

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: P251951

Luminaire Tested: **LD4B40D010 EU4B30509024 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251951
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: LD4B40D010 EU4B30509024 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE 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: 2550.0 lumens
Efficiency: N/A
Efficacy: 59.3 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

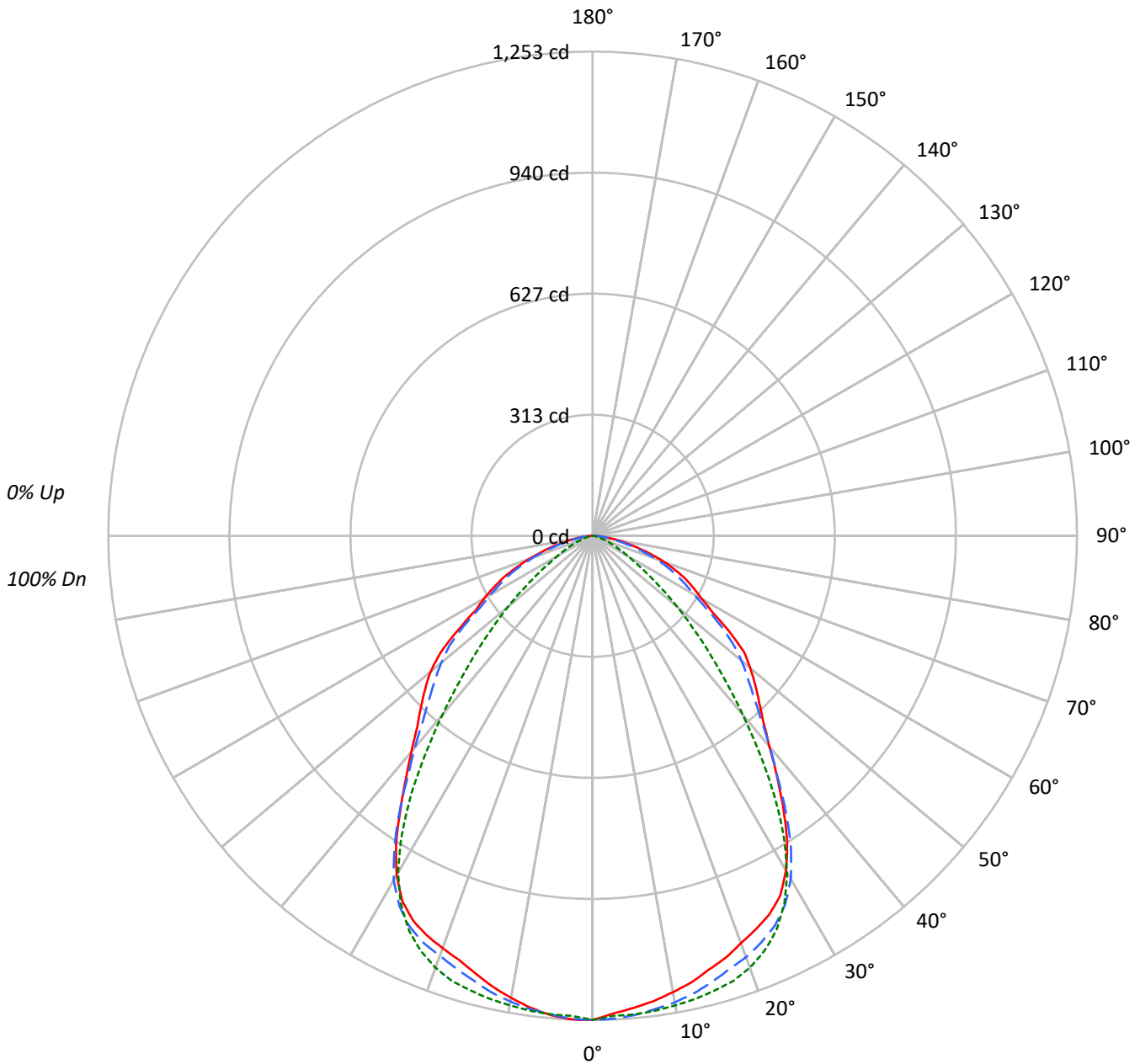
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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								
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°	122115	122115	122115
5°	119940	121632	121828
10°	118655	122089	120179
15°	117282	122922	118250
20°	116355	123356	117755
25°	116286	121050	118157
30°	112580	113233	114099
35°	102282	97464	103198
40°	90493	76766	92707
45°	83950	58452	86610
50°	80661	43257	83011
55°	73046	29803	72060
60°	63504	20291	63114
65°	61341	14667	58228
70°	55479	9888	49439
75°	45713	6514	39199
80°	36761	4322	29184
85°	30192	2125	19345



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.3	4.6
10°-20°	338.2	13.3
20°-30°	510.9	20.0
30°-40°	534.7	21.0
40°-50°	433.0	17.0
50°-60°	315.0	12.4
60°-70°	194.3	7.6
70°-80°	87.8	3.4
80°-90°	17.8	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°	967.4	37.9
0°-40°	1502.1	58.9
0°-60°	2250.1	88.2
0°-90°	2550.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2550.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1253	1253	1253	1253	1253	
5°	1226	1245	1243	1243	1245	116
15°	1162	1195	1218	1191	1172	329
25°	1081	1114	1126	1118	1099	496
35°	860	871	819	871	867	536
45°	609	590	424	598	628	473
55°	430	403	175	407	424	384
65°	266	239	64	235	252	260
75°	121	104	17	91	104	132
85°	27	21	2	15	17	31
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°	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0
2.5°	1237.5	1237.5	1249.1	1262.6	1251.0	1239.5	1247.2	1243.3	1256.8	1256.8	1251.0
5°	1226.0	1229.8	1239.5	1251.0	1241.4	1229.8	1239.5	1235.6	1249.1	1249.1	1245.3
7.5°	1214.4	1216.3	1227.9	1241.4	1231.8	1220.2	1227.9	1226.0	1237.5	1239.5	1235.6
10°	1199.0	1200.9	1212.5	1226.0	1216.3	1206.7	1214.4	1212.5	1227.9	1227.9	1226.0
12.5°	1183.6	1185.5	1197.1	1208.6	1199.0	1189.4	1197.1	1197.1	1212.5	1214.4	1212.5
15°	1162.4	1166.2	1175.9	1187.4	1181.6	1170.1	1177.8	1177.8	1191.3	1195.1	1195.1
