

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: P776253

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

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776253
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-4000K
Description: 4 INCH ROUND SHALLOW-WIDE MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

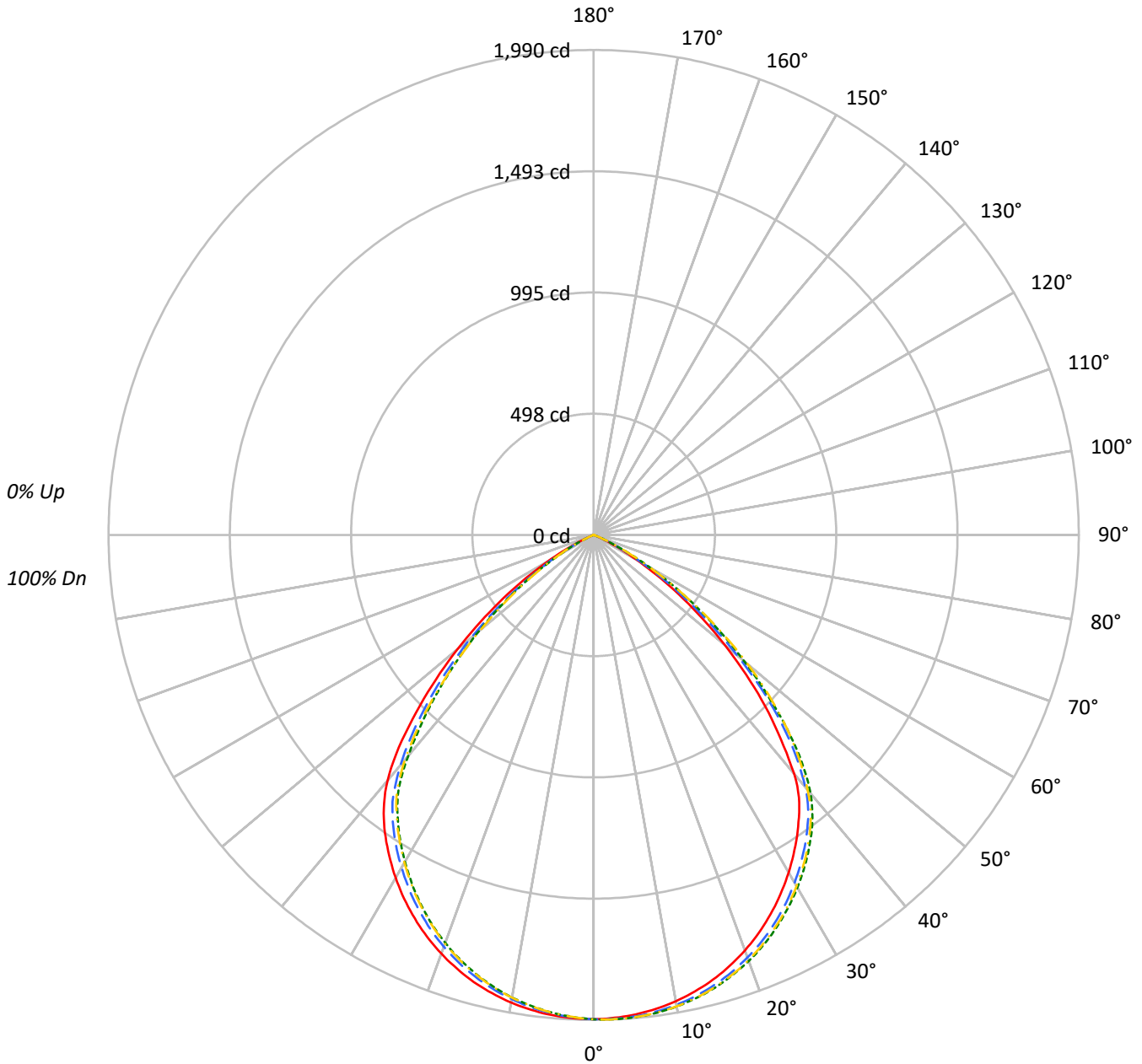
Lumens per Lamp: N/A
Luminaire Lumens: 3680.7 lumens
Efficiency: N/A
Efficacy: 95.6 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.26
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (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									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°	250101	250101	250101	250101
5°	249528	250956	249831	248517
10°	248247	251071	249014	246241
15°	246169	250572	247419	242963
20°	242996	249197	244831	238510
25°	238395	246629	241144	232632
30°	232437	242871	236070	224939
35°	224690	237565	229330	215518
40°	210006	227289	216150	194366
45°	177142	199016	183229	159629
50°	137090	158157	142768	120351
55°	94106	113305	98801	79515
60°	50944	66751	55097	40171
65°	15604	24121	17152	10810
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: 200600 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	187.7	5.1
10°-20°	534.0	14.5
20°-30°	794.3	21.6
30°-40°	918.1	24.9
40°-50°	774.7	21.0
50°-60°	394.1	10.7
60°-70°	73.7	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°	1516.0	41.2
0°-40°	2434.1	66.1
0°-60°	3602.9	97.9
0°-90°	3680.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3680.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1987	1987	1987	1987	1987	
5°	1975	1986	1978	1967	1975	188
15°	1889	1923	1899	1865	1889	533
25°	1717	1776	1737	1675	1717	790
35°	1462	1546	1493	1403	1462	911
45°	995	1118	1030	897	995	762
55°	429	516	450	362	429	387
