

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: P251611

Luminaire Tested: **LD4B20D010 EU4B10208040 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251611
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20D010 EU4B10208040 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1861.0 lumens
Efficiency: N/A
Efficacy: 89.5 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

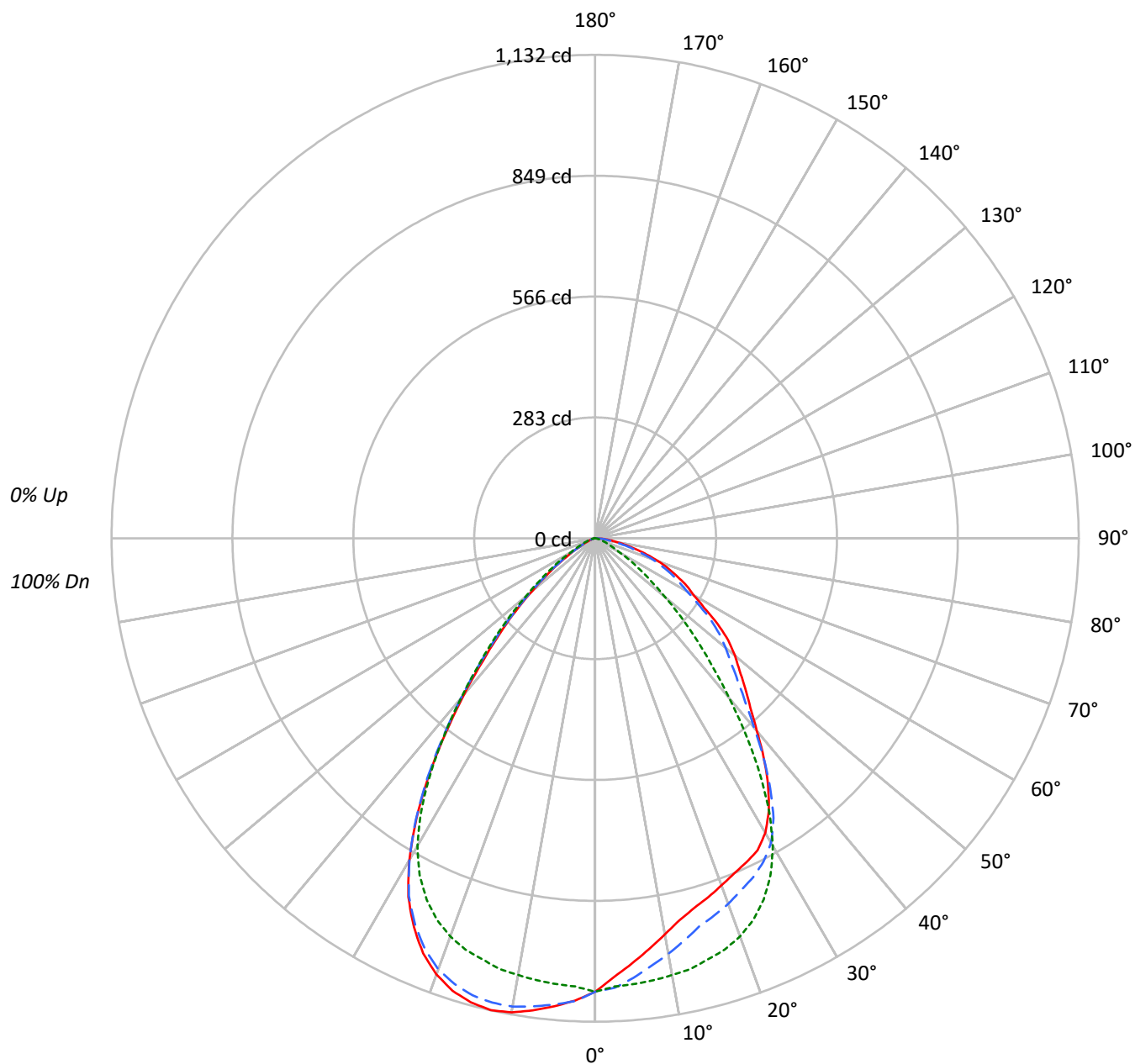
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89		
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79		
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70		
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62		
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56		
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50		
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46		
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42		
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38		
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	103471	103471	103471
5°	97703	102526	107613
10°	93152	102762	111559
15°	90413	102974	113468
20°	89680	102873	112663
25°	90037	100339	107985
30°	89612	93607	97917
35°	83996	79927	80736
40°	74845	61970	60571
45°	68445	46199	43374
50°	64726	32355	29247
55°	59504	21851	18368
60°	52004	12806	10136
65°	49211	8210	5673
70°	44822	5841	3505
75°	37090	4104	2561
80°	29184	2301	1515
85°	26054	1565	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.3	5.4
10°-20°	287.8	15.5
20°-30°	426.6	22.9
30°-40°	427.2	23.0
40°-50°	298.6	16.0
50°-60°	177.7	9.5
60°-70°	92.7	5.0
70°-80°	41.2	2.2
80°-90°	9.0	0.5
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°	814.7	43.8
0°-40°	1241.9	66.7
0°-60°	1718.1	92.3
0°-90°	1861.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1861.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1062	1062	1062	1062	1062	
5°	999	1033	1048	1096	1100	94
15°	896	941	1021	1108	1125	254
25°	837	876	933	997	1004	386
35°	706	714	672	684	679	438
45°	497	472	335	324	315	386
55°	350	328	129	112	108	311
65°	213	196	36	26	25	211
75°	98	86	11	7	7	107
85°	23	18	1	1	0	26
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°	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7
2.5°	1027.5	1039.8	1027.5	1031.6	1048.0	1032.9	1041.2	1041.2	1037.1	1046.6	1053.5
5°	998.7	1011.1	998.7	1004.2	1022.0	1007.0	1016.5	1013.8	1015.2	1023.4	1032.9