17.5°	1145.0	1146.9	1156.6	1168.2	1160.4	1150.8	1158.5	1158.5	1172.0	1175.9	1175.9
20°	1121.9	1125.7	1135.4	1146.9	1141.2	1133.5	1139.2	1139.2	1154.7	1158.5	1160.4
22.5°	1102.6	1106.5	1114.2	1129.6	1120.0	1114.2	1121.9	1120.0	1137.3	1139.2	1139.2
25°	1081.4	1085.3	1094.9	1104.5	1098.8	1093.0	1098.8	1098.8	1112.3	1114.2	1114.2
27.5°	1050.6	1052.5	1062.1	1071.8	1066.0	1058.3	1066.0	1064.1	1077.6	1079.5	1077.6
30°	1000.4	1004.3	1008.2	1021.7	1015.9	1010.1	1017.8	1013.9	1027.4	1027.4	1025.5
32.5°	936.8	936.8	944.5	954.2	946.5	942.6	948.4	950.3	960.0	960.0	954.2
35°	859.7	863.6	869.4	875.2	869.4	865.5	871.3	869.4	880.9	877.1	871.3
37.5°	782.6	784.6	790.3	798.0	790.3	784.6	786.5	784.6	794.2	794.2	784.6
40°	711.3	715.2	719.0	726.7	719.0	715.2	717.1	711.3	722.9	719.0	713.2
42.5°	653.5	655.4	661.2	665.0	657.3	655.4	657.3	653.5	659.3	655.4	643.8
45°	609.1	609.1	611.1	616.8	609.1	607.2	607.2	603.4	609.1	601.4	589.9
47.5°	570.6	572.5	574.4	578.3	572.5	566.7	568.7	560.9	564.8	559.0	543.6
50°	532.0	535.9	537.8	541.7	535.9	532.0	534.0	526.2	526.2	516.6	503.1
52.5°	493.5	495.4	493.5	497.3	493.5	487.7	489.6	481.9	481.9	470.3	456.9
55°	429.9	431.8	433.7	437.6	433.7	427.9	431.8	426.0	426.0	418.3	402.9
57.5°	366.3	368.2	370.1	372.0	372.0	368.2	370.1	366.3	364.3	358.5	347.0
60°	325.8	325.8	325.8	327.7	325.8	323.8	323.8	320.0	320.0	312.3	300.7
62.5°	294.9	296.9	296.9	298.8	296.9	294.9	293.0	289.1	287.2	279.5	269.9
65°	266.0	266.0	264.1	267.9	266.0	264.1	264.1	260.2	256.4	248.7	239.0
67.5°	231.3	233.2	231.3	233.2	233.2	231.3	229.4	225.5	223.6	217.8	206.3
70°	194.7	194.7	194.7	196.6	194.7	194.7	196.6	190.8	188.9	181.2	171.6
72.5°	158.1	160.0	160.0	158.1	160.0	156.1	156.1	156.1	154.2	146.5	136.9
75°	121.4	123.4	123.4	125.3	123.4	121.4	121.4	119.5	117.6	111.8	104.1
77.5°	90.6	90.6	92.5	92.5	92.5	90.6	90.6	86.7	86.7	82.9	75.2
80°	65.5	65.5	63.6	65.5	65.5	63.6	63.6	61.7	61.7	57.8	52.0
82.5°	42.4	44.3	44.3	44.3	44.3	42.4	42.4	42.4	40.5	38.6	34.7
85°	27.0	27.0	27.0	27.0	28.9	27.0	28.9	27.0	27.0	23.1	21.2
87.5°	11.6	11.6	11.6	13.5	13.5	11.6	11.6	11.6	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°	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0
2.5°	1251.0	1253.0	1247.2	1254.9	1249.1	1251.0	1253.0	1251.0	1243.3	1243.3	1264.5
5°	1243.3	1247.2	1241.4	1251.0	1247.2	1247.2	1251.0	1249.1	1241.4	1243.3	1262.6