65°	52	81	58	36	52	69
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°	1987.3	1987.3	1987.3	1987.3	1987.3	1987.3	1987.3	1987.3	1987.3	1987.3	1987.3
0.5°	1986.9	1986.9	1987.7	1988.1	1988.5	1988.5	1988.5	1986.9	1986.5	1986.9	1986.5
1°	1986.5	1987.3	1988.1	1988.5	1988.9	1989.3	1988.9	1987.3	1986.5	1986.5	1985.7
1.5°	1985.7	1986.9	1988.1	1988.9	1988.9	1989.7	1989.3	1987.7	1986.1	1985.3	1984.5
2°	1984.9	1986.5	1987.7	1989.3	1989.3	1990.1	1989.7	1987.7	1985.7	1984.5	1982.9
2.5°	1983.3	1985.3	1987.3	1989.3	1989.3	1989.7	1988.9	1987.3	1984.9	1983.3	1981.7
3°	1982.1	1984.5	1986.5	1988.5	1989.3	1989.7	1988.9	1986.1	1984.1	1982.1	1979.7
3.5°	1980.5	1983.3	1986.1	1988.1	1988.5	1989.3	1988.9	1985.7	1982.5	1980.1	1978.0
4°	1979.3	1982.1	1984.9	1987.3	1988.1	1988.9	1988.1	1985.3	1981.3	1978.4	1976.0
4.5°	1977.2	1980.5	1984.1	1986.1	1987.3	1988.1	1986.9	1984.5	1979.7	1976.0	1973.2
5°	1975.2	1978.9	1982.5	1985.3	1986.5	1986.9	1985.7	1982.9	1977.6	1974.0	1970.8
5.5°	1972.8	1976.8	1980.9	1984.1	1984.9	1986.1	1984.9	1981.3	1976.0	1972.0	1968.0
6°	1970.0	1974.8	1979.7	1982.5	1983.7	1984.5	1983.3	1979.7	1973.6	1969.2	1965.1
6.5°	1967.2	1972.4	1977.2	1980.9	1982.1	1982.9	1981.3	1978.0	1971.2	1966.8	1962.3
7°	1964.7	1970.0	1975.2	1979.3	1980.1	1980.9	1979.3	1976.0	1968.4	1963.1	1959.1
7.5°	1961.5	1967.2	1972.8	1976.8	1977.6	1979.3	1977.2	1973.6	1965.5	1960.3	1955.5
8°	1958.3	1964.3	1970.4	1974.8	1975.6	1976.8	1974.8	1970.8	1962.3	1956.7	1951.8
8.5°	1954.7	1961.1	1967.6	1972.0	1973.2	1974.4	1972.4	1968.0	1959.1	1953.1	1947.8
9°	1950.6	1957.9	1964.7	1969.2	1970.4	1972.0	1970.0	1965.1	1955.9	1949.4	1943.4
9.5°	1946.6	1954.3	1961.5	1966.4	1967.6	1969.2	1966.8	1962.3	1952.6	1945.4	1938.9
10°	1942.6	1950.6	1957.9	1963.5	1964.7	1966.4	1963.9	1959.1	1948.6	1941.4	1934.5
