

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: P251795

Luminaire Tested: **LD4B40D010 EU4B30509024 4LBLWW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251795  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-12)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B40D010 EU4B30509024 4LBLWW1H  
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2259.0 lumens  
Efficiency: N/A  
Efficacy: 52.5 lumens/watt  
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

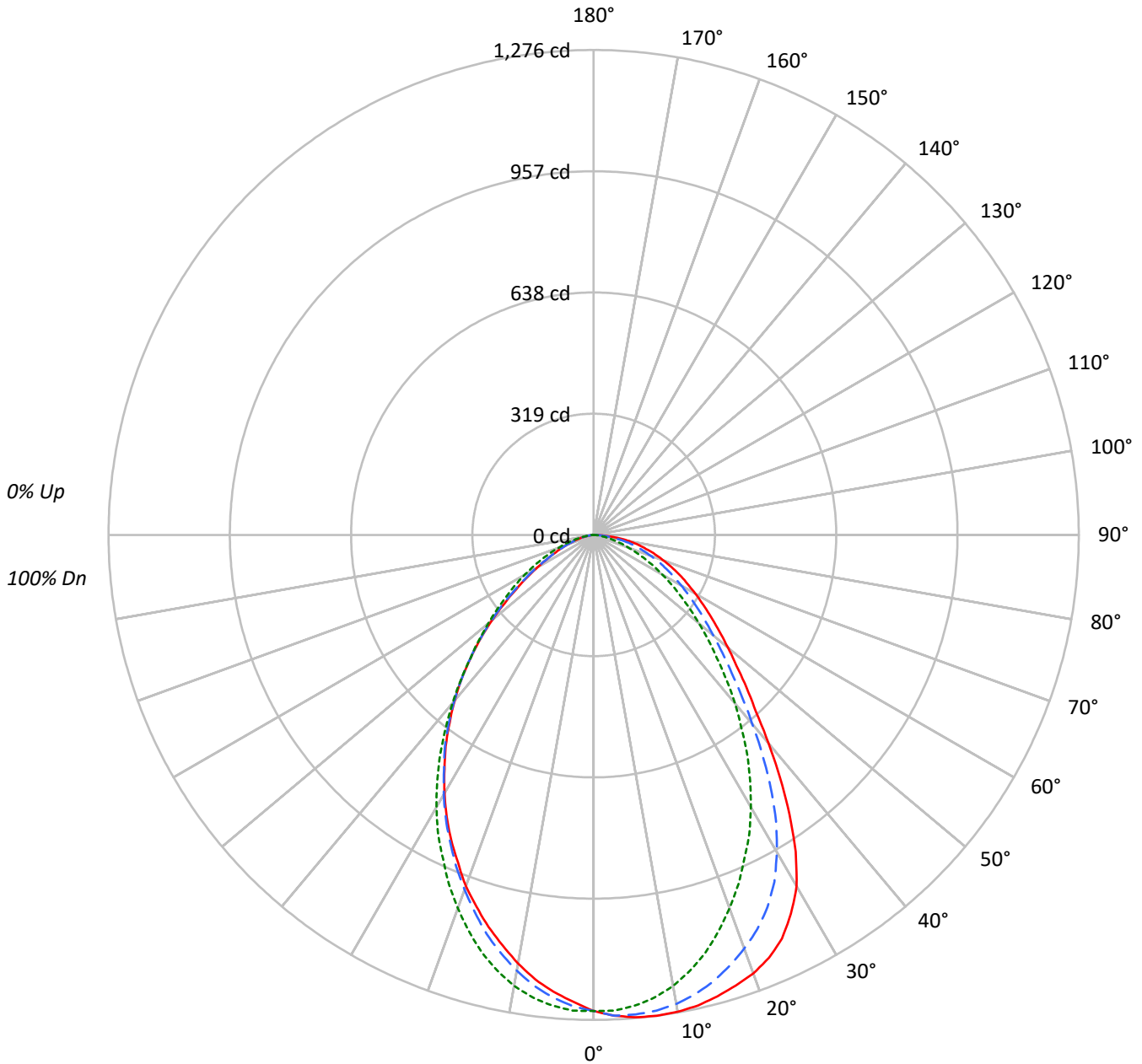
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				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	100	100	100
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88	88	88	88
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76	76	76	76
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67	67	67	67
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59	59	59	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52	52	52	52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47	47	47	47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42	42	42	42
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38	38	38	38
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35	35	35	35
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32	32	32	32

