

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: P251957

Luminaire Tested: **LD4B40D010 EU4B30509727 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251957
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 EU4B30509727 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2520.0 lumens
Efficiency: N/A
Efficacy: 58.6 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

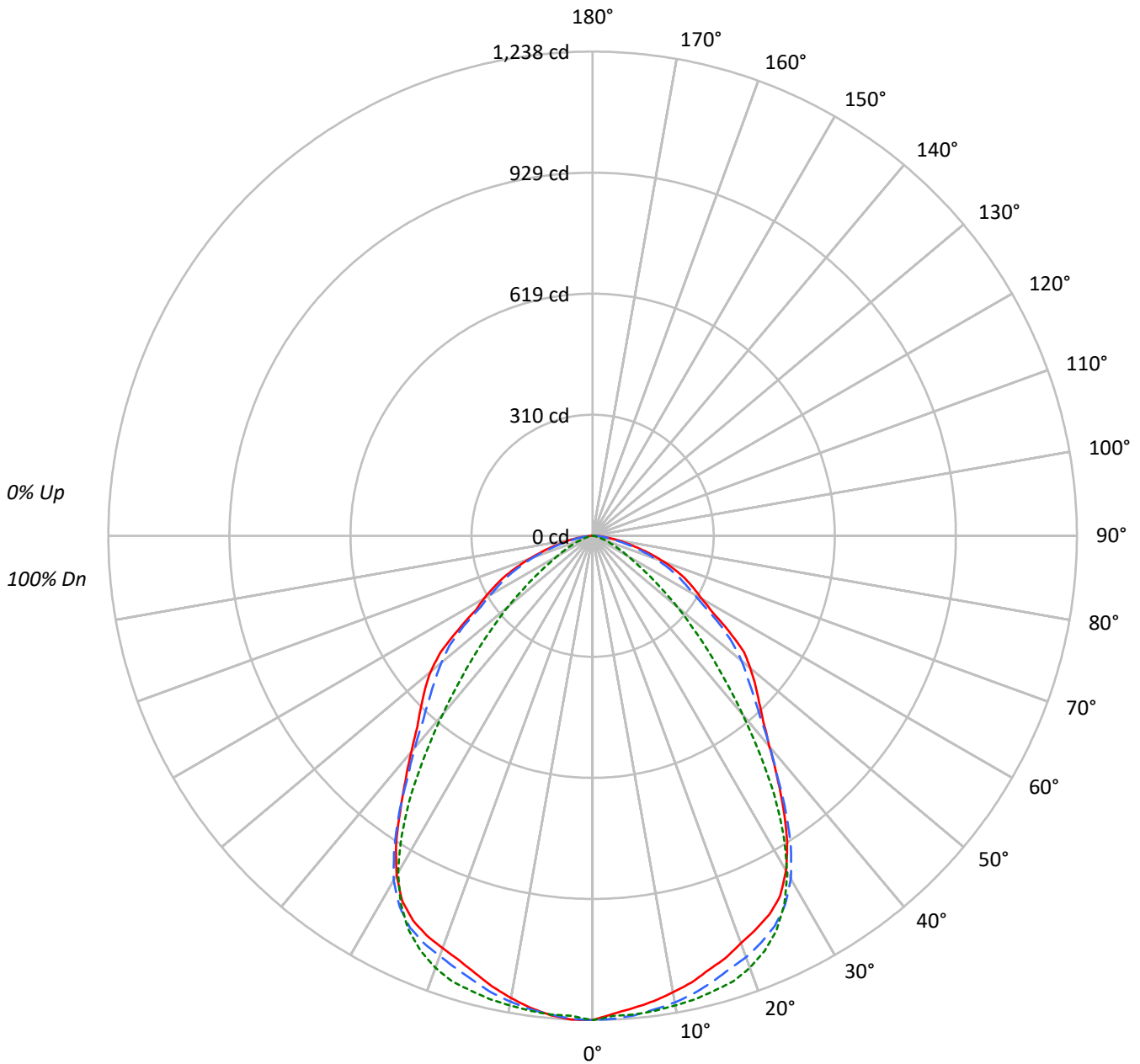
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251957

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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				
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°	120673	120673	120673
5°	118531	120204	120390
10°	117260	120654	118764
15°	115899	121469	116858
20°	114986	121904	116366
25°	114921	119631	116759
30°	111263	111905	112760
35°	101081	96322	101985
40°	89425	75863	91613
45°	82972	57763	85590
50°	79721	42741	82025
55°	72179	29463	71211
60°	62744	20057	62373
65°	60626	14505	57559
70°	54824	9774	48840
75°	45186	6439	38747
80°	36368	4265	28848
85°	29856	2125	19121