10.5°	1938.1	1946.6	1954.3	1959.9	1961.5	1963.1	1960.3	1955.5	1944.6	1936.9	1929.7
11°	1933.7	1942.2	1950.6	1956.3	1957.9	1959.5	1957.1	1951.8	1940.6	1932.1	1924.8
11.5°	1929.3	1937.7	1946.6	1952.6	1954.3	1955.9	1953.1	1947.8	1936.1	1927.3	1919.6
12°	1923.6	1933.3	1942.2	1948.6	1950.6	1951.8	1949.4	1943.4	1931.3	1922.4	1914.0
12.5°	1918.8	1928.5	1937.7	1944.6	1946.6	1947.8	1945.0	1938.9	1926.0	1917.2	1908.3
13°	1913.1	1923.6	1932.9	1940.6	1942.2	1943.8	1941.0	1934.9	1921.2	1911.5	1902.3
13.5°	1907.9	1918.4	1928.1	1935.7	1937.7	1938.9	1936.1	1930.1	1916.0	1905.9	1896.2
14°	1901.9	1912.7	1923.2	1930.9	1932.9	1934.9	1931.7	1924.8	1910.3	1900.2	1890.2
14.5°	1895.8	1907.1	1917.6	1926.0	1928.1	1929.7	1926.4	1919.6	1905.1	1894.2	1883.3
15°	1889.4	1901.1	1911.9	1920.8	1923.2	1924.8	1921.2	1914.4	1899.0	1887.7	1876.5
15.5°	1882.9	1894.2	1906.7	1915.2	1918.0	1919.2	1915.6	1908.3	1893.0	1881.3	1870.0
16°	1876.1	1888.6	1900.6	1909.5	1912.3	1914.0	1909.9	1902.7	1886.5	1874.4	1863.2
16.5°	1869.2	1882.1	1894.2	1903.9	1906.3	1907.9	1904.3	1896.6	1880.1	1867.6	1855.5
17°	1862.4	1875.3	1888.2	1897.8	1900.6	1901.9	1898.2	1890.6	1873.2	1860.7	1847.8
17.5°	1854.7	1868.0	1881.7	1891.4	1894.2	1895.4	1891.8	1884.1	1866.0	1853.1	1839.8
18°	1846.6	1860.7	1874.4	1884.9	1887.7	1889.0	1885.3	1876.9	1858.7	1845.4	1831.7
18.5°	1839.0	1853.5	1867.2	1878.5	1880.9	1882.9	1878.5	1870.0	1851.9	1837.8	1823.7
19°	1830.9	1845.4	1860.3	1871.2	1874.4	1876.1	1871.2	1863.2	1844.2	1829.7	1815.6
19.5°	1822.8	1837.8	1852.7	1864.4	1867.6	1868.8	1864.0	1855.9	1836.6	1821.6	1806.7
20°	1814.4	1829.7	1845.0	1857.1	1860.7	1861.5	1856.7	1848.2	1828.1	1813.2	1797.9
20.5°	1805.5	1821.6	1837.4	1849.5	1853.1	1854.3	1849.1	1840.6	1820.4	1804.7	1788.6
21°	1796.6	1812.8	1829.3	1841.8	1845.8	1847.0	1841.4	1832.5	1811.6	1795.4	1779.3



