

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: P251609

Luminaire Tested: **LD4B20D010 EU4B10208030 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251609
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 EU4B10208030 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1797.0 lumens
Efficiency: N/A
Efficacy: 86.4 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

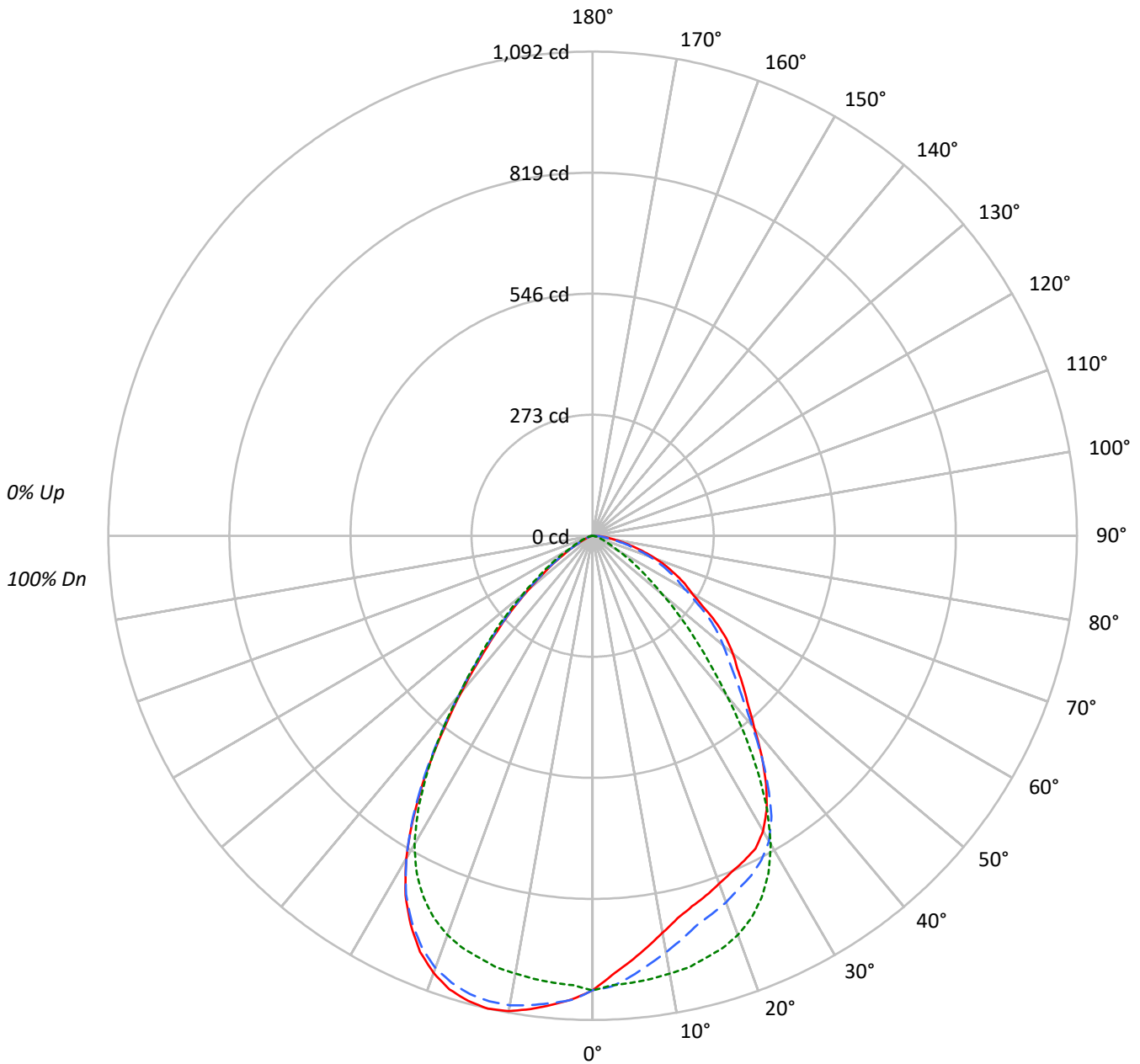
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				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	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89				89
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79				79
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70				70
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62				62
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56				56
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50				50
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46				46
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42				42
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38				38
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35				35

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	99914	99914	99914
5°	94348	99004	103915
10°	89946	99229	107730
15°	87305	99433	109563
20°	86590	99336	108784
25°	86941	96887	104275
30°	86528	90388	94552
35°	81105	77179	77964
40°	72275	59833	58484
45°	66102	44614	41885
50°	62497	31248	28246
55°	57465	21103	17739
60°	50210	12358	9785
65°	47528	7910	5488
70°	43284	5642	3391
75°	35810	3991	2485
80°	28174	2245	1459
85°	25160	1454	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	96.9	5.4
10°-20°	277.9	15.5
20°-30°	411.9	22.9
30°-40°	412.5	23.0
40°-50°	288.3	16.0
50°-60°	171.5	9.5
60°-70°	89.5	5.0
70°-80°	39.8	2.2
80°-90°	8.7	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°	786.7	43.8
0°-40°	1199.2	66.7
0°-60°	1659.0	92.3
0°-90°	1797.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1797.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1025	1025	1025	1025	1025	
5°	964	997	1012	1058	1062	90
15°	865	909	986	1070	1086	245
25°	808	846	901	963	970	373
35°	682	690	649	660	655	423
45°	480	456	324	313	304	372
55°	338	317	124	108	104	300
65°	206	189	34	25	24	204
75°	95	83	11	7	7	103
85°	22	17	1	1	0	25
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°	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2
