

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P251734

Luminaire Tested: **LD4B50D010TE EU4B30509040 4LBLWW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251734
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-11)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B50D010TE EU4B30509040 4LBLWW1LI
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3650.0 lumens
Efficiency: N/A
Efficacy: 62.1 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.03 / 1.12
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

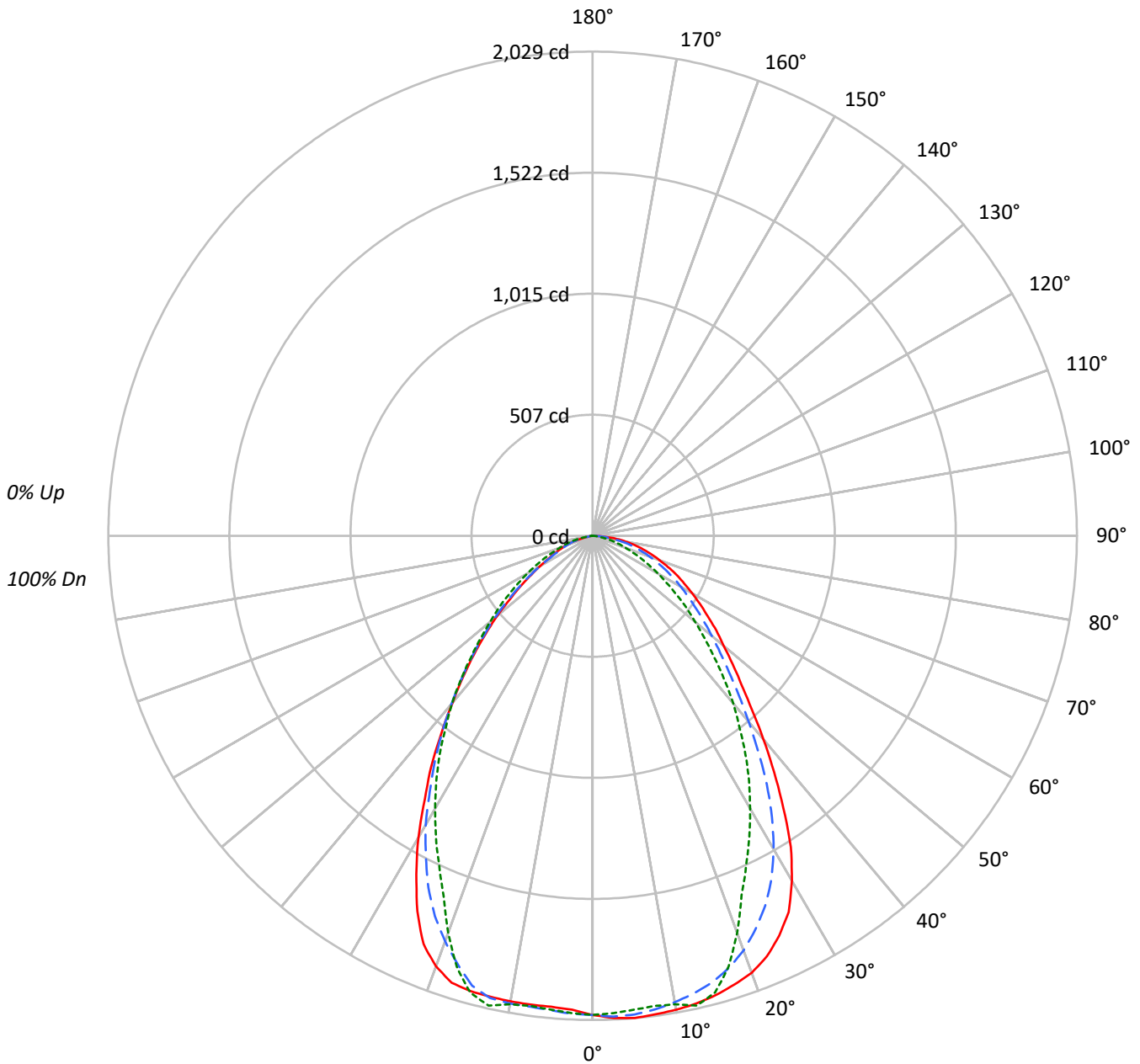
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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																			
1	111	107	103	100	108	105	102	99	101	98	96	97	95	93	93	91	90	88																			
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77																			
3	95	86	79	74	93	84	78	73	82	76	72	79	74	70	77	73	69	67																			
4	88	78	70	64	86	76	69	64	74	68	63	72	67	62	70	65	62	60																			
5	82	71	63	57	80	70	62	57	68	61	56	66	60	56	64	59	55	53																			
6	76	65	57	51	75	64	56	51	62	55	50	60	54	50	59	54	50	48																			
7	71	59	51	46	70	59	51	46	57	50	46	56	50	45	54	49	45	43																			
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	51	45	41	39																			
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36																			
10	59	47	40	35	58	47	40	35	46	39	35	45	39	35	44	39	35	33																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	195696	195696	195696
5°	198459	195005	193851
10°	199586	197260	196092
15°	201116	199925	199330
20°	202146	183520	199097
25°	198829	163687	186796
30°	187866	148434	164346
35°	165696	132763	140116
40°	141586	116498	116116
45°	121329	99428	96989
50°	108483	84815	79008
55°	100062	72536	62528
60°	93540	61399	49353
65°	89613	50918	40748
70°	84744	41118	34393
75°	82050	33249	24400
80°	79303	18184	6623
85°	69105	9840	3243



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	190.8	5.2
10°-20°	548.8	15.0
20°-30°	761.3	20.9
30°-40°	751.4	20.6
40°-50°	589.4	16.1
50°-60°	408.2	11.2
60°-70°	250.2	6.9
70°-80°	125.0	3.4