TEST NUMBER: P251957

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.9	4.6
10°-20°	334.2	13.3
20°-30°	504.9	20.0
30°-40°	528.4	21.0
40°-50°	428.0	17.0
50°-60°	311.3	12.4
60°-70°	192.0	7.6
70°-80°	86.7	3.4
80°-90°	17.6	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°	956.0	37.9
0°-40°	1484.4	58.9
0°-60°	2223.6	88.2
0°-90°	2520.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2520.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1238	1238	1238	1238	1238	
5°	1212	1231	1229	1229	1231	115
15°	1149	1181	1204	1177	1158	325
25°	1069	1101	1112	1105	1086	490
35°	850	861	810	861	857	530
45°	602	583	419	590	621	468
55°	425	398	173	402	419	379
65°	263	236	63	232	250	257
75°	120	103	17	90	103	130
85°	27	21	2	15	17	31
90°	0	0	0	0	0	



TEST NUMBER: P251957

CATALOG NUMBER: LD4B40D010 EU4B30509727 4LBDW1H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2
2.5°	1223.0	1223.0	1234.4	1247.8	1236.3	1224.9	1232.5	1228.7	1242.0	1242.0	1236.3
5°	1211.6	1215.4	1224.9	1236.3	1226.8	1215.4	1224.9	1221.1	1234.4	1234.4	1230.6
7.5°	1200.1	1202.0	1213.5	1226.8	1217.3	1205.8	1213.5	1211.6	1223.0	1224.9	1221.1
10°	1184.9	1186.8	1198.2	1211.6	1202.0	1192.5	1200.1	1198.2	1213.5	1213.5	1211.6
12.5°	1169.7	1171.6	1183.0	1194.4	1184.9	1175.4	1183.0	1183.0	1198.2	1200.1	1198.2
15°	1148.7	1152.5	1162.0	1173.5	1167.7	1156.3	1163.9	1163.9	1177.3	1181.1	1181.1
17.5°	1131.6	1133.5	1143.0	1154.4	1146.8	1137.3	1144.9	1144.9	1158.2	1162.0	1162.0
20°	1108.7	1112.5	1122.0	1133.5	1127.7	1120.1	1125.8	1125.8	1141.1	1144.9	1146.8
22.5°	1089.6	1093.5	1101.1	1116.3	1106.8	1101.1	1108.7	1106.8	1123.9	1125.8	1125.8
25°	1068.7	1072.5	1082.0	1091.5	1085.8	1080.1	1085.8	1085.8	1099.2	1101.1	1101.1
27.5°	1038.2	1040.1	1049.6	1059.2	1053.4	1045.8	1053.4	1051.5	1064.9	1066.8	1064.9
30°	988.7	992.5	996.3	1009.6	1003.9	998.2	1005.8	1002.0	1015.3	1015.3	1013.4
32.5°	925.8	925.8	933.4	943.0	935.3	931.5	937.2	939.1	948.7	948.7	943.0
35°	849.6	853.4	859.1	864.9	859.1	855.3	861.0	859.1	870.6	866.8	861.0
37.5°	773.4	775.3	781.0	788.7	781.0	775.3	777.2	775.3	784.8	784.8	775.3
40°	702.9	706.7	710.6	718.2	710.6	706.7	708.6	702.9	714.4	710.6	704.8
42.5°	645.8	647.7	653.4	657.2	649.6	647.7	649.6	645.8	651.5	647.7	636.3
45°	602.0	602.0	603.9	609.6	602.0	600.1	600.1	596.3	602.0	594.4	582.9
47.5°	563.9	565.8	567.7	571.5	565.8	560.1	562.0	554.3	558.2	552.4	537.2
50°	525.8	529.6	531.5	535.3	529.6	525.8	527.7	520.1	520.1	510.5	497.2
52.5°	487.7	489.6	487.7	491.5	487.7	482.0	483.9	476.2	476.2	464.8	451.5
55°	424.8	426.7	428.6	432.4	428.6	422.9	426.7	421.0	421.0	413.4	398.1
57.5°	361.9	363.8	365.8	367.7	367.7	363.8	365.8	361.9	360.0	354.3	342.9
60°	321.9	321.9	321.9	323.8	321.9	320.0	320.0	316.2	316.2	308.6	297.2
62.5°	291.5	293.4	293.4	295.3	293.4	291.5	289.6	285.7	283.8	276.2	266.7
65°	262.9	262.9	261.0	264.8	262.9	261.0	261.0	257.2	253.4	245.7	236.2
67.5°	228.6	230.5	228.6	230.5	230.5	228.6	226.7	222.9	221.0	215.3	203.8
70°	192.4	192.4	192.4	194.3	192.4	192.4	194.3	188.6	186.7	179.1	169.5
72.5°	156.2	158.1	158.1	156.2	158.1	154.3	154.3	154.3	152.4	144.8	135.3
75°	120.0	121.9	121.9	123.8	121.9	120.0	120.0	118.1	116.2	110.5	102.9
77.5°	89.5	89.5	91.4	91.4	91.4	89.5	89.5	85.7	85.7	81.9	74.3
80°	64.8	64.8	62.9	64.8	64.8	62.9	62.9	61.0	61.0	57.1	51.4
82.5°	41.9	43.8	43.8	43.8	43.8	41.9	41.9	41.9	40.0	38.1	34.3
85°	26.7	26.7	26.7	26.7	28.6	26.7	28.6	26.7	26.7	22.9	21.0
87.5°	11.4	11.4	11.4	13.3	13.3	11.4	11.4	11.4	11.4	11.4	9.5
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: P251957

