9	322.2	334.5	333.7
65°	207.7	211.8	204.9	212.6	233.1	263.4	305.1	313.2	312.4	324.3	323.1
65.5°	201.2	205.3	200.0	205.7	224.9	254.4	294.8	304.7	302.6	314.1	312.0
66°	194.7	199.2	195.1	198.3	217.1	245.4	285.0	294.0	293.2	304.3	301.8



TEST NUMBER: P776324

CATALOG NUMBER: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	177.5	180.3	179.1	178.3	195.5	220.4	256.0	266.6	265.8	276.0	272.8
68°	171.8	174.6	173.4	172.2	188.5	212.6	247.0	257.6	257.2	266.6	263.4
68.5°	166.4	168.9	168.1	166.0	181.6	205.3	238.0	248.6	248.2	257.6	254.0
69°	161.1	163.2	163.2	159.9	175.0	197.9	229.0	240.0	240.0	248.6	245.0
69.5°	155.8	157.9	157.9	154.2	168.5	190.2	220.8	231.5	231.5	240.0	236.0
70°	150.5	152.5	152.1	148.9	162.3	183.2	212.2	222.9	222.9	231.5	227.8
70.5°	145.6	146.4	147.2	143.5	155.8	176.3	204.1	215.1	215.1	222.9	219.2
71°	140.7	141.9	142.3	138.6	150.1	169.7	196.3	206.5	206.9	215.1	211.0
71.5°	135.8	137.0	137.0	133.3	143.9	162.8	188.1	198.7	198.7	206.5	202.8
72°	130.5	132.1	131.7	128.4	138.2	156.2	180.3	190.6	190.6	198.3	195.1
72.5°	125.5	127.2	126.8	123.1	132.5	150.1	173.0	182.8	182.8	190.2	186.9
73°	120.6	122.3	121.5	118.6	127.2	143.5	165.6	175.4	175.0	182.8	179.5
73.5°	115.3	117.4	116.5	114.1	121.5	137.4	158.3	167.7	167.3	174.6	171.8
74°	110.4	112.0	111.2	110.0	116.1	131.7	150.9	159.9	159.5	166.8	164.4
74.5°	105.5	107.1	106.7	106.3	110.8	125.5	143.9	152.5	152.1	159.5	157.0
75°	100.6	102.2	102.2	102.2	105.9	119.8	137.0	145.6	144.8	152.1	150.1
75.5°	95.7	97.3	97.3	98.1	100.6	114.5	130.0	138.2	137.4	144.4	142.7
76°	90.8	92.4	92.4	93.6	95.7	108.8	123.9	130.9	130.0	137.4	135.8
76.5°	85.9	87.5	87.9	89.6	90.8	103.1	117.0	123.5	122.7	130.0	128.8
77°	81.4	82.6	83.4	85.5	86.3	97.7	110.8	117.0	116.1	123.1	122.3
77.5°	76.5	77.7	78.9	81.0	81.4	92.4	104.3	110.0	108.8	115.7	115.7
78°	72.0	72.8	74.4	76.9	76.9	87.1	98.1	103.5	101.8	109.2	109.2
78.5°	67.1	68.3	69.9	72.8	72.4	81.8	92.0	96.5	95.3	102.2	103.1
79°	62.6	63.4	65.8	68.3	67.9	76.9	86.3	90.0	88.3	95.3	96.5
79.5°	57.7	58.5	61.3	64.2	63.8	72.0	80.6	83.0	81.8	88.7	90.4
80°	53.2	53.6	56.8	60.1	59.3	67.1	74.8	76.5	75.2	82.2	84.7
80.5°	48.7	49.1	52.8	56.0	55.2	62.2	69.1	70.3	68.7	75.7	78.5
81°	44.2	44.2	48.7	51.9	51.1	57.7	63.8	63.8	62.2	69.1	72.8
81.5°	39.7	39.7	44.6	47.8	47.4	53.2	58.5	57.7	56.0	63.0	67.5
82°	35.2	35.2	40.9	44.2	43.3	48.7	53.2	52.3	49.9	56.8	61.7
82.5°	30.7	31.5	36.8	40.1	39.7	44.6	48.3	46.6	44.2	51.1	56.8
83°	26.6	27.4	33.1	36.4	36.0	40.1	43.8	41.7	38.4	45.4	51.5
83.5°	22.1	23.7	29.9	32.7	32.3	36.4	39.3	37.2	32.7	40.9	46.6
84°	18.0	20.4	26.2	28.6	28.6	32.3	35.2	32.3	27.0	36.0	42.1
84.5°	14.7	17.2	22.9	24.9	24.9	28.2	30.7	27.4	21.3	31.5	38.0
85°	13.1	14.7	19.6	21.3	21.7	24.1	26.6	22.5	18.0	27.0	33.5
85.5°	11.0	12.7	16.4	17.6	18.0	20.0	22.1	19.2	15.5	22.1	29.4
86°	9.0	10.2	13.5	13.9	14.7	16.4	18.4	15.9	13.1	18.8	24.9
86.5°	7.4	8.2	10.2	10.6	11.5	12.7	14.3	13.1	11.0	15.9	20.9
87°	5.3	5.7	7.4	7.4	8.2	9.0	10.6	9.8	8.6	13.1	16.8
87.5°	3.7	3.7	4.1	4.5	4.9	5.7	7.0	7.0	6.5	9.8	13.1
88°	2.0	1.6	1.6	1.2	2.0	2.9	3.7	4.5	4.5	7.0	9.4
88.5°	0.8	0.4	0.4	0.4	0.4	0.8	1.2	2.0	2.0	4.1	5.7



