

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: P251942

Luminaire Tested: **LD4B30D010 EU4B30509040 4LBDW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251942  
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 EU4B30509040 4LBDW1H  
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2186.0 lumens  
Efficiency: N/A  
Efficacy: 78.1 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

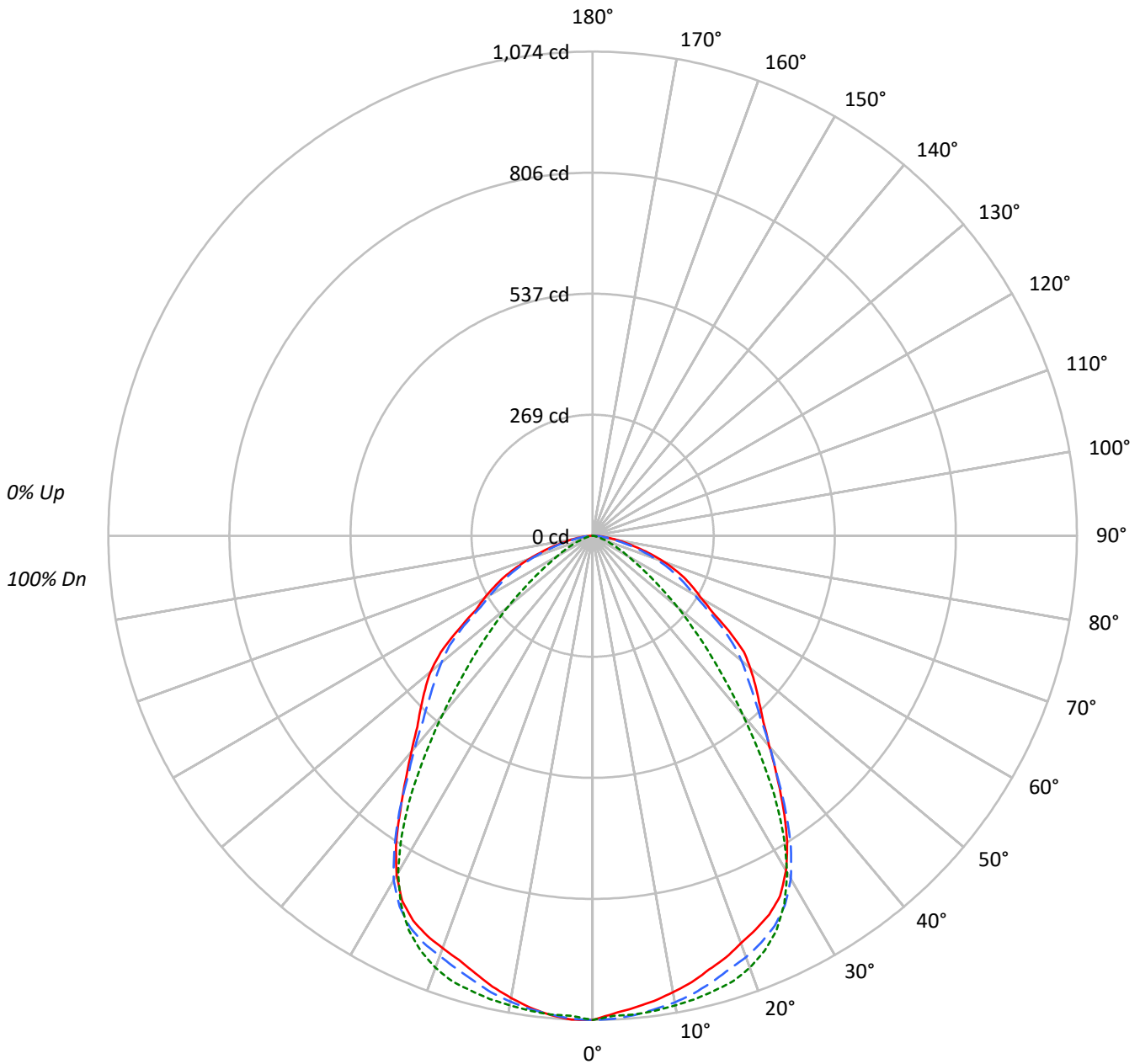
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					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°	104680	104680	104680
5°	102820	104277	104434
10°	101713	104662	103029
15°	100533	105376	101370
20°	99741	105745	100944
25°	99683	103780	101285
30°	96510	97073	97815
35°	87684	83556	88469
40°	77580	65799	79463
45°	71973	50100	74247
50°	69153	37086	71154
55°	62613	25555	61763
60°	54440	17387	54109
65°	52578	12568	49926
70°	47558	8463	42372
75°	39199	5611	33588
80°	31542	3704	25031
85°	25831	1901	16661



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	101.4	4.6
10°-20°	289.9	13.3
20°-30°	438.0	20.0
30°-40°	458.4	21.0
40°-50°	371.2	17.0
50°-60°	270.0	12.4
60°-70°	166.5	7.6
70°-80°	75.2	3.4
80°-90°	15.3	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°	829.3	37.9
0°-40°	1287.7	58.9
0°-60°	1928.9	88.2
0°-90°	2186.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2186.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1074	1074	1074	1074	1074	
5°	1051	1068	1066	1066	1068	100
15°	996	1024	1044	1021	1005	282
25°	927	955	965	958	942	425
35°	737	747	702	747	744	459
45°	522	506	364	512	539	406
55°	368	345	150	349	364	329
65°	228	205	54	202	216	223
75°	104	89	15	78	89	113
85°	23	18	2	13	15	27
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°	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1
2.5°	1060.9	1060.9	1070.8	1082.4	1072.5	1062.5	1069.2	1065.9	1077.4	1077.4	1072.5
5°	1051.0	1054.3	1062.5	1072.5	1064.2	1054.3	1062.5	1059.2	1070.8	1070.8	1067.5
7.5°	1041.1	1042.7	1052.6	1064.2	1055.9	1046.0	1052.6	1051.0	1060.9	1062.5	1059.2
10°	1027.8	1029.5	1039.4	1051.0	1042.7	1034.5	1041.1	1039.4	1052.6	1052.6	1051.0
12.5°	1014.6	1016.3	1026.2	1036.1	1027.8	1019.6	1026.2	1026.2	1039.4	1041.1	1039.4
15°	996.4	999.8	1008.0	1017.9	1013.0	1003.1	1009.7	1009.7	1021.2	1024.5	1024.5
