

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: P251935

Luminaire Tested: **LD4B30D010 EU4B30508035 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251935
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 EU4B30508035 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2582.0 lumens
Efficiency: N/A
Efficacy: 92.2 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

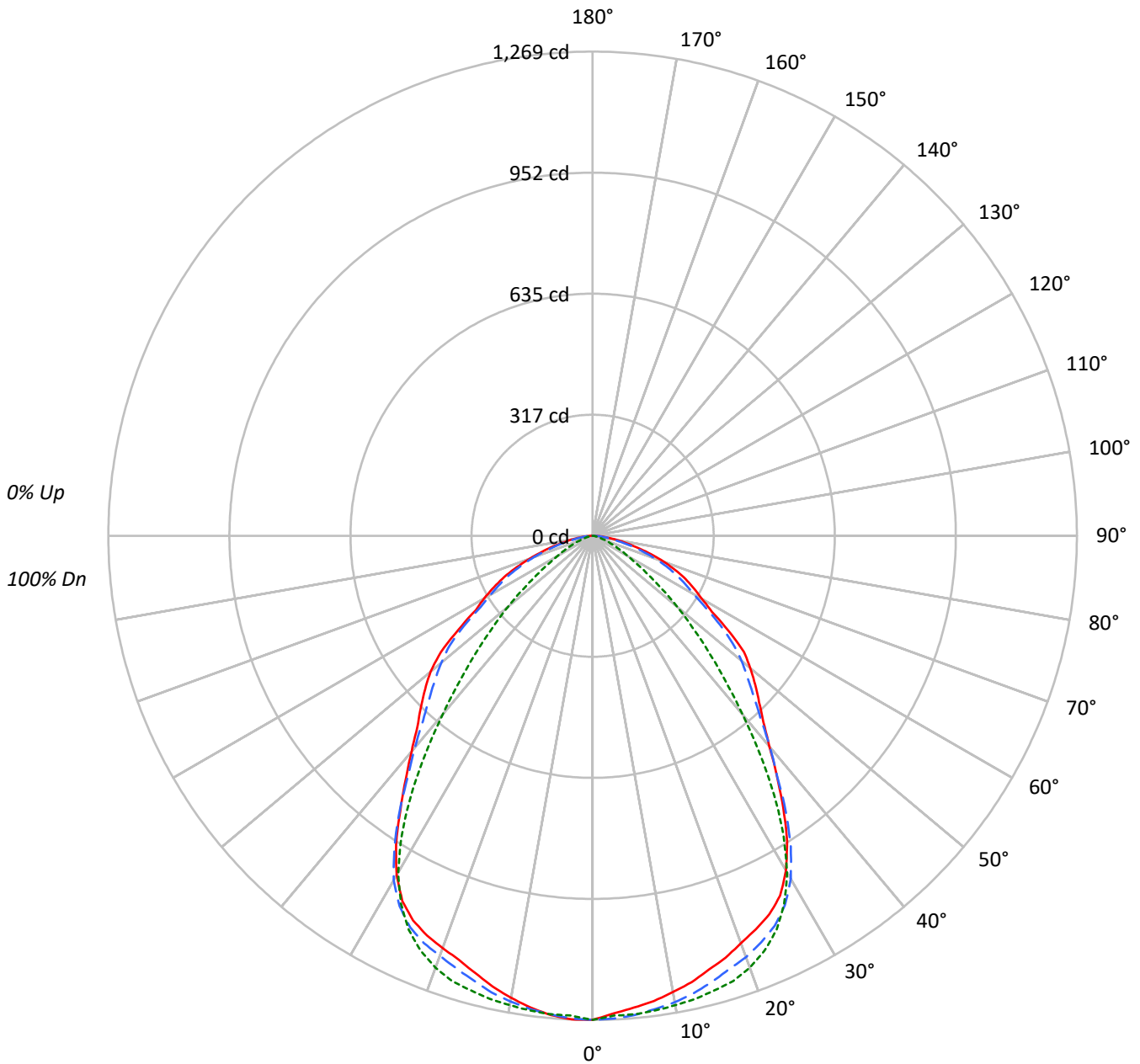
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	123645	123645	123645
5°	121447	123159	123354
10°	120139	123623	121693
15°	118755	124465	119733
20°	117818	124901	119228
25°	117749	122577	119631
30°	113998	114662	115540
35°	103567	98689	104495
40°	91626	77720	93865
45°	85011	59183	87699
50°	81677	43802	84042
55°	73963	30177	72961
60°	64303	20544	63913
65°	62125	14851	58966
70°	56163	10002	50065
75°	46316	6627	39688
80°	37266	4378	29577
85°	30527	2236	19680



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.8	4.6
10°-20°	342.4	13.3
20°-30°	517.3	20.0
30°-40°	541.4	21.0
40°-50°	438.5	17.0
50°-60°	318.9	12.4
60°-70°	196.7	7.6
70°-80°	88.9	3.4
80°-90°	18.1	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°	979.5	37.9
0°-40°	1520.9	58.9
0°-60°	2278.4	88.2
0°-90°	2582.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2582.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1269	1269	1269	1269	1269	
5°	1241	1261	1259	1259	1261	118
15°	1177	1210	1234	1206	1187	333
25°	1095	1128	1140	1132	1112	502
35°	870	882	830	882	878	543
45°	617	597	429	605	636	479
55°	435	408	178	412	429	388
65°	269	242	64	238	256	264
75°	123	105	18	92	105	133
85°	27	22	2	16	18	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°	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7
2.5°	1253.1	1253.1	1264.8	1278.5	1266.7	1255.0	1262.8	1258.9	1272.6	1272.6	1266.7
5°	1241.4	1245.3	1255.0	1266.7	1257.0	1245.3	1255.0	1251.1	1264.8	1264.8	1260.9
7.5°	1229.7	1231.6	1243.3	1257.0	1247.2	1235.5	1243.3	1241.4	1253.1	1255.0	1251.1
10°	1214.0	1216.0	1227.7	1241.4	1231.6	1221.8	1229.7	1227.7	1243.3	1243.3	1241.4
12.5°	1198.4	1200.4	1212.1	1223.8	1214.0	1204.3	1212.1	1212.1	1227.7	1229.7	1227.7
15°	1177.0	1180.9	1190.6	1202.3	1196.5	1184.8	1192.6	1192.6	1206.2	1210.1	1210.1
17.5°	1159.4	1161.3	1171.1	1182.8	1175.0	1165.2	1173.1	1173.1	1186.7	1190.6	1190.6