7.5°	970.0	979.6	968.6	975.5	991.9	979.6	987.8	987.8	989.2	1001.5	1009.7
10°	941.3	949.5	941.3	946.8	964.5	953.6	959.1	960.4	964.5	975.5	987.8
12.5°	915.3	922.1	913.9	922.1	937.2	926.2	933.1	934.4	938.5	950.9	964.5
15°	896.1	903.0	894.8	901.6	915.3	907.1	912.5	915.3	918.0	929.0	941.3
17.5°	881.1	886.6	879.7	887.9	898.9	889.3	897.5	897.5	901.6	912.5	926.2
20°	864.7	870.1	864.7	871.5	883.8	875.6	882.5	882.5	886.6	898.9	911.2
22.5°	849.6	852.4	849.6	855.1	867.4	860.6	864.7	866.0	870.1	881.1	892.0
25°	837.3	842.8	840.0	845.5	853.7	846.9	851.0	852.4	856.5	866.0	875.6
27.5°	823.6	826.4	823.6	830.5	837.3	831.8	835.9	834.6	837.3	845.5	853.7
30°	796.3	799.0	799.0	803.1	808.6	805.8	809.9	805.8	808.6	815.4	823.6
32.5°	756.6	757.9	759.3	763.4	767.5	763.4	766.2	766.2	766.2	771.6	777.1
35°	706.0	708.7	707.3	710.1	714.2	712.8	712.8	711.4	708.7	711.4	714.2
37.5°	648.5	644.4	644.4	648.5	651.2	645.8	648.5	645.8	645.8	647.1	647.1
40°	588.3	584.2	588.3	589.7	591.0	588.3	586.9	584.2	580.1	581.5	578.7
42.5°	537.7	534.9	536.3	536.3	537.7	534.9	536.3	530.8	526.7	524.0	519.9
45°	496.6	492.5	496.6	493.9	493.9	492.5	491.2	488.4	483.0	478.8	472.0
47.5°	458.3	458.3	459.7	459.7	459.7	457.0	457.0	451.5	446.0	440.5	431.0
50°	426.9	424.1	429.6	429.6	425.5	424.1	425.5	418.7	414.5	407.7	398.1
52.5°	392.7	392.7	394.0	394.0	392.7	389.9	391.3	385.8	381.7	374.9	365.3
55°	350.2	347.5	351.6	351.6	350.2	348.9	350.2	346.1	342.0	336.6	328.4
57.5°	302.4	301.0	303.7	305.1	302.4	302.4	303.7	299.6	298.3	292.8	284.6
60°	266.8	265.4	268.2	269.5	266.8	266.8	266.8	261.3	258.6	253.1	247.6
62.5°	242.2	240.8	243.5	242.2	240.8	239.4	240.8	235.3	232.6	227.1	221.6
65°	213.4	214.8	216.2	216.2	214.8	213.4	213.4	210.7	208.0	202.5	195.6
67.5°	186.1	186.1	187.4	188.8	187.4	187.4	187.4	183.3	180.6	176.5	168.3
70°	157.3	156.0	160.1	160.1	157.3	158.7	157.3	156.0	153.2	147.8	140.9
72.5°	127.2	127.2	128.6	128.6	127.2	127.2	127.2	125.9	121.8	119.0	112.2
75°	98.5	98.5	99.9	101.2	98.5	98.5	99.9	97.1	94.4	90.3	86.2
77.5°	73.9	72.5	73.9	73.9	72.5	72.5	72.5	71.1	69.8	65.7	61.6
80°	52.0	50.6	52.0	52.0	52.0	50.6	50.6	49.3	49.3	46.5	42.4
82.5°	35.6	34.2	35.6	35.6	35.6	34.2	34.2	34.2	32.8	31.5	28.7
85°	23.3	21.9	21.9	23.3	21.9	21.9	21.9	21.9	20.5	19.2	17.8
87.5°	10.9	10.9	10.9	10.9	10.9	10.9	10.9	9.6	9.6	9.6	8.2
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°	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7