17.5°	981.6	983.2	991.5	1001.4	994.8	986.5	993.1	993.1	1004.7	1008.0	1008.0
20°	961.7	965.1	973.3	983.2	978.3	971.7	976.6	976.6	989.8	993.1	994.8
22.5°	945.2	948.5	955.1	968.4	960.1	955.1	961.7	960.1	975.0	976.6	976.6
25°	927.0	930.3	938.6	946.9	941.9	937.0	941.9	941.9	953.5	955.1	955.1
27.5°	900.6	902.3	910.5	918.8	913.8	907.2	913.8	912.2	923.7	925.4	923.7
30°	857.6	860.9	864.2	875.8	870.9	865.9	872.5	869.2	880.8	880.8	879.1
32.5°	803.1	803.1	809.7	818.0	811.4	808.1	813.0	814.7	822.9	822.9	818.0
35°	737.0	740.3	745.3	750.2	745.3	742.0	746.9	745.3	755.2	751.9	746.9
37.5°	670.9	672.6	677.5	684.1	677.5	672.6	674.2	672.6	680.8	680.8	672.6
40°	609.8	613.1	616.4	623.0	616.4	613.1	614.7	609.8	619.7	616.4	611.4
42.5°	560.2	561.8	566.8	570.1	563.5	561.8	563.5	560.2	565.1	561.8	551.9
45°	522.2	522.2	523.8	528.8	522.2	520.5	520.5	517.2	522.2	515.6	505.7
47.5°	489.1	490.8	492.4	495.7	490.8	485.8	487.5	480.9	484.2	479.2	466.0
50°	456.1	459.4	461.0	464.3	459.4	456.1	457.7	451.1	451.1	442.9	431.3
52.5°	423.0	424.7	423.0	426.3	423.0	418.1	419.7	413.1	413.1	403.2	391.6
55°	368.5	370.2	371.8	375.1	371.8	366.9	370.2	365.2	365.2	358.6	345.4
57.5°	314.0	315.6	317.3	318.9	318.9	315.6	317.3	314.0	312.3	307.4	297.4
60°	279.3	279.3	279.3	280.9	279.3	277.6	277.6	274.3	274.3	267.7	257.8
62.5°	252.8	254.5	254.5	256.1	254.5	252.8	251.2	247.9	246.2	239.6	231.3
65°	228.0	228.0	226.4	229.7	228.0	226.4	226.4	223.1	219.8	213.2	204.9
67.5°	198.3	200.0	198.3	200.0	200.0	198.3	196.6	193.3	191.7	186.7	176.8
70°	166.9	166.9	166.9	168.6	166.9	166.9	168.6	163.6	161.9	155.3	147.1
72.5°	135.5	137.2	137.2	135.5	137.2	133.9	133.9	133.9	132.2	125.6	117.3
75°	104.1	105.8	105.8	107.4	105.8	104.1	104.1	102.5	100.8	95.8	89.2
77.5°	77.7	77.7	79.3	79.3	79.3	77.7	77.7	74.4	74.4	71.1	64.4
80°	56.2	56.2	54.5	56.2	56.2	54.5	54.5	52.9	52.9	49.6	44.6
82.5°	36.4	38.0	38.0	38.0	38.0	36.4	36.4	36.4	34.7	33.0	29.7
85°	23.1	23.1	23.1	23.1	24.8	23.1	24.8	23.1	23.1	19.8	18.2
87.5°	9.9	9.9	9.9	11.6	11.6	9.9	9.9	9.9	9.9	9.9	8.3
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°	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1
2.5°	1072.5	1074.1	1069.2	1075.8	1070.8	1072.5	1074.1	1072.5	1065.9	1065.9	1084.0
5°	1065.9	1069.2	1064.2	1072.5	1069.2	1069.2	1072.5	1070.8	1064.2	1065.9	1082.4
7.5°	1059.2	1064.2	1060.9	1069.2	1064.2	1064.2	1067.5	1067.5	1060.9	1062.5	1077.4