80°-90°	25.0	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°	1500.8	41.1
0°-40°	2252.2	61.7
0°-60°	3249.8	89.0
0°-90°	3650.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3650.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2008	2008	2008	2008	2008	
5°	2029	2014	1993	1996	1982	193
15°	1993	1937	1982	1952	1976	563
25°	1849	1711	1522	1628	1737	846
35°	1393	1272	1116	1151	1178	869
45°	880	807	721	712	704	688
55°	589	527	427	380	368	530
65°	389	336	221	165	177	384
75°	218	182	88	68	65	231
85°	62	35	9	3	3	70
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°	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0
2.5°	2022.7	2016.8	2013.9	2022.7	2019.8	2025.7	2022.7	2019.8	2013.9	2016.8	2016.8
5°	2028.6	2019.8	2016.8	2022.7	2022.7	2028.6	2025.7	2019.8	2013.9	2016.8	2013.9
7.5°	2022.7	2016.8	2016.8	2019.8	2016.8	2022.7	2016.8	2011.0	2005.1	2008.0	2002.1
10°	2016.8	2008.0	2008.0	2008.0	2008.0	2013.9	2008.0	1999.2	1990.3	1990.3	1984.5
12.5°	2008.0	1999.2	1999.2	2002.1	1996.2	2002.1	1996.2	1981.5	1972.7	1969.7	1963.8
15°	1993.3	1984.5	1984.5	1984.5	1978.6	1981.5	1972.7	1958.0	1946.2	1946.2	1937.3
17.5°	1972.7	1963.8	1960.9	1960.9	1952.1	1955.0	1946.2	1931.5	1913.8	1907.9	1899.1
20°	1949.1	1937.3	1931.5	1931.5	1922.6	1925.6	1913.8	1896.1	1872.6	1863.7	1849.0
22.5°	1907.9	1902.0	1893.2	1890.2	1881.4	1878.5	1866.7	1843.1	1822.5	1807.8	1784.2
25°	1849.0	1846.1	1837.2	1834.3	1822.5	1816.6	1804.9	1778.4	1757.7	1734.2	1710.6
27.5°	1778.4	1766.6	1760.7	1751.9	1740.1	1737.1	1722.4	1698.9	1666.5	1651.7	1622.3
30°	1669.4	1663.5	1657.6	1648.8	1637.0	1631.1	1622.3	1595.8	1569.3	1542.8	1516.3
32.5°	1545.8	1534.0	1525.1	1528.1	1513.4	1507.5	1492.8	1469.2	1445.6	1428.0	1398.5
35°	1392.7	1389.7	1386.8	1380.9	1369.1	1366.2	1354.4	1336.7	1310.2	1289.6	1271.9
37.5°	1248.4	1239.5	1233.7	1233.7	1221.9	1221.9	1213.0	1192.4	1177.7	1163.0	1139.4
40°	1112.9	1098.2	1098.2	1098.2	1086.4	1089.4	1083.5	1062.9	1048.2	1030.5	1015.8
42.5°	986.3	980.4	977.5	971.6	965.7	965.7	959.8	948.1	933.3	921.6	906.8
45°	880.3	877.4	874.5	871.5	865.6	862.7	859.7	842.1	833.2	821.5	806.7
47.5°	795.0	789.1	786.1	783.2	777.3	774.3	768.5	756.7	747.9	736.1	724.3
