

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: P776254

Luminaire Tested: HCDJBL3040CSD-HCD41TRMB-4000lm-5000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776254
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: HCDJBS3040CSD-HCD41TRMB-4000lm-5000K
Description: 4 INCH ROUND SHALLOW-WIDE MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

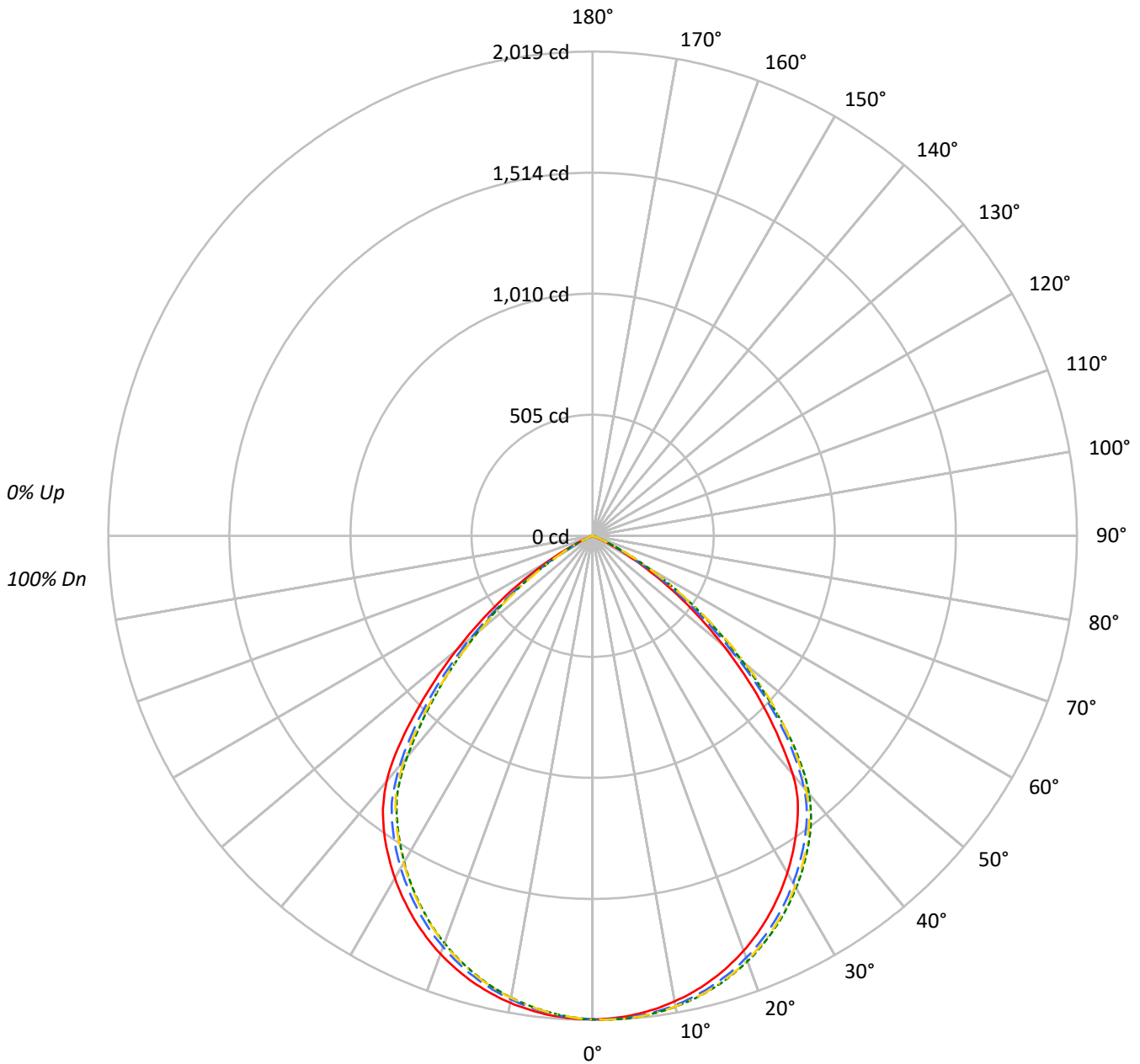
Lumens per Lamp: N/A
Luminaire Lumens: 3735.3 lumens
Efficiency: N/A
Efficacy: 97.0 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.26
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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



TEST NUMBER: P776254
CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-5000K

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	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°	253801	253801	253801	253801
5°	253230	254670	253533	252194
10°	251915	254790	252707	249883
15°	249804	254286	251094	246559
20°	246599	252894	248461	242045
25°	241936	250281	244713	236076
30°	235882	246461	239573	228281
35°	228009	241083	232725	218714
40°	213111	230640	219354	197241
45°	179758	201970	185952	161996
50°	139127	160507	144883	122132
55°	95510	114972	100250	80700
60°	51699	67758	55902	40775
65°	15842	24478	17420	10959
70°	1509	1656	1509	1509
75°	1605	1605	1605	1605
80°	1449	1449	1160	1449
85°	578	1155	578	1155

