

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: P251940

Luminaire Tested: **LD4B30D010 EU4B30509030 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251940
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 EU4B30509030 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2151.0 lumens
Efficiency: N/A
Efficacy: 76.8 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

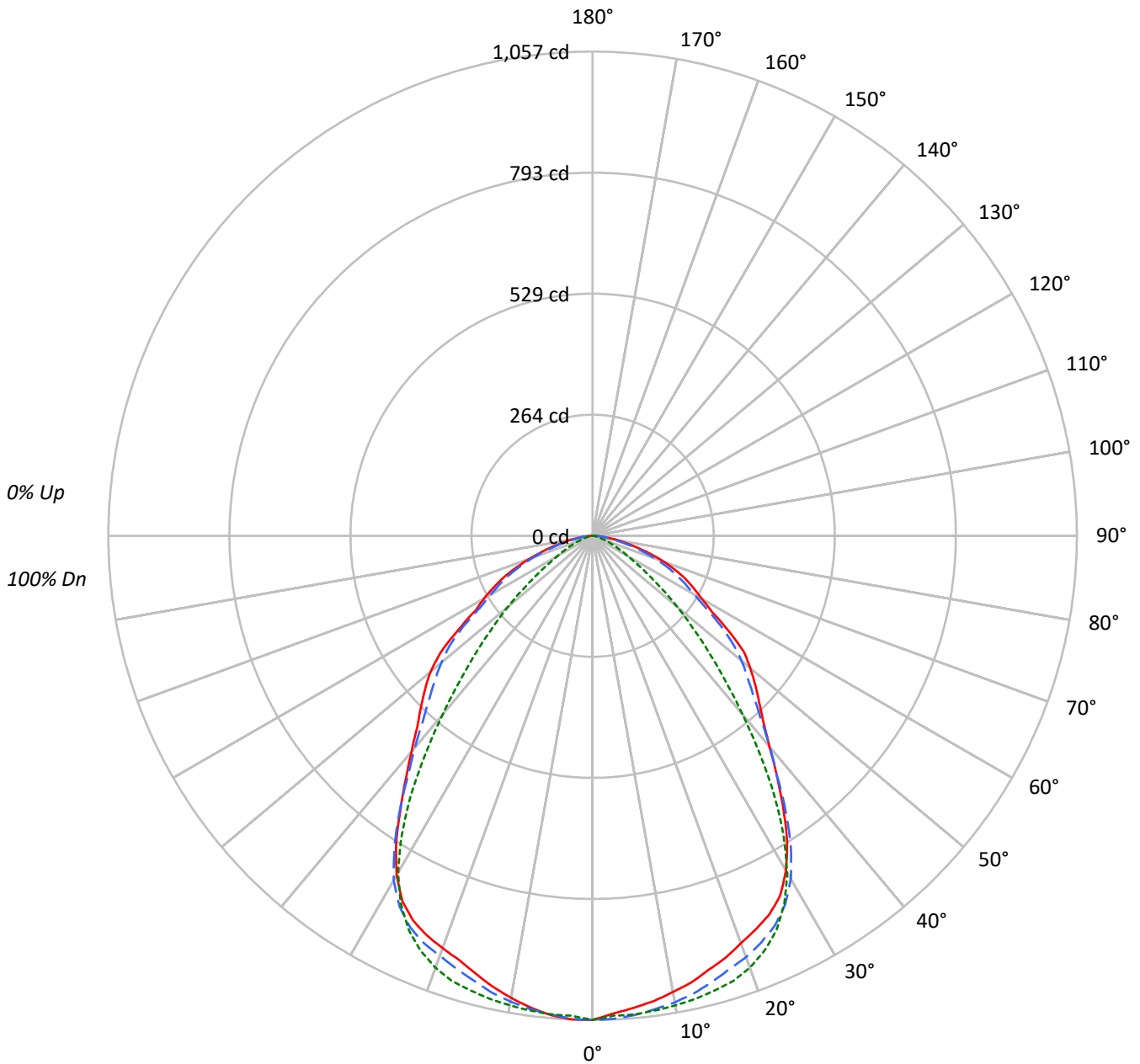
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	103003	103003	103003
5°	101176	102604	102761
10°	100090	102989	101376
15°	98929	103681	99746
20°	98143	104055	99326
25°	98092	102113	99662
30°	94968	95520	96251
35°	86280	82223	87054
40°	76333	64744	78191
45°	70815	49301	73062
50°	68046	36494	70017
55°	61610	25147	60778
60°	53563	17114	53251
65°	51748	12384	49119
70°	46789	8349	41688
75°	38559	5498	33061
80°	31037	3648	24638
85°	25495	1789	16326



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	99.8	4.6
10°-20°	285.3	13.3
20°-30°	431.0	20.0
30°-40°	451.0	21.0
40°-50°	365.3	17.0
50°-60°	265.7	12.4
60°-70°	163.9	7.6
70°-80°	74.0	3.4
80°-90°	15.0	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°	816.0	37.9
0°-40°	1267.0	58.9
0°-60°	1898.0	88.2
0°-90°	2151.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2151.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1057	1057	1057	1057	1057	
5°	1034	1050	1049	1049	1050	98
15°	980	1008	1028	1005	989	277
25°	912	940	950	943	927	418
35°	725	735	691	735	732	452
45°	514	498	358	504	530	399
55°	363	340	148	343	358	324
65°	224	202	54	198	213	220
75°	102	88	15	76	88	111
85°	23	18	2	13	15	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°	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9
2.5°	1043.9	1043.9	1053.7	1065.0	1055.3	1045.5	1052.0	1048.8	1060.2	1060.2	1055.3
5°	1034.2	1037.4	1045.5	1055.3	1047.2	1037.4	1045.5	1042.3	1053.7	1053.7	1050.4
7.5°	1024.4	1026.0	1035.8	1047.2	1039.0	1029.3	1035.8	1034.2	1043.9	1045.5	1042.3
10°	1011.4	1013.0	1022.8	1034.2	1026.0	1017.9	1024.4	1022.8	1035.8	1035.8	1034.2
12.5°	998.4	1000.0	1009.8	1019.5	1011.4	1003.3	1009.8	1009.8	1022.8	1024.4	1022.8
15°	980.5	983.7	991.9	1001.6	996.8	987.0	993.5	993.5	1004.9	1008.1	1008.1
17.5°	965.9	967.5	975.6	985.4	978.9	970.7	977.2	977.2	988.6	991.9	991.9
