

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: P179937

Luminaire Tested: **LDA6A65930D010TE LARH30NF 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179937
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26690)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A65930D010TE LARH30NF 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 30° Narrow Flood, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4882.0 lumens
Efficiency: N/A
Efficacy: 62.6 lumens/watt
Spacing Criteria (0/90/45): 2.55 / 0.46 / 1.37
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

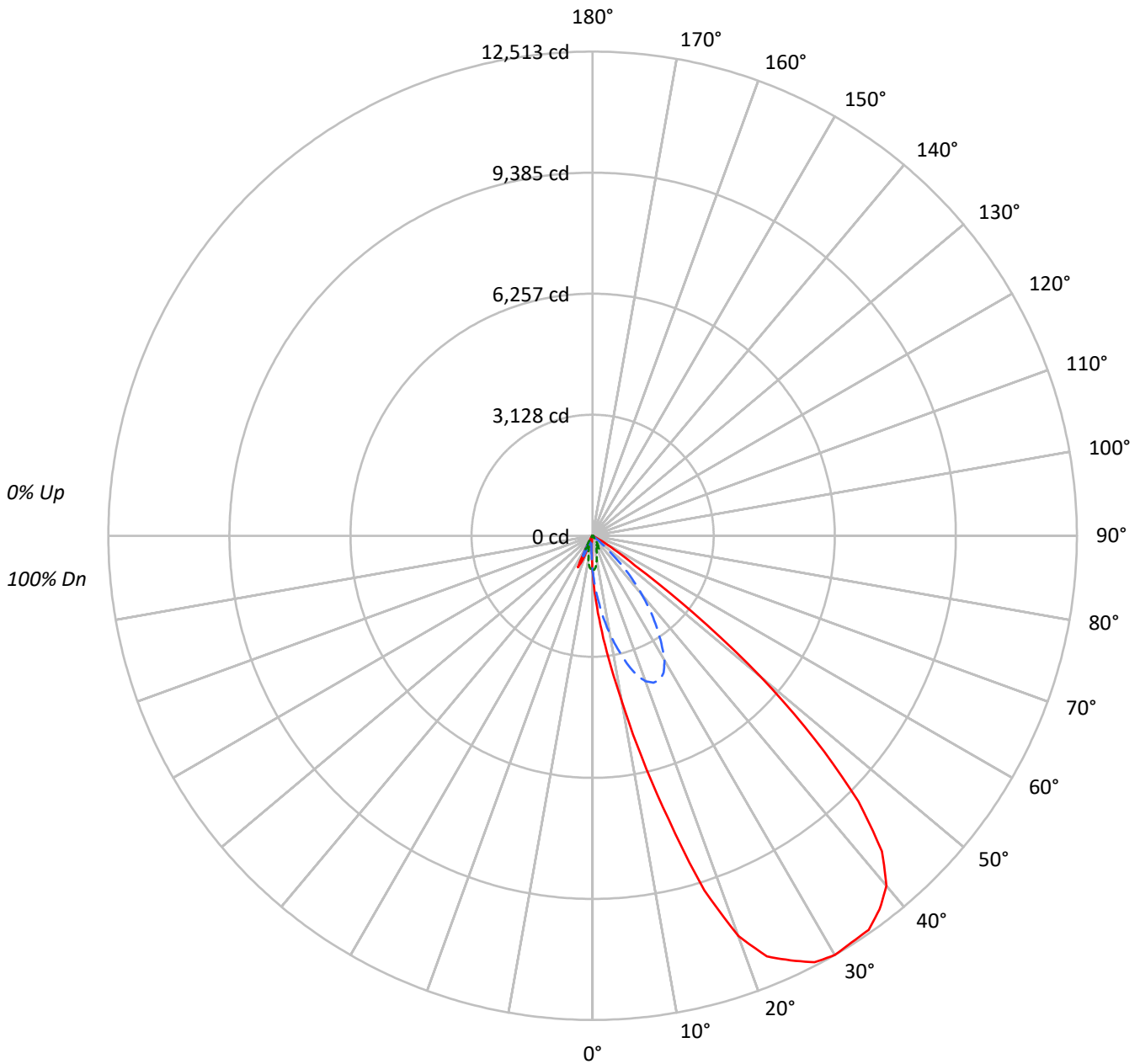
Input Watts (W): 78
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	109	106	103	110	107	104	102	103	100	98	99	97	95	95	94	93	91																			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	85	83	81																			
3	98	90	84	79	96	89	83	78	86	81	77	83	79	76	81	77	75	73																			
4	91	82	75	70	89	81	74	69	78	73	68	76	71	68	74	70	67	65																			
5	85	74	67	62	83	73	67	62	72	66	61	70	64	60	68	63	60	58																			
6	79	68	60	55	77	67	60	55	65	59	55	64	58	54	62	58	54	52																			
7	74	62	55	49	72	61	54	49	60	54	49	59	53	49	57	52	48	47																			
8	69	57	49	44	67	56	49	44	55	49	44	54	48	44	53	48	44	42																			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	43	39	38																			
10	60	48	41	36	59	48	41	36	47	40	36	46	40	36	45	40	36	34																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	49190	49190	49190
5°	126997	45592	14253
10°	240916	34791	4787
15°	430780	22616	4773
20°	641886	15384	8698
25°	732405	19193	54620
30°	792059	16028	16332
35°	832008	7803	5113
40°	845169	2805	2598
45°	753001	1853	1558
50°	483609	1305	1058
55°	127317	918	545
60°	28397	943	417
65°	2724	1116	493
70°	914	1378	609
75°	212	1822	1017
80°	0	3031	1515
85°	0	5409	2390



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.0	2.2
10°-20°	568.7	11.6
20°-30°	1334.4	27.3
30°-40°	1534.8	31.4
40°-50°	1090.3	22.3
50°-60°	221.7	4.5
60°-70°	11.1	0.2
70°-80°	6.6	0.1
80°-90°	5.5	0.1
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°	2012.0	41.2
0°-40°	3546.9	72.7
0°-60°	4858.8	99.5
0°-90°	4882.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4882.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	897	897	897	897	897	