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	122095	122095	122095
5°	124636	121623	118042
10°	126077	119209	113301
15°	126796	114739	107737
20°	127338	108349	101950
25°	126018	100941	95339
30°	120165	93055	88284
35°	106863	83698	80724
40°	90977	73560	72339
45°	78368	63221	62959
50°	69850	54643	52899
55°	64193	47151	42240
60°	60112	40582	33058
65°	57790	34222	25782
70°	55479	27469	20858
75°	53696	21765	15966
80°	54103	15153	9709
85°	45287	10735	4361



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	117.3	5.2
10°-20°	322.4	14.3
20°-30°	450.9	20.0
30°-40°	463.5	20.5
40°-50°	376.2	16.7
50°-60°	264.9	11.7
60°-70°	163.1	7.2
70°-80°	81.4	3.6
80°-90°	19.3	0.9
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°	890.6	39.4
0°-40°	1354.1	59.9
0°-60°	1995.1	88.3
0°-90°	2259.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2259.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1253	1253	1253	1253	1253	
5°	1274	1266	1243	1222	1207	122
15°	1257	1216	1137	1087	1068	355
25°	1172	1081	939	892	887	536
35°	898	811	704	682	678	559
45°	569	513	459	459	457	442
55°	378	332	278	254	249	340
65°	251	210	148	114	112	248
75°	143	112	58	42	42	152
85°	40	27	10	6	4	47
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°	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8
2.5°	1266.3	1268.2	1262.5	1268.2	1260.5	1264.4	1266.3	1262.5	1258.6	1266.3	1266.3
5°	1274.0	1274.0	1268.2	1276.0	1266.3	1268.2	1272.1	1266.3	1260.5	1268.2	1266.3
7.5°	1276.0	1276.0	1268.2	1276.0	1266.3	1268.2	1270.2	1264.4	1258.6	1264.4	1262.5
10°	1274.0	1272.1	1266.3	1274.0	1264.4	1264.4	1266.3	1260.5	1250.9	1256.7	1252.8
12.5°	1268.2	1268.2	1260.5	1268.2	1254.8	1254.8	1256.7	1249.0	1241.3	1241.3	1237.4
15°	1256.7	1256.7	1249.0	1254.8	1243.2	1243.2	1241.3	1233.6	1223.9	1223.9	1216.2
17.5°	1243.2	1243.2	1235.5	1241.3	1227.8	1227.8	1225.8	1214.3	1200.8	1198.9	1189.2
20°	1227.8	1227.8	1218.1	1222.0	1206.6	1206.6	1204.6	1191.1	1175.7	1171.9	1158.4
22.5°	1204.6	1204.6	1195.0	1196.9	1181.5	1179.6	1177.7	1162.2	1146.8	1141.0	1123.7
25°	1171.9	1169.9	1162.2	1162.2	1146.8	1143.0	1139.1	1123.7	1108.3	1096.7	1081.3
27.5°	1123.7	1125.6	1116.0	1117.9	1098.6	1094.8	1092.8	1073.6	1056.2	1044.7	1029.2
30°	1067.8	1062.0	1052.4	1052.4	1037.0	1035.0	1031.2	1013.8	994.6	981.1	963.7
32.5°	988.8	986.8	977.2	977.2	959.9	959.9	952.1	934.8	917.5	909.7	892.4
35°	898.2	896.3	888.5	888.5	873.1	875.1	867.3	853.8	836.5	824.9	811.4
37.5°	805.7	803.7	796.0	798.0	784.5	784.5	778.7	765.2	751.7	745.9	728.6
40°	715.1	713.1	703.5	709.3	697.7	693.9	691.9	682.3	666.9	659.2	649.5
42.5°	632.2	634.1	624.5	628.3	618.7	614.8	612.9	605.2	593.6	585.9	576.3
45°	568.6	564.7	560.9	560.9	551.2	549.3	547.4	537.8	530.0	522.3	512.7
47.5°	508.8	505.0	501.1	503.1	495.3	493.4	489.6	481.9	472.2	468.4	458.7
50°	460.7	458.7	452.9	452.9	445.2	443.3	439.5	433.7	424.0	418.3	410.5
52.5°	416.3	416.3	410.5	408.6	402.8	400.9	399.0	391.3	383.6	375.8	368.1
55°	377.8	375.8	372.0	372.0	364.3	362.4	360.4	352.7	345.0	339.2	331.5
57.5°	341.2	341.2	337.3	337.3	331.5	327.7	327.7	320.0	310.3	306.5	296.8