20°	1136.0	1139.9	1149.6	1161.3	1155.5	1147.7	1153.5	1153.5	1169.2	1173.1	1175.0
22.5°	1116.5	1120.4	1128.2	1143.8	1134.0	1128.2	1136.0	1134.0	1151.6	1153.5	1153.5
25°	1095.0	1098.9	1108.6	1118.4	1112.5	1106.7	1112.5	1112.5	1126.2	1128.2	1128.2
27.5°	1063.8	1065.7	1075.5	1085.2	1079.4	1071.6	1079.4	1077.4	1091.1	1093.0	1091.1
30°	1013.0	1016.9	1020.8	1034.5	1028.6	1022.8	1030.6	1026.7	1040.3	1040.3	1038.4
32.5°	948.6	948.6	956.4	966.2	958.4	954.4	960.3	962.3	972.0	972.0	966.2
35°	870.5	874.4	880.3	886.1	880.3	876.4	882.2	880.3	892.0	888.1	882.2
37.5°	792.4	794.4	800.3	808.1	800.3	794.4	796.3	794.4	804.2	804.2	794.4
40°	720.2	724.1	728.0	735.8	728.0	724.1	726.1	720.2	731.9	728.0	722.2
42.5°	661.7	663.6	669.5	673.4	665.6	663.6	665.6	661.7	667.5	663.6	651.9
45°	616.8	616.8	618.7	624.6	616.8	614.8	614.8	610.9	616.8	609.0	597.3
47.5°	577.7	579.7	581.6	585.6	579.7	573.8	575.8	568.0	571.9	566.0	550.4
50°	538.7	542.6	544.6	548.5	542.6	538.7	540.7	532.9	532.9	523.1	509.4
52.5°	499.7	501.6	499.7	503.6	499.7	493.8	495.8	488.0	488.0	476.2	462.6
55°	435.3	437.2	439.2	443.1	439.2	433.3	437.2	431.4	431.4	423.5	407.9
57.5°	370.8	372.8	374.8	376.7	376.7	372.8	374.8	370.8	368.9	363.0	351.3
60°	329.9	329.9	329.9	331.8	329.9	327.9	327.9	324.0	324.0	316.2	304.5
62.5°	298.6	300.6	300.6	302.5	300.6	298.6	296.7	292.8	290.8	283.0	273.3
65°	269.4	269.4	267.4	271.3	269.4	267.4	267.4	263.5	259.6	251.8	242.0
67.5°	234.2	236.2	234.2	236.2	236.2	234.2	232.3	228.4	226.4	220.6	208.8
70°	197.1	197.1	197.1	199.1	197.1	197.1	199.1	193.2	191.3	183.5	173.7
72.5°	160.1	162.0	162.0	160.1	162.0	158.1	158.1	158.1	156.1	148.3	138.6
75°	123.0	124.9	124.9	126.9	124.9	123.0	123.0	121.0	119.1	113.2	105.4
77.5°	91.7	91.7	93.7	93.7	93.7	91.7	91.7	87.8	87.8	83.9	76.1
80°	66.4	66.4	64.4	66.4	66.4	64.4	64.4	62.5	62.5	58.6	52.7
82.5°	42.9	44.9	44.9	44.9	44.9	42.9	42.9	42.9	41.0	39.0	35.1
85°	27.3	27.3	27.3	27.3	29.3	27.3	29.3	27.3	27.3	23.4	21.5
87.5°	11.7	11.7	11.7	13.7	13.7	11.7	11.7	11.7	11.7	11.7	9.8
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°	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7
2.5°	1266.7	1268.7	1262.8	1270.6	1264.8	1266.7	1268.7	1266.7	1258.9	1258.9	1280.4
5°	1258.9	1262.8	1257.0	1266.7	1262.8	1262.8	1266.7	1264.8	1257.0	1258.9	1278.5
7.5°	1251.1	1257.0	1253.1	1262.8	1257.0	1257.0	1260.9	1260.9	1253.1	1255.0	1272.6