50°	715.5	712.5	709.6	709.6	703.7	700.7	694.9	686.0	671.3	665.4	650.7
52.5°	653.6	647.7	641.9	641.9	636.0	636.0	627.1	618.3	603.6	597.7	585.9
55°	588.9	585.9	583.0	583.0	577.1	574.1	571.2	559.4	547.6	538.8	527.0
57.5°	532.9	530.0	527.0	527.0	521.1	518.2	515.3	506.4	494.6	488.8	474.0
60°	479.9	479.9	477.0	474.0	471.1	468.1	465.2	456.4	447.5	438.7	426.9
62.5°	432.8	429.9	426.9	424.0	424.0	421.0	418.1	406.3	400.4	391.6	379.8
65°	388.6	382.8	382.8	379.8	379.8	376.9	373.9	362.1	356.3	347.4	335.6
67.5°	341.5	338.6	335.6	335.6	332.7	332.7	329.8	320.9	312.1	306.2	294.4
70°	297.4	297.4	294.4	294.4	291.5	288.5	288.5	282.7	273.8	265.0	253.2
72.5°	259.1	256.2	253.2	253.2	250.3	250.3	247.3	241.4	235.5	229.7	214.9
75°	217.9	214.9	214.9	214.9	212.0	212.0	209.0	203.2	197.3	191.4	182.5
77.5°	179.6	179.6	176.7	176.7	173.7	173.7	173.7	167.8	161.9	156.0	144.3
80°	141.3	141.3	141.3	138.4	135.4	135.4	135.4	129.5	123.7	117.8	108.9
82.5°	103.1	100.1	100.1	97.2	94.2	94.2	94.2	88.3	85.4	76.6	70.7
85°	61.8	58.9	58.9	55.9	53.0	53.0	53.0	50.1	44.2	41.2	35.3
87.5°	23.6	23.6	23.6	23.6	23.6	20.6	20.6	17.7	17.7	14.7	14.7
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°	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0
2.5°	2016.8	2013.9	2013.9	2011.0	2013.9	2008.0	2008.0	2008.0	2008.0	2002.1	2002.1
5°	2011.0	2011.0	2008.0	2005.1	2008.0	2002.1	2005.1	2002.1	2002.1	1993.3	1993.3
7.5°	1999.2	1996.2	1990.3	1987.4	1990.3	1987.4	1987.4	1987.4	1993.3	1987.4	1987.4
10°	1978.6	1975.6	1969.7	1966.8	1966.8	1963.8	1969.7	1975.6	1987.4	1993.3	2005.1
12.5°	1958.0	1952.1	1949.1	1949.1	1952.1	1952.1	1963.8	1978.6	2008.0	2016.8	2028.6
15°	1931.5	1928.5	1928.5	1937.3	1949.1	1958.0	1981.5	1990.3	1993.3	1981.5	1975.6
17.5°	1896.1	1896.1	1899.1	1907.9	1916.7	1916.7	1919.7	1913.8	1907.9	1893.2	1875.5
20°	1837.2	1834.3	1828.4	1828.4	1828.4	1816.6	1822.5	1801.9	1787.2	1769.5	1743.0
22.5°	1763.6	1748.9	1728.3	1713.6	1704.7	1698.9	1684.1	1660.6	1642.9	1631.1	1619.4
25°	1684.1	1660.6	1631.1	1607.6	1592.9	1589.9	1569.3	1548.7	1536.9	1522.2	1516.3
27.5°	1592.9	1566.4	1531.0	1507.5	1495.7	1486.9	1469.2	1448.6	1433.9	1422.1	1413.3