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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°	1768.4	1786.2	1803.5	1817.2	1820.8	1822.0	1816.4	1807.5	1785.0	1767.6	1750.3
23°	1758.8	1776.9	1794.6	1808.7	1812.4	1813.6	1807.9	1798.7	1775.7	1758.4	1740.2
23.5°	1748.7	1766.8	1785.8	1800.3	1803.9	1804.3	1799.1	1789.4	1766.4	1748.3	1729.3
24°	1738.2	1757.1	1776.5	1791.0	1794.6	1795.8	1789.8	1780.5	1756.7	1738.2	1719.3
24.5°	1727.7	1747.5	1766.8	1781.7	1785.8	1786.2	1780.5	1770.8	1747.1	1728.1	1708.4
25°	1716.8	1737.4	1756.7	1772.1	1776.1	1776.9	1770.8	1761.2	1736.6	1717.2	1697.5
25.5°	1705.9	1726.9	1747.1	1762.8	1766.8	1767.2	1761.2	1751.5	1726.1	1706.8	1685.8
26°	1695.1	1716.0	1736.6	1752.7	1757.1	1757.5	1751.5	1741.4	1715.6	1695.5	1674.5
26.5°	1684.2	1705.1	1726.5	1742.6	1747.1	1747.1	1741.0	1730.9	1704.7	1684.2	1662.8
27°	1672.5	1694.3	1715.6	1732.6	1736.6	1737.0	1730.5	1720.5	1693.9	1673.3	1651.1
27.5°	1660.8	1683.0	1705.1	1722.5	1726.1	1726.5	1720.1	1709.6	1683.0	1661.6	1639.0
28°	1648.7	1671.7	1694.3	1711.6	1716.0	1716.4	1709.6	1698.7	1672.1	1649.9	1626.5
28.5°	1636.6	1659.6	1682.6	1700.7	1705.1	1705.1	1698.7	1687.4	1660.4	1638.2	1614.4
29°	1624.5	1647.9	1670.9	1689.4	1694.3	1693.9	1687.0	1676.5	1648.3	1625.7	1602.3
29.5°	1612.0	1635.8	1659.6	1678.5	1683.0	1682.6	1675.7	1665.2	1636.6	1613.6	1589.0
30°	1599.5	1624.1	1647.9	1667.3	1671.3	1671.3	1664.0	1653.1	1624.5	1601.1	1575.7
30.5°	1586.6	1611.6	1635.8	1655.6	1660.0	1658.8	1652.3	1641.5	1612.4	1588.6	1563.2
31°	1573.7	1599.1	1623.7	1643.1	1647.9	1647.1	1639.8	1629.4	1599.5	1575.7	1549.9
31.5°	1560.0	1586.2	1611.2	1631.4	1635.8	1635.0	1627.7	1617.3	1586.6	1562.4	1536.2
32°	1546.7	1573.3	1598.7	1619.3	1623.7	1622.9	1615.7	1604.8	1573.7	1549.5	1522.9
32.5°	1533.0	1559.6	1585.8	1606.8	1610.8	1610.0	1603.2	1592.3	1560.8	1535.8	1508.4
33°	1519.3	1546.3	1572.9	1593.9	1598.7	1597.1	1590.7	1579.4	1547.9	1522.5	1494.7
33.5°	1505.6	1532.6	1559.6	1581.4	1585.8	1584.2	1577.8	1566.1	1534.2	1508.8	1480.2
34°	1491.5	1519.3	1546.7	1568.1	1572.9	1571.7	1564.1	1553.2	1520.5	1494.3	1466.5
34.5°	1477.0	1505.2	1533.0	1555.2	1559.6	1558.0	1550.3	1539.5	1506.8	1480.2	1451.2
35°	1462.5	1491.1	1518.9	1541.1	1546.3	1544.7	1536.6	1525.4	1492.7	1465.7	1436.3
35.5°	1447.2	1476.6	1504.8	1527.8	1532.2	1531.0	1522.9	1511.7	1478.2	1450.8	1420.1
36°	1432.6	1462.1	1490.7	1513.3	1518.5	1516.9	1508.4	1497.5	1462.9	1435.1	1404.4
36.5°	1416.9	1447.2	1476.2	1499.2	1504.4	1502.4	1493.9	1482.6	1447.2	1418.9	1387.9
37°	1401.2	1431.8	1461.3	1484.2	1489.1	1487.1	1478.6	1467.3	1431.4	1402.8	1370.6
37.5°	1384.3	1415.3	1445.1	1468.5	1473.4	1471.3	1463.3	1451.6	1414.5	1385.1	1349.6
38°	1367.3	1398.8	1428.6	1452.8	1457.2	1455.2	1447.2	1435.1	1396.4	1365.7	1327.8
38.5°	1348.0	1380.2	1411.7	1435.9	1440.3	1437.9	1428.6	1417.7	1377.8	1344.8	1304.9
39°	1327.0	1359.7	1393.1	1418.9	1422.2	1418.9	1408.5	1398.8	1358.1	1322.6	1281.5
39.5°	1304.1	1337.1	1372.2	1400.4	1403.6	1398.0	1387.1	1378.2	1337.1	1300.0	1256.9
40°	1278.3	1313.3	1349.6	1380.6	1383.5	1375.8	1365.3	1356.1	1315.7	1275.8	1231.9
40.5°	1249.6	1289.1	1326.6	1359.7	1361.7	1353.6	1342.3	1333.5	1292.0	1251.2	1205.7
41°	1221.8	1264.1	1302.8	1337.1	1339.1	1330.3	1319.4	1310.1	1267.0	1226.3	1179.5
41.5°	1193.6	1238.3	1277.8	1313.3	1314.9	1306.9	1296.4	1285.5	1239.6	1200.0	1152.5
42°	1165.0	1210.9	1253.3	1287.5	1289.1	1282.7	1273.0	1260.5	1212.5	1173.4	1124.7
