

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: P251943

Luminaire Tested: **LD4B30D010 EU4B30509050 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251943
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B30D010 EU4B30509050 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2195.0 lumens
Efficiency: N/A
Efficacy: 78.4 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

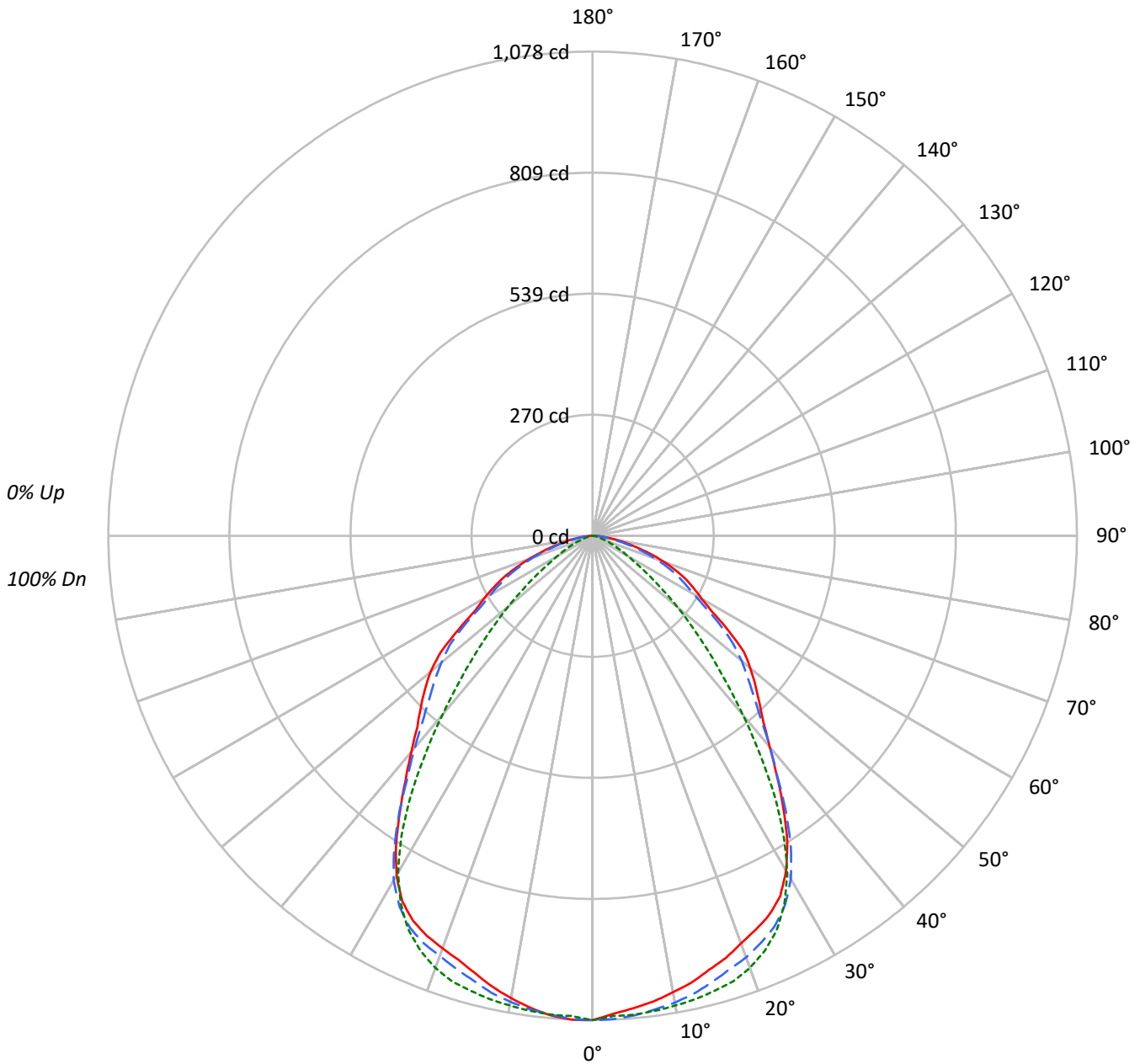
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251943

CATALOG NUMBER: LD4B30D010 EU4B30509050 4LBDW1H

Luminous Intensity Polar Plot





TEST NUMBER: P251943

CATALOG NUMBER: LD4B30D010 EU4B30509050 4LBDW1H

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	105109	105109	105109
5°	103240	104698	104864
10°	102138	105087	103454
15°	100957	105810	101784
20°	100155	106181	101358
25°	100103	104200	101705
30°	96915	97466	98220
35°	88041	83901	88838
40°	77898	66079	79794
45°	72262	50307	74550
50°	69441	37237	71442
55°	62868	25657	62018
60°	54654	17464	54343
65°	52809	12637	50134
70°	47757	8520	42543
75°	39349	5611	33739
80°	31654	3704	25143
85°	25942	1901	16661