5°	2308	1669	828	332	259	281
15°	7590	3412	398	90	84	2277
25°	12108	4110	317	693	903	5580
35°	12432	2886	117	86	76	7723
45°	9713	1026	24	26	20	7158
55°	1332	27	10	10	6	1797
65°	21	8	9	8	4	51
75°	1	5	9	8	5	2
85°	0	5	9	7	4	0
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°	897.3	897.3	897.3	897.3	897.3	897.3	897.3	897.3	897.3	897.3	897.3
2.5°	1546.2	1499.3	1476.4	1475.4	1408.6	1430.5	1408.6	1391.4	1329.2	1303.4	1260.4
5°	2307.8	2250.4	2204.6	2184.5	2069.8	2045.0	2033.5	1975.2	1845.3	1769.8	1669.4
7.5°	3206.0	3145.8	3070.3	3010.1	2843.9	2797.0	2766.5	2666.1	2474.0	2322.1	2134.8
10°	4327.9	4292.6	4170.2	4059.4	3807.1	3709.6	3617.9	3383.8	3132.5	2827.6	2585.9
12.5°	5838.7	5755.6	5537.7	5316.0	4920.4	4775.1	4623.2	4248.6	3864.4	3386.6	2987.2
15°	7590.3	7519.6	7184.2	6823.0	6260.1	6021.2	5783.3	5193.7	4603.1	3987.7	3412.4
17.5°	9606.6	9472.9	9139.3	8528.7	7741.3	7365.8	6922.4	6171.3	5318.9	4482.7	3767.9
20°	11002.8	10923.5	10641.6	10055.8	9159.4	8663.5	8113.0	7081.9	5916.1	4879.3	4001.1
22.5°	11766.3	11687.0	11475.8	10958.8	10224.0	9726.1	9086.8	7818.7	6367.2	5145.9	4111.0
25°	12108.4	12056.8	11941.2	11519.7	10839.4	10391.2	9786.3	8328.0	6649.1	5267.3	4110.0
27.5°	12424.7	12438.1	12152.4	11805.5	11178.6	10728.5	10155.2	8557.4	6704.5	5206.1	3978.2
30°	12512.6	12479.2	12354.0	11865.7	11281.8	10791.6	10177.1	8436.0	6488.5	4935.7	3716.3
32.5°	12458.1	12459.1	12341.6	11822.7	11136.6	10588.0	9897.1	8001.2	6068.1	4511.4	3309.2
35°	12432.3	12423.7	12118.9	11663.1	10791.6	10146.6	9276.0	7303.6	5485.1	3969.6	2885.9
37.5°	12176.2	12124.6	11904.9	11286.6	10146.6	9321.9	8384.4	6450.3	4767.5	3405.8	2452.1
40°	11810.2	11745.3	11387.9	10501.1	9043.8	8123.5	7191.8	5484.2	4016.4	2844.8	1968.5
42.5°	11060.1	10953.1	10411.3	9234.9	7623.8	6767.6	5995.4	4517.1	3283.4	2309.7	1511.8
45°	9712.7	9537.8	8787.7	7558.8	6154.1	5482.3	4829.6	3620.8	2628.9	1720.1	1026.3
47.5°	7798.6	7607.5	6927.1	5940.0	4818.1	4273.4	3719.2	2666.1	1778.4	1002.4	515.1
50°	5670.5	5538.7	4937.6	4105.3	3186.0	2729.2	2303.9	1486.9	853.3	484.5	211.2
52.5°	3267.2	3172.6	2754.0	2160.6	1567.2	1312.0	1055.0	648.9	434.8	192.1	67.8
55°	1332.1	1277.6	1094.2	926.9	695.7	601.1	501.7	323.9	146.2	45.9	26.8
57.5°	651.7	645.0	538.0	431.0	317.3	256.1	193.0	65.0	35.4	22.9	17.2
60°	259.0	249.4	171.1	99.4	55.4	44.9	38.2	26.8	20.1	15.3	12.4