30°	1486.9	1460.4	1430.9	1401.5	1389.7	1375.0	1357.3	1342.6	1327.9	1319.0	1313.2
32.5°	1369.1	1342.6	1313.2	1292.5	1277.8	1266.0	1251.3	1236.6	1224.8	1218.9	1213.0
35°	1248.4	1221.9	1198.3	1177.7	1165.9	1157.1	1145.3	1127.7	1118.8	1115.9	1110.0
37.5°	1118.8	1101.2	1080.6	1062.9	1054.1	1042.3	1036.4	1021.7	1021.7	1009.9	1009.9
40°	998.1	986.3	965.7	951.0	945.1	936.3	927.5	921.6	918.6	915.7	912.7
42.5°	892.1	874.5	862.7	850.9	842.1	836.2	836.2	827.3	824.4	815.6	812.6
45°	795.0	786.1	765.5	756.7	753.7	744.9	742.0	736.1	727.2	721.4	718.4
47.5°	709.6	700.7	689.0	677.2	671.3	665.4	659.5	650.7	644.8	636.0	633.0
50°	638.9	624.2	612.4	603.6	594.7	591.8	585.9	574.1	568.2	559.4	559.4
52.5°	574.1	562.4	547.6	538.8	530.0	524.1	515.3	506.4	497.6	494.6	485.8
55°	518.2	503.5	488.8	477.0	468.1	459.3	456.4	444.6	432.8	426.9	421.0
57.5°	465.2	450.5	432.8	418.1	412.2	406.3	397.5	385.7	376.9	368.0	362.1
60°	412.2	400.4	382.8	368.0	362.1	353.3	344.5	332.7	323.9	315.0	309.2
62.5°	368.0	350.4	335.6	320.9	312.1	306.2	294.4	285.6	273.8	265.0	256.2
65°	323.9	306.2	291.5	276.8	270.9	262.0	253.2	241.4	229.7	220.8	209.0
67.5°	279.7	265.0	250.3	235.5	229.7	223.8	212.0	200.2	188.4	179.6	167.8
70°	241.4	226.7	212.0	200.2	194.3	188.4	176.7	164.9	156.0	144.3	135.4
72.5°	206.1	194.3	179.6	167.8	161.9	156.0	144.3	135.4	123.7	117.8	108.9
75°	170.8	159.0	147.2	135.4	129.5	123.7	114.8	106.0	97.2	88.3	82.4
77.5°	135.4	123.7	111.9	103.1	97.2	94.2	85.4	76.6	67.7	61.8	53.0
80°	100.1	88.3	79.5	70.7	64.8	61.8	53.0	47.1	41.2	32.4	29.4
82.5°	61.8	53.0	47.1	41.2	38.3	35.3	29.4	23.6	20.6	17.7	14.7
85°	32.4	29.4	23.6	20.6	17.7	17.7	14.7	11.8	8.8	8.8	5.9
87.5°	11.8	8.8	8.8	5.9	5.9	5.9	5.9	2.9	2.9	2.9	2.9
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°	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0
2.5°	1996.2	1999.2	2002.1	2005.1	2002.1	2002.1	2008.0	1996.2	2005.1	2005.1	1993.3
5°	1990.3	1996.2	1993.3	1999.2	1993.3	1993.3	1996.2	1990.3	1996.2	1996.2	1987.4
7.5°	1984.5	1990.3	1990.3	1993.3	1990.3	1990.3	1993.3	1984.5	1990.3	1990.3	1981.5
10°	2011.0	2016.8	2013.9	2011.0	2002.1	1996.2	1999.2	1984.5	1990.3	1990.3	1981.5