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 112.5°
 Vertical Angle: 45°
 Luminance: 203572 cd/sqm



TEST NUMBER: P776254

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-5000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	190.5	5.1
10°-20°	541.9	14.5
20°-30°	806.1	21.6
30°-40°	931.7	24.9
40°-50°	786.2	21.0
50°-60°	399.9	10.7
60°-70°	74.8	2.0
70°-80°	3.3	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°	1538.5	41.2
0°-40°	2470.1	66.1
0°-60°	3656.2	97.9
0°-90°	3735.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3735.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2017	2017	2017	2017	2017	
5°	2004	2016	2007	1996	2004	190
15°	1917	1952	1927	1892	1917	540
25°	1742	1802	1762	1700	1742	802
35°	1484	1569	1515	1424	1484	924
45°	1010	1135	1045	910	1010	773
55°	435	524	457	368	435	393
65°	53	82	58	37	53	70
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°	2016.7	2016.7	2016.7	2016.7	2016.7	2016.7	2016.7	2016.7	2016.7	2016.7	2016.7
0.5°	2016.3	2016.3	2017.2	2017.6	2018.0	2018.0	2018.0	2016.3	2015.9	2016.3	2015.9
1°	2015.9	2016.7	2017.6	2018.0	2018.4	2018.4	2018.4	2016.7	2015.9	2015.9	2015.1
1.5°	2015.1	2016.3	2017.6	2018.4	2018.4	2019.2	2018.8	2017.2	2015.5	2014.7	2013.9
2°	2014.3	2015.9	2017.2	2018.8	2018.8	2019.6	2019.2	2017.2	2015.1	2013.9	2012.2
2.5°	2012.7	2014.7	2016.7	2018.8	2018.8	2019.2	2018.4	2016.7	2014.3	2012.7	2011.0
3°	2011.4	2013.9	2015.9	2018.0	2018.8	2019.2	2018.4	2015.5	2013.5	2011.4	2009.0
3.5°	2009.8	2012.7	2015.5	2017.6	2018.0	2018.8	2018.4	2015.1	2011.8	2009.4	2007.3
4°	2008.6	2011.4	2014.3	2016.7	2017.6	2018.4	2017.6	2014.7	2010.6	2007.7	2005.3
4.5°	2006.5	2009.8	2013.5	2015.5	2016.7	2017.6	2016.3	2013.9	2009.0	2005.3	2002.4
5°	2004.5	2008.2	2011.8	2014.7	2015.9	2016.3	2015.1	2012.2	2006.9	2003.2	2000.0
5.5°	2002.0	2006.1	2010.2	2013.5	2014.3	2015.5	2014.3	2010.6	2005.3	2001.2	1997.1
6°	1999.2	2004.1	2009.0	2011.8	2013.1	2013.9	2012.7	2009.0	2002.8	1998.3	1994.2
6.5°	1996.3	2001.6	2006.5	2010.2	2011.4	2012.2	2010.6	2007.3	2000.4	1995.9	1991.4
7°	1993.8	1999.2	2004.5	2008.6	2009.4	2010.2	2008.6	2005.3	1997.5	1992.2	1988.1
7.5°	1990.6	1996.3	2002.0	2006.1	2006.9	2008.6	2006.5	2002.8	1994.7	1989.3	1984.4