TEST NUMBER: P776324

CATALOG NUMBER: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-5000K

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: P776324

CATALOG NUMBER: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1861.5	1861.5	1861.5	1861.5	1861.5	1861.5
0.5°	1864.4	1863.5	1859.0	1855.0	1852.1	1850.5
1°	1867.6	1863.1	1854.5	1847.2	1842.3	1839.8
1.5°	1870.9	1862.3	1850.0	1839.0	1832.1	1828.8
2°	1873.8	1861.1	1844.7	1831.2	1821.4	1817.7
2.5°	1876.2	1859.9	1839.4	1822.2	1810.4	1805.9
3°	1878.7	1858.2	1834.1	1813.7	1799.7	1794.4
3.5°	1880.7	1856.2	1828.4	1804.7	1788.7	1782.2
4°	1882.4	1854.1	1822.2	1795.7	1776.8	1769.9
4.5°	1883.6	1851.7	1816.1	1785.4	1765.0	1757.2
5°	1884.8	1849.2	1810.0	1776.0	1752.7	1744.5
5.5°	1885.6	1846.0	1803.4	1765.8	1740.9	1731.0
6°	1886.4	1843.1	1796.5	1755.6	1728.2	1718.0
6.5°	1886.9	1839.8	1789.1	1744.9	1715.5	1704.9
7°	1886.9	1836.1	1781.8	1735.1	1702.8	1691.0
7.5°	1886.4	1832.5	1774.4	1724.1	1689.7	1676.7
8°	1886.0	1828.4	1766.6	1713.1	1676.2	1663.2
8.5°	1885.2	1823.9	1758.9	1702.0	1662.8	1648.8
9°	1884.0	1819.4	1750.7	1690.6	1648.8	1634.1
9.5°	1882.8	1814.9	1742.1	1678.7	1635.4	1619.4
10°	1881.1	1810.0	1733.5	1666.8	1621.4	1604.7
10.5°	1879.1	1804.7	1724.9	1655.4	1607.5	1589.6
11°	1877.0	1799.3	1715.9	1643.1	1593.2	1574.8
11.5°	1874.6	1793.6	1706.9	1630.9	1578.5	1559.7
12°	1871.7	1787.5	1697.5	1618.6	1564.2	1543.7
12.5°	1868.9	1781.8	1688.1	1605.9	1549.5	1528.6
13°	1865.6	1775.6	1678.7	1593.2	1534.8	1513.5
13.5°	1861.5	1769.1	1668.9	1580.6	1520.0	1497.5
14°	1858.2	1762.5	1659.5	1567.9	1504.9	1482.0
14.5°	1854.1	1755.6	1649.3	1554.8	1489.8	1466.1
15°	1849.6	1748.2	1639.0	1541.3	1474.6	1450.1
15.5°	1845.1	1741.3	1628.8	1528.2	1459.1	1434.2
16°	1840.2	1733.9	1618.6	1514.7	1444.0	1418.2
16.5°	1835.3	1726.1	1608.0	1501.6	1428.8	1402.7
17°	1829.6	1718.4	1597.3	1488.1	1413.3	1386.3
17.5°	1823.9	1710.2	1586.3	1474.2	1397.8	1370.4
18°	1818.1	1702.0	1575.6	1460.3	1382.2	1354.0
18.5°	1812.0	1693.4	1564.2	1446.8	1366.3	1338.1
19°	1805.5	1684.4	1552.7	1432.5	1350.7	1321.7
19.5°	1798.9	1675.8	1541.3	1419.0	1335.6	1304.9
20°	1792.0	1666.4	1529.8	1405.1	1319.7	1289.0
20.5°	1784.2	1657.0	1518.0	1390.8	1304.1	1272.6
21°	1776.8	1647.2	1505.7	1376.5	1288.2	1256.3