2.5°	1048.0	1045.3	1053.5	1050.7	1052.1	1045.3	1056.2	1050.7	1057.6	1050.7	1064.4
5°	1030.2	1027.5	1039.8	1038.4	1039.8	1034.3	1046.6	1045.3	1053.5	1048.0	1063.0
7.5°	1011.1	1008.3	1022.0	1023.4	1026.1	1020.6	1037.1	1037.1	1045.3	1043.9	1060.3
10°	989.2	990.5	1004.2	1007.0	1012.4	1009.7	1024.7	1028.8	1039.8	1038.4	1058.9
12.5°	968.6	968.6	986.4	991.9	996.0	994.6	1012.4	1017.9	1030.2	1032.9	1052.1
15°	948.1	949.5	965.9	974.1	979.6	978.2	997.4	1004.2	1019.3	1020.6	1043.9
17.5°	931.7	930.3	948.1	955.0	963.2	961.8	982.3	990.5	1005.6	1009.7	1031.6
20°	918.0	916.7	933.1	941.3	946.8	945.4	965.9	975.5	989.2	991.9	1013.8
22.5°	901.6	898.9	915.3	922.1	927.6	926.2	944.0	950.9	964.5	967.3	987.8
25°	882.5	879.7	894.8	898.9	903.0	900.2	915.3	919.4	930.3	933.1	953.6
27.5°	860.6	853.7	866.0	866.0	868.8	864.7	875.6	879.7	889.3	889.3	908.4
30°	826.4	816.8	823.6	822.3	823.6	818.1	825.0	826.4	833.2	831.8	845.5
32.5°	778.5	764.8	768.9	764.8	760.7	752.5	760.7	757.9	763.4	757.9	770.3
35°	712.8	699.1	697.8	692.3	688.2	681.3	681.3	674.5	675.9	671.8	680.0
37.5°	641.7	623.9	621.1	610.2	603.3	595.1	595.1	589.7	582.8	580.1	586.9
40°	571.9	552.7	545.9	528.1	521.3	513.1	507.6	500.7	498.0	487.1	492.5
42.5°	511.7	491.2	476.1	457.0	450.1	437.8	429.6	421.4	417.3	405.0	410.4
45°	461.1	436.4	420.0	395.4	385.8	372.1	359.8	350.2	340.7	335.2	332.5
47.5°	418.7	392.7	370.8	343.4	328.4	316.0	299.6	290.0	277.7	270.9	266.8
50°	383.1	354.3	329.7	298.3	283.2	269.5	250.4	235.3	224.4	213.4	210.7
52.5°	351.6	321.5	294.2	258.6	240.8	224.4	203.9	187.4	177.9	165.5	164.2
55°	314.7	288.7	258.6	221.6	203.9	187.4	165.5	149.1	136.8	128.6	125.9
57.5°	275.0	250.4	221.6	184.7	166.9	149.1	128.6	113.6	102.6	95.8	94.4
60°	238.1	214.8	187.4	150.5	132.7	117.7	95.8	80.7	71.1	65.7	62.9
62.5°	210.7	188.8	162.8	128.6	112.2	97.1	76.6	62.9	54.7	49.3	46.5
65°	184.7	162.8	139.6	108.1	94.4	80.7	61.6	49.3	41.0	35.6	32.8
67.5°	157.3	138.2	116.3	90.3	76.6	65.7	49.3	38.3	31.5	27.4	24.6
70°	130.0	112.2	94.4	72.5	62.9	52.0	38.3	30.1	23.3	20.5	17.8
72.5°	102.6	88.9	73.9	56.1	47.9	41.0	30.1	21.9	17.8	15.0	12.3
75°	76.6	67.0	54.7	42.4	35.6	30.1	21.9	16.4	13.7	10.9	9.6
77.5°	54.7	46.5	38.3	28.7	26.0	21.9	15.0	12.3	9.6	6.8	5.5
80°	36.9	32.8	26.0	20.5	16.4	15.0	10.9	8.2	5.5	4.1	4.1
82.5°	24.6	20.5	16.4	12.3	10.9	9.6	6.8	5.5	4.1	2.7	2.7
85°	15.0	12.3	9.6	6.8	6.8	5.5	4.1	2.7	1.4	1.4	1.4