42.5°	1136.8	1183.5	1227.1	1260.9	1263.3	1258.5	1248.8	1235.5	1183.1	1146.0	1095.6
43°	1108.9	1155.7	1200.5	1233.9	1236.3	1233.5	1223.8	1208.1	1152.9	1117.4	1066.6
43.5°	1080.3	1127.1	1173.0	1205.3	1208.1	1207.7	1198.0	1181.5	1122.2	1088.0	1037.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	995.3	1039.6	1085.6	1113.4	1118.2	1127.1	1118.6	1096.0	1029.5	997.7	948.9
45.5°	966.7	1009.8	1054.5	1080.3	1086.8	1099.3	1090.4	1067.4	998.9	966.7	919.5
46°	937.6	980.8	1024.3	1048.5	1055.3	1070.2	1062.6	1036.8	968.3	934.4	890.1
46.5°	908.2	950.9	992.9	1016.6	1023.9	1041.6	1034.8	1007.8	937.2	902.6	860.2
47°	878.0	921.5	961.8	984.0	991.6	1011.4	1005.3	976.3	907.8	870.7	831.2
47.5°	847.7	892.1	930.4	950.9	960.6	981.6	976.7	945.7	878.0	839.3	801.4
48°	817.9	862.2	897.3	919.1	930.0	951.3	946.5	915.1	848.1	807.8	772.4
48.5°	787.7	832.0	865.1	887.2	899.3	921.1	917.5	886.8	818.3	775.6	743.3
49°	758.2	803.0	832.4	855.8	868.3	890.5	886.8	855.0	788.5	744.5	713.9
49.5°	728.8	773.2	800.6	824.4	837.7	859.4	857.4	824.8	758.6	713.5	684.5
50°	700.2	742.9	768.3	794.1	807.8	828.0	826.4	794.5	729.2	683.7	655.0
50.5°	671.2	712.7	736.5	762.3	777.6	796.9	795.7	765.1	699.8	653.0	625.2
51°	643.4	682.1	704.2	732.0	747.4	765.9	763.9	736.1	671.6	624.0	596.6
51.5°	614.7	652.6	673.6	701.4	717.5	735.3	734.5	707.0	642.1	595.0	568.0
52°	587.3	622.4	643.4	672.0	688.1	704.2	703.4	678.0	613.5	566.8	539.4
52.5°	560.3	593.4	613.9	640.9	658.3	674.0	672.8	648.6	585.7	539.0	511.1
53°	533.3	564.3	583.7	613.1	629.2	643.8	642.6	620.4	557.9	511.9	483.3
53.5°	506.3	535.7	554.7	584.1	600.6	613.9	612.7	592.2	530.1	484.9	456.3
54°	479.7	506.7	526.5	555.5	572.0	584.5	582.5	564.3	503.1	459.5	430.1
54.5°	453.9	478.5	498.6	526.1	543.4	555.1	553.1	536.5	476.9	435.4	404.7
55°	428.9	451.5	471.6	499.9	516.4	526.5	524.4	509.5	450.3	409.6	379.3
55.5°	403.9	424.1	444.6	473.2	489.4	498.2	495.0	482.1	424.5	384.6	356.3
56°	379.3	398.3	418.8	446.2	462.0	470.4	466.8	456.3	399.1	362.0	333.0
56.5°	355.1	372.9	393.4	419.2	435.4	442.6	439.4	429.3	375.3	339.4	310.0
57°	331.8	347.5	368.8	395.4	409.6	416.4	412.8	403.9	351.9	317.2	286.6
57.5°	308.8	323.3	344.7	370.5	384.6	390.2	386.6	379.3	328.5	294.7	265.2
58°	285.8	299.9	320.5	346.3	360.4	365.2	362.0	355.1	304.7	272.1	244.3
58.5°	264.4	277.3	297.5	322.9	336.2	340.2	337.0	330.5	281.4	251.9	224.5
59°	242.7	256.0	275.7	300.3	312.0	315.2	312.4	306.0	259.6	231.0	205.6
59.5°	222.5	235.0	254.4	278.5	288.2	290.2	287.8	281.8	239.4	212.0	187.4
60°	202.4	214.5	233.4	257.2	265.2	267.7	264.8	259.6	218.9	193.1	170.1
60.5°	183.8	195.5	213.2	237.0	243.9	245.5	243.1	237.8	199.1	175.4	152.8
61°	165.3	176.6	194.7	216.5	222.5	224.1	221.3	216.1	180.2	157.6	137.1
61.5°	147.9	159.2	176.2	197.1	202.0	203.2	200.7	195.9	162.9	141.5	122.5
62°	133.0	142.3	158.8	179.0	182.2	183.4	181.4	176.2	144.7	125.4	107.6
62.5°	118.5	128.6	142.3	160.8	162.9	164.5	162.5	156.4	128.2	110.5	94.3
63°	103.6	114.9	128.6	143.9	144.7	146.3	144.3	137.9	112.1	96.3	81.8
63.5°	89.1	101.2	114.9	129.0	127.4	129.0	127.0	120.9	97.1	83.4	70.5
64°	74.6	87.5	101.2	114.1	110.9	112.5	111.3	104.8	83.0	70.9	59.7
64.5°	62.9	74.2	87.5	99.6	95.1	97.1	95.9	89.5	70.1	59.7	50.0
65°	52.4	62.9	73.8	84.7	81.0	83.0	81.8	75.4	57.6	51.6	42.7
65.5°	43.5	52.8	62.5	70.1	67.7	69.3	68.5	62.9	48.4	43.1	35.9
66°	35.5	43.1	52.0	58.0	55.6	57.2	56.4	53.6	39.5	34.7	29.0