7.5°	1235.6	1241.4	1237.5	1247.2	1241.4	1241.4	1245.3	1245.3	1237.5	1239.5	1256.8
10°	1224.1	1231.8	1229.8	1239.5	1233.7	1233.7	1239.5	1239.5	1231.8	1233.7	1251.0
12.5°	1214.4	1222.1	1220.2	1229.8	1226.0	1227.9	1229.8	1233.7	1224.1	1227.9	1243.3
15°	1199.0	1206.7	1206.7	1216.3	1212.5	1216.3	1220.2	1226.0	1218.3	1218.3	1233.7
17.5°	1181.6	1191.3	1191.3	1199.0	1199.0	1200.9	1208.6	1214.4	1206.7	1208.6	1222.1
20°	1162.4	1173.9	1173.9	1183.6	1181.6	1185.5	1191.3	1197.1	1189.4	1189.4	1204.8
22.5°	1143.1	1152.7	1154.7	1160.4	1160.4	1162.4	1168.2	1172.0	1162.4	1162.4	1177.8
25°	1116.1	1125.7	1127.7	1131.5	1127.7	1127.7	1131.5	1135.4	1125.7	1125.7	1139.2
27.5°	1079.5	1089.1	1089.1	1087.2	1083.3	1085.3	1083.3	1085.3	1075.6	1073.7	1087.2
30°	1025.5	1031.3	1031.3	1029.4	1023.6	1023.6	1017.8	1019.7	1006.2	1006.2	1017.8
32.5°	952.3	958.0	954.2	950.3	942.6	938.8	934.9	933.0	919.5	919.5	933.0
35°	865.5	869.4	863.6	855.9	846.2	840.5	834.7	827.0	817.3	819.2	827.0
37.5°	776.8	776.8	769.1	753.7	746.0	736.4	726.7	726.7	711.3	709.4	715.2
40°	701.7	694.0	680.5	659.3	645.8	636.1	622.6	614.9	603.4	603.4	613.0
42.5°	634.2	618.8	601.4	572.5	559.0	547.5	530.1	522.4	508.9	507.0	512.8
45°	574.4	559.0	534.0	503.1	485.8	472.3	447.2	437.6	426.0	424.1	427.9
47.5°	526.2	508.9	478.1	437.6	420.2	402.9	377.8	364.3	354.7	348.9	354.7
50°	483.8	460.7	427.9	385.5	362.4	347.0	316.1	302.6	289.1	285.3	287.2
52.5°	437.6	414.4	379.7	335.4	314.2	291.1	262.2	242.9	231.3	225.5	231.3
55°	387.5	364.3	329.6	285.3	262.2	241.0	210.1	194.7	181.2	175.4	181.2
57.5°	333.5	312.3	281.4	237.1	215.9	196.6	167.7	152.3	138.8	134.9	138.8
60°	287.2	269.9	239.0	196.6	179.3	158.1	133.0	117.6	106.0	104.1	106.0
62.5°	256.4	237.1	208.2	167.7	150.4	133.0	109.9	94.5	84.8	82.9	84.8
65°	225.5	204.3	177.3	142.6	125.3	111.8	88.7	75.2	65.5	63.6	65.5
67.5°	190.8	171.6	148.4	117.6	104.1	90.6	71.3	57.8	50.1	48.2	50.1
70°	158.1	140.7	117.6	94.5	81.0	71.3	54.0	44.3	36.6	34.7	36.6
72.5°	125.3	109.9	90.6	71.3	63.6	54.0	42.4	32.8	27.0	25.1	27.0
75°	96.4	84.8	69.4	52.0	46.3	40.5	28.9	23.1	19.3	17.3	19.3
77.5°	67.5	59.8	48.2	38.6	32.8	28.9	21.2	15.4	13.5	11.6	13.5
80°	46.3	40.5	32.8	25.1	21.2	17.3	13.5	9.6	7.7	7.7	7.7
82.5°	30.8	25.1	19.3	15.4	13.5	11.6	7.7	5.8	5.8	3.9	3.9
85°	17.3	15.4	11.6	9.6	7.7	5.8	3.9	3.9	1.9	1.9	1.9
87.5°	7.7	5.8	3.9	3.9	1.9	1.9	1.9	1.9	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°	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0
