

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: P776443

Luminaire Tested: HCDJBL3040CSD-HCD81TRH-4000lm-4000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776443
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B043-HCD81TRH)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD81TRH-4000lm-4000K
Description: 8 INCH ROUND SHALLOW-WIDE HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

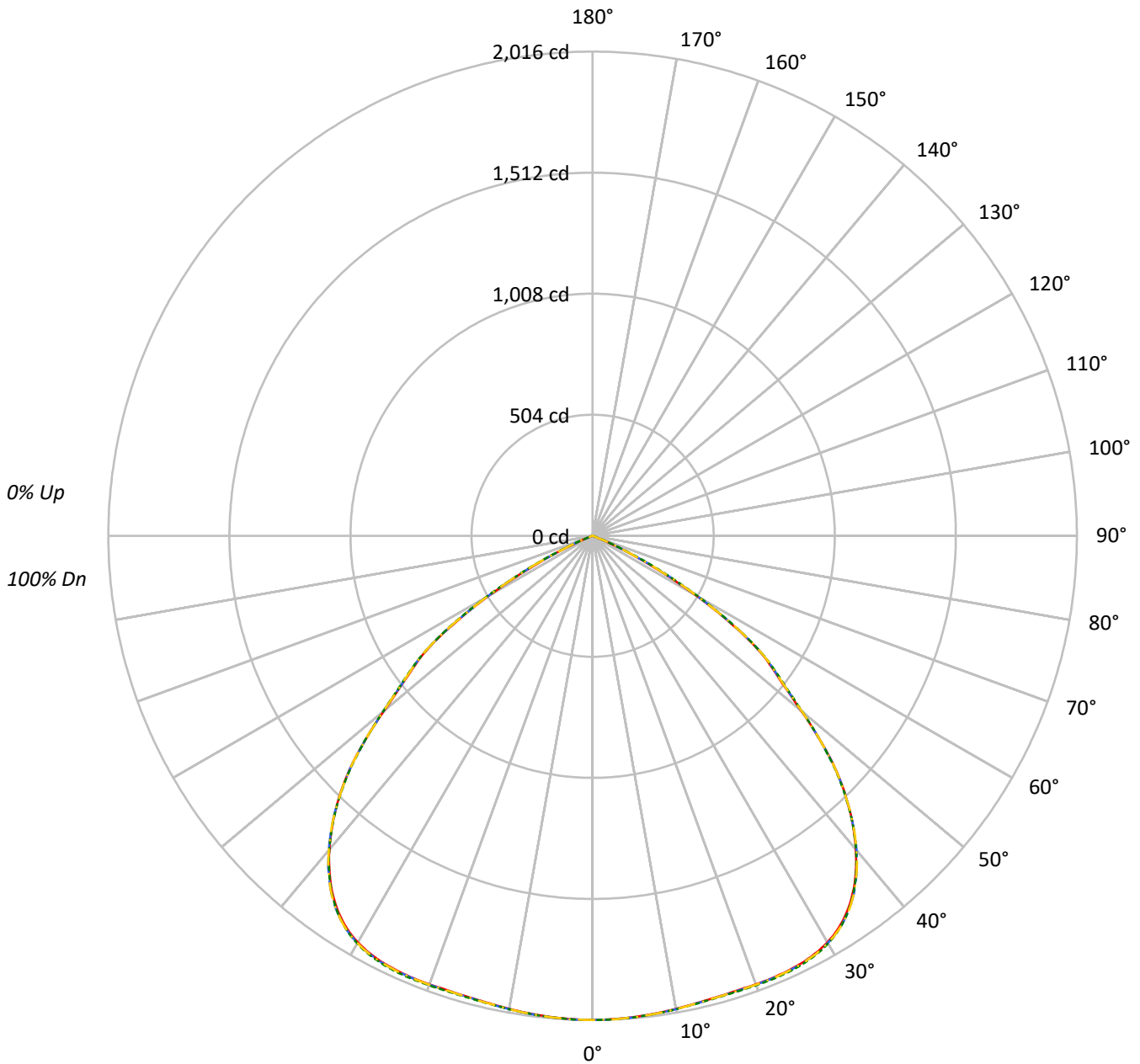
Lumens per Lamp: N/A
Luminaire Lumens: 4896.9 lumens
Efficiency: N/A
Efficacy: 127.2 lumens/watt
Spacing Criteria (0/90/45): 1.42 / 1.42 / 1.43
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

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: P776443
CATALOG NUMBER: HCDJBL3040CSD-HCD81TRH-4000lm-4000K