10°	1049.3	1055.9	1054.3	1062.5	1057.6	1057.6	1062.5	1062.5	1055.9	1057.6	1072.5
12.5°	1041.1	1047.7	1046.0	1054.3	1051.0	1052.6	1054.3	1057.6	1049.3	1052.6	1065.9
15°	1027.8	1034.5	1034.5	1042.7	1039.4	1042.7	1046.0	1051.0	1044.4	1044.4	1057.6
17.5°	1013.0	1021.2	1021.2	1027.8	1027.8	1029.5	1036.1	1041.1	1034.5	1036.1	1047.7
20°	996.4	1006.4	1006.4	1014.6	1013.0	1016.3	1021.2	1026.2	1019.6	1019.6	1032.8
22.5°	979.9	988.2	989.8	994.8	994.8	996.4	1001.4	1004.7	996.4	996.4	1009.7
25°	956.8	965.1	966.7	970.0	966.7	966.7	970.0	973.3	965.1	965.1	976.6
27.5°	925.4	933.7	933.7	932.0	928.7	930.3	928.7	930.3	922.1	920.4	932.0
30°	879.1	884.1	884.1	882.4	877.5	877.5	872.5	874.2	862.6	862.6	872.5
32.5°	816.3	821.3	818.0	814.7	808.1	804.8	801.5	799.8	788.2	788.2	799.8
35°	742.0	745.3	740.3	733.7	725.4	720.5	715.5	708.9	700.7	702.3	708.9
37.5°	666.0	666.0	659.3	646.1	639.5	631.2	623.0	623.0	609.8	608.1	613.1
40°	601.5	594.9	583.3	565.1	553.6	545.3	533.8	527.1	517.2	517.2	525.5
42.5°	543.7	530.4	515.6	490.8	479.2	469.3	454.4	447.8	436.3	434.6	439.6
45°	492.4	479.2	457.7	431.3	416.4	404.9	383.4	375.1	365.2	363.5	366.9
47.5°	451.1	436.3	409.8	375.1	360.2	345.4	323.9	312.3	304.1	299.1	304.1
50°	414.8	394.9	366.9	330.5	310.7	297.4	271.0	259.4	247.9	244.6	246.2
52.5°	375.1	355.3	325.5	287.5	269.4	249.5	224.7	208.2	198.3	193.3	198.3
55°	332.1	312.3	282.6	244.6	224.7	206.6	180.1	166.9	155.3	150.4	155.3
57.5°	285.9	267.7	241.3	203.3	185.1	168.6	143.8	130.5	119.0	115.7	119.0
60°	246.2	231.3	204.9	168.6	153.7	135.5	114.0	100.8	90.9	89.2	90.9
62.5°	219.8	203.3	178.5	143.8	128.9	114.0	94.2	81.0	72.7	71.1	72.7
65°	193.3	175.2	152.0	122.3	107.4	95.8	76.0	64.4	56.2	54.5	56.2
67.5°	163.6	147.1	127.2	100.8	89.2	77.7	61.1	49.6	43.0	41.3	43.0
70°	135.5	120.6	100.8	81.0	69.4	61.1	46.3	38.0	31.4	29.7	31.4
72.5°	107.4	94.2	77.7	61.1	54.5	46.3	36.4	28.1	23.1	21.5	23.1
75°	82.6	72.7	59.5	44.6	39.7	34.7	24.8	19.8	16.5	14.9	16.5
77.5°	57.8	51.2	41.3	33.0	28.1	24.8	18.2	13.2	11.6	9.9	11.6
80°	39.7	34.7	28.1	21.5	18.2	14.9	11.6	8.3	6.6	6.6	6.6
82.5°	26.4	21.5	16.5	13.2	11.6	9.9	6.6	5.0	5.0	3.3	3.3
85°	14.9	13.2	9.9	8.3	6.6	5.0	3.3	3.3	1.7	1.7	1.7
87.5°	6.6	5.0	3.3	3.3	1.7	1.7	1.7	1.7	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°	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1