8°	1987.3	1993.4	1999.6	2004.1	2004.9	2006.1	2004.1	2000.0	1991.4	1985.7	1980.7
8.5°	1983.6	1990.2	1996.7	2001.2	2002.4	2003.7	2001.6	1997.1	1988.1	1982.0	1976.7
9°	1979.5	1986.9	1993.8	1998.3	1999.6	2001.2	1999.2	1994.2	1984.8	1978.3	1972.2
9.5°	1975.4	1983.2	1990.6	1995.5	1996.7	1998.3	1995.9	1991.4	1981.6	1974.2	1967.7
10°	1971.3	1979.5	1986.9	1992.6	1993.8	1995.5	1993.0	1988.1	1977.5	1970.1	1963.2
10.5°	1966.8	1975.4	1983.2	1988.9	1990.6	1992.2	1989.3	1984.4	1973.4	1965.6	1958.2
11°	1962.3	1970.9	1979.5	1985.2	1986.9	1988.5	1986.1	1980.7	1969.3	1960.7	1953.3
11.5°	1957.8	1966.4	1975.4	1981.6	1983.2	1984.8	1982.0	1976.7	1964.8	1955.8	1948.0
12°	1952.1	1961.9	1970.9	1977.5	1979.5	1980.7	1978.3	1972.2	1959.9	1950.9	1942.3
12.5°	1947.2	1957.0	1966.4	1973.4	1975.4	1976.7	1973.8	1967.7	1954.6	1945.6	1936.6
13°	1941.5	1952.1	1961.5	1969.3	1970.9	1972.6	1969.7	1963.6	1949.7	1939.8	1930.4
13.5°	1936.2	1946.8	1956.6	1964.4	1966.4	1967.7	1964.8	1958.7	1944.3	1934.1	1924.3
14°	1930.0	1941.1	1951.7	1959.5	1961.5	1963.6	1960.3	1953.3	1938.6	1928.4	1918.2
14.5°	1923.9	1935.3	1946.0	1954.6	1956.6	1958.2	1955.0	1948.0	1933.3	1922.2	1911.2
15°	1917.3	1929.2	1940.2	1949.2	1951.7	1953.3	1949.7	1942.7	1927.2	1915.7	1904.2
15.5°	1910.8	1922.2	1934.9	1943.5	1946.4	1947.6	1943.9	1936.6	1921.0	1909.2	1897.7
16°	1903.8	1916.5	1928.8	1937.8	1940.7	1942.3	1938.2	1930.8	1914.5	1902.2	1890.7
16.5°	1896.9	1910.0	1922.2	1932.1	1934.5	1936.2	1932.5	1924.7	1907.9	1895.2	1883.0
17°	1889.9	1903.0	1916.1	1925.9	1928.8	1930.0	1926.3	1918.6	1901.0	1888.3	1875.2
17.5°	1882.2	1895.7	1909.6	1919.4	1922.2	1923.5	1919.8	1912.0	1893.6	1880.5	1867.0
18°	1874.0	1888.3	1902.2	1912.8	1915.7	1916.9	1913.2	1904.7	1886.2	1872.7	1858.8
18.5°	1866.2	1880.9	1894.8	1906.3	1908.7	1910.8	1906.3	1897.7	1879.3	1865.0	1850.7
19°	1858.0	1872.7	1887.9	1898.9	1902.2	1903.8	1898.9	1890.7	1871.5	1856.8	1842.5
19.5°	1849.8	1865.0	1880.1	1892.0	1895.2	1896.5	1891.6	1883.4	1863.7	1848.6	1833.5
20°	1841.3	1856.8	1872.3	1884.6	1888.3	1889.1	1884.2	1875.6	1855.2	1840.0	1824.5
20.5°	1832.3	1848.6	1864.6	1876.8	1880.5	1881.7	1876.4	1867.8	1847.4	1831.4	1815.1
21°	1823.3	1839.6	1856.4	1869.1	1873.2	1874.4	1868.7	1859.7	1838.4	1822.0	1805.7