CATALOG NUMBER: LD4B40D010 EU4B30509727 4LBDW1H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2
2.5°	1236.3	1238.2	1232.5	1240.1	1234.4	1236.3	1238.2	1236.3	1228.7	1228.7	1249.7
5°	1228.7	1232.5	1226.8	1236.3	1232.5	1232.5	1236.3	1234.4	1226.8	1228.7	1247.8
7.5°	1221.1	1226.8	1223.0	1232.5	1226.8	1226.8	1230.6	1230.6	1223.0	1224.9	1242.0
10°	1209.7	1217.3	1215.4	1224.9	1219.2	1219.2	1224.9	1224.9	1217.3	1219.2	1236.3
12.5°	1200.1	1207.8	1205.8	1215.4	1211.6	1213.5	1215.4	1219.2	1209.7	1213.5	1228.7
15°	1184.9	1192.5	1192.5	1202.0	1198.2	1202.0	1205.8	1211.6	1203.9	1203.9	1219.2
17.5°	1167.7	1177.3	1177.3	1184.9	1184.9	1186.8	1194.4	1200.1	1192.5	1194.4	1207.8
20°	1148.7	1160.1	1160.1	1169.7	1167.7	1171.6	1177.3	1183.0	1175.4	1175.4	1190.6
22.5°	1129.6	1139.2	1141.1	1146.8	1146.8	1148.7	1154.4	1158.2	1148.7	1148.7	1163.9
25°	1103.0	1112.5	1114.4	1118.2	1114.4	1114.4	1118.2	1122.0	1112.5	1112.5	1125.8
27.5°	1066.8	1076.3	1076.3	1074.4	1070.6	1072.5	1070.6	1072.5	1063.0	1061.1	1074.4
30°	1013.4	1019.2	1019.2	1017.3	1011.5	1011.5	1005.8	1007.7	994.4	994.4	1005.8
32.5°	941.1	946.8	943.0	939.1	931.5	927.7	923.9	922.0	908.7	908.7	922.0
35°	855.3	859.1	853.4	845.8	836.3	830.6	824.9	817.2	807.7	809.6	817.2
37.5°	767.7	767.7	760.1	744.8	737.2	727.7	718.2	718.2	702.9	701.0	706.7
40°	693.4	685.8	672.5	651.5	638.2	628.6	615.3	607.7	596.3	596.3	605.8
42.5°	626.7	611.5	594.4	565.8	552.4	541.0	523.9	516.2	502.9	501.0	506.7
45°	567.7	552.4	527.7	497.2	480.1	466.7	442.0	432.4	421.0	419.1	422.9
47.5°	520.1	502.9	472.4	432.4	415.3	398.1	373.4	360.0	350.5	344.8	350.5
50°	478.1	455.3	422.9	381.0	358.1	342.9	312.4	299.1	285.7	281.9	283.8
52.5°	432.4	409.6	375.3	331.5	310.5	287.7	259.1	240.0	228.6	222.9	228.6
55°	382.9	360.0	325.7	281.9	259.1	238.1	207.6	192.4	179.1	173.4	179.1
57.5°	329.6	308.6	278.1	234.3	213.4	194.3	165.7	150.5	137.2	133.3	137.2
60°	283.8	266.7	236.2	194.3	177.2	156.2	131.4	116.2	104.8	102.9	104.8
62.5°	253.4	234.3	205.7	165.7	148.6	131.4	108.6	93.3	83.8	81.9	83.8
65°	222.9	201.9	175.3	141.0	123.8	110.5	87.6	74.3	64.8	62.9	64.8
67.5°	188.6	169.5	146.7	116.2	102.9	89.5	70.5	57.1	49.5	47.6	49.5
70°	156.2	139.1	116.2	93.3	80.0	70.5	53.3	43.8	36.2	34.3	36.2
72.5°	123.8	108.6	89.5	70.5	62.9	53.3	41.9	32.4	26.7	24.8	26.7
75°	95.2	83.8	68.6	51.4	45.7	40.0	28.6	22.9	19.0	17.1	19.0
77.5°	66.7	59.1	47.6	38.1	32.4	28.6	21.0	15.2	13.3	11.4	13.3
80°	45.7	40.0	32.4	24.8	21.0	17.1	13.3	9.5	7.6	7.6	7.6
82.5°	30.5	24.8	19.0	15.2	13.3	11.4	7.6	5.7	5.7	3.8	3.8
85°	17.1	15.2	11.4	9.5	7.6	5.7	3.8	3.8	1.9	1.9	1.9
87.5°	7.6	5.7	3.8	3.8	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