20°	946.3	949.6	957.7	967.5	962.6	956.1	961.0	961.0	974.0	977.2	978.9
22.5°	930.1	933.3	939.8	952.9	944.7	939.8	946.3	944.7	959.4	961.0	961.0
25°	912.2	915.5	923.6	931.7	926.8	922.0	926.8	926.8	938.2	939.8	939.8
27.5°	886.2	887.8	895.9	904.1	899.2	892.7	899.2	897.6	908.9	910.6	908.9
30°	843.9	847.2	850.4	861.8	856.9	852.0	858.5	855.3	866.7	866.7	865.0
32.5°	790.2	790.2	796.8	804.9	798.4	795.1	800.0	801.6	809.8	809.8	804.9
35°	725.2	728.5	733.3	738.2	733.3	730.1	735.0	733.3	743.1	739.8	735.0
37.5°	660.2	661.8	666.7	673.2	666.7	661.8	663.4	661.8	669.9	669.9	661.8
40°	600.0	603.3	606.5	613.0	606.5	603.3	604.9	600.0	609.8	606.5	601.6
42.5°	551.2	552.8	557.7	561.0	554.5	552.8	554.5	551.2	556.1	552.8	543.1
45°	513.8	513.8	515.5	520.3	513.8	512.2	512.2	508.9	513.8	507.3	497.6
47.5°	481.3	482.9	484.6	487.8	482.9	478.1	479.7	473.2	476.4	471.5	458.5
50°	448.8	452.0	453.7	456.9	452.0	448.8	450.4	443.9	443.9	435.8	424.4
52.5°	416.3	417.9	416.3	419.5	416.3	411.4	413.0	406.5	406.5	396.8	385.4
55°	362.6	364.2	365.9	369.1	365.9	361.0	364.2	359.4	359.4	352.8	339.8
57.5°	308.9	310.6	312.2	313.8	313.8	310.6	312.2	308.9	307.3	302.4	292.7
60°	274.8	274.8	274.8	276.4	274.8	273.2	273.2	269.9	269.9	263.4	253.7
62.5°	248.8	250.4	250.4	252.0	250.4	248.8	247.2	243.9	242.3	235.8	227.6
65°	224.4	224.4	222.8	226.0	224.4	222.8	222.8	219.5	216.3	209.8	201.6
67.5°	195.1	196.7	195.1	196.7	196.7	195.1	193.5	190.2	188.6	183.7	174.0
70°	164.2	164.2	164.2	165.9	164.2	164.2	165.9	161.0	159.4	152.8	144.7
72.5°	133.3	135.0	135.0	133.3	135.0	131.7	131.7	131.7	130.1	123.6	115.4
75°	102.4	104.1	104.1	105.7	104.1	102.4	102.4	100.8	99.2	94.3	87.8
77.5°	76.4	76.4	78.0	78.0	78.0	76.4	76.4	73.2	73.2	69.9	63.4
80°	55.3	55.3	53.7	55.3	55.3	53.7	53.7	52.0	52.0	48.8	43.9
82.5°	35.8	37.4	37.4	37.4	37.4	35.8	35.8	35.8	34.1	32.5	29.3
85°	22.8	22.8	22.8	22.8	24.4	22.8	24.4	22.8	22.8	19.5	17.9
87.5°	9.8	9.8	9.8	11.4	11.4	9.8	9.8	9.8	9.8	9.8	8.1
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°	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9
2.5°	1055.3	1056.9	1052.0	1058.5	1053.7	1055.3	1056.9	1055.3	1048.8	1048.8	1066.7
5°	1048.8	1052.0	1047.2	1055.3	1052.0	1052.0	1055.3	1053.7	1047.2	1048.8	1065.0
7.5°	1042.3	1047.2	1043.9	1052.0	1047.2	1047.2	1050.4	1050.4	1043.9	1045.5	1060.2