2.5°	992.1	1004.0	992.1	996.1	1012.0	997.4	1005.3	1005.3	1001.4	1010.6	1017.2
5°	964.4	976.3	964.4	969.7	986.9	972.3	981.6	978.9	980.2	988.2	997.4
7.5°	936.7	945.9	935.3	941.9	957.8	945.9	953.8	953.8	955.1	967.0	975.0
10°	908.9	916.8	908.9	914.2	931.4	920.8	926.1	927.4	931.4	941.9	953.8
12.5°	883.8	890.4	882.5	890.4	904.9	894.4	901.0	902.3	906.3	918.2	931.4
15°	865.3	871.9	864.0	870.6	883.8	875.9	881.2	883.8	886.5	897.0	908.9
17.5°	850.8	856.1	849.5	857.4	868.0	858.7	866.6	866.6	870.6	881.2	894.4
20°	834.9	840.2	834.9	841.5	853.4	845.5	852.1	852.1	856.1	868.0	879.8
22.5°	820.4	823.0	820.4	825.7	837.6	831.0	834.9	836.2	840.2	850.8	861.4
25°	808.5	813.8	811.1	816.4	824.4	817.8	821.7	823.0	827.0	836.2	845.5
27.5°	795.3	797.9	795.3	801.9	808.5	803.2	807.2	805.9	808.5	816.4	824.4
30°	768.9	771.5	771.5	775.5	780.8	778.1	782.1	778.1	780.8	787.4	795.3
32.5°	730.6	731.9	733.2	737.2	741.1	737.2	739.8	739.8	739.8	745.1	750.4
35°	681.7	684.3	683.0	685.6	689.6	688.3	688.3	687.0	684.3	687.0	689.6
37.5°	626.2	622.2	622.2	626.2	628.8	623.6	626.2	623.6	623.6	624.9	624.9
40°	568.1	564.1	568.1	569.4	570.7	568.1	566.7	564.1	560.1	561.5	558.8
42.5°	519.2	516.5	517.9	517.9	519.2	516.5	517.9	512.6	508.6	506.0	502.0
45°	479.6	475.6	479.6	476.9	476.9	475.6	474.3	471.6	466.3	462.4	455.8
47.5°	442.6	442.6	443.9	443.9	443.9	441.2	441.2	436.0	430.7	425.4	416.1
50°	412.2	409.5	414.8	414.8	410.9	409.5	410.9	404.3	400.3	393.7	384.4
52.5°	379.2	379.2	380.5	380.5	379.2	376.5	377.8	372.5	368.6	362.0	352.7
55°	338.2	335.6	339.5	339.5	338.2	336.9	338.2	334.2	330.3	325.0	317.1
57.5°	292.0	290.6	293.3	294.6	292.0	292.0	293.3	289.3	288.0	282.7	274.8
60°	257.6	256.3	258.9	260.3	257.6	257.6	257.6	252.3	249.7	244.4	239.1
62.5°	233.8	232.5	235.2	233.8	232.5	231.2	232.5	227.2	224.6	219.3	214.0
65°	206.1	207.4	208.7	208.7	207.4	206.1	206.1	203.4	200.8	195.5	188.9
67.5°	179.7	179.7	181.0	182.3	181.0	181.0	181.0	177.0	174.4	170.4	162.5
70°	151.9	150.6	154.6	154.6	151.9	153.2	151.9	150.6	148.0	142.7	136.1
72.5°	122.9	122.9	124.2	124.2	122.9	122.9	122.9	121.5	117.6	114.9	108.3
75°	95.1	95.1	96.4	97.8	95.1	95.1	96.4	93.8	91.2	87.2	83.2
77.5°	71.3	70.0	71.3	71.3	70.0	70.0	70.0	68.7	67.4	63.4	59.4
80°	50.2	48.9	50.2	50.2	50.2	48.9	48.9	47.6	47.6	44.9	41.0
82.5°	34.3	33.0	34.3	34.3	34.3	33.0	33.0	33.0	31.7	30.4	27.7