Luminous Intensity Polar Plot





TEST NUMBER: P776443

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRH-4000lm-4000K

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20										
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	112	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	91	89								
2	103	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80	78								
3	96	87	80	75	93	85	79	74	82	77	73	80	75	71	77	74	70	68								
4	88	78	70	65	86	77	70	64	74	68	63	72	67	63	70	66	62	60								
5	82	70	62	57	80	69	62	56	67	61	56	65	60	55	64	59	55	53								
6	76	64	56	50	74	63	55	50	61	54	49	59	53	49	58	53	48	47								
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	41								
8	65	53	45	40	64	52	45	40	51	44	39	50	44	39	49	43	39	37								
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	33								
10	57	45	37	32	56	44	37	32	43	37	32	42	36	32	42	36	32	30								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	61555	61555	61555	61555
5°	61640	61665	61640	61665
10°	62006	62055	62006	62055
15°	62873	62962	62873	62962
20°	64563	64706	64563	64706
25°	66817	67009	66817	67009
30°	68903	69100	68903	69100
35°	69629	69782	69629	69782
40°	67932	67964	67932	67964
45°	63361	63275	63361	63275
50°	53771	54151	53771	54151
55°	45968	46223	45968	46223
60°	30231	31410	30231	31410
65°	10663	12844	10663	12844
70°	179	973	179	973
75°	47	47	47	47
80°	0	70	0	70
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 63361 cd/sqm



TEST NUMBER: P776443

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRH-4000lm-4000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	191.7	3.9
10°-20°	564.5	11.5
20°-30°	917.0	18.7
30°-40°	1164.4	23.8
40°-50°	1116.7	22.8
50°-60°	751.6	15.3
60°-70°	190.1	3.9
70°-80°	0.8	0.0
80°-90°	0.0	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1673.3	34.2
0°-40°	2837.7	57.9
0°-60°	4706.0	96.1
0°-90°	4896.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4896.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2016	2016	2016	2016	2016	
5°	2011	2012	2011	2012	2011	192
15°	1989	1992	1989	1992	1989	564
25°	1984	1989	1984	1989	1984	916
35°	1868	1872	1868	1872	1868	1162
45°	1468	1466	1468	1466	1468	1117
55°	864	868	864	868	864	747
65°	148	178	148	178	148	177
75°	0	0	0	0	0	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



TEST NUMBER: P776443

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRH-4000lm-4000K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2016.2	2016.2	2016.2	2016.2	2016.2	2016.2	2016.2	2016.2	2016.2	2016.2	2016.2
0.5°	2015.8	2015.8	2016.2	2016.6	2016.2	2016.6	2016.2	2015.8	2015.8	2015.8	2016.2
1°	2015.8	2015.8	2016.2	2016.6	2015.8	2016.6	2016.2	2015.8	2015.8	2015.8	2016.2
1.5°	2015.4	2015.4	2015.8	2016.2	2015.8	2016.2	2015.8	2015.4	2015.4	2015.4	2015.8
2°	2015.0	2015.0	2015.8	2015.8	2015.4	2015.8	2015.8	2015.0	2015.0	2015.0	2015.8
2.5°	2014.6	2015.0	2015.4	2015.8	2015.0	2015.8	2015.4	2015.0	2014.6	2015.0	2015.4
3°	2014.2	2014.2	2015.0	2015.0	2014.6	2015.0	2015.0	2014.2	2014.2	2014.2	2015.0