60°	308.4	308.4	304.5	304.5	298.8	298.8	294.9	287.2	281.4	273.7	266.0
62.5°	277.5	279.5	275.6	273.7	267.9	266.0	266.0	260.2	250.6	244.8	237.1
65°	250.6	248.6	246.7	244.8	239.0	237.1	237.1	229.4	223.6	215.9	210.1
67.5°	221.7	221.7	217.8	217.8	213.9	212.0	208.2	202.4	196.6	190.8	185.0
70°	194.7	194.7	192.7	192.7	187.0	185.0	183.1	177.3	171.5	165.8	158.0
72.5°	169.6	167.7	165.8	165.8	161.9	160.0	158.0	152.3	146.5	140.7	134.9
75°	142.6	142.6	140.7	140.7	136.8	134.9	134.9	131.1	123.4	119.5	111.8
77.5°	119.5	119.5	117.6	117.6	113.7	113.7	111.8	106.0	102.2	96.4	92.5
80°	96.4	94.4	94.4	92.5	88.7	88.7	86.7	84.8	79.0	75.2	69.4
82.5°	67.5	67.5	67.5	65.5	63.6	63.6	61.7	57.8	54.0	52.0	46.3
85°	40.5	40.5	38.5	36.6	38.5	36.6	34.7	32.8	30.8	28.9	27.0
87.5°	17.3	17.3	15.4	15.4	15.4	15.4	15.4	13.5	11.6	11.6	9.6
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°	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8
2.5°	1254.8	1260.5	1258.6	1256.7	1252.8	1252.8	1252.8	1250.9	1252.8	1252.8	1249.0
5°	1254.8	1258.6	1256.7	1252.8	1249.0	1249.0	1247.0	1243.2	1243.2	1243.2	1235.5
7.5°	1249.0	1252.8	1247.0	1243.2	1239.3	1235.5	1235.5	1229.7	1229.7	1227.8	1220.1
10°	1237.4	1239.3	1231.6	1227.8	1222.0	1220.1	1216.2	1208.5	1206.6	1204.6	1196.9
12.5°	1220.1	1222.0	1212.3	1204.6	1196.9	1195.0	1191.1	1181.5	1177.7	1173.8	1164.2
15°	1195.0	1195.0	1183.4	1173.8	1166.1	1164.2	1154.5	1144.9	1141.0	1137.2	1123.7
17.5°	1166.1	1164.2	1148.7	1139.1	1129.5	1125.6	1116.0	1104.4	1096.7	1092.8	1081.3
20°	1135.3	1129.5	1112.1	1102.5	1090.9	1085.1	1075.5	1060.1	1052.4	1044.7	1033.1
22.5°	1098.6	1090.9	1071.6	1058.2	1046.6	1040.8	1027.3	1013.8	1002.3	994.6	981.1
25°	1054.3	1044.7	1023.5	1006.1	996.5	990.7	977.2	961.8	950.2	938.7	927.1
27.5°	1002.3	990.7	969.5	952.1	942.5	932.9	923.2	905.9	896.3	886.6	873.1
30°	938.7	925.2	905.9	890.5	878.9	871.2	859.6	844.2	832.6	826.9	813.4
32.5°	869.3	853.8	836.5	821.1	815.3	805.7	796.0	780.6	771.0	765.2	755.6
35°	792.2	780.6	761.3	749.8	740.1	736.3	728.6	713.1	709.3	703.5	691.9
37.5°	711.2	701.6	688.1	678.5	670.7	666.9	659.2	649.5	643.8	638.0	632.2
40°	636.1	628.3	616.8	609.1	599.4	593.6	593.6	582.1	578.2	578.2	572.4
42.5°	562.8	559.0	549.3	537.8	535.8	530.0	528.1	522.3	518.5	516.5	514.6
45°	501.1	495.3	485.7	479.9	474.1	474.1	468.4	462.6	460.7	458.7	456.8
47.5°	447.2	439.5	431.7	426.0	422.1	420.2	414.4	410.5	408.6	408.6	406.7
50°	399.0	393.2	385.5	379.7	375.8	372.0	368.1	364.3	362.4	360.4	360.4
52.5°	358.5	350.8	343.1	337.3	331.5	329.6	325.7	321.9	320.0	318.0	316.1
55°	321.9	316.1	306.5	300.7	294.9	294.9	289.1	283.3	279.5	277.5	275.6
57.5°	287.2	281.4	271.8	266.0	262.1	258.3	254.4	250.6	246.7	242.9	239.0
60°	256.3	250.6	240.9	233.2	231.3	227.4	223.6	215.9	212.0	208.2	204.3
62.5°	227.4	219.7	212.0	204.3	202.4	198.5	192.7	187.0	181.2	177.3	171.5
65°	200.5	194.7	185.0	179.3	173.5	171.5	165.8	158.0	152.3	148.4	142.6
67.5°	175.4	167.7	158.0	152.3	148.4	144.6	138.8	133.0	127.2	121.4	115.6
70°	150.3	144.6	134.9	129.1	125.3	121.4	115.6	107.9	102.2	96.4	92.5
