

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: PORTFOLIO

Report Number: P880580

Luminaire Tested: **LD4C45D010 EU4459040 4LBDWNH**

Issue Date: 10/4/2024

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



Test Information

Test Method: LM-79-08
Report Number: P880580
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P251940)
Test Lab: INNOVATION CENTER
Issue Date: 10/4/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: PORTFOLIO
Catalog Number: LD4C45D010 EU4459040 4LBDWNH
Description: 4 INCH 4500 LUMEN PORTFOLIO LED DOWNLIGHT WITH, 4000K, 90CRI LEDS
AND 4LBDWN TRIM WITH H FINISH
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

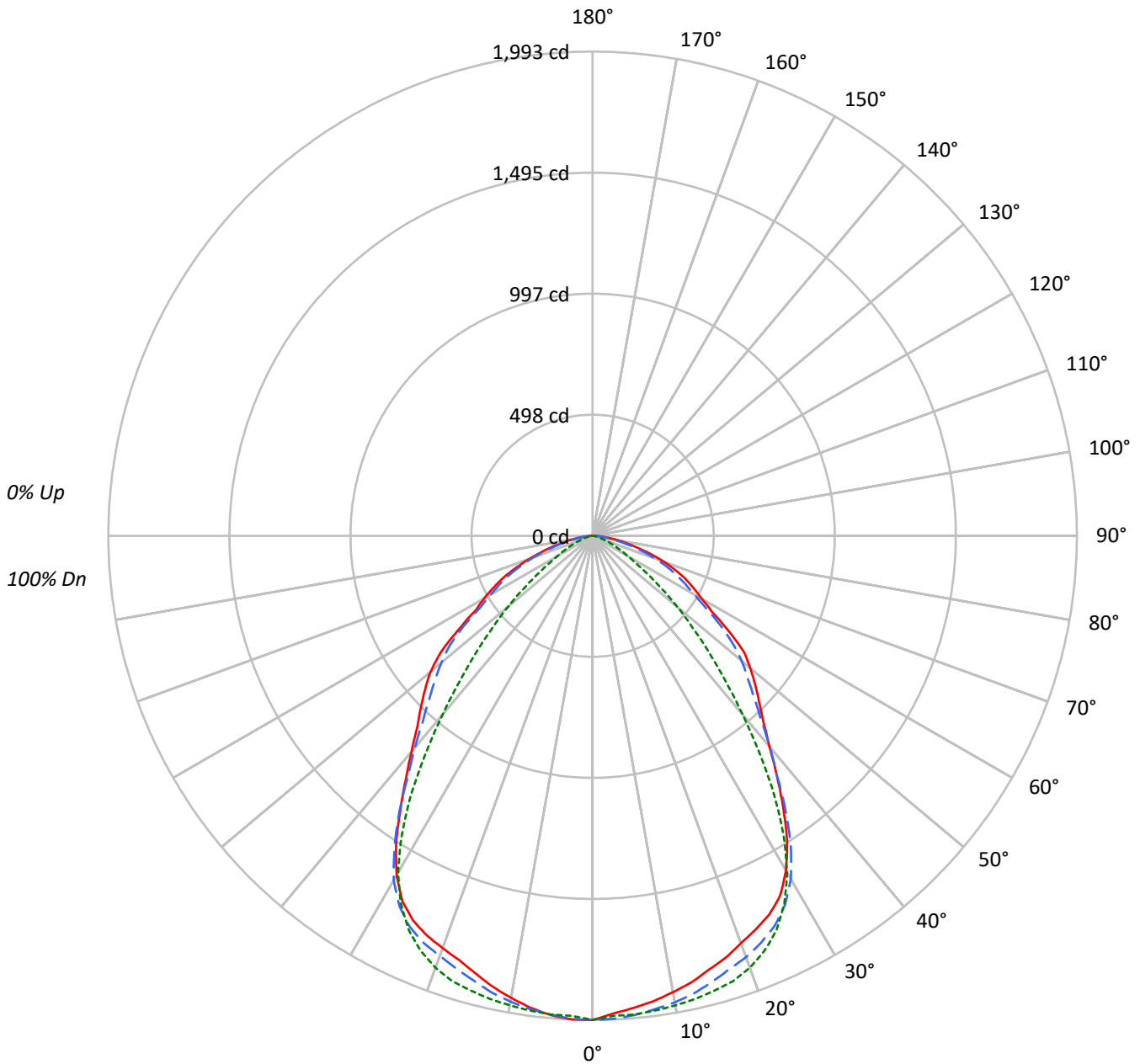
Lumens per Lamp: N/A
Luminaire Lumens: 4056.0 lumens
Efficiency: N/A
Efficacy: 81.8 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 49.6
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: 25 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			100																
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88			88																
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76			76																
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66			66																
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58			58																
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51			51																
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46			46																
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41			41																
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37			37																
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34			34																
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31			31																