10°	1032.5	1039.0	1037.4	1045.5	1040.7	1040.7	1045.5	1045.5	1039.0	1040.7	1055.3
12.5°	1024.4	1030.9	1029.3	1037.4	1034.2	1035.8	1037.4	1040.7	1032.5	1035.8	1048.8
15°	1011.4	1017.9	1017.9	1026.0	1022.8	1026.0	1029.3	1034.2	1027.6	1027.6	1040.7
17.5°	996.8	1004.9	1004.9	1011.4	1011.4	1013.0	1019.5	1024.4	1017.9	1019.5	1030.9
20°	980.5	990.3	990.3	998.4	996.8	1000.0	1004.9	1009.8	1003.3	1003.3	1016.3
22.5°	964.2	972.4	974.0	978.9	978.9	980.5	985.4	988.6	980.5	980.5	993.5
25°	941.5	949.6	951.2	954.5	951.2	951.2	954.5	957.7	949.6	949.6	961.0
27.5°	910.6	918.7	918.7	917.1	913.8	915.5	913.8	915.5	907.3	905.7	917.1
30°	865.0	869.9	869.9	868.3	863.4	863.4	858.5	860.2	848.8	848.8	858.5
32.5°	803.3	808.1	804.9	801.6	795.1	791.9	788.6	787.0	775.6	775.6	787.0
35°	730.1	733.3	728.5	722.0	713.8	708.9	704.1	697.6	689.4	691.1	697.6
37.5°	655.3	655.3	648.8	635.8	629.3	621.1	613.0	613.0	600.0	598.4	603.3
40°	591.9	585.4	574.0	556.1	544.7	536.6	525.2	518.7	508.9	508.9	517.1
42.5°	535.0	522.0	507.3	482.9	471.5	461.8	447.2	440.7	429.3	427.6	432.5
45°	484.6	471.5	450.4	424.4	409.8	398.4	377.2	369.1	359.4	357.7	361.0
47.5°	443.9	429.3	403.3	369.1	354.5	339.8	318.7	307.3	299.2	294.3	299.2
50°	408.1	388.6	361.0	325.2	305.7	292.7	266.7	255.3	243.9	240.7	242.3
52.5°	369.1	349.6	320.3	282.9	265.0	245.5	221.1	204.9	195.1	190.2	195.1
55°	326.8	307.3	278.1	240.7	221.1	203.3	177.2	164.2	152.8	148.0	152.8
57.5°	281.3	263.4	237.4	200.0	182.1	165.9	141.5	128.5	117.1	113.8	117.1
60°	242.3	227.6	201.6	165.9	151.2	133.3	112.2	99.2	89.4	87.8	89.4
62.5°	216.3	200.0	175.6	141.5	126.8	112.2	92.7	79.7	71.5	69.9	71.5
65°	190.2	172.4	149.6	120.3	105.7	94.3	74.8	63.4	55.3	53.7	55.3
67.5°	161.0	144.7	125.2	99.2	87.8	76.4	60.2	48.8	42.3	40.7	42.3
70°	133.3	118.7	99.2	79.7	68.3	60.2	45.5	37.4	30.9	29.3	30.9
72.5°	105.7	92.7	76.4	60.2	53.7	45.5	35.8	27.6	22.8	21.1	22.8
75°	81.3	71.5	58.5	43.9	39.0	34.1	24.4	19.5	16.3	14.6	16.3
77.5°	56.9	50.4	40.7	32.5	27.6	24.4	17.9	13.0	11.4	9.8	11.4
80°	39.0	34.1	27.6	21.1	17.9	14.6	11.4	8.1	6.5	6.5	6.5
82.5°	26.0	21.1	16.3	13.0	11.4	9.8	6.5	4.9	4.9	3.3	3.3
85°	14.6	13.0	9.8	8.1	6.5	4.9	3.3	3.3	1.6	1.6	1.6
87.5°	6.5	4.9	3.3	3.3	1.6	1.6	1.6	1.6	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°	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9