TEST NUMBER: P251957

CATALOG NUMBER: LD4B40D010 EU4B30509727 4LBDW1H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2
2.5°	1243.9	1238.2	1245.8	1238.2	1234.4	1238.2	1234.4	1245.8	1236.3	1228.7	1236.3
5°	1242.0	1234.4	1242.0	1236.3	1230.6	1232.5	1228.7	1240.1	1228.7	1223.0	1226.8
7.5°	1238.2	1232.5	1236.3	1230.6	1224.9	1226.8	1223.0	1232.5	1221.1	1215.4	1219.2
10°	1232.5	1226.8	1228.7	1224.9	1219.2	1219.2	1215.4	1223.0	1209.7	1202.0	1205.8
12.5°	1224.9	1217.3	1221.1	1215.4	1207.8	1207.8	1203.9	1209.7	1196.3	1188.7	1190.6
15°	1215.4	1207.8	1207.8	1202.0	1194.4	1194.4	1186.8	1192.5	1177.3	1169.7	1169.7
17.5°	1203.9	1194.4	1194.4	1188.7	1179.2	1177.3	1171.6	1177.3	1160.1	1152.5	1152.5
20°	1186.8	1179.2	1177.3	1173.5	1163.9	1162.0	1154.4	1156.3	1143.0	1137.3	1135.4
22.5°	1163.9	1156.3	1158.2	1152.5	1144.9	1143.0	1135.4	1141.1	1127.7	1122.0	1123.9
25°	1123.9	1120.1	1123.9	1122.0	1116.3	1116.3	1112.5	1116.3	1104.9	1101.1	1103.0
27.5°	1078.2	1076.3	1078.2	1078.2	1074.4	1074.4	1074.4	1080.1	1068.7	1066.8	1066.8
30°	1011.5	1011.5	1013.4	1015.3	1015.3	1019.2	1017.3	1024.9	1017.3	1013.4	1017.3
32.5°	923.9	931.5	937.2	937.2	937.2	941.1	944.9	950.6	943.0	944.9	944.9
35°	824.9	830.6	834.4	843.9	838.2	851.5	855.3	863.0	861.0	864.9	863.0
37.5°	714.4	722.0	729.6	742.9	741.0	756.3	763.9	779.1	775.3	782.9	786.8
40°	611.5	622.9	634.4	643.9	651.5	666.7	682.0	701.0	706.7	712.5	714.4
42.5°	512.4	523.9	542.9	556.3	567.7	592.4	613.4	636.3	642.0	653.4	657.2
45°	432.4	442.0	464.8	482.0	491.5	527.7	552.4	581.0	590.5	603.9	609.6
47.5°	358.1	375.3	398.1	419.1	432.4	470.5	502.9	533.4	546.7	562.0	569.6
50°	293.4	312.4	342.9	361.9	381.0	422.9	459.1	491.5	504.8	522.0	529.6
52.5°	240.0	261.0	289.6	310.5	331.5	375.3	413.4	443.9	461.0	472.4	483.9
55°	188.6	211.5	240.0	262.9	280.0	327.7	360.0	390.5	401.9	411.5	417.2
57.5°	146.7	163.8	192.4	211.5	232.4	274.3	306.7	329.6	339.1	350.5	354.3
60°	114.3	131.4	158.1	177.2	196.2	236.2	268.6	291.5	301.0	310.5	316.2
62.5°	91.4	108.6	133.3	150.5	167.6	203.8	232.4	255.3	266.7	276.2	281.9
65°	72.4	87.6	108.6	125.7	139.1	171.4	200.0	221.0	232.4	241.9	247.6
67.5°	57.1	70.5	89.5	101.0	114.3	141.0	165.7	184.8	194.3	205.7	211.5
70°	43.8	53.3	70.5	80.0	89.5	112.4	131.4	150.5	160.0	167.6	171.4
72.5°	32.4	40.0	53.3	61.0	66.7	85.7	101.0	114.3	121.9	129.5	133.3
75°	22.9	28.6	38.1	43.8	47.6	61.0	74.3	83.8	89.5	95.2	101.0
77.5°	15.2	19.0	24.8	28.6	32.4	41.9	49.5	57.1	62.9	68.6	70.5
80°	9.5	13.3	17.1	19.0	21.0	26.7	34.3	38.1	41.9	45.7	47.6
82.5°	5.7	7.6	9.5	11.4	13.3	17.1	21.0	24.8	26.7	30.5	32.4
85°	1.9	3.8	3.8	5.7	5.7	9.5	11.4	13.3	15.2	17.1	19.0
87.5°	0.0	0.0	1.9	1.9	1.9	1.9	3.8	3.8	3.8	3.8	3.8
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: P251957