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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°	1794.6	1812.6	1830.2	1844.1	1847.8	1849.0	1843.3	1834.3	1811.4	1793.8	1776.2
23°	1784.8	1803.2	1821.2	1835.5	1839.2	1840.4	1834.7	1825.3	1802.0	1784.4	1766.0
23.5°	1774.6	1793.0	1812.2	1826.9	1830.6	1831.0	1825.7	1815.9	1792.6	1774.2	1754.9
24°	1763.9	1783.2	1802.8	1817.5	1821.2	1822.4	1816.3	1806.9	1782.8	1763.9	1744.7
24.5°	1753.3	1773.3	1793.0	1808.1	1812.2	1812.6	1806.9	1797.1	1772.9	1753.7	1733.7
25°	1742.3	1763.1	1782.8	1798.3	1802.4	1803.2	1797.1	1787.3	1762.3	1742.7	1722.6
25.5°	1731.2	1752.5	1772.9	1788.9	1793.0	1793.4	1787.3	1777.4	1751.7	1732.0	1710.8
26°	1720.2	1741.4	1762.3	1778.7	1783.2	1783.6	1777.4	1767.2	1741.0	1720.6	1699.3
26.5°	1709.1	1730.4	1752.1	1768.4	1772.9	1772.9	1766.8	1756.6	1730.0	1709.1	1687.4
27°	1697.3	1719.3	1741.0	1758.2	1762.3	1762.7	1756.2	1745.9	1718.9	1698.1	1675.6
27.5°	1685.4	1707.9	1730.4	1748.0	1751.7	1752.1	1745.5	1734.9	1707.9	1686.2	1663.3
28°	1673.1	1696.4	1719.3	1736.9	1741.4	1741.8	1734.9	1723.8	1696.8	1674.3	1650.6
28.5°	1660.8	1684.2	1707.5	1725.9	1730.4	1730.4	1723.8	1712.4	1685.0	1662.5	1638.3
29°	1648.6	1672.3	1695.6	1714.4	1719.3	1718.9	1712.0	1701.3	1672.7	1649.8	1626.1
29.5°	1635.9	1660.0	1684.2	1703.4	1707.9	1707.5	1700.5	1689.9	1660.8	1637.5	1612.6
30°	1623.2	1648.2	1672.3	1691.9	1696.0	1696.0	1688.7	1677.6	1648.6	1624.8	1599.1
30.5°	1610.1	1635.5	1660.0	1680.1	1684.6	1683.3	1676.8	1665.8	1636.3	1612.2	1586.4
31°	1597.0	1622.8	1647.8	1667.4	1672.3	1671.5	1664.1	1653.5	1623.2	1599.1	1572.9
31.5°	1583.1	1609.7	1635.1	1655.5	1660.0	1659.2	1651.8	1641.2	1610.1	1585.6	1559.0
32°	1569.6	1596.6	1622.4	1643.3	1647.8	1646.9	1639.6	1628.5	1597.0	1572.5	1545.5
32.5°	1555.7	1582.7	1609.3	1630.6	1634.7	1633.8	1626.9	1615.8	1583.9	1558.6	1530.8
33°	1541.8	1569.2	1596.2	1617.5	1622.4	1620.8	1614.2	1602.8	1570.9	1545.1	1516.9
33.5°	1527.9	1555.3	1582.7	1604.8	1609.3	1607.7	1601.1	1589.3	1556.9	1531.2	1502.1
34°	1513.6	1541.8	1569.6	1591.3	1596.2	1595.0	1587.2	1576.2	1543.0	1516.4	1488.2
34.5°	1498.9	1527.5	1555.7	1578.2	1582.7	1581.1	1573.3	1562.3	1529.1	1502.1	1472.7
35°	1484.1	1513.2	1541.4	1563.9	1569.2	1567.6	1559.4	1547.9	1514.8	1487.4	1457.5
35.5°	1468.6	1498.4	1527.1	1550.4	1554.9	1553.7	1545.5	1534.0	1500.1	1472.3	1441.2
36°	1453.9	1483.7	1512.8	1535.7	1541.0	1539.4	1530.8	1519.7	1484.5	1456.3	1425.2
36.5°	1437.9	1468.6	1498.0	1521.4	1526.7	1524.6	1516.0	1504.6	1468.6	1439.9	1408.4
37°	1421.9	1453.0	1482.9	1506.2	1511.1	1509.1	1500.5	1489.0	1452.6	1423.6	1390.9
37.5°	1404.8	1436.3	1466.5	1490.3	1495.2	1493.1	1484.9	1473.1	1435.4	1405.6	1369.6
38°	1387.6	1419.5	1449.8	1474.3	1478.8	1476.8	1468.6	1456.3	1417.0	1385.9	1347.5
38.5°	1367.9	1400.7	1432.6	1457.1	1461.6	1459.2	1449.8	1438.7	1398.2	1364.7	1324.2
39°	1346.7	1379.8	1413.8	1439.9	1443.2	1439.9	1429.3	1419.5	1378.2	1342.2	1300.5
39.5°	1323.4	1356.9	1392.5	1421.1	1424.4	1418.7	1407.6	1398.6	1356.9	1319.3	1275.5
40°	1297.2	1332.8	1369.6	1401.1	1403.9	1396.2	1385.5	1376.1	1335.2	1294.7	1250.1
40.5°	1268.1	1308.2	1346.3	1379.8	1381.9	1373.7	1362.2	1353.2	1311.1	1269.8	1223.5
41°	1239.9	1282.9	1322.1	1356.9	1359.0	1350.0	1338.9	1329.5	1285.7	1244.4	1197.0
41.5°	1211.3	1256.7	1296.8	1332.8	1334.4	1326.2	1315.6	1304.5	1257.9	1217.8	1169.5
42°	1182.2	1228.9	1271.8	1306.6	1308.2	1301.7	1291.9	1279.2	1230.5	1190.8	1141.3
42.5°	1153.6	1201.0	1245.2	1279.6	1282.0	1277.1	1267.3	1253.8	1200.6	1163.0	1111.9
43°	1125.4	1172.8	1218.2	1252.2	1254.6	1251.8	1242.0	1226.0	1170.0	1134.0	1082.4
43.5°	1096.3	1143.8	1190.4	1223.1	1226.0	1225.6	1215.8	1199.0	1138.9	1104.1	1052.6