2.5°	1061.8	1056.9	1063.4	1056.9	1053.7	1056.9	1053.7	1063.4	1055.3	1048.8	1055.3
5°	1060.2	1053.7	1060.2	1055.3	1050.4	1052.0	1048.8	1058.5	1048.8	1043.9	1047.2
7.5°	1056.9	1052.0	1055.3	1050.4	1045.5	1047.2	1043.9	1052.0	1042.3	1037.4	1040.7
10°	1052.0	1047.2	1048.8	1045.5	1040.7	1040.7	1037.4	1043.9	1032.5	1026.0	1029.3
12.5°	1045.5	1039.0	1042.3	1037.4	1030.9	1030.9	1027.6	1032.5	1021.1	1014.6	1016.3
15°	1037.4	1030.9	1030.9	1026.0	1019.5	1019.5	1013.0	1017.9	1004.9	998.4	998.4
17.5°	1027.6	1019.5	1019.5	1014.6	1006.5	1004.9	1000.0	1004.9	990.3	983.7	983.7
20°	1013.0	1006.5	1004.9	1001.6	993.5	991.9	985.4	987.0	975.6	970.7	969.1
22.5°	993.5	987.0	988.6	983.7	977.2	975.6	969.1	974.0	962.6	957.7	959.4
25°	959.4	956.1	959.4	957.7	952.9	952.9	949.6	952.9	943.1	939.8	941.5
27.5°	920.3	918.7	920.3	920.3	917.1	917.1	917.1	922.0	912.2	910.6	910.6
30°	863.4	863.4	865.0	866.7	866.7	869.9	868.3	874.8	868.3	865.0	868.3
32.5°	788.6	795.1	800.0	800.0	800.0	803.3	806.5	811.4	804.9	806.5	806.5
35°	704.1	708.9	712.2	720.3	715.5	726.8	730.1	736.6	735.0	738.2	736.6
37.5°	609.8	616.3	622.8	634.2	632.5	645.5	652.0	665.0	661.8	668.3	671.5
40°	522.0	531.7	541.5	549.6	556.1	569.1	582.1	598.4	603.3	608.1	609.8
42.5°	437.4	447.2	463.4	474.8	484.6	505.7	523.6	543.1	548.0	557.7	561.0
45°	369.1	377.2	396.8	411.4	419.5	450.4	471.5	495.9	504.1	515.5	520.3
47.5°	305.7	320.3	339.8	357.7	369.1	401.6	429.3	455.3	466.7	479.7	486.2
50°	250.4	266.7	292.7	308.9	325.2	361.0	391.9	419.5	430.9	445.5	452.0
52.5°	204.9	222.8	247.2	265.0	282.9	320.3	352.8	378.9	393.5	403.3	413.0
55°	161.0	180.5	204.9	224.4	239.0	279.7	307.3	333.3	343.1	351.2	356.1
57.5°	125.2	139.8	164.2	180.5	198.4	234.1	261.8	281.3	289.4	299.2	302.4
60°	97.6	112.2	135.0	151.2	167.5	201.6	229.3	248.8	256.9	265.0	269.9
62.5°	78.0	92.7	113.8	128.5	143.1	174.0	198.4	217.9	227.6	235.8	240.7
65°	61.8	74.8	92.7	107.3	118.7	146.3	170.7	188.6	198.4	206.5	211.4
67.5°	48.8	60.2	76.4	86.2	97.6	120.3	141.5	157.7	165.9	175.6	180.5
70°	37.4	45.5	60.2	68.3	76.4	95.9	112.2	128.5	136.6	143.1	146.3
72.5°	27.6	34.1	45.5	52.0	56.9	73.2	86.2	97.6	104.1	110.6	113.8
75°	19.5	24.4	32.5	37.4	40.7	52.0	63.4	71.5	76.4	81.3	86.2
77.5°	13.0	16.3	21.1	24.4	27.6	35.8	42.3	48.8	53.7	58.5	60.2