3.5°	2013.4	2013.8	2014.2	2014.6	2014.2	2014.6	2014.2	2013.8	2013.4	2013.8	2014.2
4°	2013.0	2013.0	2013.4	2014.2	2013.4	2014.2	2013.4	2013.0	2013.0	2013.0	2013.4
4.5°	2012.1	2012.6	2013.0	2013.4	2013.0	2013.4	2013.0	2012.6	2012.1	2012.6	2013.0
5°	2011.3	2011.7	2012.1	2012.6	2012.1	2012.6	2012.1	2011.7	2011.3	2011.7	2012.1
5.5°	2010.5	2010.5	2011.3	2011.7	2011.3	2011.7	2011.3	2010.5	2010.5	2010.5	2011.3
6°	2009.3	2009.7	2010.1	2010.9	2010.5	2010.9	2010.1	2009.7	2009.3	2009.7	2010.1
6.5°	2008.5	2008.9	2009.3	2010.1	2009.3	2010.1	2009.3	2008.9	2008.5	2008.9	2009.3
7°	2007.3	2007.7	2008.5	2008.9	2008.5	2008.9	2008.5	2007.7	2007.3	2007.7	2008.5
7.5°	2006.1	2006.5	2007.3	2007.7	2007.3	2007.7	2007.3	2006.5	2006.1	2006.5	2007.3
8°	2005.3	2005.3	2006.1	2006.9	2006.5	2006.9	2006.1	2005.3	2005.3	2005.3	2006.1
8.5°	2004.1	2004.1	2004.9	2005.3	2005.3	2005.3	2004.9	2004.1	2004.1	2004.1	2004.9
9°	2002.5	2002.9	2003.7	2004.5	2004.1	2004.5	2003.7	2002.9	2002.5	2002.9	2003.7
9.5°	2001.3	2001.7	2002.5	2003.3	2002.9	2003.3	2002.5	2001.7	2001.3	2001.7	2002.5
10°	2000.1	2000.5	2001.3	2002.1	2001.7	2002.1	2001.3	2000.5	2000.1	2000.5	2001.3
10.5°	1998.8	1999.2	1999.7	2000.9	2000.5	2000.9	1999.7	1999.2	1998.8	1999.2	1999.7
11°	1997.6	1997.6	1998.4	1999.7	1999.2	1999.7	1998.4	1997.6	1997.6	1997.6	1998.4
11.5°	1996.4	1996.4	1997.2	1998.4	1998.0	1998.4	1997.2	1996.4	1996.4	1996.4	1997.2
12°	1995.2	1995.2	1996.0	1997.2	1997.2	1997.2	1996.0	1995.2	1995.2	1995.2	1996.0
12.5°	1994.0	1994.0	1995.2	1996.0	1996.0	1996.0	1995.2	1994.0	1994.0	1994.0	1995.2
13°	1992.8	1993.2	1994.0	1994.8	1995.2	1994.8	1994.0	1993.2	1992.8	1993.2	1994.0
13.5°	1991.6	1992.0	1993.2	1994.0	1994.0	1994.0	1993.2	1992.0	1991.6	1992.0	1993.2
14°	1990.8	1991.2	1992.0	1993.2	1993.2	1993.2	1992.0	1991.2	1990.8	1991.2	1992.0
14.5°	1990.0	1990.4	1991.2	1992.4	1992.8	1992.4	1991.2	1990.4	1990.0	1990.4	1991.2
15°	1989.2	1989.6	1990.4	1992.0	1992.0	1992.0	1990.4	1989.6	1989.2	1989.6	1990.4
15.5°	1988.4	1988.8	1990.0	1991.2	1991.6	1991.2	1990.0	1988.8	1988.4	1988.8	1990.0
16°	1988.0	1988.4	1989.2	1990.8	1991.2	1990.8	1989.2	1988.4	1988.0	1988.4	1989.2
16.5°	1987.6	1988.0	1988.8	1990.4	1990.8	1990.4	1988.8	1988.0	1987.6	1988.0	1988.8
17°	1987.2	1987.6	1988.8	1990.4	1990.8	1990.4	1988.8	1987.6	1987.2	1987.6	1988.8
17.5°	1987.2	1987.6	1988.4	1990.4	1990.8	1990.4	1988.4	1987.6	1987.2	1987.6	1988.4
18°	1986.7	1987.2	1988.4	1990.4	1990.8	1990.4	1988.4	1987.2	1986.7	1987.2	1988.4
18.5°	1986.7	1987.2	1988.4	1990.4	1990.8	1990.4	1988.4	1987.2	1986.7	1987.2	1988.4
19°	1987.2	1987.2	1988.4	1990.8	1991.2	1990.8	1988.4	1987.2	1987.2	1987.2	1988.4
19.5°	1987.2	1987.6	1988.8	1990.8	1991.6	1990.8	1988.8	1987.6	1987.2	1987.6	1988.8
20°	1987.2	1987.6	1988.8	1991.2	1991.6	1991.2	1988.8	1987.6	1987.2	1987.6	1988.8
20.5°	1987.6	1987.6	1989.2	1991.2	1992.0	1991.2	1989.2	1987.6	1987.6	1987.6	1989.2
21°	1987.6	1988.0	1989.2	1991.6	1992.0	1991.6	1989.2	1988.0	1987.6	1988.0	1989.2