72.5°	127.2	119.5	111.8	106.0	102.2	98.3	92.5	86.7	81.0	77.1	71.3
75°	106.0	98.3	92.5	84.8	82.9	79.0	73.2	67.5	61.7	57.8	54.0
77.5°	84.8	79.0	71.3	67.5	63.6	59.8	55.9	50.1	46.3	40.5	36.6
80°	63.6	57.8	52.0	48.2	44.3	42.4	38.5	34.7	30.8	27.0	25.1
82.5°	42.4	38.5	32.8	30.8	28.9	27.0	23.1	21.2	19.3	17.3	15.4
85°	23.1	21.2	19.3	15.4	15.4	13.5	11.6	11.6	9.6	9.6	7.7
87.5°	9.6	7.7	7.7	5.8	5.8	5.8	3.9	3.9	3.9	1.9	1.9
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°	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8
2.5°	1250.9	1243.2	1243.2	1243.2	1237.4	1239.3	1241.3	1243.2	1241.3	1235.5	1241.3
5°	1237.4	1229.7	1229.7	1225.8	1222.0	1222.0	1222.0	1223.9	1222.0	1216.2	1218.1
7.5°	1220.1	1210.4	1208.5	1204.6	1200.8	1198.9	1198.9	1198.9	1196.9	1189.2	1193.1
10°	1193.1	1183.4	1179.6	1177.7	1171.9	1169.9	1168.0	1166.1	1164.2	1156.5	1160.3
12.5°	1160.3	1152.6	1144.9	1143.0	1137.2	1133.3	1131.4	1131.4	1127.5	1119.8	1123.7
15°	1121.8	1110.2	1104.4	1100.6	1094.8	1090.9	1087.1	1089.0	1087.1	1079.4	1081.3
17.5°	1075.5	1063.9	1058.2	1056.2	1048.5	1044.7	1042.7	1042.7	1040.8	1033.1	1035.0
20°	1025.4	1013.8	1010.0	1006.1	1002.3	998.4	996.5	994.6	992.6	984.9	990.7
22.5°	975.3	961.8	956.0	956.0	948.3	946.4	944.4	946.4	944.4	936.7	940.6
25°	923.2	909.7	905.9	900.1	896.3	894.3	894.3	894.3	892.4	888.5	892.4
27.5°	865.4	855.8	850.0	848.1	844.2	842.3	840.4	842.3	842.3	836.5	840.4
30°	807.6	799.9	796.0	794.1	788.3	786.4	788.3	788.3	788.3	782.5	788.3
32.5°	749.8	744.0	742.1	736.3	732.4	732.4	732.4	734.3	732.4	728.6	734.3
35°	691.9	684.2	682.3	680.4	680.4	676.5	680.4	678.5	682.3	676.5	680.4
37.5°	630.3	626.4	624.5	624.5	620.6	622.6	622.6	622.6	626.4	620.6	624.5
40°	572.4	568.6	568.6	568.6	566.7	566.7	566.7	568.6	570.5	566.7	570.5
42.5°	514.6	512.7	512.7	510.8	508.8	510.8	512.7	512.7	514.6	510.8	512.7
45°	458.7	456.8	458.7	456.8	456.8	454.9	456.8	458.7	458.7	456.8	456.8
47.5°	406.7	406.7	404.8	404.8	404.8	404.8	404.8	404.8	404.8	400.9	404.8
50°	360.4	356.6	358.5	356.6	356.6	354.6	354.6	352.7	350.8	348.9	348.9
52.5°	316.1	312.2	312.2	310.3	308.4	308.4	306.5	304.5	302.6	298.8	298.8
55°	273.7	269.8	267.9	266.0	264.1	262.1	260.2	258.3	254.4	252.5	252.5
57.5°	235.1	231.3	227.4	227.4	223.6	221.7	217.8	213.9	212.0	208.2	208.2
60°	200.5	196.6	190.8	188.9	187.0	183.1	177.3	175.4	173.5	169.6	171.5
62.5°	167.7	161.9	156.1	154.2	152.3	148.4	144.6	140.7	138.8	140.7	140.7
65°	136.8	131.1	127.2	123.4	121.4	117.6	115.6	113.7	113.7	113.7	115.6
67.5°	109.9	104.1	100.2	98.3	94.4	92.5	92.5	92.5	92.5	92.5	92.5
70°	86.7	82.9	79.0	75.2	75.2	73.2	73.2	73.2	73.2	73.2	73.2
72.5°	65.5	61.7	59.8	59.8	57.8	57.8	57.8	57.8	55.9	55.9	57.8
75°	48.2	46.3	44.3	44.3	44.3	42.4	42.4	42.4	42.4	42.4	42.4
77.5°	34.7	32.8	32.8	30.8	30.8	30.8	30.8	30.8	30.8	28.9	28.9
80°	23.1	21.2	21.2	21.2	21.2	19.3	19.3	19.3	19.3	19.3	19.3
82.5°	13.5	13.5	13.5	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
85°	7.7	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
87.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	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: P251795