10°	1239.4	1247.2	1245.3	1255.0	1249.2	1249.2	1255.0	1255.0	1247.2	1249.2	1266.7
12.5°	1229.7	1237.5	1235.5	1245.3	1241.4	1243.3	1245.3	1249.2	1239.4	1243.3	1258.9
15°	1214.0	1221.8	1221.8	1231.6	1227.7	1231.6	1235.5	1241.4	1233.6	1233.6	1249.2
17.5°	1196.5	1206.2	1206.2	1214.0	1214.0	1216.0	1223.8	1229.7	1221.8	1223.8	1237.5
20°	1177.0	1188.7	1188.7	1198.4	1196.5	1200.4	1206.2	1212.1	1204.3	1204.3	1219.9
22.5°	1157.4	1167.2	1169.2	1175.0	1175.0	1177.0	1182.8	1186.7	1177.0	1177.0	1192.6
25°	1130.1	1139.9	1141.8	1145.7	1141.8	1141.8	1145.7	1149.6	1139.9	1139.9	1153.5
27.5°	1093.0	1102.8	1102.8	1100.8	1096.9	1098.9	1096.9	1098.9	1089.1	1087.2	1100.8
30°	1038.4	1044.2	1044.2	1042.3	1036.4	1036.4	1030.6	1032.5	1018.9	1018.9	1030.6
32.5°	964.2	970.1	966.2	962.3	954.4	950.5	946.6	944.7	931.0	931.0	944.7
35°	876.4	880.3	874.4	866.6	856.9	851.0	845.1	837.3	827.6	829.5	837.3
37.5°	786.6	786.6	778.8	763.2	755.4	745.6	735.8	735.8	720.2	718.3	724.1
40°	710.5	702.7	689.0	667.5	653.9	644.1	630.4	622.6	610.9	610.9	620.7
42.5°	642.2	626.5	609.0	579.7	566.0	554.3	536.8	528.9	515.3	513.3	519.2
45°	581.6	566.0	540.7	509.4	491.9	478.2	452.8	443.1	431.4	429.4	433.3
47.5°	532.9	515.3	484.1	443.1	425.5	407.9	382.6	368.9	359.1	353.3	359.1
50°	489.9	466.5	433.3	390.4	366.9	351.3	320.1	306.4	292.8	288.9	290.8
52.5°	443.1	419.6	384.5	339.6	318.1	294.7	265.4	245.9	234.2	228.4	234.2
55°	392.3	368.9	333.8	288.9	265.4	244.0	212.8	197.1	183.5	177.6	183.5
57.5°	337.7	316.2	285.0	240.1	218.6	199.1	169.8	154.2	140.5	136.6	140.5
60°	290.8	273.3	242.0	199.1	181.5	160.1	134.7	119.1	107.4	105.4	107.4
62.5°	259.6	240.1	210.8	169.8	152.2	134.7	111.3	95.6	85.9	83.9	85.9
65°	228.4	206.9	179.6	144.4	126.9	113.2	89.8	76.1	66.4	64.4	66.4
67.5°	193.2	173.7	150.3	119.1	105.4	91.7	72.2	58.6	50.7	48.8	50.7
70°	160.1	142.5	119.1	95.6	82.0	72.2	54.7	44.9	37.1	35.1	37.1
72.5°	126.9	111.3	91.7	72.2	64.4	54.7	42.9	33.2	27.3	25.4	27.3
75°	97.6	85.9	70.3	52.7	46.8	41.0	29.3	23.4	19.5	17.6	19.5
77.5°	68.3	60.5	48.8	39.0	33.2	29.3	21.5	15.6	13.7	11.7	13.7
80°	46.8	41.0	33.2	25.4	21.5	17.6	13.7	9.8	7.8	7.8	7.8
82.5°	31.2	25.4	19.5	15.6	13.7	11.7	7.8	5.9	5.9	3.9	3.9
85°	17.6	15.6	11.7	9.8	7.8	5.9	3.9	3.9	2.0	2.0	2.0
87.5°	7.8	5.9	3.9	3.9	2.0	2.0	2.0	2.0	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7