TEST NUMBER: P776253

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	17.3	21.4	27.0	28.6	30.2	31.4	30.6	26.6	12.1	13.3	10.9
68°	14.5	16.1	20.6	21.4	21.8	22.6	21.8	17.7	7.3	9.3	7.7
68.5°	12.1	12.9	14.9	15.7	13.7	14.1	13.3	12.1	4.8	6.0	5.6
69°	9.3	10.1	12.1	12.9	9.3	9.7	8.9	8.1	4.4	4.8	4.4
69.5°	6.9	7.3	9.7	10.1	6.4	6.4	6.0	5.6	4.4	4.4	4.4
70°	4.0	4.4	6.9	6.9	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: P776253
CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-4000K

CANDELA DISTRIBUTION (continued):

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



TEST NUMBER: P776253

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1987.3	1987.3	1987.3	1987.3	1987.3	1987.3
0.5°	1986.1	1986.1	1986.9	1986.5	1985.7	1986.9
1°	1984.9	1984.9	1985.7	1985.3	1984.9	1986.5
1.5°	1983.3	1983.3	1984.1	1984.1	1983.7	1985.7
2°	1982.1	1981.7	1982.1	1982.5	1981.7	1984.9
2.5°	1980.5	1979.7	1980.5	1980.1	1980.1	1983.3
3°	1978.4	1977.6	1978.0	1978.0	1978.4	1982.1
3.5°	1976.0	1975.6	1975.6	1976.0	1976.4	1980.5
4°	1973.6	1973.2	1973.2	1973.6	1974.4	1979.3
4.5°	1970.8	1970.4	1970.4	1970.8	1972.0	1977.2
5°	1968.0	1967.2	1967.2	1968.0	1969.2	1975.2
5.5°	1965.1	1964.3	1963.9	1964.7	1966.8	1972.8
6°	1961.9	1960.7	1960.3	1961.9	1963.5	1970.0
6.5°	1958.7	1957.5	1956.7	1958.3	1960.3	1967.2
7°	1955.1	1953.9	1953.5	1954.7	1957.1	1964.7
7.5°	1951.0	1949.8	1949.4	1950.6	1953.9	1961.5
8°	1947.0	1945.4	1945.4	1946.2	1949.8	1958.3
8.5°	1942.6	1941.4	1941.0	1942.2	1945.4	1954.7
9°	1938.1	1936.5	1936.1	1937.7	1941.0	1950.6
9.5°	1933.7	1931.7	1931.3	1932.9	1936.5	1946.6
10°	1928.9	1926.9	1926.0	1928.1	1931.7	1942.6
10.5°	1923.6	1922.0	1921.2	1923.2	1927.3	1938.1
11°	1918.4	1916.8	1916.0	1918.0	1921.6	1933.7
11.5°	1912.7	1910.7	1910.3	1911.9	1916.4	1929.3
12°	1907.1	1905.1	1904.3	1906.3	1911.1	1923.6
12.5°	1901.5	1899.0	1898.2	1900.2	1905.1	1918.8
13°	1895.0	1892.6	1891.4	1894.2	1899.0	1913.1
13.5°	1888.6	1886.1	1884.9	1887.7	1893.0	1907.9
14°	1882.1	1879.3	1878.5	1881.3	1886.5	1901.9
14.5°	1875.3	1872.4	1871.2	1874.4	1880.1	1895.8
15°	1868.0	1864.8	1864.0	1866.8	1872.8	1889.4
15.5°	1860.7	1857.5	1856.7	1859.5	1865.6	1882.9
16°	1853.1	1849.9	1849.5	1852.3	1858.3	1876.1
16.5°	1845.8	1842.2	1841.4	1844.6	1850.7	1869.2
17°	1837.8	1833.7	1832.9	1836.6	1843.0	1862.4
17.5°	1829.7	1825.7	1824.9	1828.5	1834.9	1854.7
18°	1821.2	1817.2	1816.4	1819.6	1827.3	1846.6
18.5°	1812.4	1808.3	1807.5	1811.2	1818.8	1839.0
19°	1803.9	1799.5	1798.3	1802.3	1809.5	1830.9
19.5°	1794.6	1790.2	1789.4	1793.0	1801.1	1822.8
20°	1785.4	1780.9	1780.1	1783.7	1792.6	1814.4
20.5°	1776.1	1771.3	1770.0	1774.1	1782.9	1805.5
21°	1766.4	1761.2	1760.4	1764.4	1773.3	1796.6