TEST NUMBER: P776443

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRH-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	1987.2	1987.6	1989.2	1991.6	1992.4	1991.6	1989.2	1987.6	1987.2	1987.6	1989.2
23°	1986.7	1987.2	1988.8	1991.2	1992.0	1991.2	1988.8	1987.2	1986.7	1987.2	1988.8
23.5°	1986.3	1986.7	1988.4	1990.8	1991.6	1990.8	1988.4	1986.7	1986.3	1986.7	1988.4
24°	1985.9	1985.9	1987.6	1990.4	1991.2	1990.4	1987.6	1985.9	1985.9	1985.9	1987.6
24.5°	1984.7	1985.1	1986.7	1989.6	1990.4	1989.6	1986.7	1985.1	1984.7	1985.1	1986.7
25°	1983.5	1983.9	1985.9	1988.8	1989.2	1988.8	1985.9	1983.9	1983.5	1983.9	1985.9
25.5°	1982.3	1982.7	1984.7	1987.6	1988.0	1987.6	1984.7	1982.7	1982.3	1982.7	1984.7
26°	1980.7	1981.1	1983.1	1985.9	1986.7	1985.9	1983.1	1981.1	1980.7	1981.1	1983.1
26.5°	1978.7	1979.1	1981.5	1984.3	1984.7	1984.3	1981.5	1979.1	1978.7	1979.1	1981.5
27°	1976.7	1977.1	1979.1	1981.9	1982.3	1981.9	1979.1	1977.1	1976.7	1977.1	1979.1
27.5°	1973.8	1974.7	1976.7	1979.5	1979.9	1979.5	1976.7	1974.7	1973.8	1974.7	1976.7
28°	1971.0	1971.4	1973.8	1976.7	1977.1	1976.7	1973.8	1971.4	1971.0	1971.4	1973.8
28.5°	1967.8	1968.2	1970.6	1973.4	1973.4	1973.4	1970.6	1968.2	1967.8	1968.2	1970.6
29°	1963.8	1964.6	1967.0	1969.4	1969.8	1969.4	1967.0	1964.6	1963.8	1964.6	1967.0
29.5°	1959.3	1960.1	1963.0	1965.4	1965.4	1965.4	1963.0	1960.1	1959.3	1960.1	1963.0
30°	1954.5	1955.3	1958.1	1960.5	1960.1	1960.5	1958.1	1955.3	1954.5	1955.3	1958.1
30.5°	1949.3	1950.1	1952.9	1955.3	1954.9	1955.3	1952.9	1950.1	1949.3	1950.1	1952.9
31°	1943.2	1944.0	1947.2	1949.3	1948.5	1949.3	1947.2	1944.0	1943.2	1944.0	1947.2
31.5°	1936.4	1937.6	1940.8	1942.4	1941.6	1942.4	1940.8	1937.6	1936.4	1937.6	1940.8
32°	1928.7	1930.3	1933.5	1935.1	1934.3	1935.1	1933.5	1930.3	1928.7	1930.3	1933.5
32.5°	1920.6	1922.2	1925.5	1926.7	1925.9	1926.7	1925.5	1922.2	1920.6	1922.2	1925.5
33°	1911.8	1913.4	1917.0	1917.8	1916.6	1917.8	1917.0	1913.4	1911.8	1913.4	1917.0
33.5°	1901.7	1903.7	1907.3	1908.1	1906.9	1908.1	1907.3	1903.7	1901.7	1903.7	1907.3
34°	1891.6	1893.6	1897.2	1897.7	1896.0	1897.7	1897.2	1893.6	1891.6	1893.6	1897.2
34.5°	1879.9	1882.3	1886.0	1886.0	1884.3	1886.0	1886.0	1882.3	1879.9	1882.3	1886.0
35°	1868.2	1870.2	1874.3	1873.9	1872.3	1873.9	1874.3	1870.2	1868.2	1870.2	1874.3
35.5°	1855.3	1857.3	1861.4	1861.0	1859.4	1861.0	1861.4	1857.3	1855.3	1857.3	1861.4
36°	1841.6	1844.0	1848.1	1847.3	1845.2	1847.3	1848.1	1844.0	1841.6	1844.0	1848.1
36.5°	1827.5	1829.5	1833.6	1832.7	1830.3	1832.7	1833.6	1829.5	1827.5	1829.5	1833.6
37°	1811.8	1814.2	1817.8	1817.4	1815.0	1817.4	1817.8	1814.2	1811.8	1814.2	1817.8
37.5°	1796.1	1798.1	1802.1	1800.9	1798.5	1800.9	1802.1	1798.1	1796.1	1798.1	1802.1
38°	1779.1	1781.5	1785.2	1784.0	1781.1	1784.0	1785.2	1781.5	1779.1	1781.5	1785.2
38.5°	1761.4	1763.8	1767.4	1765.8	1763.4	1765.8	1767.4	1763.8	1761.4	1763.8	1767.4
39°	1743.6	1745.7	1748.9	1747.7	1744.9	1747.7	1748.9	1745.7	1743.6	1745.7	1748.9
39.5°	1724.7	1726.3	1729.5	1728.3	1725.5	1728.3	1729.5	1726.3	1724.7	1726.3	1729.5
40°	1704.5	1706.2	1709.4	1708.2	1705.3	1708.2	1709.4	1706.2	1704.5	1706.2	1709.4
40.5°	1684.4	1685.6	1688.4	1687.2	1684.4	1687.2	1688.4	1685.6	1684.4	1685.6	1688.4
41°	1663.0	1664.2	1666.6	1665.8	1663.0	1665.8	1666.6	1664.2	1663.0	1664.2	1666.6
41.5°	1641.2	1642.1	1644.5	1642.9	1640.8	1642.9	1644.5	1642.1	1641.2	1642.1	1644.5
42°	1618.7	1619.5	1621.1	1620.3	1618.3	1620.3	1621.1	1619.5	1618.7	1619.5	1621.1
42.5°	1595.7	1595.7	1597.3	1596.5	1594.5	1596.5	1597.3	1595.7	1595.7	1595.7	1597.3
43°	1571.5	1571.5	1572.7	1571.9	1569.9	1571.9	1572.7	1571.5	1571.5	1571.5	1572.7
43.5°	1546.5	1546.5	1546.9	1546.1	1544.9	1546.1	1546.9	1546.5	1546.5	1546.5	1546.9