TEST NUMBER: P251943

CATALOG NUMBER: LD4B30D010 EU4B30509050 4LBDW1H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	101.8	4.6
10°-20°	291.1	13.3
20°-30°	439.8	20.0
30°-40°	460.3	21.0
40°-50°	372.8	17.0
50°-60°	271.1	12.4
60°-70°	167.2	7.6
70°-80°	75.6	3.4
80°-90°	15.4	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°	832.7	37.9
0°-40°	1293.0	58.9
0°-60°	1936.9	88.2
0°-90°	2195.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2195.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1078	1078	1078	1078	1078	
5°	1055	1072	1070	1070	1072	100
15°	1001	1029	1049	1025	1009	283
25°	931	959	969	962	946	427
35°	740	750	705	750	747	461
45°	524	508	365	514	541	408
55°	370	347	151	350	365	330
65°	229	206	55	202	217	224
75°	104	90	15	78	90	113
85°	23	18	2	13	15	27
90°	0	0	0	0	0	



TEST NUMBER: P251943

CATALOG NUMBER: LD4B30D010 EU4B30509050 4LBDW1H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5
2.5°	1065.3	1065.3	1075.2	1086.8	1076.9	1066.9	1073.6	1070.2	1081.9	1081.9	1076.9
5°	1055.3	1058.6	1066.9	1076.9	1068.6	1058.6	1066.9	1063.6	1075.2	1075.2	1071.9
7.5°	1045.4	1047.0	1057.0	1068.6	1060.3	1050.3	1057.0	1055.3	1065.3	1066.9	1063.6
10°	1032.1	1033.7	1043.7	1055.3	1047.0	1038.7	1045.4	1043.7	1057.0	1057.0	1055.3
12.5°	1018.8	1020.5	1030.4	1040.4	1032.1	1023.8	1030.4	1030.4	1043.7	1045.4	1043.7
15°	1000.6	1003.9	1012.2	1022.1	1017.1	1007.2	1013.8	1013.8	1025.4	1028.8	1028.8
17.5°	985.6	987.3	995.6	1005.5	998.9	990.6	997.2	997.2	1008.8	1012.2	1012.2
20°	965.7	969.0	977.3	987.3	982.3	975.7	980.6	980.6	993.9	997.2	998.9
22.5°	949.1	952.4	959.1	972.3	964.0	959.1	965.7	964.0	979.0	980.6	980.6
25°	930.9	934.2	942.5	950.8	945.8	940.8	945.8	945.8	957.4	959.1	959.1
27.5°	904.3	906.0	914.3	922.6	917.6	910.9	917.6	915.9	927.5	929.2	927.5
30°	861.2	864.5	867.8	879.4	874.4	869.5	876.1	872.8	884.4	884.4	882.7
32.5°	806.4	806.4	813.1	821.3	814.7	811.4	816.4	818.0	826.3	826.3	821.3
35°	740.0	743.4	748.3	753.3	748.3	745.0	750.0	748.3	758.3	755.0	750.0
37.5°	673.7	675.3	680.3	686.9	680.3	675.3	677.0	675.3	683.6	683.6	675.3
40°	612.3	615.6	618.9	625.6	618.9	615.6	617.3	612.3	622.2	618.9	613.9
42.5°	562.5	564.2	569.1	572.5	565.8	564.2	565.8	562.5	567.5	564.2	554.2
45°	524.3	524.3	526.0	531.0	524.3	522.7	522.7	519.4	524.3	517.7	507.7
47.5°	491.1	492.8	494.5	497.8	492.8	487.8	489.5	482.9	486.2	481.2	467.9
50°	458.0	461.3	462.9	466.3	461.3	458.0	459.6	453.0	453.0	444.7	433.1
52.5°	424.8	426.4	424.8	428.1	424.8	419.8	421.5	414.8	414.8	404.9	393.3
55°	370.0	371.7	373.3	376.7	373.3	368.4	371.7	366.7	366.7	360.1	346.8
57.5°	315.3	316.9	318.6	320.2	320.2	316.9	318.6	315.3	313.6	308.6	298.7
60°	280.4	280.4	280.4	282.1	280.4	278.8	278.8	275.4	275.4	268.8	258.8
62.5°	253.9	255.5	255.5	257.2	255.5	253.9	252.2	248.9	247.2	240.6	232.3
65°	229.0	229.0	227.3	230.6	229.0	227.3	227.3	224.0	220.7	214.0	205.8
67.5°	199.1	200.8	199.1	200.8	200.8	199.1	197.5	194.1	192.5	187.5	177.5
70°	167.6	167.6	167.6	169.2	167.6	167.6	169.2	164.3	162.6	156.0	147.7
72.5°	136.1	137.7	137.7	136.1	137.7	134.4	134.4	134.4	132.7	126.1	117.8
75°	104.5	106.2	106.2	107.9	106.2	104.5	104.5	102.9	101.2	96.2	89.6
77.5°	78.0	78.0	79.6	79.6	79.6	78.0	78.0	74.7	74.7	71.3	64.7
80°	56.4	56.4	54.8	56.4	56.4	54.8	54.8	53.1	53.1	49.8	44.8
82.5°	36.5	38.2	38.2	38.2	38.2	36.5	36.5	36.5	34.8	33.2	29.9
85°	23.2	23.2	23.2	23.2	24.9	23.2	24.9	23.2	23.2	19.9	18.3
87.5°	10.0	10.0	10.0	11.6	11.6	10.0	10.0	10.0	10.0	10.0	8.3
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: P251943