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	244835	244835	244835
5°	240492	243895	244265
10°	237908	244807	240965
15°	235157	246451	237090
20°	233289	247343	236100
25°	233166	242723	236894
30°	225740	227045	228790
35°	205093	195449	206922
40°	181447	153895	185857
45°	168320	117188	173672
50°	161750	86752	166433
55°	146441	59780	144470
60°	127325	40689	126588
65°	122994	29448	116744
70°	111208	19828	99103
75°	91659	13053	78605
80°	73791	8702	58580
85°	60612	4229	38764



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	188.1	4.6
10°-20°	537.9	13.3
20°-30°	812.7	20.0
30°-40°	850.5	21.0
40°-50°	688.8	17.0
50°-60°	501.0	12.4
60°-70°	309.0	7.6
70°-80°	139.6	3.4
80°-90°	28.4	0.7
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°	1538.7	37.9
0°-40°	2389.2	58.9
0°-60°	3579.0	88.2
0°-90°	4056.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4056.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1993	1993	1993	1993	1993	
5°	1950	1981	1978	1978	1981	185
15°	1849	1901	1938	1895	1864	523
25°	1720	1772	1791	1778	1748	788
35°	1368	1386	1303	1386	1380	852
45°	969	938	674	950	1000	753
55°	684	641	279	647	674	610
65°	423	380	101	374	402	414
75°	193	166	28	144	166	210
85°	43	34	3	24	28	49
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9
2.5°	1968.4	1968.4	1986.9	2008.2	1989.9	1971.4	1983.7	1977.7	1999.1	1999.1	1989.9
5°	1950.1	1956.2	1971.4	1989.9	1974.6	1956.2	1971.4	1965.4	1986.9	1986.9	1980.7
7.5°	1931.6	1934.7	1953.1	1974.6	1959.2	1940.9	1953.1	1950.1	1968.4	1971.4	1965.4
10°	1907.1	1910.1	1928.6	1950.1	1934.7	1919.4	1931.6	1928.6	1953.1	1953.1	1950.1
12.5°	1882.6	1885.6	1904.1	1922.4	1907.1	1891.9	1904.1	1904.1	1928.6	1931.6	1928.6
15°	1848.9	1854.9	1870.4	1888.7	1879.6	1861.1	1873.4	1873.4	1894.9	1900.9	1900.9
17.5°	1821.3	1824.4	1839.6	1858.1	1845.8	1830.4	1842.6	1842.6	1864.1	1870.4	1870.4
20°	1784.4	1790.6	1805.9	1824.4	1815.1	1802.9	1812.1	1812.1	1836.6	1842.6	1845.8
22.5°	1753.8	1759.9	1772.1	1796.8	1781.4	1772.1	1784.4	1781.4	1809.1	1812.1	1812.1
25°	1720.1	1726.3	1741.6	1756.8	1747.6	1738.6	1747.6	1747.6	1769.1	1772.1	1772.1
27.5°	1671.0	1674.1	1689.3	1704.8	1695.6	1683.3	1695.6	1692.5	1713.9	1717.1	1713.9
30°	1591.3	1597.5	1603.5	1625.0	1615.8	1606.6	1618.8	1612.8	1634.3	1634.3	1631.1
32.5°	1490.0	1490.0	1502.5	1517.7	1505.5	1499.3	1508.5	1511.5	1527.0	1527.0	1517.7