2.5°	1258.8	1253.0	1260.7	1253.0	1249.1	1253.0	1249.1	1260.7	1251.0	1243.3	1251.0
5°	1256.8	1249.1	1256.8	1251.0	1245.3	1247.2	1243.3	1254.9	1243.3	1237.5	1241.4
7.5°	1253.0	1247.2	1251.0	1245.3	1239.5	1241.4	1237.5	1247.2	1235.6	1229.8	1233.7
10°	1247.2	1241.4	1243.3	1239.5	1233.7	1233.7	1229.8	1237.5	1224.1	1216.3	1220.2
12.5°	1239.5	1231.8	1235.6	1229.8	1222.1	1222.1	1218.3	1224.1	1210.6	1202.9	1204.8
15°	1229.8	1222.1	1222.1	1216.3	1208.6	1208.6	1200.9	1206.7	1191.3	1183.6	1183.6
17.5°	1218.3	1208.6	1208.6	1202.9	1193.2	1191.3	1185.5	1191.3	1173.9	1166.2	1166.2
20°	1200.9	1193.2	1191.3	1187.4	1177.8	1175.9	1168.2	1170.1	1156.6	1150.8	1148.9
22.5°	1177.8	1170.1	1172.0	1166.2	1158.5	1156.6	1148.9	1154.7	1141.2	1135.4	1137.3
25°	1137.3	1133.5	1137.3	1135.4	1129.6	1129.6	1125.7	1129.6	1118.0	1114.2	1116.1
27.5°	1091.0	1089.1	1091.0	1091.0	1087.2	1087.2	1087.2	1093.0	1081.4	1079.5	1079.5
30°	1023.6	1023.6	1025.5	1027.4	1027.4	1031.3	1029.4	1037.1	1029.4	1025.5	1029.4
32.5°	934.9	942.6	948.4	948.4	948.4	952.3	956.1	961.9	954.2	956.1	956.1
35°	834.7	840.5	844.3	853.9	848.2	861.7	865.5	873.2	871.3	875.2	873.2
37.5°	722.9	730.6	738.3	751.8	749.9	765.3	773.0	788.4	784.6	792.3	796.1
40°	618.8	630.3	641.9	651.5	659.3	674.7	690.1	709.4	715.2	720.9	722.9
42.5°	518.5	530.1	549.4	562.9	574.4	599.5	620.7	643.8	649.6	661.2	665.0
45°	437.6	447.2	470.3	487.7	497.3	534.0	559.0	587.9	597.6	611.1	616.8
47.5°	362.4	379.7	402.9	424.1	437.6	476.1	508.9	539.7	553.2	568.7	576.4
50°	296.9	316.1	347.0	366.3	385.5	427.9	464.6	497.3	510.8	528.2	535.9
52.5°	242.9	264.1	293.0	314.2	335.4	379.7	418.3	449.1	466.5	478.1	489.6
55°	190.8	214.0	242.9	266.0	283.4	331.6	364.3	395.2	406.7	416.4	422.2
57.5°	148.4	165.8	194.7	214.0	235.2	277.6	310.4	333.5	343.1	354.7	358.5
60°	115.7	133.0	160.0	179.3	198.5	239.0	271.8	294.9	304.6	314.2	320.0
62.5°	92.5	109.9	134.9	152.3	169.6	206.3	235.2	258.3	269.9	279.5	285.3
65°	73.3	88.7	109.9	127.2	140.7	173.5	202.4	223.6	235.2	244.8	250.6
67.5°	57.8	71.3	90.6	102.2	115.7	142.6	167.7	187.0	196.6	208.2	214.0
70°	44.3	54.0	71.3	81.0	90.6	113.7	133.0	152.3	161.9	169.6	173.5
72.5°	32.8	40.5	54.0	61.7	67.5	86.7	102.2	115.7	123.4	131.1	134.9
75°	23.1	28.9	38.6	44.3	48.2	61.7	75.2	84.8	90.6	96.4	102.2
77.5°	15.4	19.3	25.1	28.9	32.8	42.4	50.1	57.8	63.6	69.4	71.3