TEST NUMBER: P776324

CATALOG NUMBER: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1752.3	1616.5	1468.9	1334.0	1240.7	1207.2
23°	1743.7	1605.5	1455.8	1319.7	1224.4	1190.4
23.5°	1734.3	1594.0	1443.6	1305.3	1209.2	1174.5
24°	1724.9	1581.4	1430.5	1290.6	1193.3	1158.1
24.5°	1715.1	1569.5	1417.0	1276.3	1177.3	1141.4
25°	1704.9	1556.0	1403.1	1261.6	1161.0	1125.4
25.5°	1694.2	1542.9	1389.6	1246.9	1145.9	1109.5
26°	1682.8	1528.6	1375.3	1232.1	1129.9	1093.5
26.5°	1670.9	1514.7	1360.5	1217.4	1114.0	1077.6
27°	1658.7	1500.8	1345.8	1202.7	1098.4	1061.6
27.5°	1645.6	1485.7	1330.7	1187.6	1082.9	1046.1
28°	1631.7	1469.7	1315.2	1172.4	1066.9	1030.1
28.5°	1617.8	1455.0	1300.0	1157.7	1051.4	1015.0
29°	1603.5	1439.1	1284.5	1143.0	1036.3	999.9
29.5°	1588.3	1422.7	1268.9	1127.9	1021.1	984.3
30°	1573.6	1405.9	1252.6	1112.3	1006.0	969.6
30.5°	1558.1	1388.8	1237.0	1097.2	990.9	954.5
31°	1541.7	1371.2	1220.3	1081.6	975.7	939.7
31.5°	1524.5	1353.2	1203.9	1066.1	960.6	925.0
32°	1507.4	1335.6	1187.2	1051.0	946.3	910.3
32.5°	1489.8	1317.2	1170.8	1035.0	931.6	896.0
33°	1471.4	1298.0	1153.6	1019.5	916.8	881.7
33.5°	1453.0	1279.2	1136.4	1003.9	902.5	867.4
34°	1433.3	1260.4	1119.3	988.0	888.2	853.5
34.5°	1414.1	1240.7	1102.1	972.1	874.3	838.7
35°	1394.5	1221.5	1084.5	956.1	860.0	824.8
35.5°	1374.4	1201.1	1067.3	940.6	846.1	810.9
36°	1354.0	1181.8	1049.7	925.4	831.8	797.4
36.5°	1332.7	1161.8	1032.2	909.9	818.3	783.5
37°	1311.9	1140.9	1014.6	894.4	804.4	769.6
37.5°	1290.6	1120.9	997.0	878.4	790.9	755.7
38°	1268.9	1099.6	979.4	862.9	776.6	741.8
38.5°	1246.9	1079.2	961.4	847.7	763.1	728.3
39°	1225.2	1058.3	943.8	832.6	750.0	715.2
39.5°	1203.1	1037.9	926.2	817.9	736.5	701.3
40°	1180.6	1016.6	908.7	802.3	722.2	687.8
40.5°	1157.7	995.8	890.7	787.2	709.1	674.3
41°	1134.8	974.9	873.1	772.5	696.0	660.8
41.5°	1112.3	954.1	855.1	757.4	682.1	647.8
42°	1089.0	933.6	837.5	742.6	669.0	634.3
42.5°	1066.9	912.8	819.9	727.9	655.5	621.2
43°	1043.6	891.9	802.7	713.2	642.9	608.1
43.5°	1020.3	871.5	785.2	698.5	629.0	594.6