CATALOG NUMBER: LD4B40D010 EU4B30509024 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8	1252.8
2.5°	1229.7	1237.4	1239.3	1233.6	1235.5	1231.6	1233.6	1229.7
5°	1208.5	1214.3	1216.2	1212.3	1212.3	1208.5	1210.4	1206.6
7.5°	1181.5	1187.3	1189.2	1185.4	1185.4	1181.5	1181.5	1179.6
10°	1150.7	1152.6	1156.5	1150.7	1152.6	1148.7	1148.7	1144.9
12.5°	1112.1	1116.0	1119.8	1114.1	1114.1	1112.1	1112.1	1106.3
15°	1071.6	1075.5	1077.4	1073.6	1073.6	1071.6	1069.7	1067.8
17.5°	1029.2	1031.2	1035.0	1029.2	1033.1	1029.2	1029.2	1025.4
20°	981.1	986.8	988.8	983.0	984.9	983.0	983.0	983.0
22.5°	934.8	938.7	940.6	936.7	938.7	934.8	936.7	932.9
25°	886.6	888.5	890.5	886.6	890.5	888.5	886.6	886.6
27.5°	836.5	838.4	840.4	836.5	840.4	838.4	840.4	836.5
30°	782.5	786.4	790.2	786.4	788.3	786.4	786.4	784.5
32.5°	728.6	732.4	736.3	732.4	736.3	732.4	734.3	730.5
35°	678.5	680.4	682.3	678.5	680.4	680.4	680.4	678.5
37.5°	622.6	626.4	626.4	624.5	628.3	626.4	626.4	622.6
40°	568.6	570.5	572.4	568.6	570.5	568.6	570.5	568.6
42.5°	512.7	516.5	518.5	514.6	514.6	514.6	512.7	514.6
45°	454.9	458.7	462.6	456.8	458.7	458.7	458.7	456.8
47.5°	402.8	402.8	404.8	402.8	404.8	400.9	404.8	402.8
50°	348.9	348.9	352.7	348.9	348.9	348.9	348.9	348.9
52.5°	296.8	298.8	298.8	294.9	296.8	294.9	296.8	294.9
55°	248.6	248.6	250.6	248.6	248.6	248.6	248.6	248.6
57.5°	206.2	208.2	208.2	206.2	208.2	206.2	206.2	206.2
60°	171.5	171.5	171.5	169.6	171.5	169.6	171.5	169.6
62.5°	138.8	140.7	140.7	138.8	140.7	138.8	138.8	138.8
65°	113.7	113.7	113.7	113.7	113.7	113.7	113.7	111.8
67.5°	90.6	90.6	92.5	90.6	92.5	92.5	92.5	92.5
70°	73.2	73.2	73.2	73.2	73.2	73.2	73.2	73.2
72.5°	55.9	55.9	57.8	55.9	55.9	55.9	55.9	55.9
75°	42.4	42.4	42.4	42.4	42.4	40.5	40.5	42.4
77.5°	28.9	28.9	28.9	28.9	28.9	28.9	28.9	30.8
80°	19.3	19.3	19.3	19.3	17.3	17.3	19.3	17.3
82.5°	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
85°	5.8	5.8	3.9	3.9	3.9	3.9	3.9	3.9
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



Report Generated By E9808895 / USPTCWHP6082093





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















(END OF REPORT)