85°	22.5	21.1	21.1	22.5	21.1	21.1	21.1	21.1	19.8	18.5	17.2
87.5°	10.6	10.6	10.6	10.6	10.6	10.6	10.6	9.2	9.2	9.2	7.9
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2
2.5°	1012.0	1009.3	1017.2	1014.6	1015.9	1009.3	1019.9	1014.6	1021.2	1014.6	1027.8
5°	994.8	992.1	1004.0	1002.7	1004.0	998.7	1010.6	1009.3	1017.2	1012.0	1026.5
7.5°	976.3	973.6	986.9	988.2	990.8	985.5	1001.4	1001.4	1009.3	1008.0	1023.8
10°	955.1	956.5	969.7	972.3	977.6	975.0	989.5	993.5	1004.0	1002.7	1022.5
12.5°	935.3	935.3	952.5	957.8	961.8	960.4	977.6	982.9	994.8	997.4	1015.9
15°	915.5	916.8	932.7	940.6	945.9	944.6	963.1	969.7	984.2	985.5	1008.0
17.5°	899.7	898.3	915.5	922.1	930.0	928.7	948.5	956.5	971.0	975.0	996.1
20°	886.5	885.1	901.0	908.9	914.2	912.9	932.7	941.9	955.1	957.8	978.9
22.5°	870.6	868.0	883.8	890.4	895.7	894.4	911.6	918.2	931.4	934.0	953.8
25°	852.1	849.5	864.0	868.0	871.9	869.3	883.8	887.8	898.3	901.0	920.8
27.5°	831.0	824.4	836.2	836.2	838.9	834.9	845.5	849.5	858.7	858.7	877.2
30°	797.9	788.7	795.3	794.0	795.3	790.0	796.6	797.9	804.5	803.2	816.4
32.5°	751.7	738.5	742.5	738.5	734.5	726.6	734.5	731.9	737.2	731.9	743.8
35°	688.3	675.1	673.8	668.5	664.5	657.9	657.9	651.3	652.6	648.7	656.6
37.5°	619.6	602.4	599.8	589.2	582.6	574.7	574.7	569.4	562.8	560.1	566.7
40°	552.2	533.7	527.1	509.9	503.3	495.4	490.1	483.5	480.9	470.3	475.6
42.5°	494.1	474.3	459.7	441.2	434.6	422.7	414.8	406.9	402.9	391.0	396.3
45°	445.2	421.4	405.6	381.8	372.5	359.3	347.4	338.2	329.0	323.7	321.0
47.5°	404.3	379.2	358.0	331.6	317.1	305.2	289.3	280.1	268.2	261.6	257.6
50°	369.9	342.2	318.4	288.0	273.5	260.3	241.8	227.2	216.7	206.1	203.4
52.5°	339.5	310.5	284.0	249.7	232.5	216.7	196.8	181.0	171.7	159.9	158.5
55°	303.9	278.7	249.7	214.0	196.8	181.0	159.9	144.0	132.1	124.2	121.5
57.5°	265.5	241.8	214.0	178.3	161.2	144.0	124.2	109.7	99.1	92.5	91.2
60°	229.9	207.4	181.0	145.3	128.1	113.6	92.5	77.9	68.7	63.4	60.8
62.5°	203.4	182.3	157.2	124.2	108.3	93.8	74.0	60.8	52.8	47.6	44.9
65°	178.3	157.2	134.8	104.4	91.2	77.9	59.4	47.6	39.6	34.3	31.7
67.5°	151.9	133.4	112.3	87.2	74.0	63.4	47.6	37.0	30.4	26.4	23.8
70°	125.5	108.3	91.2	70.0	60.8	50.2	37.0	29.1	22.5	19.8	17.2
72.5°	99.1	85.9	71.3	54.2	46.2	39.6	29.1	21.1	17.2	14.5	11.9
75°	74.0	64.7	52.8	41.0	34.3	29.1	21.1	15.9	13.2	10.6	9.2
77.5°	52.8	44.9	37.0	27.7	25.1	21.1	14.5	11.9	9.2	6.6	5.3
80°	35.7	31.7	25.1	19.8	15.9	14.5	10.6	7.9	5.3	4.0	4.0