2.5°	1079.1	1074.1	1080.7	1074.1	1070.8	1074.1	1070.8	1080.7	1072.5	1065.9	1072.5
5°	1077.4	1070.8	1077.4	1072.5	1067.5	1069.2	1065.9	1075.8	1065.9	1060.9	1064.2
7.5°	1074.1	1069.2	1072.5	1067.5	1062.5	1064.2	1060.9	1069.2	1059.2	1054.3	1057.6
10°	1069.2	1064.2	1065.9	1062.5	1057.6	1057.6	1054.3	1060.9	1049.3	1042.7	1046.0
12.5°	1062.5	1055.9	1059.2	1054.3	1047.7	1047.7	1044.4	1049.3	1037.8	1031.2	1032.8
15°	1054.3	1047.7	1047.7	1042.7	1036.1	1036.1	1029.5	1034.5	1021.2	1014.6	1014.6
17.5°	1044.4	1036.1	1036.1	1031.2	1022.9	1021.2	1016.3	1021.2	1006.4	999.8	999.8
20°	1029.5	1022.9	1021.2	1017.9	1009.7	1008.0	1001.4	1003.1	991.5	986.5	984.9
22.5°	1009.7	1003.1	1004.7	999.8	993.1	991.5	984.9	989.8	978.3	973.3	975.0
25°	975.0	971.7	975.0	973.3	968.4	968.4	965.1	968.4	958.4	955.1	956.8
27.5°	935.3	933.7	935.3	935.3	932.0	932.0	932.0	937.0	927.0	925.4	925.4
30°	877.5	877.5	879.1	880.8	880.8	884.1	882.4	889.0	882.4	879.1	882.4
32.5°	801.5	808.1	813.0	813.0	813.0	816.3	819.6	824.6	818.0	819.6	819.6
35°	715.5	720.5	723.8	732.1	727.1	738.7	742.0	748.6	746.9	750.2	748.6
37.5°	619.7	626.3	632.9	644.5	642.8	656.0	662.6	675.9	672.6	679.2	682.5
40°	530.4	540.4	550.3	558.5	565.1	578.4	591.6	608.1	613.1	618.0	619.7
42.5°	444.5	454.4	471.0	482.5	492.4	513.9	532.1	551.9	556.9	566.8	570.1
45°	375.1	383.4	403.2	418.1	426.3	457.7	479.2	504.0	512.3	523.8	528.8
47.5°	310.7	325.5	345.4	363.5	375.1	408.2	436.3	462.7	474.3	487.5	494.1
50°	254.5	271.0	297.4	314.0	330.5	366.9	398.2	426.3	437.9	452.8	459.4
52.5°	208.2	226.4	251.2	269.4	287.5	325.5	358.6	385.0	399.9	409.8	419.7
55°	163.6	183.4	208.2	228.0	242.9	284.2	312.3	338.8	348.7	356.9	361.9
57.5°	127.2	142.1	166.9	183.4	201.6	238.0	266.1	285.9	294.1	304.1	307.4
60°	99.1	114.0	137.2	153.7	170.2	204.9	233.0	252.8	261.1	269.4	274.3
62.5°	79.3	94.2	115.7	130.5	145.4	176.8	201.6	221.4	231.3	239.6	244.6
65°	62.8	76.0	94.2	109.1	120.6	148.7	173.5	191.7	201.6	209.9	214.8
67.5°	49.6	61.1	77.7	87.6	99.1	122.3	143.8	160.3	168.6	178.5	183.4
70°	38.0	46.3	61.1	69.4	77.7	97.5	114.0	130.5	138.8	145.4	148.7
72.5°	28.1	34.7	46.3	52.9	57.8	74.4	87.6	99.1	105.8	112.4	115.7
75°	19.8	24.8	33.0	38.0	41.3	52.9	64.4	72.7	77.7	82.6	87.6
77.5°	13.2	16.5	21.5	24.8	28.1	36.4	43.0	49.6	54.5	59.5	61.1