TEST NUMBER: P776443

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRH-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1467.5	1466.3	1466.3	1465.9	1465.5	1465.9	1466.3	1466.3	1467.5	1466.3	1466.3
45.5°	1439.3	1438.1	1437.7	1437.2	1436.8	1437.2	1437.7	1438.1	1439.3	1438.1	1437.7
46°	1410.2	1408.6	1408.2	1408.2	1407.8	1408.2	1408.2	1408.6	1410.2	1408.6	1408.2
46.5°	1380.0	1378.4	1378.0	1377.6	1377.2	1377.6	1378.0	1378.4	1380.0	1378.4	1378.0
47°	1347.7	1346.1	1344.9	1344.1	1343.3	1344.1	1344.9	1346.1	1347.7	1346.1	1344.9
47.5°	1312.7	1311.1	1309.4	1309.9	1309.4	1309.9	1309.4	1311.1	1312.7	1311.1	1309.4
48°	1275.6	1275.2	1276.0	1276.4	1276.8	1276.4	1276.0	1275.2	1275.6	1275.2	1276.0
48.5°	1240.1	1240.1	1241.7	1242.1	1242.1	1242.1	1241.7	1240.1	1240.1	1240.1	1241.7
49°	1205.8	1205.4	1206.6	1207.0	1207.5	1207.0	1206.6	1205.4	1205.8	1205.4	1206.6
49.5°	1168.7	1169.2	1171.6	1173.2	1173.6	1173.2	1171.6	1169.2	1168.7	1169.2	1171.6
50°	1132.1	1133.7	1136.9	1138.9	1140.1	1138.9	1136.9	1133.7	1132.1	1133.7	1136.9
50.5°	1098.2	1100.2	1103.4	1105.5	1106.3	1105.5	1103.4	1100.2	1098.2	1100.2	1103.4
51°	1067.2	1068.4	1071.6	1073.2	1074.0	1073.2	1071.6	1068.4	1067.2	1068.4	1071.6
51.5°	1037.3	1038.1	1041.8	1044.6	1045.8	1044.6	1041.8	1038.1	1037.3	1038.1	1041.8
52°	1007.9	1009.5	1013.1	1016.8	1018.4	1016.8	1013.1	1009.5	1007.9	1009.5	1013.1
52.5°	981.3	982.9	986.9	990.6	993.0	990.6	986.9	982.9	981.3	982.9	986.9
53°	956.7	958.3	962.7	966.4	968.0	966.4	962.7	958.3	956.7	958.3	962.7
53.5°	933.7	935.3	939.4	942.6	944.2	942.6	939.4	935.3	933.7	935.3	939.4
54°	911.9	913.1	916.8	918.8	919.6	918.8	916.8	913.1	911.9	913.1	916.8
54.5°	889.0	890.2	893.0	895.4	895.8	895.4	893.0	890.2	889.0	890.2	893.0
55°	863.6	864.8	867.6	869.2	868.4	869.2	867.6	864.8	863.6	864.8	867.6
55.5°	834.1	835.3	838.6	840.2	839.8	840.2	838.6	835.3	834.1	835.3	838.6
56°	801.5	803.1	807.1	809.1	808.7	809.1	807.1	803.1	801.5	803.1	807.1
56.5°	766.8	769.2	772.8	776.1	775.7	776.1	772.8	769.2	766.8	769.2	772.8
57°	730.5	732.5	737.8	739.8	740.2	739.8	737.8	732.5	730.5	732.5	737.8
57.5°	692.6	695.0	700.7	703.1	703.5	703.1	700.7	695.0	692.6	695.0	700.7
58°	654.3	656.7	662.4	666.0	666.8	666.0	662.4	656.7	654.3	656.7	662.4
58.5°	615.2	617.2	623.3	627.7	628.9	627.7	623.3	617.2	615.2	617.2	623.3
59°	575.7	577.7	583.4	589.4	591.0	589.4	583.4	577.7	575.7	577.7	583.4
59.5°	535.4	537.8	544.3	551.1	552.7	551.1	544.3	537.8	535.4	537.8	544.3
60°	495.1	498.7	505.2	513.6	514.4	513.6	505.2	498.7	495.1	498.7	505.2
60.5°	455.6	458.8	467.7	475.3	476.9	475.3	467.7	458.8	455.6	458.8	467.7
61°	416.9	420.9	430.6	437.8	439.8	437.8	430.6	420.9	416.9	420.9	430.6
61.5°	379.8	383.4	393.9	400.3	404.0	400.3	393.9	383.4	379.8	383.4	393.9
62°	343.1	346.7	357.6	364.0	368.1	364.0	357.6	346.7	343.1	346.7	357.6
62.5°	306.4	311.2	322.5	329.0	333.4	329.0	322.5	311.2	306.4	311.2	322.5
63°	270.5	276.6	288.3	295.1	300.4	295.1	288.3	276.6	270.5	276.6	288.3
63.5°	237.5	242.7	255.2	262.5	267.7	262.5	255.2	242.7	237.5	242.7	255.2
64°	206.0	211.7	222.9	231.4	236.2	231.4	222.9	211.7	206.0	211.7	222.9
64.5°	176.2	181.4	192.3	202.0	206.8	202.0	192.3	181.4	176.2	181.4	192.3
65°	147.6	154.8	164.1	173.4	177.8	173.4	164.1	154.8	147.6	154.8	164.1
65.5°	122.6	129.4	137.5	146.7	150.8	146.7	137.5	129.4	122.6	129.4	137.5
66°	98.8	105.6	113.7	122.6	124.6	122.6	113.7	105.6	98.8	105.6	113.7