82.5°	23.8	19.8	15.9	11.9	10.6	9.2	6.6	5.3	4.0	2.6	2.6
85°	14.5	11.9	9.2	6.6	6.6	5.3	4.0	2.6	1.3	1.3	1.3
87.5°	6.6	5.3	4.0	2.6	2.6	1.3	1.3	1.3	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°	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2
2.5°	1038.4	1030.4	1025.2	1031.8	1034.4	1030.4	1034.4	1041.0	1047.6	1048.9	1030.4
5°	1039.7	1031.8	1029.1	1037.1	1038.4	1037.1	1041.0	1050.3	1058.2	1060.8	1042.3
7.5°	1039.7	1034.4	1033.1	1042.3	1043.7	1042.3	1048.9	1059.5	1067.4	1072.7	1054.2
10°	1037.1	1034.4	1035.7	1043.7	1046.3	1046.3	1055.6	1067.4	1075.4	1080.7	1062.2
12.5°	1033.1	1033.1	1033.1	1042.3	1045.0	1046.3	1054.2	1070.1	1075.4	1083.3	1064.8
15°	1026.5	1026.5	1026.5	1035.7	1039.7	1039.7	1048.9	1063.5	1070.1	1078.0	1059.5
17.5°	1014.6	1014.6	1015.9	1023.8	1027.8	1027.8	1037.1	1052.9	1056.9	1066.1	1047.6
20°	997.4	997.4	998.7	1006.7	1010.6	1008.0	1019.9	1033.1	1037.1	1045.0	1026.5
22.5°	972.3	972.3	972.3	980.2	982.9	981.6	993.5	1005.3	1005.3	1015.9	996.1
25°	935.3	938.0	935.3	943.3	945.9	944.6	955.1	965.7	963.1	975.0	955.1
27.5°	890.4	889.1	889.1	895.7	895.7	894.4	902.3	914.2	911.6	919.5	901.0
30°	828.3	832.3	825.7	834.9	831.0	828.3	833.6	844.2	840.2	846.8	832.3
32.5°	757.0	751.7	751.7	751.7	754.3	747.7	753.0	758.3	754.3	760.9	745.1
35°	663.2	664.5	660.5	661.9	663.2	655.3	660.5	665.8	660.5	664.5	650.0
37.5°	569.4	570.7	561.5	566.7	561.5	558.8	564.1	566.7	561.5	565.4	549.6
40°	475.6	473.0	471.6	471.6	473.0	466.3	470.3	474.3	470.3	473.0	458.4
42.5°	393.7	392.4	389.7	391.0	387.1	385.8	387.1	391.0	387.1	389.7	379.2
45°	322.3	319.7	315.7	317.1	317.1	310.5	314.4	317.1	313.1	314.4	305.2
47.5°	256.3	252.3	252.3	251.0	251.0	248.4	252.3	251.0	247.0	249.7	240.4
50°	199.5	196.8	196.8	196.8	196.8	192.9	194.2	196.8	192.9	192.9	187.6
52.5°	155.9	151.9	149.3	149.3	149.3	148.0	148.0	149.3	145.3	145.3	144.0
55°	117.6	116.3	112.3	112.3	112.3	108.3	109.7	109.7	108.3	108.3	104.4
57.5°	87.2	83.2	80.6	80.6	77.9	77.9	76.6	77.9	75.3	75.3	72.7
60°	58.1	55.5	54.2	52.8	52.8	51.5	52.8	51.5	51.5	50.2	48.9
62.5°	42.3	39.6	37.0	37.0	37.0	35.7	35.7	35.7	35.7	35.7	34.3
65°	30.4	27.7	27.7	26.4	26.4	25.1	25.1	25.1	25.1	25.1	23.8
67.5°	21.1	19.8	18.5	18.5	18.5	18.5	18.5	18.5	17.2	17.2	17.2
70°	15.9	14.5	13.2	13.2	13.2	13.2	13.2	11.9	13.2	13.2	11.9
72.5°	10.6	10.6	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