87.5°	6.8	5.5	4.1	2.7	2.7	1.4	1.4	1.4	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°	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7
2.5°	1075.4	1067.1	1061.7	1068.5	1071.3	1067.1	1071.3	1078.1	1084.9	1086.3	1067.1
5°	1076.7	1068.5	1065.8	1074.0	1075.4	1074.0	1078.1	1087.7	1095.9	1098.6	1079.5
7.5°	1076.7	1071.3	1069.9	1079.5	1080.8	1079.5	1086.3	1097.2	1105.5	1110.9	1091.8
10°	1074.0	1071.3	1072.6	1080.8	1083.6	1083.6	1093.1	1105.5	1113.7	1119.1	1100.0
12.5°	1069.9	1069.9	1069.9	1079.5	1082.2	1083.6	1091.8	1108.2	1113.7	1121.9	1102.7
15°	1063.0	1063.0	1063.0	1072.6	1076.7	1076.7	1086.3	1101.4	1108.2	1116.4	1097.2
17.5°	1050.7	1050.7	1052.1	1060.3	1064.4	1064.4	1074.0	1090.4	1094.5	1104.1	1084.9
20°	1032.9	1032.9	1034.3	1042.5	1046.6	1043.9	1056.2	1069.9	1074.0	1082.2	1063.0
22.5°	1007.0	1007.0	1007.0	1015.2	1017.9	1016.5	1028.8	1041.2	1041.2	1052.1	1031.6
25°	968.6	971.4	968.6	976.9	979.6	978.2	989.2	1000.1	997.4	1009.7	989.2
27.5°	922.1	920.8	920.8	927.6	927.6	926.2	934.4	946.8	944.0	952.2	933.1
30°	857.8	861.9	855.1	864.7	860.6	857.8	863.3	874.2	870.1	877.0	861.9
32.5°	783.9	778.5	778.5	778.5	781.2	774.4	779.8	785.3	781.2	788.0	771.6
35°	686.8	688.2	684.1	685.4	686.8	678.6	684.1	689.5	684.1	688.2	673.1
37.5°	589.7	591.0	581.5	586.9	581.5	578.7	584.2	586.9	581.5	585.6	569.1
40°	492.5	489.8	488.4	488.4	489.8	483.0	487.1	491.2	487.1	489.8	474.7
42.5°	407.7	406.3	403.6	405.0	400.9	399.5	400.9	405.0	400.9	403.6	392.7
45°	333.8	331.1	327.0	328.4	328.4	321.5	325.6	328.4	324.2	325.6	316.0
47.5°	265.4	261.3	261.3	259.9	259.9	257.2	261.3	259.9	255.8	258.6	249.0
50°	206.6	203.9	203.9	203.9	203.9	199.7	201.1	203.9	199.7	199.7	194.3
52.5°	161.4	157.3	154.6	154.6	154.6	153.2	153.2	154.6	150.5	150.5	149.1
55°	121.8	120.4	116.3	116.3	116.3	112.2	113.6	113.6	112.2	112.2	108.1
57.5°	90.3	86.2	83.5	83.5	80.7	80.7	79.4	80.7	78.0	78.0	75.2
60°	60.2	57.5	56.1	54.7	54.7	53.4	54.7	53.4	53.4	52.0	50.6
62.5°	43.8	41.0	38.3	38.3	38.3	36.9	36.9	36.9	36.9	36.9	35.6
65°	31.5	28.7	28.7	27.4	27.4	26.0	26.0	26.0	26.0	26.0	24.6
67.5°	21.9	20.5	19.2	19.2	19.2	19.2	19.2	19.2	17.8	17.8	17.8
70°	16.4	15.0	13.7	13.7	13.7	13.7	13.7	12.3	13.7	13.7	12.3
72.5°	10.9	10.9	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
75°	8.2	8.2	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
77.5°	5.5	5.5	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