TEST NUMBER: P776443

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRH-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	39.5	50.4	54.4	62.1	62.5	62.1	54.4	50.4	39.5	50.4	54.4
68°	24.2	35.5	39.5	47.2	46.4	47.2	39.5	35.5	24.2	35.5	39.5
68.5°	10.5	23.0	27.8	33.5	37.1	33.5	27.8	23.0	10.5	23.0	27.8
69°	5.6	14.1	18.1	21.8	28.6	21.8	18.1	14.1	5.6	14.1	18.1
69.5°	3.6	6.9	10.1	12.9	19.8	12.9	10.1	6.9	3.6	6.9	10.1
70°	2.0	4.0	4.8	5.6	10.9	5.6	4.8	4.0	2.0	4.0	4.8
70.5°	0.8	2.0	2.8	2.4	3.2	2.4	2.8	2.0	0.8	2.0	2.8
71°	0.8	1.2	1.6	1.2	1.2	1.2	1.6	1.2	0.8	1.2	1.6
71.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
72°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
72.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
73°	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.8	0.8
73.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.8
74°	0.4	0.4	0.4	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4
74.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
75°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
75.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
76°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
76.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
77°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
78°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
78.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
80.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
81°	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776443

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRH-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: P776443

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRH-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2016.2	2016.2	2016.2	2016.2	2016.2	2016.2
0.5°	2016.6	2016.2	2016.6	2016.2	2015.8	2015.8
1°	2016.6	2015.8	2016.6	2016.2	2015.8	2015.8
1.5°	2016.2	2015.8	2016.2	2015.8	2015.4	2015.4
2°	2015.8	2015.4	2015.8	2015.8	2015.0	2015.0
2.5°	2015.8	2015.0	2015.8	2015.4	2015.0	2014.6
3°	2015.0	2014.6	2015.0	2015.0	2014.2	2014.2
3.5°	2014.6	2014.2	2014.6	2014.2	2013.8	2013.4
4°	2014.2	2013.4	2014.2	2013.4	2013.0	2013.0
4.5°	2013.4	2013.0	2013.4	2013.0	2012.6	2012.1
5°	2012.6	2012.1	2012.6	2012.1	2011.7	2011.3
5.5°	2011.7	2011.3	2011.7	2011.3	2010.5	2010.5
6°	2010.9	2010.5	2010.9	2010.1	2009.7	2009.3
6.5°	2010.1	2009.3	2010.1	2009.3	2008.9	2008.5
7°	2008.9	2008.5	2008.9	2008.5	2007.7	2007.3
7.5°	2007.7	2007.3	2007.7	2007.3	2006.5	2006.1
8°	2006.9	2006.5	2006.9	2006.1	2005.3	2005.3
8.5°	2005.3	2005.3	2005.3	2004.9	2004.1	2004.1
9°	2004.5	2004.1	2004.5	2003.7	2002.9	2002.5
9.5°	2003.3	2002.9	2003.3	2002.5	2001.7	2001.3
10°	2002.1	2001.7	2002.1	2001.3	2000.5	2000.1
10.5°	2000.9	2000.5	2000.9	1999.7	1999.2	1998.8
11°	1999.7	1999.2	1999.7	1998.4	1997.6	1997.6
11.5°	1998.4	1998.0	1998.4	1997.2	1996.4	1996.4
12°	1997.2	1997.2	1997.2	1996.0	1995.2	1995.2
12.5°	1996.0	1996.0	1996.0	1995.2	1994.0	1994.0
13°	1994.8	1995.2	1994.8	1994.0	1993.2	1992.8
13.5°	1994.0	1994.0	1994.0	1993.2	1992.0	1991.6
14°	1993.2	1993.2	1993.2	1992.0	1991.2	1990.8
14.5°	1992.4	1992.8	1992.4	1991.2	1990.4	1990.0
15°	1992.0	1992.0	1992.0	1990.4	1989.6	1989.2
15.5°	1991.2	1991.6	1991.2	1990.0	1988.8	1988.4
16°	1990.8	1991.2	1990.8	1989.2	1988.4	1988.0
16.5°	1990.4	1990.8	1990.4	1988.8	1988.0	1987.6
17°	1990.4	1990.8	1990.4	1988.8	1987.6	1987.2
17.5°	1990.4	1990.8	1990.4	1988.4	1987.6	1987.2
18°	1990.4	1990.8	1990.4	1988.4	1987.2	1986.7
18.5°	1990.4	1990.8	1990.4	1988.4	1987.2	1986.7
19°	1990.8	1991.2	1990.8	1988.4	1987.2	1987.2
19.5°	1990.8	1991.6	1990.8	1988.8	1987.6	1987.2
20°	1991.2	1991.6	1991.2	1988.8	1987.6	1987.2
20.5°	1991.2	1992.0	1991.2	1989.2	1987.6	1987.6
21°	1991.6	1992.0	1991.6	1989.2	1988.0	1987.6