62.5°	44.9	44.0	37.3	31.5	25.8	22.9	21.0	16.2	13.4	10.5	9.6
65°	21.0	21.0	19.1	17.2	14.3	13.4	12.4	10.5	8.6	7.6	7.6
67.5°	10.5	10.5	9.6	8.6	7.6	7.6	6.7	6.7	5.7	5.7	5.7
70°	5.7	5.7	5.7	4.8	4.8	4.8	4.8	4.8	3.8	4.8	4.8
72.5°	3.8	3.8	3.8	2.9	1.9	2.9	2.9	2.9	3.8	4.8	4.8
75°	1.0	1.0	1.0	1.9	1.9	1.9	2.9	2.9	3.8	4.8	4.8
77.5°	1.0	1.0	1.0	1.0	1.9	1.9	1.9	2.9	3.8	4.8	4.8
80°	0.0	1.0	1.0	1.0	1.9	1.9	1.9	2.9	3.8	4.8	4.8
82.5°	0.0	0.0	1.0	1.0	1.9	1.9	1.9	2.9	3.8	4.8	4.8
85°	0.0	0.0	1.0	1.0	1.9	1.9	1.9	2.9	3.8	4.8	4.8
87.5°	0.0	0.0	1.0	1.0	1.9	1.9	1.9	2.9	3.8	4.8	4.8
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°	897.3	897.3	897.3	897.3	897.3	897.3	897.3	897.3	897.3	897.3	897.3
2.5°	1241.3	1191.6	1159.1	1101.8	1077.9	1067.4	1014.8	964.2	915.5	880.1	825.6
5°	1593.0	1513.7	1392.3	1278.6	1228.9	1197.4	1094.2	998.6	907.8	828.5	733.9
7.5°	1971.4	1808.0	1617.8	1435.3	1349.3	1292.0	1132.4	992.9	862.9	742.5	613.5
10°	2334.5	2077.5	1800.3	1539.5	1422.9	1336.9	1128.6	949.9	780.7	625.0	486.4
12.5°	2644.1	2311.6	1943.7	1605.4	1453.5	1343.6	1093.2	875.3	669.9	502.6	382.2
15°	2905.0	2491.2	2038.3	1627.4	1444.9	1314.9	1024.4	773.1	548.5	398.5	308.7
17.5°	3088.5	2578.2	2060.3	1590.1	1384.7	1234.6	920.2	642.2	431.0	322.0	243.7
20°	3195.5	2589.7	2006.8	1499.3	1279.5	1120.9	789.3	504.6	349.7	263.7	189.2
22.5°	3211.8	2533.3	1901.6	1377.0	1158.2	1005.3	657.5	422.4	318.2	246.5	185.4
25°	3133.4	2421.5	1765.0	1257.6	1048.3	891.6	568.6	427.2	357.4	317.3	329.7
27.5°	2981.5	2237.1	1608.3	1135.3	933.6	775.0	537.0	447.2	389.9	396.6	419.5
30°	2748.3	1977.1	1382.8	927.9	714.8	590.6	427.2	322.0	267.6	253.2	254.2
32.5°	2405.2	1651.3	1085.6	644.1	480.7	398.5	270.4	179.7	180.6	167.2	166.3
35°	2013.4	1329.2	812.3	431.9	332.5	277.1	159.6	126.1	121.4	116.6	109.9
37.5°	1625.5	1027.3	540.9	295.3	212.1	153.9	80.3	65.9	61.2	57.3	57.3
40°	1237.5	718.6	334.5	154.8	86.0	63.1	47.8	40.1	39.2	39.2	38.2
42.5°	898.3	424.3	181.6	61.2	47.8	42.0	33.4	29.6	29.6	29.6	29.6
45°	477.8	216.0	69.8	38.2	31.5	29.6	24.8	22.9	22.9	23.9	23.9
47.5°	220.7	81.2	35.4	25.8	22.0	22.0	19.1	18.2	18.2	19.1	19.1
50°	79.3	33.4	22.9	18.2	16.2	17.2	15.3	14.3	15.3	15.3	15.3
52.5°	30.6	21.0	16.2	14.3	12.4	13.4	11.5	11.5	12.4	12.4	12.4
55°	19.1	15.3	12.4	10.5	9.6	10.5	9.6	9.6	9.6	9.6	9.6
57.5°	13.4	11.5	9.6	8.6	7.6	8.6	8.6	8.6	8.6	8.6	8.6