80°	8.3	11.6	14.9	16.5	18.2	23.1	29.7	33.0	36.4	39.7	41.3
82.5°	5.0	6.6	8.3	9.9	11.6	14.9	18.2	21.5	23.1	26.4	28.1
85°	1.7	3.3	3.3	5.0	5.0	8.3	9.9	11.6	13.2	14.9	16.5
87.5°	0.0	0.0	1.7	1.7	1.7	1.7	3.3	3.3	3.3	3.3	3.3
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: P251942

CATALOG NUMBER: LD4B30D010 EU4B30509040 4LBDW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1	1074.1
2.5°	1079.1	1074.1	1070.8	1069.2	1080.7	1065.9	1072.5	1074.1
5°	1072.5	1067.5	1064.2	1062.5	1072.5	1059.2	1064.2	1067.5
7.5°	1062.5	1059.2	1054.3	1052.6	1062.5	1047.7	1054.3	1055.9
10°	1051.0	1046.0	1042.7	1041.1	1049.3	1034.5	1041.1	1041.1
12.5°	1036.1	1032.8	1026.2	1026.2	1032.8	1019.6	1024.5	1024.5
15°	1016.3	1013.0	1006.4	1006.4	1013.0	999.8	1004.7	1004.7
17.5°	999.8	996.4	991.5	989.8	996.4	983.2	988.2	986.5
20°	986.5	983.2	976.6	976.6	981.6	968.4	973.3	973.3
22.5°	975.0	973.3	966.7	966.7	973.3	960.1	963.4	960.1
25°	956.8	955.1	948.5	950.2	953.5	940.3	945.2	941.9
27.5°	927.0	927.0	920.4	918.8	923.7	912.2	915.5	913.8
30°	880.8	882.4	874.2	874.2	875.8	865.9	870.9	869.2
32.5°	818.0	819.6	813.0	811.4	816.3	808.1	811.4	811.4
35°	748.6	750.2	745.3	745.3	750.2	745.3	745.3	743.6
37.5°	679.2	682.5	679.2	680.8	684.1	679.2	682.5	680.8
40°	623.0	626.3	621.3	624.6	627.9	623.0	627.9	624.6
42.5°	571.8	576.7	573.4	576.7	580.0	576.7	580.0	575.1
45°	533.8	537.1	535.4	537.1	540.4	538.7	540.4	538.7
47.5°	497.4	504.0	500.7	504.0	509.0	505.7	509.0	504.0
50°	464.3	469.3	467.7	471.0	472.6	471.0	474.3	469.3
52.5°	421.4	426.3	424.7	424.7	428.0	424.7	428.0	424.7
55°	365.2	366.9	366.9	368.5	366.9	365.2	366.9	363.5
57.5°	310.7	314.0	309.0	314.0	312.3	310.7	310.7	307.4
60°	276.0	280.9	277.6	280.9	279.3	279.3	279.3	277.6
62.5°	247.9	251.2	247.9	249.5	249.5	249.5	247.9	246.2
65°	216.5	221.4	218.1	219.8	218.1	216.5	218.1	216.5
67.5°	185.1	186.7	186.7	185.1	185.1	185.1	185.1	181.8
70°	150.4	152.0	150.4	153.7	152.0	150.4	152.0	148.7
72.5°	117.3	119.0	117.3	119.0	117.3	117.3	117.3	117.3
75°	87.6	89.2	89.2	89.2	89.2	89.2	85.9	89.2
77.5°	62.8	62.8	62.8	64.4	62.8	62.8	62.8	62.8
80°	43.0	43.0	43.0	44.6	43.0	44.6	43.0	44.6
82.5°	28.1	28.1	28.1	28.1	28.1	28.1	28.1	28.1
85°	14.9	16.5	16.5	14.9	14.9	14.9	14.9	14.9
87.5°	3.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7
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)