2.5°	1274.5	1268.7	1276.5	1268.7	1264.8	1268.7	1264.8	1276.5	1266.7	1258.9	1266.7
5°	1272.6	1264.8	1272.6	1266.7	1260.9	1262.8	1258.9	1270.6	1258.9	1253.1	1257.0
7.5°	1268.7	1262.8	1266.7	1260.9	1255.0	1257.0	1253.1	1262.8	1251.1	1245.3	1249.2
10°	1262.8	1257.0	1258.9	1255.0	1249.2	1249.2	1245.3	1253.1	1239.4	1231.6	1235.5
12.5°	1255.0	1247.2	1251.1	1245.3	1237.5	1237.5	1233.6	1239.4	1225.8	1217.9	1219.9
15°	1245.3	1237.5	1237.5	1231.6	1223.8	1223.8	1216.0	1221.8	1206.2	1198.4	1198.4
17.5°	1233.6	1223.8	1223.8	1217.9	1208.2	1206.2	1200.4	1206.2	1188.7	1180.9	1180.9
20°	1216.0	1208.2	1206.2	1202.3	1192.6	1190.6	1182.8	1184.8	1171.1	1165.2	1163.3
22.5°	1192.6	1184.8	1186.7	1180.9	1173.1	1171.1	1163.3	1169.2	1155.5	1149.6	1151.6
25°	1151.6	1147.7	1151.6	1149.6	1143.8	1143.8	1139.9	1143.8	1132.1	1128.2	1130.1
27.5°	1104.7	1102.8	1104.7	1104.7	1100.8	1100.8	1100.8	1106.7	1095.0	1093.0	1093.0
30°	1036.4	1036.4	1038.4	1040.3	1040.3	1044.2	1042.3	1050.1	1042.3	1038.4	1042.3
32.5°	946.6	954.4	960.3	960.3	960.3	964.2	968.1	974.0	966.2	968.1	968.1
35°	845.1	851.0	854.9	864.7	858.8	872.5	876.4	884.2	882.2	886.1	884.2
37.5°	731.9	739.7	747.6	761.2	759.3	774.9	782.7	798.3	794.4	802.2	806.1
40°	626.5	638.3	650.0	659.7	667.5	683.1	698.8	718.3	724.1	730.0	731.9
42.5°	525.0	536.8	556.3	569.9	581.6	607.0	628.5	651.9	657.8	669.5	673.4
45°	443.1	452.8	476.2	493.8	503.6	540.7	566.0	595.3	605.1	618.7	624.6
47.5°	366.9	384.5	407.9	429.4	443.1	482.1	515.3	546.5	560.2	575.8	583.6
50°	300.6	320.1	351.3	370.8	390.4	433.3	470.4	503.6	517.2	534.8	542.6
52.5°	245.9	267.4	296.7	318.1	339.6	384.5	423.5	454.8	472.3	484.1	495.8
55°	193.2	216.7	245.9	269.4	286.9	335.7	368.9	400.1	411.8	421.6	427.5
57.5°	150.3	167.9	197.1	216.7	238.1	281.1	314.2	337.7	347.4	359.1	363.0
60°	117.1	134.7	162.0	181.5	201.0	242.0	275.2	298.6	308.4	318.1	324.0
62.5°	93.7	111.3	136.6	154.2	171.8	208.8	238.1	261.5	273.3	283.0	288.9
65°	74.2	89.8	111.3	128.8	142.5	175.7	204.9	226.4	238.1	247.9	253.7
67.5°	58.6	72.2	91.7	103.4	117.1	144.4	169.8	189.3	199.1	210.8	216.7
70°	44.9	54.7	72.2	82.0	91.7	115.2	134.7	154.2	164.0	171.8	175.7
72.5°	33.2	41.0	54.7	62.5	68.3	87.8	103.4	117.1	124.9	132.7	136.6
75°	23.4	29.3	39.0	44.9	48.8	62.5	76.1	85.9	91.7	97.6	103.4
77.5°	15.6	19.5	25.4	29.3	33.2	42.9	50.7	58.6	64.4	70.3	72.2