CATALOG NUMBER: LD4B40D010 EU4B30509727 4LBDW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2	1238.2
2.5°	1243.9	1238.2	1234.4	1232.5	1245.8	1228.7	1236.3	1238.2
5°	1236.3	1230.6	1226.8	1224.9	1236.3	1221.1	1226.8	1230.6
7.5°	1224.9	1221.1	1215.4	1213.5	1224.9	1207.8	1215.4	1217.3
10°	1211.6	1205.8	1202.0	1200.1	1209.7	1192.5	1200.1	1200.1
12.5°	1194.4	1190.6	1183.0	1183.0	1190.6	1175.4	1181.1	1181.1
15°	1171.6	1167.7	1160.1	1160.1	1167.7	1152.5	1158.2	1158.2
17.5°	1152.5	1148.7	1143.0	1141.1	1148.7	1133.5	1139.2	1137.3
20°	1137.3	1133.5	1125.8	1125.8	1131.6	1116.3	1122.0	1122.0
22.5°	1123.9	1122.0	1114.4	1114.4	1122.0	1106.8	1110.6	1106.8
25°	1103.0	1101.1	1093.5	1095.4	1099.2	1083.9	1089.6	1085.8
27.5°	1068.7	1068.7	1061.1	1059.2	1064.9	1051.5	1055.4	1053.4
30°	1015.3	1017.3	1007.7	1007.7	1009.6	998.2	1003.9	1002.0
32.5°	943.0	944.9	937.2	935.3	941.1	931.5	935.3	935.3
35°	863.0	864.9	859.1	859.1	864.9	859.1	859.1	857.2
37.5°	782.9	786.8	782.9	784.8	788.7	782.9	786.8	784.8
40°	718.2	722.0	716.3	720.1	723.9	718.2	723.9	720.1
42.5°	659.1	664.8	661.0	664.8	668.6	664.8	668.6	662.9
45°	615.3	619.1	617.2	619.1	622.9	621.0	622.9	621.0
47.5°	573.4	581.0	577.2	581.0	586.7	582.9	586.7	581.0
50°	535.3	541.0	539.1	542.9	544.8	542.9	546.7	541.0
52.5°	485.8	491.5	489.6	489.6	493.4	489.6	493.4	489.6
55°	421.0	422.9	422.9	424.8	422.9	421.0	422.9	419.1
57.5°	358.1	361.9	356.2	361.9	360.0	358.1	358.1	354.3
60°	318.1	323.8	320.0	323.8	321.9	321.9	321.9	320.0
62.5°	285.7	289.6	285.7	287.7	287.7	287.7	285.7	283.8
65°	249.6	255.3	251.5	253.4	251.5	249.6	251.5	249.6
67.5°	213.4	215.3	215.3	213.4	213.4	213.4	213.4	209.5
70°	173.4	175.3	173.4	177.2	175.3	173.4	175.3	171.4
72.5°	135.3	137.2	135.3	137.2	135.3	135.3	135.3	135.3
75°	101.0	102.9	102.9	102.9	102.9	102.9	99.1	102.9
77.5°	72.4	72.4	72.4	74.3	72.4	72.4	72.4	72.4
80°	49.5	49.5	49.5	51.4	49.5	51.4	49.5	51.4
82.5°	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4
85°	17.1	19.0	19.0	17.1	17.1	17.1	17.1	17.1
87.5°	3.8	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)