80°	8.1	11.4	14.6	16.3	17.9	22.8	29.3	32.5	35.8	39.0	40.7
82.5°	4.9	6.5	8.1	9.8	11.4	14.6	17.9	21.1	22.8	26.0	27.6
85°	1.6	3.3	3.3	4.9	4.9	8.1	9.8	11.4	13.0	14.6	16.3
87.5°	0.0	0.0	1.6	1.6	1.6	1.6	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: P251940

CATALOG NUMBER: LD4B30D010 EU4B30509030 4LBDW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9	1056.9
2.5°	1061.8	1056.9	1053.7	1052.0	1063.4	1048.8	1055.3	1056.9
5°	1055.3	1050.4	1047.2	1045.5	1055.3	1042.3	1047.2	1050.4
7.5°	1045.5	1042.3	1037.4	1035.8	1045.5	1030.9	1037.4	1039.0
10°	1034.2	1029.3	1026.0	1024.4	1032.5	1017.9	1024.4	1024.4
12.5°	1019.5	1016.3	1009.8	1009.8	1016.3	1003.3	1008.1	1008.1
15°	1000.0	996.8	990.3	990.3	996.8	983.7	988.6	988.6
17.5°	983.7	980.5	975.6	974.0	980.5	967.5	972.4	970.7
20°	970.7	967.5	961.0	961.0	965.9	952.9	957.7	957.7
22.5°	959.4	957.7	951.2	951.2	957.7	944.7	948.0	944.7
25°	941.5	939.8	933.3	935.0	938.2	925.2	930.1	926.8
27.5°	912.2	912.2	905.7	904.1	908.9	897.6	900.8	899.2
30°	866.7	868.3	860.2	860.2	861.8	852.0	856.9	855.3
32.5°	804.9	806.5	800.0	798.4	803.3	795.1	798.4	798.4
35°	736.6	738.2	733.3	733.3	738.2	733.3	733.3	731.7
37.5°	668.3	671.5	668.3	669.9	673.2	668.3	671.5	669.9
40°	613.0	616.3	611.4	614.6	617.9	613.0	617.9	614.6
42.5°	562.6	567.5	564.2	567.5	570.7	567.5	570.7	565.9
45°	525.2	528.5	526.8	528.5	531.7	530.1	531.7	530.1
47.5°	489.4	495.9	492.7	495.9	500.8	497.6	500.8	495.9
50°	456.9	461.8	460.2	463.4	465.0	463.4	466.7	461.8
52.5°	414.6	419.5	417.9	417.9	421.1	417.9	421.1	417.9
55°	359.4	361.0	361.0	362.6	361.0	359.4	361.0	357.7
57.5°	305.7	308.9	304.1	308.9	307.3	305.7	305.7	302.4
60°	271.5	276.4	273.2	276.4	274.8	274.8	274.8	273.2
62.5°	243.9	247.2	243.9	245.5	245.5	245.5	243.9	242.3
65°	213.0	217.9	214.6	216.3	214.6	213.0	214.6	213.0
67.5°	182.1	183.7	183.7	182.1	182.1	182.1	182.1	178.9
70°	148.0	149.6	148.0	151.2	149.6	148.0	149.6	146.3
72.5°	115.4	117.1	115.4	117.1	115.4	115.4	115.4	115.4
75°	86.2	87.8	87.8	87.8	87.8	87.8	84.6	87.8
77.5°	61.8	61.8	61.8	63.4	61.8	61.8	61.8	61.8
80°	42.3	42.3	42.3	43.9	42.3	43.9	42.3	43.9
82.5°	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6
85°	14.6	16.3	16.3	14.6	14.6	14.6	14.6	14.6
87.5°	3.3	1.6	1.6	1.6	1.6	1.6	1.6	1.6
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)