75°	7.9	7.9	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
77.5°	5.3	5.3	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
80°	4.0	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
82.5°	2.6	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
85°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	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: P251609

CATALOG NUMBER: LD4B20D010 EU4B10208030 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2	1025.2
2.5°	1050.3	1048.9	1046.3	1050.3	1039.7	1035.7	1034.4	1046.3
5°	1064.8	1062.2	1062.2	1066.1	1054.2	1051.6	1048.9	1062.2
7.5°	1078.0	1075.4	1075.4	1079.3	1068.8	1066.1	1063.5	1076.7
10°	1085.9	1085.9	1085.9	1088.6	1079.3	1076.7	1075.4	1088.6
12.5°	1089.9	1089.9	1088.6	1093.9	1082.0	1082.0	1079.3	1092.5
15°	1084.6	1084.6	1084.6	1088.6	1078.0	1075.4	1075.4	1085.9
17.5°	1071.4	1071.4	1070.1	1074.0	1062.2	1062.2	1060.8	1072.7
20°	1051.6	1051.6	1048.9	1054.2	1042.3	1038.4	1037.1	1048.9
22.5°	1019.9	1018.6	1017.2	1019.9	1009.3	1006.7	1005.3	1015.9
25°	978.9	977.6	975.0	977.6	965.7	961.8	961.8	969.7
27.5°	920.8	920.8	916.8	920.8	907.6	906.3	904.9	914.2
30°	849.5	844.2	841.5	846.8	833.6	833.6	831.0	840.2
32.5°	760.9	755.7	754.3	757.0	745.1	741.1	746.4	751.7
35°	659.2	660.5	655.3	655.3	644.7	646.0	647.3	655.3
37.5°	561.5	558.8	557.5	558.8	550.9	548.3	545.6	553.5
40°	470.3	463.7	462.4	462.4	455.8	454.5	455.8	459.7
42.5°	384.4	383.1	377.8	380.5	373.9	376.5	375.2	375.2
45°	310.5	311.8	306.5	310.5	305.2	301.2	301.2	303.9
47.5°	245.7	245.7	244.4	244.4	240.4	241.8	239.1	243.1
50°	190.2	190.2	187.6	188.9	186.3	186.3	185.0	186.3
52.5°	145.3	144.0	144.0	142.7	140.0	141.4	142.7	140.0
55°	105.7	107.0	104.4	105.7	103.0	104.4	103.0	104.4
57.5°	72.7	74.0	71.3	74.0	71.3	72.7	71.3	71.3
60°	50.2	50.2	48.9	50.2	48.9	48.9	47.6	50.2
62.5°	34.3	34.3	34.3	34.3	34.3	33.0	34.3	34.3
65°	25.1	23.8	23.8	23.8	23.8	23.8	23.8	23.8
67.5°	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2
70°	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9
72.5°	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
75°	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
77.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
80°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
82.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
85°	1.3	1.3	1.3	0.0	1.3	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)