80°	9.6	13.5	17.3	19.3	21.2	27.0	34.7	38.6	42.4	46.3	48.2
82.5°	5.8	7.7	9.6	11.6	13.5	17.3	21.2	25.1	27.0	30.8	32.8
85°	1.9	3.9	3.9	5.8	5.8	9.6	11.6	13.5	15.4	17.3	19.3
87.5°	0.0	0.0	1.9	1.9	1.9	1.9	3.9	3.9	3.9	3.9	3.9
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: P251951

CATALOG NUMBER: LD4B40D010 EU4B30509024 4LBDW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0	1253.0
2.5°	1258.8	1253.0	1249.1	1247.2	1260.7	1243.3	1251.0	1253.0
5°	1251.0	1245.3	1241.4	1239.5	1251.0	1235.6	1241.4	1245.3
7.5°	1239.5	1235.6	1229.8	1227.9	1239.5	1222.1	1229.8	1231.8
10°	1226.0	1220.2	1216.3	1214.4	1224.1	1206.7	1214.4	1214.4
12.5°	1208.6	1204.8	1197.1	1197.1	1204.8	1189.4	1195.1	1195.1
15°	1185.5	1181.6	1173.9	1173.9	1181.6	1166.2	1172.0	1172.0
17.5°	1166.2	1162.4	1156.6	1154.7	1162.4	1146.9	1152.7	1150.8
20°	1150.8	1146.9	1139.2	1139.2	1145.0	1129.6	1135.4	1135.4
22.5°	1137.3	1135.4	1127.7	1127.7	1135.4	1120.0	1123.8	1120.0
25°	1116.1	1114.2	1106.5	1108.4	1112.3	1096.8	1102.6	1098.8
27.5°	1081.4	1081.4	1073.7	1071.8	1077.6	1064.1	1067.9	1066.0
30°	1027.4	1029.4	1019.7	1019.7	1021.7	1010.1	1015.9	1013.9
32.5°	954.2	956.1	948.4	946.5	952.3	942.6	946.5	946.5
35°	873.2	875.2	869.4	869.4	875.2	869.4	869.4	867.4
37.5°	792.3	796.1	792.3	794.2	798.0	792.3	796.1	794.2
40°	726.7	730.6	724.8	728.7	732.5	726.7	732.5	728.7
42.5°	667.0	672.7	668.9	672.7	676.6	672.7	676.6	670.8
45°	622.6	626.5	624.6	626.5	630.3	628.4	630.3	628.4
47.5°	580.2	587.9	584.1	587.9	593.7	589.9	593.7	587.9
50°	541.7	547.5	545.5	549.4	551.3	549.4	553.2	547.5
52.5°	491.5	497.3	495.4	495.4	499.3	495.4	499.3	495.4
55°	426.0	427.9	427.9	429.9	427.9	426.0	427.9	424.1
57.5°	362.4	366.3	360.5	366.3	364.3	362.4	362.4	358.5
60°	321.9	327.7	323.8	327.7	325.8	325.8	325.8	323.8
62.5°	289.1	293.0	289.1	291.1	291.1	291.1	289.1	287.2
65°	252.5	258.3	254.4	256.4	254.4	252.5	254.4	252.5
67.5°	215.9	217.8	217.8	215.9	215.9	215.9	215.9	212.0
70°	175.4	177.3	175.4	179.3	177.3	175.4	177.3	173.5
72.5°	136.9	138.8	136.9	138.8	136.9	136.9	136.9	136.9
75°	102.2	104.1	104.1	104.1	104.1	104.1	100.2	104.1
77.5°	73.3	73.3	73.3	75.2	73.3	73.3	73.3	73.3
80°	50.1	50.1	50.1	52.0	50.1	52.0	50.1	52.0
82.5°	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8
85°	17.3	19.3	19.3	17.3	17.3	17.3	17.3	17.3
87.5°	3.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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)