80°	9.8	13.7	17.6	19.5	21.5	27.3	35.1	39.0	42.9	46.8	48.8
82.5°	5.9	7.8	9.8	11.7	13.7	17.6	21.5	25.4	27.3	31.2	33.2
85°	2.0	3.9	3.9	5.9	5.9	9.8	11.7	13.7	15.6	17.6	19.5
87.5°	0.0	0.0	2.0	2.0	2.0	2.0	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: P251935

CATALOG NUMBER: LD4B30D010 EU4B30508035 4LBDW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7	1268.7
2.5°	1274.5	1268.7	1264.8	1262.8	1276.5	1258.9	1266.7	1268.7
5°	1266.7	1260.9	1257.0	1255.0	1266.7	1251.1	1257.0	1260.9
7.5°	1255.0	1251.1	1245.3	1243.3	1255.0	1237.5	1245.3	1247.2
10°	1241.4	1235.5	1231.6	1229.7	1239.4	1221.8	1229.7	1229.7
12.5°	1223.8	1219.9	1212.1	1212.1	1219.9	1204.3	1210.1	1210.1
15°	1200.4	1196.5	1188.7	1188.7	1196.5	1180.9	1186.7	1186.7
17.5°	1180.9	1177.0	1171.1	1169.2	1177.0	1161.3	1167.2	1165.2
20°	1165.2	1161.3	1153.5	1153.5	1159.4	1143.8	1149.6	1149.6
22.5°	1151.6	1149.6	1141.8	1141.8	1149.6	1134.0	1137.9	1134.0
25°	1130.1	1128.2	1120.4	1122.3	1126.2	1110.6	1116.5	1112.5
27.5°	1095.0	1095.0	1087.2	1085.2	1091.1	1077.4	1081.3	1079.4
30°	1040.3	1042.3	1032.5	1032.5	1034.5	1022.8	1028.6	1026.7
32.5°	966.2	968.1	960.3	958.4	964.2	954.4	958.4	958.4
35°	884.2	886.1	880.3	880.3	886.1	880.3	880.3	878.3
37.5°	802.2	806.1	802.2	804.2	808.1	802.2	806.1	804.2
40°	735.8	739.7	733.9	737.8	741.7	735.8	741.7	737.8
42.5°	675.3	681.2	677.3	681.2	685.1	681.2	685.1	679.2
45°	630.4	634.3	632.4	634.3	638.3	636.3	638.3	636.3
47.5°	587.5	595.3	591.4	595.3	601.2	597.3	601.2	595.3
50°	548.5	554.3	552.4	556.3	558.2	556.3	560.2	554.3
52.5°	497.7	503.6	501.6	501.6	505.5	501.6	505.5	501.6
55°	431.4	433.3	433.3	435.3	433.3	431.4	433.3	429.4
57.5°	366.9	370.8	365.0	370.8	368.9	366.9	366.9	363.0
60°	326.0	331.8	327.9	331.8	329.9	329.9	329.9	327.9
62.5°	292.8	296.7	292.8	294.7	294.7	294.7	292.8	290.8
65°	255.7	261.5	257.6	259.6	257.6	255.7	257.6	255.7
67.5°	218.6	220.6	220.6	218.6	218.6	218.6	218.6	214.7
70°	177.6	179.6	177.6	181.5	179.6	177.6	179.6	175.7
72.5°	138.6	140.5	138.6	140.5	138.6	138.6	138.6	138.6
75°	103.4	105.4	105.4	105.4	105.4	105.4	101.5	105.4
77.5°	74.2	74.2	74.2	76.1	74.2	74.2	74.2	74.2
80°	50.7	50.7	50.7	52.7	50.7	52.7	50.7	52.7
82.5°	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2
85°	17.6	19.5	19.5	17.6	17.6	17.6	17.6	17.6
87.5°	3.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)