12.5°	2019.8	2016.8	2005.1	1999.2	1993.3	1987.4	1990.3	1978.6	1984.5	1984.5	1978.6
15°	1960.9	1955.0	1946.2	1949.1	1943.2	1940.3	1946.2	1940.3	1952.1	1958.0	1952.1
17.5°	1860.8	1857.8	1852.0	1852.0	1852.0	1854.9	1863.7	1863.7	1881.4	1893.2	1899.1
20°	1731.2	1728.3	1731.2	1737.1	1740.1	1751.9	1772.5	1784.2	1807.8	1828.4	1843.1
22.5°	1613.5	1619.4	1628.2	1640.0	1642.9	1657.6	1684.1	1695.9	1725.4	1748.9	1763.6
25°	1513.4	1522.2	1528.1	1536.9	1539.9	1557.5	1581.1	1595.8	1628.2	1645.9	1663.5
27.5°	1413.3	1425.0	1428.0	1439.8	1439.8	1457.4	1478.0	1492.8	1513.4	1531.0	1545.8
30°	1316.1	1319.0	1327.9	1330.8	1336.7	1354.4	1366.2	1375.0	1398.5	1407.4	1416.2
32.5°	1210.1	1221.9	1227.8	1230.7	1227.8	1242.5	1254.3	1260.2	1269.0	1280.8	1286.7
35°	1110.0	1115.9	1118.8	1124.7	1127.7	1130.6	1136.5	1139.4	1151.2	1154.2	1157.1
37.5°	1009.9	1018.7	1015.8	1018.7	1018.7	1021.7	1027.6	1024.6	1033.4	1036.4	1033.4
40°	909.8	909.8	915.7	912.7	915.7	912.7	918.6	918.6	918.6	921.6	918.6
42.5°	809.7	812.6	809.7	815.6	809.7	812.6	812.6	809.7	812.6	809.7	809.7
45°	718.4	718.4	718.4	718.4	712.5	712.5	718.4	715.5	712.5	709.6	706.6
47.5°	630.1	633.0	627.1	630.1	627.1	624.2	621.2	621.2	618.3	612.4	609.5
50°	556.5	550.6	547.6	550.6	547.6	544.7	541.8	535.9	532.9	527.0	524.1
52.5°	482.9	477.0	471.1	471.1	468.1	462.3	459.3	453.4	450.5	444.6	444.6
55°	418.1	412.2	406.3	403.4	397.5	391.6	388.6	382.8	379.8	373.9	368.0
57.5°	356.3	347.4	341.5	338.6	335.6	326.8	323.9	318.0	312.1	306.2	303.3
60°	300.3	291.5	282.7	279.7	276.8	267.9	265.0	256.2	253.2	247.3	244.4
62.5°	247.3	241.4	229.7	226.7	220.8	214.9	206.1	203.2	200.2	203.2	203.2
65°	200.2	191.4	182.5	179.6	173.7	167.8	164.9	161.9	164.9	164.9	167.8
67.5°	159.0	150.2	141.3	141.3	138.4	132.5	132.5	132.5	135.4	135.4	138.4
70°	126.6	120.7	114.8	111.9	111.9	108.9	111.9	111.9	114.8	114.8	114.8
72.5°	100.1	97.2	94.2	91.3	91.3	91.3	91.3	91.3	91.3	91.3	94.2
75°	76.6	73.6	70.7	70.7	67.7	67.7	67.7	67.7	67.7	67.7	64.8
77.5°	50.1	47.1	44.2	44.2	41.2	38.3	38.3	35.3	35.3	35.3	35.3
80°	26.5	23.6	20.6	17.7	17.7	14.7	14.7	14.7	14.7	11.8	11.8
82.5°	11.8	8.8	8.8	8.8	8.8	5.9	5.9	5.9	5.9	5.9	5.9