TEST NUMBER: P776254

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1010.0	1055.0	1101.6	1129.9	1134.8	1143.8	1135.2	1112.3	1044.8	1012.5	963.0
45.5°	981.0	1024.7	1070.1	1096.3	1102.9	1115.5	1106.6	1083.2	1013.7	981.0	933.1
46°	951.5	995.3	1039.5	1064.0	1071.0	1086.1	1078.3	1052.1	982.6	948.2	903.2
46.5°	921.6	965.0	1007.6	1031.7	1039.1	1057.1	1050.1	1022.7	951.1	915.9	873.0
47°	891.0	935.1	976.1	998.6	1006.3	1026.4	1020.2	990.8	921.2	883.6	843.5
47.5°	860.3	905.3	944.1	965.0	974.8	996.1	991.2	959.7	891.0	851.7	813.2
48°	830.0	875.0	910.6	932.7	943.7	965.4	960.5	928.6	860.7	819.8	783.8
48.5°	799.3	844.3	877.9	900.4	912.6	934.7	931.1	900.0	830.4	787.1	754.3
49°	769.5	814.9	844.7	868.5	881.1	903.6	900.0	867.6	800.2	755.6	724.5
49.5°	739.6	784.6	812.4	836.6	850.1	872.1	870.1	837.0	769.9	724.1	694.6
50°	710.6	753.9	779.7	805.9	819.8	840.2	838.6	806.3	740.0	693.8	664.7
50.5°	681.1	723.2	747.4	773.6	789.1	808.7	807.5	776.4	710.2	662.7	634.5
51°	652.9	692.2	714.7	742.9	758.4	777.2	775.2	747.0	681.5	633.2	605.4
51.5°	623.8	662.3	683.6	711.8	728.2	746.2	745.3	717.5	651.7	603.8	576.4
52°	596.0	631.6	652.9	681.9	698.3	714.7	713.8	688.1	622.6	575.2	547.3
52.5°	568.6	602.2	623.0	650.4	668.0	684.0	682.7	658.2	594.4	546.9	518.7
53°	541.2	572.7	592.3	622.2	638.6	653.3	652.1	629.6	566.2	519.5	490.5
53.5°	513.8	543.7	562.9	592.8	609.5	623.0	621.8	600.9	537.9	492.1	463.1
54°	486.8	514.2	534.3	563.7	580.5	593.2	591.1	572.7	510.5	466.3	436.5
54.5°	460.6	485.6	506.0	533.8	551.4	563.3	561.3	544.5	483.9	441.8	410.7
55°	435.3	458.2	478.6	507.3	524.0	534.3	532.2	517.1	456.9	415.6	384.9
55.5°	409.9	430.3	451.2	480.3	496.6	505.6	502.3	489.3	430.8	390.3	361.6
56°	384.9	404.2	425.0	452.8	468.8	477.4	473.7	463.1	405.0	367.4	337.9
56.5°	360.4	378.4	399.3	425.4	441.8	449.2	445.9	435.7	380.8	344.4	314.6
57°	336.7	352.6	374.3	401.3	415.6	422.6	418.9	409.9	357.1	321.9	290.9
57.5°	313.4	328.1	349.8	375.9	390.3	396.0	392.3	384.9	333.4	299.0	269.2
58°	290.0	304.4	325.2	351.4	365.7	370.6	367.4	360.4	309.3	276.1	247.9
58.5°	268.4	281.4	301.9	327.7	341.2	345.3	342.0	335.4	285.5	255.7	227.9
59°	246.3	259.8	279.8	304.8	316.6	319.9	317.0	310.5	263.4	234.4	208.6
59.5°	225.8	238.5	258.1	282.7	292.5	294.5	292.1	285.9	243.0	215.2	190.2
60°	205.4	217.6	236.9	261.0	269.2	271.6	268.8	263.4	222.1	195.9	172.6
60.5°	186.5	198.4	216.4	240.5	247.5	249.1	246.7	241.4	202.1	177.9	155.0
61°	167.7	179.2	197.6	219.7	225.8	227.4	224.6	219.3	182.9	159.9	139.1
61.5°	150.1	161.6	178.8	200.0	204.9	206.2	203.7	198.8	165.3	143.6	124.4
62°	135.0	144.4	161.2	181.6	184.9	186.1	184.1	178.8	146.9	127.2	109.2
62.5°	120.3	130.5	144.4	163.2	165.3	166.9	164.9	158.7	130.1	112.1	95.7
63°	105.1	116.6	130.5	146.0	146.9	148.5	146.4	139.9	113.7	97.8	83.0
63.5°	90.4	102.7	116.6	130.9	129.3	130.9	128.9	122.7	98.6	84.7	71.6
64°	75.7	88.8	102.7	115.8	112.5	114.1	112.9	106.4	84.3	72.0	60.5
64.5°	63.8	75.3	88.8	101.0	96.5	98.6	97.4	90.8	71.2	60.5	50.7
65°	53.2	63.8	74.9	85.9	82.2	84.3	83.0	76.5	58.5	52.4	43.4
65.5°	44.2	53.6	63.4	71.2	68.7	70.4	69.5	63.8	49.1	43.8	36.4
66°	36.0	43.8	52.8	58.9	56.5	58.1	57.3	54.4	40.1	35.2	29.5