80°	4.1	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
82.5°	2.7	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
85°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.0
87.5°	0.0	0.0	0.0	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	0.0	0.0	0.0



TEST NUMBER: P251611

CATALOG NUMBER: LD4B20D010 EU4B10208040 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7	1061.7
2.5°	1087.7	1086.3	1083.6	1087.7	1076.7	1072.6	1071.3	1083.6
5°	1102.7	1100.0	1100.0	1104.1	1091.8	1089.0	1086.3	1100.0
7.5°	1116.4	1113.7	1113.7	1117.8	1106.8	1104.1	1101.4	1115.0
10°	1124.6	1124.6	1124.6	1127.3	1117.8	1115.0	1113.7	1127.3
12.5°	1128.7	1128.7	1127.3	1132.8	1120.5	1120.5	1117.8	1131.5
15°	1123.2	1123.2	1123.2	1127.3	1116.4	1113.7	1113.7	1124.6
17.5°	1109.6	1109.6	1108.2	1112.3	1100.0	1100.0	1098.6	1110.9
20°	1089.0	1089.0	1086.3	1091.8	1079.5	1075.4	1074.0	1086.3
22.5°	1056.2	1054.8	1053.5	1056.2	1045.3	1042.5	1041.2	1052.1
25°	1013.8	1012.4	1009.7	1012.4	1000.1	996.0	996.0	1004.2
27.5°	953.6	953.6	949.5	953.6	939.9	938.5	937.2	946.8
30°	879.7	874.2	871.5	877.0	863.3	863.3	860.6	870.1
32.5°	788.0	782.6	781.2	783.9	771.6	767.5	773.0	778.5
35°	682.7	684.1	678.6	678.6	667.7	669.0	670.4	678.6
37.5°	581.5	578.7	577.4	578.7	570.5	567.8	565.0	573.3
40°	487.1	480.2	478.8	478.8	472.0	470.6	472.0	476.1
42.5°	398.1	396.8	391.3	394.0	387.2	389.9	388.6	388.6
45°	321.5	322.9	317.4	321.5	316.0	311.9	311.9	314.7
47.5°	254.5	254.5	253.1	253.1	249.0	250.4	247.6	251.7
50°	197.0	197.0	194.3	195.6	192.9	192.9	191.5	192.9
52.5°	150.5	149.1	149.1	147.8	145.0	146.4	147.8	145.0
55°	109.5	110.8	108.1	109.5	106.7	108.1	106.7	108.1
57.5°	75.2	76.6	73.9	76.6	73.9	75.2	73.9	73.9
60°	52.0	52.0	50.6	52.0	50.6	50.6	49.3	52.0
62.5°	35.6	35.6	35.6	35.6	35.6	34.2	35.6	35.6
65°	26.0	24.6	24.6	24.6	24.6	24.6	24.6	24.6
67.5°	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8
70°	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
72.5°	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
75°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
77.5°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
80°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
85°	1.4	1.4	1.4	0.0	1.4	0.0	0.0	0.0
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



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— 0°-180° - - 45°-225° - - - 90°-270°













(END OF REPORT)