35°	1367.5	1373.7	1382.7	1392.0	1382.7	1376.7	1385.9	1382.7	1401.2	1395.0	1385.9
37.5°	1244.9	1247.9	1257.2	1269.4	1257.2	1247.9	1250.9	1247.9	1263.2	1263.2	1247.9
40°	1131.4	1137.6	1143.6	1155.9	1143.6	1137.6	1140.6	1131.4	1149.9	1143.6	1134.4
42.5°	1039.4	1042.4	1051.6	1057.8	1045.6	1042.4	1045.6	1039.4	1048.6	1042.4	1024.1
45°	968.8	968.8	972.0	981.1	968.8	965.8	965.8	959.6	968.8	956.6	938.3
47.5°	907.6	910.6	913.8	919.8	910.6	901.5	904.5	892.3	898.3	889.1	864.6
50°	846.3	852.3	855.5	861.5	852.3	846.3	849.3	837.0	837.0	821.8	800.3
52.5°	785.0	788.0	785.0	791.0	785.0	775.7	778.8	766.5	766.5	748.2	726.7
55°	683.7	686.7	690.0	696.0	690.0	680.7	686.7	677.7	677.7	665.3	640.7
57.5°	582.5	585.7	588.7	591.7	591.7	585.7	588.7	582.5	579.5	570.2	551.9
60°	518.2	518.2	518.2	521.2	518.2	515.2	515.2	508.9	508.9	496.7	478.4
62.5°	469.1	472.2	472.2	475.2	472.2	469.1	466.1	459.9	456.9	444.6	429.2
65°	423.1	423.1	420.1	426.2	423.1	420.1	420.1	413.9	407.9	395.6	380.1
67.5°	367.9	370.9	367.9	370.9	370.9	367.9	364.9	358.6	355.6	346.4	328.1
70°	309.6	309.6	309.6	312.8	309.6	309.6	312.8	303.6	300.6	288.1	272.9
72.5°	251.4	254.6	254.6	251.4	254.6	248.3	248.3	248.3	245.3	233.1	217.6
75°	193.1	196.3	196.3	199.3	196.3	193.1	193.1	190.1	187.1	177.8	165.6
77.5°	144.1	144.1	147.1	147.1	147.1	144.1	144.1	138.0	138.0	131.8	119.5
80°	104.3	104.3	101.3	104.3	104.3	101.3	101.3	98.1	98.1	92.0	82.8
82.5°	67.5	70.5	70.5	70.5	70.5	67.5	67.5	67.5	64.3	61.3	55.2
85°	43.0	43.0	43.0	43.0	46.0	43.0	46.0	43.0	43.0	36.8	33.8
87.5°	18.5	18.5	18.5	21.5	21.5	18.5	18.5	18.5	18.5	18.5	15.3
90°	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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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9
2.5°	1989.9	1992.9	1983.7	1995.9	1986.9	1989.9	1992.9	1989.9	1977.7	1977.7	2011.4
5°	1977.7	1983.7	1974.6	1989.9	1983.7	1983.7	1989.9	1986.9	1974.6	1977.7	2008.2
7.5°	1965.4	1974.6	1968.4	1983.7	1974.6	1974.6	1980.7	1980.7	1968.4	1971.4	1999.1
10°	1946.9	1959.2	1956.2	1971.4	1962.4	1962.4	1971.4	1971.4	1959.2	1962.4	1989.9
12.5°	1931.6	1943.9	1940.9	1956.2	1950.1	1953.1	1956.2	1962.4	1946.9	1953.1	1977.7
15°	1907.1	1919.4	1919.4	1934.7	1928.6	1934.7	1940.9	1950.1	1937.7	1937.7	1962.4
17.5°	1879.6	1894.9	1894.9	1907.1	1907.1	1910.1	1922.4	1931.6	1919.4	1922.4	1943.9
20°	1848.9	1867.3	1867.3	1882.6	1879.6	1885.6	1894.9	1904.1	1891.9	1891.9	1916.4