TEST NUMBER: P776253

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1735.8	1730.9	1729.3	1733.4	1743.8	1768.4
23°	1725.3	1720.5	1718.8	1723.3	1733.0	1758.8
23.5°	1714.4	1709.2	1708.0	1712.4	1722.1	1748.7
24°	1703.5	1697.9	1696.3	1701.5	1711.6	1738.2
24.5°	1692.2	1686.6	1685.0	1689.8	1700.7	1727.7
25°	1681.0	1675.3	1673.7	1678.5	1689.8	1716.8
25.5°	1669.3	1663.2	1661.6	1666.4	1678.1	1705.9
26°	1657.6	1651.1	1649.5	1654.8	1666.4	1695.1
26.5°	1645.1	1639.0	1637.4	1643.1	1654.4	1684.2
27°	1633.4	1626.5	1625.3	1630.6	1642.3	1672.5
27.5°	1620.5	1614.0	1612.4	1618.1	1630.2	1660.8
28°	1608.0	1600.7	1599.5	1605.2	1617.7	1648.7
28.5°	1595.1	1588.2	1586.6	1592.7	1604.8	1636.6
29°	1582.2	1575.3	1573.3	1579.4	1592.3	1624.5
29.5°	1568.5	1562.0	1560.0	1566.5	1579.4	1612.0
30°	1555.6	1547.9	1546.7	1552.8	1566.5	1599.5
30.5°	1541.5	1534.6	1532.6	1539.5	1552.8	1586.6
31°	1527.8	1520.5	1518.5	1525.0	1539.1	1573.7
31.5°	1514.1	1506.8	1504.4	1511.7	1525.8	1560.0
32°	1500.0	1492.3	1489.9	1497.9	1512.1	1546.7
32.5°	1485.4	1478.2	1476.2	1483.4	1498.3	1533.0
33°	1470.5	1463.7	1461.7	1468.5	1483.8	1519.3
33.5°	1456.0	1448.8	1446.8	1454.4	1468.9	1505.6
34°	1441.1	1433.4	1431.8	1439.9	1454.4	1491.5
34.5°	1426.2	1418.5	1416.5	1424.6	1439.9	1477.0
35°	1410.5	1402.8	1401.2	1408.9	1424.2	1462.5
35.5°	1393.9	1387.1	1385.5	1393.5	1409.7	1447.2
36°	1377.8	1370.2	1369.0	1377.8	1393.9	1432.6
36.5°	1360.5	1352.8	1352.0	1361.3	1377.0	1416.9
37°	1341.5	1334.7	1334.3	1343.2	1360.1	1401.2
37.5°	1319.4	1313.7	1314.5	1325.4	1343.2	1384.3
38°	1295.6	1290.3	1291.6	1303.6	1321.8	1367.3
38.5°	1271.0	1264.5	1267.4	1279.9	1299.2	1348.0
39°	1244.4	1238.7	1242.0	1255.3	1275.8	1327.0
39.5°	1217.0	1211.3	1215.4	1229.1	1250.8	1304.1
40°	1189.2	1183.1	1187.6	1202.1	1224.6	1278.3
40.5°	1160.9	1154.1	1158.9	1174.7	1196.4	1249.6
41°	1133.5	1125.5	1130.7	1147.2	1167.8	1221.8
41.5°	1105.7	1095.6	1101.3	1118.2	1137.6	1193.6
42°	1077.9	1068.2	1072.3	1089.6	1108.1	1165.0
42.5°	1050.9	1039.2	1042.8	1060.6	1078.3	1136.8
43°	1023.5	1011.4	1012.6	1030.7	1047.3	1108.9
43.5°	996.5	981.6	982.4	1000.5	1017.0	1080.3