TEST NUMBER: P776254

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	17.6	21.7	27.4	29.0	30.7	31.9	31.1	27.0	12.3	13.5	11.0
68°	14.7	16.4	20.9	21.7	22.1	22.9	22.1	18.0	7.4	9.4	7.8
68.5°	12.3	13.1	15.1	16.0	13.9	14.3	13.5	12.3	4.9	6.1	5.7
69°	9.4	10.2	12.3	13.1	9.4	9.8	9.0	8.2	4.5	4.9	4.5
69.5°	7.0	7.4	9.8	10.2	6.5	6.5	6.1	5.7	4.5	4.5	4.5
70°	4.1	4.5	7.0	7.0	4.5	4.5	4.5	4.5	4.1	4.1	4.1
70.5°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
71°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
71.5°	3.7	3.7	3.7	4.1	3.7	3.7	4.1	4.1	4.1	4.1	4.1
72°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
72.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
73°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
73.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7	3.3	3.3	3.7
74°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
74.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
75°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
75.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.3	2.9	2.9	2.9
76°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
76.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
77°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.5	2.5	2.9
77.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
78°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
78.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.0	2.0	2.5
79°	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5	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: P776254
CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-5000K

CANDELA DISTRIBUTION (continued):

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



TEST NUMBER: P776254

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2016.7	2016.7	2016.7	2016.7	2016.7	2016.7
0.5°	2015.5	2015.5	2016.3	2015.9	2015.1	2016.3
1°	2014.3	2014.3	2015.1	2014.7	2014.3	2015.9
1.5°	2012.7	2012.7	2013.5	2013.5	2013.1	2015.1
2°	2011.4	2011.0	2011.4	2011.8	2011.0	2014.3
2.5°	2009.8	2009.0	2009.8	2009.4	2009.4	2012.7
3°	2007.7	2006.9	2007.3	2007.3	2007.7	2011.4
3.5°	2005.3	2004.9	2004.9	2005.3	2005.7	2009.8
4°	2002.8	2002.4	2002.4	2002.8	2003.7	2008.6
4.5°	2000.0	1999.6	1999.6	2000.0	2001.2	2006.5
5°	1997.1	1996.3	1996.3	1997.1	1998.3	2004.5
5.5°	1994.2	1993.4	1993.0	1993.8	1995.9	2002.0
6°	1991.0	1989.7	1989.3	1991.0	1992.6	1999.2
6.5°	1987.7	1986.5	1985.7	1987.3	1989.3	1996.3
7°	1984.0	1982.8	1982.4	1983.6	1986.1	1993.8
7.5°	1979.9	1978.7	1978.3	1979.5	1982.8	1990.6
8°	1975.8	1974.2	1974.2	1975.0	1978.7	1987.3
8.5°	1971.3	1970.1	1969.7	1970.9	1974.2	1983.6
9°	1966.8	1965.2	1964.8	1966.4	1969.7	1979.5
9.5°	1962.3	1960.3	1959.9	1961.5	1965.2	1975.4
10°	1957.4	1955.4	1954.6	1956.6	1960.3	1971.3
10.5°	1952.1	1950.5	1949.7	1951.7	1955.8	1966.8
11°	1946.8	1945.2	1944.3	1946.4	1950.1	1962.3
11.5°	1941.1	1939.0	1938.6	1940.2	1944.7	1957.8
12°	1935.3	1933.3	1932.5	1934.5	1939.4	1952.1
12.5°	1929.6	1927.2	1926.3	1928.4	1933.3	1947.2
13°	1923.1	1920.6	1919.4	1922.2	1927.2	1941.5
13.5°	1916.5	1914.1	1912.8	1915.7	1921.0	1936.2
14°	1910.0	1907.1	1906.3	1909.2	1914.5	1930.0
14.5°	1903.0	1900.2	1898.9	1902.2	1907.9	1923.9
15°	1895.7	1892.4	1891.6	1894.4	1900.6	1917.3
15.5°	1888.3	1885.0	1884.2	1887.1	1893.2	1910.8
16°	1880.5	1877.2	1876.8	1879.7	1885.8	1903.8
16.5°	1873.2	1869.5	1868.7	1871.9	1878.1	1896.9
17°	1865.0	1860.9	1860.1	1863.7	1870.3	1889.9
17.5°	1856.8	1852.7	1851.9	1855.6	1862.1	1882.2
18°	1848.2	1844.1	1843.3	1846.6	1854.3	1874.0
18.5°	1839.2	1835.1	1834.3	1838.0	1845.8	1866.2
19°	1830.6	1826.1	1824.9	1829.0	1836.3	1858.0
19.5°	1821.2	1816.7	1815.9	1819.6	1827.8	1849.8
20°	1811.8	1807.3	1806.5	1810.2	1819.2	1841.3
20.5°	1802.4	1797.5	1796.3	1800.3	1809.3	1832.3
21°	1792.6	1787.3	1786.4	1790.5	1799.5	1823.3