CATALOG NUMBER: LD4B30D010 EU4B30509050 4LBDW1H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5
2.5°	1076.9	1078.5	1073.6	1080.2	1075.2	1076.9	1078.5	1076.9	1070.2	1070.2	1088.5
5°	1070.2	1073.6	1068.6	1076.9	1073.6	1073.6	1076.9	1075.2	1068.6	1070.2	1086.8
7.5°	1063.6	1068.6	1065.3	1073.6	1068.6	1068.6	1071.9	1071.9	1065.3	1066.9	1081.9
10°	1053.6	1060.3	1058.6	1066.9	1061.9	1061.9	1066.9	1066.9	1060.3	1061.9	1076.9
12.5°	1045.4	1052.0	1050.3	1058.6	1055.3	1057.0	1058.6	1061.9	1053.6	1057.0	1070.2
15°	1032.1	1038.7	1038.7	1047.0	1043.7	1047.0	1050.3	1055.3	1048.7	1048.7	1061.9
17.5°	1017.1	1025.4	1025.4	1032.1	1032.1	1033.7	1040.4	1045.4	1038.7	1040.4	1052.0
20°	1000.6	1010.5	1010.5	1018.8	1017.1	1020.5	1025.4	1030.4	1023.8	1023.8	1037.1
22.5°	984.0	992.3	993.9	998.9	998.9	1000.6	1005.5	1008.8	1000.6	1000.6	1013.8
25°	960.7	969.0	970.7	974.0	970.7	970.7	974.0	977.3	969.0	969.0	980.6
27.5°	929.2	937.5	937.5	935.8	932.5	934.2	932.5	934.2	925.9	924.2	935.8
30°	882.7	887.7	887.7	886.1	881.1	881.1	876.1	877.8	866.1	866.1	876.1
32.5°	819.7	824.7	821.3	818.0	811.4	808.1	804.8	803.1	791.5	791.5	803.1
35°	745.0	748.3	743.4	736.7	728.4	723.4	718.5	711.8	703.5	705.2	711.8
37.5°	668.7	668.7	662.1	648.8	642.1	633.8	625.6	625.6	612.3	610.6	615.6
40°	604.0	597.3	585.7	567.5	555.9	547.6	536.0	529.3	519.4	519.4	527.7
42.5°	545.9	532.6	517.7	492.8	481.2	471.2	456.3	449.7	438.1	436.4	441.4
45°	494.5	481.2	459.6	433.1	418.1	406.5	385.0	376.7	366.7	365.0	368.4
47.5°	453.0	438.1	411.5	376.7	361.7	346.8	325.2	313.6	305.3	300.3	305.3
50°	416.5	396.6	368.4	331.9	311.9	298.7	272.1	260.5	248.9	245.6	247.2
52.5°	376.7	356.7	326.9	288.7	270.5	250.6	225.7	209.1	199.1	194.1	199.1
55°	333.5	313.6	283.7	245.6	225.7	207.4	180.9	167.6	156.0	151.0	156.0
57.5°	287.1	268.8	242.3	204.1	185.8	169.2	144.4	131.1	119.5	116.2	119.5
60°	247.2	232.3	205.8	169.2	154.3	136.1	114.5	101.2	91.3	89.6	91.3
62.5°	220.7	204.1	179.2	144.4	129.4	114.5	94.6	81.3	73.0	71.3	73.0
65°	194.1	175.9	152.7	122.8	107.9	96.2	76.3	64.7	56.4	54.8	56.4
67.5°	164.3	147.7	127.8	101.2	89.6	78.0	61.4	49.8	43.1	41.5	43.1
70°	136.1	121.1	101.2	81.3	69.7	61.4	46.5	38.2	31.5	29.9	31.5
72.5°	107.9	94.6	78.0	61.4	54.8	46.5	36.5	28.2	23.2	21.6	23.2
75°	83.0	73.0	59.7	44.8	39.8	34.8	24.9	19.9	16.6	14.9	16.6
77.5°	58.1	51.4	41.5	33.2	28.2	24.9	18.3	13.3	11.6	10.0	11.6
80°	39.8	34.8	28.2	21.6	18.3	14.9	11.6	8.3	6.6	6.6	6.6
82.5°	26.5	21.6	16.6	13.3	11.6	10.0	6.6	5.0	5.0	3.3	3.3
85°	14.9	13.3	10.0	8.3	6.6	5.0	3.3	3.3	1.7	1.7	1.7
87.5°	6.6	5.0	3.3	3.3	1.7	1.7	1.7	1.7	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: P251943