TEST NUMBER: P776253

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	912.6	896.9	891.3	907.4	928.0	995.3
45.5°	884.0	867.9	861.0	876.4	897.7	966.7
46°	855.0	840.1	832.4	845.3	868.7	937.6
46.5°	825.2	810.2	802.6	814.3	839.3	908.2
47°	796.1	782.8	773.2	783.2	810.2	878.0
47.5°	767.1	753.0	743.3	752.6	780.4	847.7
48°	737.7	726.0	715.5	722.4	751.4	817.9
48.5°	709.1	697.0	686.1	691.7	722.4	787.7
49°	680.8	669.6	658.3	662.7	693.7	758.2
49.5°	652.2	642.1	629.7	633.7	665.1	728.8
50°	624.0	614.7	601.8	604.7	636.5	700.2
50.5°	597.4	587.7	574.0	576.4	608.7	671.2
51°	570.4	560.7	547.4	549.4	581.3	643.4
51.5°	543.4	534.9	520.4	522.4	553.5	614.7
52°	516.4	509.1	494.6	496.2	527.3	587.3
52.5°	491.0	483.7	468.4	470.0	500.7	560.3
53°	464.8	457.9	443.8	445.4	474.9	533.3
53.5°	439.0	433.3	418.4	421.2	449.1	506.3
54°	413.6	408.8	394.6	397.1	424.1	479.7
54.5°	389.8	385.4	371.7	374.1	399.5	453.9
55°	366.4	362.4	349.1	351.9	376.1	428.9
55.5°	343.4	339.0	327.3	330.1	352.3	403.9
56°	320.5	316.4	305.6	309.2	329.3	379.3
56.5°	297.5	294.7	284.6	288.6	306.8	355.1
57°	274.5	273.3	264.8	268.5	285.8	331.8
57.5°	253.6	252.7	245.5	249.1	264.4	308.8
58°	232.6	232.2	226.9	231.0	244.7	285.8
58.5°	212.4	212.8	209.2	213.2	224.5	264.4
59°	193.1	194.3	191.9	195.9	206.4	242.7
59.5°	174.5	176.6	175.8	179.4	188.7	222.5
60°	157.2	159.6	160.0	164.1	171.7	202.4
60.5°	140.7	142.3	144.7	148.3	154.8	183.8
61°	125.0	128.6	131.8	135.8	139.1	165.3
61.5°	109.6	115.3	118.9	122.9	125.8	147.9
62°	95.5	101.6	106.0	110.0	112.1	133.0
62.5°	83.0	87.9	93.1	97.1	98.4	118.5
63°	70.9	74.6	80.2	84.2	85.1	103.6
63.5°	60.1	63.3	69.3	73.4	73.4	89.1
64°	50.0	53.2	59.3	63.3	62.9	74.6
64.5°	43.1	44.3	50.0	53.6	52.4	62.9
65°	36.7	36.3	41.9	44.7	43.9	52.4
65.5°	29.8	29.4	34.3	36.7	35.9	43.5
66°	23.4	23.4	27.0	29.8	28.6	35.5



TEST NUMBER: P776253

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	9.3	11.7	12.9	12.9	12.9	17.3
68°	6.9	9.3	10.1	10.9	9.3	14.5
68.5°	5.2	6.9	7.3	8.5	8.5	12.1
69°	4.4	4.4	4.4	6.4	7.3	9.3
69.5°	4.4	4.4	4.0	4.4	6.0	6.9
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: P776253

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

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
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





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

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Peachtree City, GA 30269

Scaled Data Report



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Peachtree City, GA 30269

Scaled Data Report





21.5°	1787.4	1804.3	1821.2	1833.7	1837.4	1838.6	1832.9	1824.5	1803.1	1786.6	1770.0
22°	1778.1	1795.4	1812.4	1825.7	1829.3	1830.1	1825.3	1816.4	1793.8	1777.7	1760.4



44°	1052.5	1098.5	1144.4	1175.1	1179.5	1181.5	1172.2	1153.7	1091.6	1058.2	1008.2
44.5°	1023.9	1068.6	1114.6	1144.4	1148.5	1154.9	1146.4	1126.7	1060.2	1028.3	978.7



66.5°	28.2	35.1	42.7	47.2	47.2	48.8	47.6	44.7	30.2	26.6	21.8
67°	22.6	27.8	34.3	37.1	38.7	39.9	39.1	35.5	21.4	18.1	14.9



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°	1756.3	1751.5	1749.9	1754.3	1763.2	1787.4
22°	1746.3	1741.4	1739.8	1743.8	1753.5	1778.1



44°	968.3	953.8	951.7	969.5	987.2	1052.5
44.5°	940.9	924.7	921.5	938.4	957.8	1023.9



66.5°	16.9	18.5	21.0	23.4	22.2	28.2
67°	12.9	14.1	15.7	17.7	17.3	22.6

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Peachtree City, GA 30269

Scaled Data Report



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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Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)