TEST NUMBER: P776324

CATALOG NUMBER: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	952.4	810.9	734.0	655.5	590.5	555.7
45.5°	929.9	790.9	716.9	641.6	577.0	542.7
46°	907.0	771.3	700.9	627.7	564.7	530.4
46.5°	884.9	751.6	683.7	613.4	551.7	516.9
47°	862.5	732.4	667.4	599.5	539.0	504.2
47.5°	840.8	713.2	651.0	585.6	525.9	491.5
48°	818.7	694.4	635.5	572.1	513.6	479.3
48.5°	797.4	675.6	619.5	558.6	501.0	466.2
49°	775.8	657.6	603.6	545.1	488.3	453.9
49.5°	754.9	639.6	588.1	531.6	475.6	441.7
50°	733.6	621.2	573.3	518.1	463.3	429.0
50.5°	713.2	604.0	557.8	505.0	451.1	416.3
51°	693.2	586.8	543.1	492.0	438.4	404.4
51.5°	673.5	570.1	528.4	479.3	426.1	392.2
52°	653.5	553.7	514.0	466.2	414.3	380.3
52.5°	633.4	537.3	499.7	453.9	402.4	368.5
53°	614.2	521.8	486.2	441.2	390.1	357.4
53.5°	595.8	506.7	471.9	429.0	377.9	346.8
54°	577.0	491.5	458.4	416.7	366.4	340.2
54.5°	559.4	477.2	445.7	404.9	355.0	335.7
55°	542.3	463.3	432.7	393.0	343.9	330.8
55.5°	525.1	449.4	420.4	381.5	332.9	326.3
56°	508.7	436.3	407.7	370.1	322.7	321.0
56.5°	492.8	423.3	395.9	358.6	316.9	315.7
57°	477.6	410.6	384.0	347.6	312.4	310.8
57.5°	462.5	398.3	373.0	336.6	307.5	305.1
58°	448.2	386.4	361.9	325.9	302.6	299.8
58.5°	434.3	375.0	350.9	315.7	297.3	293.6
59°	420.4	364.0	340.2	305.5	292.0	287.1
59.5°	407.3	352.9	330.0	295.3	287.1	280.9
60°	394.6	341.9	319.8	285.4	281.4	274.4
60.5°	382.4	331.7	310.0	276.0	275.6	267.4
61°	370.5	321.4	300.2	266.6	269.9	260.9
61.5°	358.6	312.0	291.2	258.0	263.8	254.4
62°	348.0	302.2	282.2	249.5	257.2	247.4
62.5°	337.4	292.8	273.6	241.3	251.1	240.9
63°	326.7	283.8	264.6	233.9	245.0	234.3
63.5°	316.1	274.8	256.4	228.2	238.8	227.8
64°	305.5	265.8	247.8	223.7	232.3	220.8
64.5°	295.3	257.6	240.0	219.2	226.1	214.3
65°	285.8	249.5	232.3	214.7	220.0	207.7
65.5°	276.4	241.7	224.9	209.8	213.9	201.2
66°	267.4	233.5	217.6	204.9	207.3	194.7