22.5°	1818.1	1833.6	1836.6	1845.8	1845.8	1848.9	1858.1	1864.1	1848.9	1848.9	1873.4
25°	1775.3	1790.6	1793.6	1799.8	1793.6	1793.6	1799.8	1805.9	1790.6	1790.6	1812.1
27.5°	1717.1	1732.3	1732.3	1729.3	1723.1	1726.3	1723.1	1726.3	1710.8	1707.8	1729.3
30°	1631.1	1640.3	1640.3	1637.3	1628.1	1628.1	1618.8	1622.0	1600.5	1600.5	1618.8
32.5°	1514.7	1523.8	1517.7	1511.5	1499.3	1493.2	1487.0	1484.0	1462.5	1462.5	1484.0
35°	1376.7	1382.7	1373.7	1361.4	1346.0	1336.7	1327.7	1315.4	1300.0	1303.2	1315.4
37.5°	1235.7	1235.7	1223.4	1198.9	1186.6	1171.2	1155.9	1155.9	1131.4	1128.4	1137.6
40°	1116.1	1103.9	1082.4	1048.6	1027.1	1011.8	990.3	978.1	959.6	959.6	975.1
42.5°	1008.8	984.3	956.6	910.6	889.1	870.8	843.3	831.0	809.5	806.3	815.5
45°	913.8	889.1	849.3	800.3	772.7	751.2	711.3	696.0	677.7	674.5	680.7
47.5°	837.0	809.5	760.5	696.0	668.5	640.7	601.0	579.5	564.2	554.9	564.2
50°	769.5	732.8	680.7	613.2	576.4	551.9	502.9	481.4	459.9	453.9	456.9
52.5°	696.0	659.2	604.0	533.4	499.7	462.9	416.9	386.4	367.9	358.6	367.9
55°	616.2	579.5	524.4	453.9	416.9	383.3	334.1	309.6	288.1	279.1	288.1
57.5°	530.4	496.7	447.6	377.1	343.4	312.8	266.8	242.3	220.8	214.6	220.8
60°	456.9	429.2	380.1	312.8	285.1	251.4	211.6	187.1	168.6	165.6	168.6
62.5°	407.9	377.1	331.1	266.8	239.1	211.6	174.8	150.3	134.8	131.8	134.8
65°	358.6	325.1	282.1	226.8	199.3	177.8	141.0	119.5	104.3	101.3	104.3
67.5°	303.6	272.9	236.1	187.1	165.6	144.1	113.5	92.0	79.8	76.7	79.8
70°	251.4	223.8	187.1	150.3	128.8	113.5	85.8	70.5	58.3	55.2	58.3
72.5°	199.3	174.8	144.1	113.5	101.3	85.8	67.5	52.0	43.0	39.8	43.0
75°	153.3	134.8	110.3	82.8	73.5	64.3	46.0	36.8	30.7	27.5	30.7
77.5°	107.3	95.0	76.7	61.3	52.0	46.0	33.8	24.5	21.5	18.5	21.5
80°	73.5	64.3	52.0	39.8	33.8	27.5	21.5	15.3	12.3	12.3	12.3
82.5°	49.0	39.8	30.7	24.5	21.5	18.5	12.3	9.2	9.2	6.2	6.2
85°	27.5	24.5	18.5	15.3	12.3	9.2	6.2	6.2	3.0	3.0	3.0
87.5°	12.3	9.2	6.2	6.2	3.0	3.0	3.0	3.0	0.0	0.0	0.0
90°	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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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9
2.5°	2002.2	1992.9	2005.2	1992.9	1986.9	1992.9	1986.9	2005.2	1989.9	1977.7	1989.9
5°	1999.1	1986.9	1999.1	1989.9	1980.7	1983.7	1977.7	1995.9	1977.7	1968.4	1974.6
7.5°	1992.9	1983.7	1989.9	1980.7	1971.4	1974.6	1968.4	1983.7	1965.4	1956.2	1962.4
10°	1983.7	1974.6	1977.7	1971.4	1962.4	1962.4	1956.2	1968.4	1946.9	1934.7	1940.9