CATALOG NUMBER: LD4B30D010 EU4B30509050 4LBDW1H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5
2.5°	1083.5	1078.5	1085.2	1078.5	1075.2	1078.5	1075.2	1085.2	1076.9	1070.2	1076.9
5°	1081.9	1075.2	1081.9	1076.9	1071.9	1073.6	1070.2	1080.2	1070.2	1065.3	1068.6
7.5°	1078.5	1073.6	1076.9	1071.9	1066.9	1068.6	1065.3	1073.6	1063.6	1058.6	1061.9
10°	1073.6	1068.6	1070.2	1066.9	1061.9	1061.9	1058.6	1065.3	1053.6	1047.0	1050.3
12.5°	1066.9	1060.3	1063.6	1058.6	1052.0	1052.0	1048.7	1053.6	1042.0	1035.4	1037.1
15°	1058.6	1052.0	1052.0	1047.0	1040.4	1040.4	1033.7	1038.7	1025.4	1018.8	1018.8
17.5°	1048.7	1040.4	1040.4	1035.4	1027.1	1025.4	1020.5	1025.4	1010.5	1003.9	1003.9
20°	1033.7	1027.1	1025.4	1022.1	1013.8	1012.2	1005.5	1007.2	995.6	990.6	988.9
22.5°	1013.8	1007.2	1008.8	1003.9	997.2	995.6	988.9	993.9	982.3	977.3	979.0
25°	979.0	975.7	979.0	977.3	972.3	972.3	969.0	972.3	962.4	959.1	960.7
27.5°	939.2	937.5	939.2	939.2	935.8	935.8	935.8	940.8	930.9	929.2	929.2
30°	881.1	881.1	882.7	884.4	884.4	887.7	886.1	892.7	886.1	882.7	886.1
32.5°	804.8	811.4	816.4	816.4	816.4	819.7	823.0	828.0	821.3	823.0	823.0
35°	718.5	723.4	726.8	735.1	730.1	741.7	745.0	751.7	750.0	753.3	751.7
37.5°	622.2	628.9	635.5	647.1	645.5	658.7	665.4	678.6	675.3	682.0	685.3
40°	532.6	542.6	552.5	560.8	567.5	580.8	594.0	610.6	615.6	620.6	622.2
42.5°	446.3	456.3	472.9	484.5	494.5	516.0	534.3	554.2	559.2	569.1	572.5
45°	376.7	385.0	404.9	419.8	428.1	459.6	481.2	506.1	514.4	526.0	531.0
47.5°	311.9	326.9	346.8	365.0	376.7	409.8	438.1	464.6	476.2	489.5	496.1
50°	255.5	272.1	298.7	315.3	331.9	368.4	399.9	428.1	439.7	454.6	461.3
52.5°	209.1	227.3	252.2	270.5	288.7	326.9	360.1	386.6	401.5	411.5	421.5
55°	164.3	184.2	209.1	229.0	243.9	285.4	313.6	340.2	350.1	358.4	363.4
57.5°	127.8	142.7	167.6	184.2	202.4	238.9	267.1	287.1	295.4	305.3	308.6
60°	99.6	114.5	137.7	154.3	170.9	205.8	234.0	253.9	262.2	270.5	275.4
62.5°	79.6	94.6	116.2	131.1	146.0	177.5	202.4	222.3	232.3	240.6	245.6
65°	63.1	76.3	94.6	109.5	121.1	149.3	174.2	192.5	202.4	210.7	215.7
67.5°	49.8	61.4	78.0	87.9	99.6	122.8	144.4	161.0	169.2	179.2	184.2
70°	38.2	46.5	61.4	69.7	78.0	97.9	114.5	131.1	139.4	146.0	149.3
72.5°	28.2	34.8	46.5	53.1	58.1	74.7	87.9	99.6	106.2	112.8	116.2
75°	19.9	24.9	33.2	38.2	41.5	53.1	64.7	73.0	78.0	83.0	87.9
77.5°	13.3	16.6	21.6	24.9	28.2	36.5	43.1	49.8	54.8	59.7	61.4
80°	8.3	11.6	14.9	16.6	18.3	23.2	29.9	33.2	36.5	39.8	41.5
82.5°	5.0	6.6	8.3	10.0	11.6	14.9	18.3	21.6	23.2	26.5	28.2
85°	1.7	3.3	3.3	5.0	5.0	8.3	10.0	11.6	13.3	14.9	16.6
87.5°	0.0	0.0	1.7	1.7	1.7	1.7	3.3	3.3	3.3	3.3	3.3
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: P251943