TEST NUMBER: P776443

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRH-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1991.6	1992.4	1991.6	1989.2	1987.6	1987.2
23°	1991.2	1992.0	1991.2	1988.8	1987.2	1986.7
23.5°	1990.8	1991.6	1990.8	1988.4	1986.7	1986.3
24°	1990.4	1991.2	1990.4	1987.6	1985.9	1985.9
24.5°	1989.6	1990.4	1989.6	1986.7	1985.1	1984.7
25°	1988.8	1989.2	1988.8	1985.9	1983.9	1983.5
25.5°	1987.6	1988.0	1987.6	1984.7	1982.7	1982.3
26°	1985.9	1986.7	1985.9	1983.1	1981.1	1980.7
26.5°	1984.3	1984.7	1984.3	1981.5	1979.1	1978.7
27°	1981.9	1982.3	1981.9	1979.1	1977.1	1976.7
27.5°	1979.5	1979.9	1979.5	1976.7	1974.7	1973.8
28°	1976.7	1977.1	1976.7	1973.8	1971.4	1971.0
28.5°	1973.4	1973.4	1973.4	1970.6	1968.2	1967.8
29°	1969.4	1969.8	1969.4	1967.0	1964.6	1963.8
29.5°	1965.4	1965.4	1965.4	1963.0	1960.1	1959.3
30°	1960.5	1960.1	1960.5	1958.1	1955.3	1954.5
30.5°	1955.3	1954.9	1955.3	1952.9	1950.1	1949.3
31°	1949.3	1948.5	1949.3	1947.2	1944.0	1943.2
31.5°	1942.4	1941.6	1942.4	1940.8	1937.6	1936.4
32°	1935.1	1934.3	1935.1	1933.5	1930.3	1928.7
32.5°	1926.7	1925.9	1926.7	1925.5	1922.2	1920.6
33°	1917.8	1916.6	1917.8	1917.0	1913.4	1911.8
33.5°	1908.1	1906.9	1908.1	1907.3	1903.7	1901.7
34°	1897.7	1896.0	1897.7	1897.2	1893.6	1891.6
34.5°	1886.0	1884.3	1886.0	1886.0	1882.3	1879.9
35°	1873.9	1872.3	1873.9	1874.3	1870.2	1868.2
35.5°	1861.0	1859.4	1861.0	1861.4	1857.3	1855.3
36°	1847.3	1845.2	1847.3	1848.1	1844.0	1841.6
36.5°	1832.7	1830.3	1832.7	1833.6	1829.5	1827.5
37°	1817.4	1815.0	1817.4	1817.8	1814.2	1811.8
37.5°	1800.9	1798.5	1800.9	1802.1	1798.1	1796.1
38°	1784.0	1781.1	1784.0	1785.2	1781.5	1779.1
38.5°	1765.8	1763.4	1765.8	1767.4	1763.8	1761.4
39°	1747.7	1744.9	1747.7	1748.9	1745.7	1743.6
39.5°	1728.3	1725.5	1728.3	1729.5	1726.3	1724.7
40°	1708.2	1705.3	1708.2	1709.4	1706.2	1704.5
40.5°	1687.2	1684.4	1687.2	1688.4	1685.6	1684.4
41°	1665.8	1663.0	1665.8	1666.6	1664.2	1663.0
41.5°	1642.9	1640.8	1642.9	1644.5	1642.1	1641.2
42°	1620.3	1618.3	1620.3	1621.1	1619.5	1618.7
42.5°	1596.5	1594.5	1596.5	1597.3	1595.7	1595.7
43°	1571.9	1569.9	1571.9	1572.7	1571.5	1571.5
43.5°	1546.1	1544.9	1546.1	1546.9	1546.5	1546.5