12.5°	1971.4	1959.2	1965.4	1956.2	1943.9	1943.9	1937.7	1946.9	1925.4	1913.2	1916.4
15°	1956.2	1943.9	1943.9	1934.7	1922.4	1922.4	1910.1	1919.4	1894.9	1882.6	1882.6
17.5°	1937.7	1922.4	1922.4	1913.2	1897.9	1894.9	1885.6	1894.9	1867.3	1854.9	1854.9
20°	1910.1	1897.9	1894.9	1888.7	1873.4	1870.4	1858.1	1861.1	1839.6	1830.4	1827.4
22.5°	1873.4	1861.1	1864.1	1854.9	1842.6	1839.6	1827.4	1836.6	1815.1	1805.9	1809.1
25°	1809.1	1802.9	1809.1	1805.9	1796.8	1796.8	1790.6	1796.8	1778.3	1772.1	1775.3
27.5°	1735.3	1732.3	1735.3	1735.3	1729.3	1729.3	1729.3	1738.6	1720.1	1717.1	1717.1
30°	1628.1	1628.1	1631.1	1634.3	1634.3	1640.3	1637.3	1649.6	1637.3	1631.1	1637.3
32.5°	1487.0	1499.3	1508.5	1508.5	1508.5	1514.7	1520.8	1530.0	1517.7	1520.8	1520.8
35°	1327.7	1336.7	1342.9	1358.2	1349.2	1370.5	1376.7	1389.0	1385.9	1392.0	1389.0
37.5°	1149.9	1162.1	1174.4	1195.9	1192.7	1217.2	1229.4	1253.9	1247.9	1260.2	1266.2
40°	984.3	1002.6	1021.1	1036.3	1048.6	1073.1	1097.6	1128.4	1137.6	1146.7	1149.9
42.5°	824.8	843.3	873.8	895.3	913.8	953.6	987.3	1024.1	1033.3	1051.6	1057.8
45°	696.0	711.3	748.2	775.7	791.0	849.3	889.1	935.1	950.5	972.0	981.1
47.5°	576.4	604.0	640.7	674.5	696.0	757.3	809.5	858.5	880.0	904.5	916.8
50°	472.2	502.9	551.9	582.5	613.2	680.7	739.0	791.0	812.5	840.0	852.3
52.5°	386.4	420.1	466.1	499.7	533.4	604.0	665.3	714.5	742.0	760.5	778.8
55°	303.6	340.4	386.4	423.1	450.7	527.4	579.5	628.5	647.0	662.2	671.5
57.5°	236.1	263.6	309.6	340.4	374.1	441.4	493.7	530.4	545.7	564.2	570.2
60°	184.0	211.6	254.6	285.1	315.8	380.1	432.4	469.1	484.4	499.7	508.9
62.5°	147.1	174.8	214.6	242.3	269.8	328.1	374.1	410.9	429.2	444.6	453.9
65°	116.5	141.0	174.8	202.3	223.8	275.9	321.9	355.6	374.1	389.4	398.6
67.5°	92.0	113.5	144.1	162.5	184.0	226.8	266.8	297.4	312.8	331.1	340.4
70°	70.5	85.8	113.5	128.8	144.1	180.8	211.6	242.3	257.6	269.8	275.9
72.5°	52.0	64.3	85.8	98.1	107.3	138.0	162.5	184.0	196.3	208.6	214.6
75°	36.8	46.0	61.3	70.5	76.7	98.1	119.5	134.8	144.1	153.3	162.5
77.5°	24.5	30.7	39.8	46.0	52.0	67.5	79.8	92.0	101.3	110.3	113.5
80°	15.3	21.5	27.5	30.7	33.8	43.0	55.2	61.3	67.5	73.5	76.7
82.5°	9.2	12.3	15.3	18.5	21.5	27.5	33.8	39.8	43.0	49.0	52.0
85°	3.0	6.2	6.2	9.2	9.2	15.3	18.5	21.5	24.5	27.5	30.7
87.5°	0.0	0.0	3.0	3.0	3.0	3.0	6.2	6.2	6.2	6.2	6.2
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: P880580