CATALOG NUMBER: LD4B30D010 EU4B30509050 4LBDW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5	1078.5
2.5°	1083.5	1078.5	1075.2	1073.6	1085.2	1070.2	1076.9	1078.5
5°	1076.9	1071.9	1068.6	1066.9	1076.9	1063.6	1068.6	1071.9
7.5°	1066.9	1063.6	1058.6	1057.0	1066.9	1052.0	1058.6	1060.3
10°	1055.3	1050.3	1047.0	1045.4	1053.6	1038.7	1045.4	1045.4
12.5°	1040.4	1037.1	1030.4	1030.4	1037.1	1023.8	1028.8	1028.8
15°	1020.5	1017.1	1010.5	1010.5	1017.1	1003.9	1008.8	1008.8
17.5°	1003.9	1000.6	995.6	993.9	1000.6	987.3	992.3	990.6
20°	990.6	987.3	980.6	980.6	985.6	972.3	977.3	977.3
22.5°	979.0	977.3	970.7	970.7	977.3	964.0	967.4	964.0
25°	960.7	959.1	952.4	954.1	957.4	944.1	949.1	945.8
27.5°	930.9	930.9	924.2	922.6	927.5	915.9	919.2	917.6
30°	884.4	886.1	877.8	877.8	879.4	869.5	874.4	872.8
32.5°	821.3	823.0	816.4	814.7	819.7	811.4	814.7	814.7
35°	751.7	753.3	748.3	748.3	753.3	748.3	748.3	746.7
37.5°	682.0	685.3	682.0	683.6	686.9	682.0	685.3	683.6
40°	625.6	628.9	623.9	627.2	630.5	625.6	630.5	627.2
42.5°	574.1	579.1	575.8	579.1	582.4	579.1	582.4	577.4
45°	536.0	539.3	537.6	539.3	542.6	540.9	542.6	540.9
47.5°	499.4	506.1	502.8	506.1	511.1	507.7	511.1	506.1
50°	466.3	471.2	469.6	472.9	474.6	472.9	476.2	471.2
52.5°	423.1	428.1	426.4	426.4	429.8	426.4	429.8	426.4
55°	366.7	368.4	368.4	370.0	368.4	366.7	368.4	365.0
57.5°	311.9	315.3	310.3	315.3	313.6	311.9	311.9	308.6
60°	277.1	282.1	278.8	282.1	280.4	280.4	280.4	278.8
62.5°	248.9	252.2	248.9	250.6	250.6	250.6	248.9	247.2
65°	217.4	222.3	219.0	220.7	219.0	217.4	219.0	217.4
67.5°	185.8	187.5	187.5	185.8	185.8	185.8	185.8	182.5
70°	151.0	152.7	151.0	154.3	152.7	151.0	152.7	149.3
72.5°	117.8	119.5	117.8	119.5	117.8	117.8	117.8	117.8
75°	87.9	89.6	89.6	89.6	89.6	89.6	86.3	89.6
77.5°	63.1	63.1	63.1	64.7	63.1	63.1	63.1	63.1
80°	43.1	43.1	43.1	44.8	43.1	44.8	43.1	44.8
82.5°	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
85°	14.9	16.6	16.6	14.9	14.9	14.9	14.9	14.9
87.5°	3.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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













(END OF REPORT)