TEST NUMBER: P776443

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRH-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1465.9	1465.5	1465.9	1466.3	1466.3	1467.5
45.5°	1437.2	1436.8	1437.2	1437.7	1438.1	1439.3
46°	1408.2	1407.8	1408.2	1408.2	1408.6	1410.2
46.5°	1377.6	1377.2	1377.6	1378.0	1378.4	1380.0
47°	1344.1	1343.3	1344.1	1344.9	1346.1	1347.7
47.5°	1309.9	1309.4	1309.9	1309.4	1311.1	1312.7
48°	1276.4	1276.8	1276.4	1276.0	1275.2	1275.6
48.5°	1242.1	1242.1	1242.1	1241.7	1240.1	1240.1
49°	1207.0	1207.5	1207.0	1206.6	1205.4	1205.8
49.5°	1173.2	1173.6	1173.2	1171.6	1169.2	1168.7
50°	1138.9	1140.1	1138.9	1136.9	1133.7	1132.1
50.5°	1105.5	1106.3	1105.5	1103.4	1100.2	1098.2
51°	1073.2	1074.0	1073.2	1071.6	1068.4	1067.2
51.5°	1044.6	1045.8	1044.6	1041.8	1038.1	1037.3
52°	1016.8	1018.4	1016.8	1013.1	1009.5	1007.9
52.5°	990.6	993.0	990.6	986.9	982.9	981.3
53°	966.4	968.0	966.4	962.7	958.3	956.7
53.5°	942.6	944.2	942.6	939.4	935.3	933.7
54°	918.8	919.6	918.8	916.8	913.1	911.9
54.5°	895.4	895.8	895.4	893.0	890.2	889.0
55°	869.2	868.4	869.2	867.6	864.8	863.6
55.5°	840.2	839.8	840.2	838.6	835.3	834.1
56°	809.1	808.7	809.1	807.1	803.1	801.5
56.5°	776.1	775.7	776.1	772.8	769.2	766.8
57°	739.8	740.2	739.8	737.8	732.5	730.5
57.5°	703.1	703.5	703.1	700.7	695.0	692.6
58°	666.0	666.8	666.0	662.4	656.7	654.3
58.5°	627.7	628.9	627.7	623.3	617.2	615.2
59°	589.4	591.0	589.4	583.4	577.7	575.7
59.5°	551.1	552.7	551.1	544.3	537.8	535.4
60°	513.6	514.4	513.6	505.2	498.7	495.1
60.5°	475.3	476.9	475.3	467.7	458.8	455.6
61°	437.8	439.8	437.8	430.6	420.9	416.9
61.5°	400.3	404.0	400.3	393.9	383.4	379.8
62°	364.0	368.1	364.0	357.6	346.7	343.1
62.5°	329.0	333.4	329.0	322.5	311.2	306.4
63°	295.1	300.4	295.1	288.3	276.6	270.5
63.5°	262.5	267.7	262.5	255.2	242.7	237.5
64°	231.4	236.2	231.4	222.9	211.7	206.0
64.5°	202.0	206.8	202.0	192.3	181.4	176.2
65°	173.4	177.8	173.4	164.1	154.8	147.6
65.5°	146.7	150.8	146.7	137.5	129.4	122.6
66°	122.6	124.6	122.6	113.7	105.6	98.8



TEST NUMBER: P776443

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRH-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	62.1	62.5	62.1	54.4	50.4	39.5
68°	47.2	46.4	47.2	39.5	35.5	24.2
68.5°	33.5	37.1	33.5	27.8	23.0	10.5
69°	21.8	28.6	21.8	18.1	14.1	5.6
69.5°	12.9	19.8	12.9	10.1	6.9	3.6
70°	5.6	10.9	5.6	4.8	4.0	2.0
70.5°	2.4	3.2	2.4	2.8	2.0	0.8
71°	1.2	1.2	1.2	1.6	1.2	0.8
71.5°	0.8	0.8	0.8	0.8	0.8	0.8
72°	0.8	0.8	0.8	0.8	0.8	0.8
72.5°	0.8	0.8	0.8	0.8	0.8	0.8
73°	0.8	0.8	0.8	0.8	0.8	0.4
73.5°	0.8	0.8	0.8	0.8	0.4	0.4
74°	0.8	0.8	0.8	0.4	0.4	0.4
74.5°	0.4	0.4	0.4	0.4	0.4	0.4
75°	0.4	0.4	0.4	0.4	0.4	0.4
75.5°	0.4	0.4	0.4	0.4	0.4	0.4
76°	0.4	0.4	0.4	0.4	0.4	0.4
76.5°	0.4	0.4	0.4	0.4	0.4	0.4
77°	0.4	0.4	0.4	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	0.4	0.4
78°	0.4	0.4	0.4	0.4	0.4	0.4
78.5°	0.4	0.4	0.4	0.4	0.4	0.4
79°	0.4	0.4	0.4	0.4	0.4	0.4
79.5°	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.4	0.4	0.4	0.4	0.0	0.0
80.5°	0.4	0.4	0.4	0.4	0.0	0.0
81°	0.0	0.4	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776443

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRH-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



Report Generated By 670245859 / DESKTOP-T8S5UU9

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





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

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





21.5°	1987.6	1988.0	1989.2	1991.6	1992.4	1991.6	1989.2	1988.0	1987.6	1988.0	1989.2
22°	1987.6	1987.6	1989.2	1991.6	1992.4	1991.6	1989.2	1987.6	1987.6	1987.6	1989.2



44°	1521.1	1520.3	1520.7	1519.9	1519.1	1519.9	1520.7	1520.3	1521.1	1520.3	1520.7
44.5°	1494.9	1493.7	1494.1	1493.7	1492.5	1493.7	1494.1	1493.7	1494.9	1493.7	1494.1



66.5°	79.0	85.5	91.1	99.6	102.0	99.6	91.1	85.5	79.0	85.5	91.1
67°	59.3	66.1	72.2	80.2	81.0	80.2	72.2	66.1	59.3	66.1	72.2



89°	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

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





21.5°	1991.6	1992.4	1991.6	1989.2	1988.0	1987.6
22°	1991.6	1992.4	1991.6	1989.2	1987.6	1987.6



44°	1519.9	1519.1	1519.9	1520.7	1520.3	1521.1
44.5°	1493.7	1492.5	1493.7	1494.1	1493.7	1494.9

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



66.5°	99.6	102.0	99.6	91.1	85.5	79.0
67°	80.2	81.0	80.2	72.2	66.1	59.3

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
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

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)