CATALOG NUMBER: LD4C45D010 EU4459040 4LBDWNH

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9	1992.9
2.5°	2002.2	1992.9	1986.9	1983.7	2005.2	1977.7	1989.9	1992.9
5°	1989.9	1980.7	1974.6	1971.4	1989.9	1965.4	1974.6	1980.7
7.5°	1971.4	1965.4	1956.2	1953.1	1971.4	1943.9	1956.2	1959.2
10°	1950.1	1940.9	1934.7	1931.6	1946.9	1919.4	1931.6	1931.6
12.5°	1922.4	1916.4	1904.1	1904.1	1916.4	1891.9	1900.9	1900.9
15°	1885.6	1879.6	1867.3	1867.3	1879.6	1854.9	1864.1	1864.1
17.5°	1854.9	1848.9	1839.6	1836.6	1848.9	1824.4	1833.6	1830.4
20°	1830.4	1824.4	1812.1	1812.1	1821.3	1796.8	1805.9	1805.9
22.5°	1809.1	1805.9	1793.6	1793.6	1805.9	1781.4	1787.6	1781.4
25°	1775.3	1772.1	1759.9	1763.1	1769.1	1744.6	1753.8	1747.6
27.5°	1720.1	1720.1	1707.8	1704.8	1713.9	1692.5	1698.6	1695.6
30°	1634.3	1637.3	1622.0	1622.0	1625.0	1606.6	1615.8	1612.8
32.5°	1517.7	1520.8	1508.5	1505.5	1514.7	1499.3	1505.5	1505.5
35°	1389.0	1392.0	1382.7	1382.7	1392.0	1382.7	1382.7	1379.7
37.5°	1260.2	1266.2	1260.2	1263.2	1269.4	1260.2	1266.2	1263.2
40°	1155.9	1162.1	1152.9	1158.9	1165.1	1155.9	1165.1	1158.9
42.5°	1060.9	1070.1	1063.9	1070.1	1076.1	1070.1	1076.1	1067.1
45°	990.3	996.6	993.4	996.6	1002.6	999.6	1002.6	999.6
47.5°	922.8	935.1	929.1	935.1	944.3	938.3	944.3	935.1
50°	861.5	870.8	867.8	873.8	876.8	873.8	880.0	870.8
52.5°	781.8	791.0	788.0	788.0	794.0	788.0	794.0	788.0
55°	677.7	680.7	680.7	683.7	680.7	677.7	680.7	674.5
57.5°	576.4	582.5	573.4	582.5	579.5	576.4	576.4	570.2
60°	511.9	521.2	515.2	521.2	518.2	518.2	518.2	515.2
62.5°	459.9	466.1	459.9	462.9	462.9	462.9	459.9	456.9
65°	401.6	410.9	404.7	407.9	404.7	401.6	404.7	401.6
67.5°	343.4	346.4	346.4	343.4	343.4	343.4	343.4	337.3
70°	279.1	282.1	279.1	285.1	282.1	279.1	282.1	275.9
72.5°	217.6	220.8	217.6	220.8	217.6	217.6	217.6	217.6
75°	162.5	165.6	165.6	165.6	165.6	165.6	159.5	165.6
77.5°	116.5	116.5	116.5	119.5	116.5	116.5	116.5	116.5
80°	79.8	79.8	79.8	82.8	79.8	82.8	79.8	82.8
82.5°	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0
85°	27.5	30.7	30.7	27.5	27.5	27.5	27.5	27.5
87.5°	6.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)