TEST NUMBER: P776254

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1761.5	1756.6	1754.9	1759.0	1769.7	1794.6
23°	1750.8	1745.9	1744.3	1748.8	1758.6	1784.8
23.5°	1739.8	1734.5	1733.3	1737.8	1747.6	1774.6
24°	1728.8	1723.0	1721.4	1726.7	1736.9	1763.9
24.5°	1717.3	1711.6	1709.9	1714.8	1725.9	1753.3
25°	1705.8	1700.1	1698.5	1703.4	1714.8	1742.3
25.5°	1694.0	1687.8	1686.2	1691.1	1703.0	1731.2
26°	1682.1	1675.6	1673.9	1679.3	1691.1	1720.2
26.5°	1669.4	1663.3	1661.7	1667.4	1678.8	1709.1
27°	1657.6	1650.6	1649.4	1654.7	1666.6	1697.3
27.5°	1644.5	1637.9	1636.3	1642.0	1654.3	1685.4
28°	1631.8	1624.4	1623.2	1628.9	1641.6	1673.1
28.5°	1618.7	1611.8	1610.1	1616.3	1628.5	1660.8
29°	1605.6	1598.7	1596.6	1602.8	1615.8	1648.6
29.5°	1591.7	1585.2	1583.1	1589.7	1602.8	1635.9
30°	1578.6	1570.9	1569.6	1575.8	1589.7	1623.2
30.5°	1564.3	1557.4	1555.3	1562.3	1575.8	1610.1
31°	1550.4	1543.0	1541.0	1547.5	1561.9	1597.0
31.5°	1536.5	1529.1	1526.7	1534.0	1548.4	1583.1
32°	1522.2	1514.4	1511.9	1520.1	1534.4	1569.6
32.5°	1507.4	1500.1	1498.0	1505.4	1520.5	1555.7
33°	1492.3	1485.4	1483.3	1490.3	1505.8	1541.8
33.5°	1477.6	1470.2	1468.2	1475.9	1490.7	1527.9
34°	1462.4	1454.7	1453.0	1461.2	1475.9	1513.6
34.5°	1447.3	1439.5	1437.5	1445.7	1461.2	1498.9
35°	1431.4	1423.6	1421.9	1429.7	1445.3	1484.1
35.5°	1414.6	1407.6	1406.0	1414.2	1430.5	1468.6
36°	1398.2	1390.4	1389.2	1398.2	1414.6	1453.9
36.5°	1380.6	1372.9	1372.0	1381.4	1397.4	1437.9
37°	1361.4	1354.5	1354.0	1363.0	1380.2	1421.9
37.5°	1338.9	1333.2	1334.0	1345.0	1363.0	1404.8
38°	1314.8	1309.5	1310.7	1323.0	1341.4	1387.6
38.5°	1289.8	1283.3	1286.1	1298.8	1318.5	1367.9
39°	1262.8	1257.1	1260.4	1273.9	1294.7	1346.7
39.5°	1235.0	1229.3	1233.4	1247.3	1269.4	1323.4
40°	1206.8	1200.6	1205.1	1219.9	1242.8	1297.2
40.5°	1178.1	1171.2	1176.1	1192.0	1214.1	1268.1
41°	1150.3	1142.1	1147.5	1164.2	1185.1	1239.9
41.5°	1122.1	1111.9	1117.6	1134.8	1154.4	1211.3
42°	1093.9	1084.1	1088.1	1105.7	1124.5	1182.2
42.5°	1066.5	1054.6	1058.3	1076.3	1094.3	1153.6
43°	1038.6	1026.4	1027.6	1046.0	1062.8	1125.4
43.5°	1011.2	996.1	996.9	1015.3	1032.1	1096.3