TEST NUMBER: P776324

CATALOG NUMBER: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	241.7	211.4	196.7	190.2	188.9	177.5
68°	233.1	204.1	190.2	184.8	182.8	171.8
68.5°	225.3	197.1	184.0	179.9	177.1	166.4
69°	217.6	190.2	177.5	174.6	171.3	161.1
69.5°	209.8	183.6	171.3	169.3	165.6	155.8
70°	202.4	177.1	165.6	164.0	160.3	150.5
70.5°	195.1	170.9	159.9	158.7	155.0	145.6
71°	188.1	164.4	153.8	153.4	149.7	140.7
71.5°	180.8	158.3	148.9	148.0	144.8	135.8
72°	174.2	152.1	143.5	143.1	139.4	130.5
72.5°	167.3	147.2	138.2	137.8	134.5	125.5
73°	160.7	141.5	133.3	132.9	129.2	120.6
73.5°	154.2	135.8	128.0	127.6	124.3	115.3
74°	148.0	129.6	123.1	122.7	119.0	110.4
74.5°	141.5	123.9	118.2	117.8	114.1	105.5
75°	135.4	118.6	113.7	112.9	108.8	100.6
75.5°	129.6	113.3	109.2	108.4	103.9	95.7
76°	123.5	108.0	105.1	103.5	98.6	90.8
76.5°	117.8	103.1	101.0	98.6	93.6	85.9
77°	112.0	97.7	96.9	94.1	88.7	81.4
77.5°	106.3	92.8	92.8	89.1	83.8	76.5
78°	101.0	87.9	88.3	84.7	78.9	72.0
78.5°	95.3	83.4	84.2	80.2	74.0	67.1
79°	90.0	78.5	79.7	75.7	69.1	62.6
79.5°	84.7	74.0	75.7	71.2	64.2	57.7
80°	79.3	69.5	71.2	66.7	59.3	53.2
80.5°	74.4	65.0	67.1	62.2	54.8	48.7
81°	69.5	60.5	62.6	58.1	49.9	44.2
81.5°	64.6	56.4	58.5	53.6	45.4	39.7
82°	59.7	52.3	54.4	49.5	41.3	35.2
82.5°	55.2	48.3	50.3	45.4	36.8	30.7
83°	50.7	44.2	46.2	41.7	32.7	26.6
83.5°	46.2	40.1	42.1	37.6	28.6	22.1
84°	41.7	36.4	38.4	33.9	24.9	18.0
84.5°	37.6	32.3	34.4	30.3	21.7	14.7
85°	33.5	28.6	30.3	26.6	18.4	13.1
85.5°	29.4	24.9	26.6	22.9	15.9	11.0
86°	25.4	21.7	22.5	19.6	13.5	9.0
86.5°	20.9	18.0	18.8	15.9	11.0	7.4
87°	17.2	14.7	15.1	12.7	8.6	5.3
87.5°	13.5	11.5	11.5	9.8	6.1	3.7
88°	9.8	8.2	8.2	6.5	4.1	2.0
88.5°	6.1	4.9	4.9	3.3	2.0	0.8



TEST NUMBER: P776324

CATALOG NUMBER: HCDJBL3040CSD-HCD4TQSH-HCD4TSQLWW-4000lm-5000K

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
1121 Highway 74 South
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°	1239.5	1269.4	1359.7	1493.9	1652.1	1785.0	1882.4	1940.0	1958.4	1929.8	1865.6
22°	1223.5	1253.4	1345.0	1481.2	1641.5	1776.8	1875.8	1934.3	1952.7	1923.7	1859.0



44°	581.9	606.0	667.4	754.5	857.1	998.6	1122.5	1051.0	992.5	1053.8	1125.4
44.5°	568.8	593.0	653.1	736.9	836.3	975.7	1095.6	1027.7	968.0	1031.3	1098.4



66.5°	188.9	193.0	189.3	191.4	209.8	236.8	274.8	285.0	283.8	294.4	292.0
67°	182.8	186.5	184.0	184.8	202.4	228.6	265.4	275.6	274.8	285.4	281.8



89°	0.0	0.4	0.0	0.0	0.0	0.0	0.4	0.4	0.4	1.6	2.5
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°	1769.1	1637.4	1493.5	1362.6	1272.2	1239.5
22°	1760.9	1626.8	1481.2	1348.3	1256.3	1223.5



44°	997.4	851.4	768.0	684.2	616.7	581.9
44.5°	975.3	831.0	750.8	669.8	603.2	568.8



66.5°	258.5	226.1	210.6	200.4	201.2	188.9
67°	249.9	218.4	203.7	195.5	195.1	182.8

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89°	2.9	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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Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)