85°	5.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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



TEST NUMBER: P251734

CATALOG NUMBER: LD4B50D010TE EU4B30509040 4LBLWW1LI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0	2008.0
2.5°	1999.2	1993.3	1999.2	2002.1	1996.2	1993.3	1999.2	1987.4
5°	1996.2	1987.4	1990.3	1993.3	1987.4	1984.5	1990.3	1981.5
7.5°	1990.3	1987.4	1990.3	1993.3	1984.5	1984.5	1990.3	1981.5
10°	1990.3	1984.5	1987.4	1993.3	1987.4	1987.4	1993.3	1981.5
12.5°	1987.4	1978.6	1987.4	1990.3	1984.5	1984.5	1990.3	1978.6
15°	1966.8	1966.8	1969.7	1975.6	1972.7	1975.6	1984.5	1975.6
17.5°	1922.6	1928.5	1940.3	1949.1	1955.0	1960.9	1969.7	1963.8
20°	1869.6	1878.5	1893.2	1902.0	1913.8	1916.7	1931.5	1919.7
22.5°	1787.2	1804.9	1816.6	1825.5	1834.3	1843.1	1854.9	1852.0
25°	1687.1	1698.9	1707.7	1716.5	1728.3	1734.2	1740.1	1737.1
27.5°	1566.4	1572.3	1584.0	1589.9	1595.8	1601.7	1613.5	1598.8
30°	1433.9	1436.8	1442.7	1451.5	1451.5	1457.4	1463.3	1460.4
32.5°	1298.4	1298.4	1304.3	1310.2	1307.3	1310.2	1322.0	1307.3
35°	1165.9	1163.0	1171.8	1174.8	1174.8	1171.8	1180.7	1177.7
37.5°	1036.4	1039.3	1042.3	1045.2	1039.3	1045.2	1045.2	1039.3
40°	918.6	915.7	921.6	924.5	921.6	924.5	924.5	912.7
42.5°	812.6	806.7	809.7	812.6	809.7	812.6	809.7	803.8
45°	709.6	706.6	706.6	709.6	703.7	703.7	703.7	703.7
47.5°	612.4	609.5	612.4	612.4	606.5	606.5	609.5	606.5
50°	524.1	521.1	521.1	521.1	518.2	518.2	521.1	521.1
52.5°	444.6	438.7	438.7	438.7	438.7	438.7	441.6	435.8
55°	365.1	365.1	365.1	365.1	368.0	368.0	368.0	368.0
57.5°	300.3	303.3	303.3	306.2	303.3	306.2	306.2	303.3
60°	250.3	247.3	250.3	250.3	253.2	253.2	253.2	253.2
62.5°	206.1	206.1	206.1	209.0	209.0	209.0	212.0	209.0
65°	170.8	170.8	173.7	173.7	173.7	176.7	176.7	176.7
67.5°	141.3	141.3	141.3	141.3	144.3	144.3	147.2	144.3
70°	117.8	117.8	117.8	117.8	117.8	120.7	120.7	120.7
72.5°	94.2	94.2	94.2	94.2	97.2	97.2	97.2	97.2
75°	64.8	64.8	64.8	67.7	64.8	64.8	64.8	64.8
77.5°	32.4	32.4	32.4	32.4	32.4	29.4	29.4	29.4
80°	11.8	11.8	11.8	11.8	11.8	11.8	8.8	11.8
82.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	2.9
85°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)