TEST NUMBER: P776254

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	926.1	910.2	904.5	920.8	941.7	1010.0
45.5°	897.1	880.7	873.8	889.3	911.0	981.0
46°	867.6	852.5	844.7	857.8	881.6	951.5
46.5°	837.4	822.2	814.5	826.3	851.7	921.6
47°	807.9	794.4	784.6	794.8	822.2	891.0
47.5°	778.5	764.2	754.3	763.7	792.0	860.3
48°	748.6	736.7	726.1	733.1	762.5	830.0
48.5°	719.6	707.3	696.2	702.0	733.1	799.3
49°	690.9	679.5	668.0	672.5	704.0	769.5
49.5°	661.9	651.7	639.0	643.1	675.0	739.6
50°	633.2	623.8	610.8	613.6	645.9	710.6
50.5°	606.3	596.4	582.5	585.0	617.7	681.1
51°	578.8	569.0	555.5	557.6	589.9	652.9
51.5°	551.4	542.8	528.1	530.2	561.7	623.8
52°	524.0	516.7	501.9	503.6	535.1	596.0
52.5°	498.3	490.9	475.3	477.0	508.1	568.6
53°	471.7	464.7	450.4	452.0	481.9	541.2
53.5°	445.5	439.8	424.6	427.5	455.7	513.8
54°	419.7	414.8	400.5	402.9	430.3	486.8
54.5°	395.6	391.1	377.2	379.6	405.4	460.6
55°	371.8	367.8	354.3	357.1	381.7	435.3
55.5°	348.5	344.0	332.2	335.0	357.5	409.9
56°	325.2	321.1	310.1	313.8	334.2	384.9
56.5°	301.9	299.0	288.8	292.9	311.3	360.4
57°	278.6	277.4	268.8	272.4	290.0	336.7
57.5°	257.3	256.5	249.1	252.8	268.4	313.4
58°	236.0	235.6	230.3	234.4	248.3	290.0
58.5°	215.6	216.0	212.3	216.4	227.9	268.4
59°	195.9	197.2	194.7	198.8	209.4	246.3
59.5°	177.1	179.2	178.4	182.0	191.4	225.8
60°	159.5	162.0	162.4	166.5	174.3	205.4
60.5°	142.8	144.4	146.9	150.5	157.1	186.5
61°	126.8	130.5	133.8	137.9	141.1	167.7
61.5°	111.3	117.0	120.7	124.8	127.6	150.1
62°	97.0	103.1	107.6	111.7	113.7	135.0
62.5°	84.3	89.2	94.5	98.6	99.8	120.3
63°	72.0	75.7	81.4	85.5	86.3	105.1
63.5°	61.0	64.2	70.4	74.5	74.5	90.4
64°	50.7	54.0	60.1	64.2	63.8	75.7
64.5°	43.8	45.0	50.7	54.4	53.2	63.8
65°	37.2	36.8	42.5	45.4	44.6	53.2
65.5°	30.3	29.9	34.8	37.2	36.4	44.2
66°	23.7	23.7	27.4	30.3	29.0	36.0



TEST NUMBER: P776254

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	9.4	11.9	13.1	13.1	13.1	17.6
68°	7.0	9.4	10.2	11.0	9.4	14.7
68.5°	5.3	7.0	7.4	8.6	8.6	12.3
69°	4.5	4.5	4.5	6.5	7.4	9.4
69.5°	4.5	4.5	4.1	4.5	6.1	7.0
70°	4.1	4.1	4.1	4.1	4.9	4.1
70.5°	4.1	4.1	4.1	4.1	4.1	4.1
71°	4.1	4.1	4.1	4.1	3.7	4.1
71.5°	3.7	3.7	3.7	3.7	3.7	3.7
72°	3.7	3.7	3.7	3.7	3.7	3.7
72.5°	3.7	3.7	3.7	3.7	3.7	3.7
73°	3.7	3.7	3.7	3.7	3.3	3.7
73.5°	3.3	3.3	3.3	3.3	3.3	3.3
74°	3.3	3.3	3.3	3.3	3.3	3.3
74.5°	3.3	3.3	3.3	3.3	3.3	3.3
75°	3.3	3.3	3.3	3.3	2.9	3.3
75.5°	2.9	2.9	2.9	2.9	2.9	2.9
76°	2.9	2.9	2.9	2.9	2.9	2.9
76.5°	2.9	2.9	2.9	2.9	2.9	2.9
77°	2.9	2.9	2.9	2.9	2.5	2.9
77.5°	2.5	2.5	2.5	2.5	2.5	2.5
78°	2.5	2.5	2.5	2.5	2.5	2.5
78.5°	2.5	2.5	2.5	2.5	2.0	2.5
79°	2.5	2.5	2.5	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: P776254

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMB-4000lm-5000K

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°	1813.8	1831.0	1848.2	1860.9	1864.6	1865.8	1860.1	1851.5	1829.8	1813.0	1796.3
22°	1804.4	1822.0	1839.2	1852.7	1856.4	1857.2	1852.3	1843.3	1820.4	1804.0	1786.4



44°	1068.1	1114.7	1161.4	1192.5	1197.0	1199.0	1189.6	1170.8	1107.8	1073.8	1023.1
44.5°	1039.1	1084.5	1131.1	1161.4	1165.5	1172.0	1163.4	1143.4	1075.9	1043.6	993.2



66.5°	28.6	35.6	43.4	47.9	47.9	49.5	48.3	45.4	30.7	27.0	22.1
67°	22.9	28.2	34.8	37.6	39.3	40.5	39.7	36.0	21.7	18.4	15.1



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°	1782.3	1777.4	1775.8	1780.3	1789.3	1813.8
22°	1772.1	1767.2	1765.6	1769.7	1779.5	1804.4



44°	982.6	967.9	965.8	983.8	1001.8	1068.1
44.5°	954.8	938.4	935.1	952.3	972.0	1039.1

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66.5°	17.2	18.8	21.3	23.7	22.5	28.6
67°	13.1	14.3	16.0	18.0	17.6	22.9

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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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Scaled Data Report



(END OF REPORT)