60°	10.5	8.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	8.6	8.6
62.5°	8.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	8.6	8.6	8.6
65°	7.6	6.7	7.6	7.6	6.7	7.6	7.6	7.6	8.6	8.6	9.6
67.5°	5.7	5.7	5.7	6.7	6.7	6.7	7.6	7.6	8.6	8.6	8.6
70°	5.7	5.7	6.7	6.7	6.7	6.7	7.6	7.6	8.6	8.6	8.6
72.5°	5.7	5.7	6.7	6.7	6.7	7.6	7.6	7.6	8.6	8.6	8.6
75°	5.7	5.7	6.7	6.7	6.7	7.6	7.6	7.6	8.6	8.6	8.6
77.5°	5.7	5.7	6.7	6.7	6.7	7.6	7.6	8.6	8.6	8.6	8.6
80°	5.7	6.7	6.7	7.6	7.6	7.6	7.6	8.6	8.6	9.6	9.6
82.5°	5.7	6.7	6.7	7.6	7.6	7.6	7.6	8.6	8.6	9.6	9.6
85°	5.7	6.7	6.7	7.6	7.6	7.6	7.6	8.6	8.6	8.6	8.6
87.5°	5.7	6.7	6.7	7.6	7.6	7.6	7.6	7.6	8.6	8.6	8.6
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°	897.3	897.3	897.3	897.3	897.3	897.3	897.3	897.3	897.3	897.3	897.3
2.5°	789.3	742.5	695.7	672.7	652.7	624.0	587.7	558.1	526.5	510.3	473.0
5°	659.4	579.1	511.2	478.8	453.9	419.5	382.2	355.5	331.6	318.2	294.3
7.5°	510.3	433.8	374.6	349.7	331.6	297.2	269.5	241.8	216.9	198.8	174.9
10°	394.7	335.4	286.7	262.8	242.7	206.4	173.0	147.2	120.4	102.2	94.6
12.5°	313.4	258.0	208.3	184.4	163.4	126.1	101.3	96.5	91.7	89.8	87.0
15°	240.8	190.2	137.6	113.7	105.1	100.3	94.6	93.6	89.8	89.8	87.0
17.5°	180.6	124.2	105.1	103.2	102.2	100.3	97.5	96.5	95.6	95.6	94.6
20°	130.0	120.4	117.5	119.4	120.4	122.3	121.4	121.4	125.2	133.8	131.9
22.5°	182.5	197.8	214.1	219.8	240.8	261.8	280.9	304.8	361.2	426.2	441.5
25°	361.2	407.1	449.1	472.1	506.5	553.3	598.2	653.6	692.8	725.3	762.6
27.5°	449.1	466.3	459.6	462.5	458.7	452.0	453.9	465.4	459.6	442.4	449.1
30°	265.7	279.0	271.4	275.2	264.7	264.7	261.8	267.6	263.7	257.1	255.1
32.5°	173.0	180.6	179.7	179.7	175.8	173.9	167.2	165.3	158.6	146.2	143.3
35°	104.2	99.4	94.6	91.7	89.8	89.8	88.9	88.9	86.0	83.1	82.2
37.5°	56.4	57.3	57.3	57.3	57.3	59.2	58.3	58.3	58.3	56.4	56.4
40°	39.2	41.1	41.1	41.1	42.0	42.0	42.0	43.0	42.0	42.0	42.0
42.5°	30.6	31.5	30.6	30.6	31.5	31.5	31.5	32.5	32.5	32.5	31.5
45°	24.8	24.8	23.9	24.8	24.8	25.8	25.8	25.8	25.8	24.8	24.8
47.5°	20.1	20.1	20.1	20.1	21.0	21.0	21.0	21.0	21.0	21.0	21.0
50°	16.2	16.2	16.2	17.2	17.2	17.2	16.2	17.2	17.2	17.2	16.2
52.5°	12.4	12.4	12.4	12.4	12.4	11.5	11.5	11.5	11.5	11.5	10.5
55°	9.6	9.6	9.6	9.6	9.6	10.5	9.6	10.5	9.6	9.6	8.6
57.5°	8.6	8.6	8.6	8.6	9.6	9.6	8.6	8.6	8.6	7.6	7.6
60°	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	7.6	6.7	6.7
62.5°	9.6	9.6	8.6	8.6	8.6	8.6	7.6	7.6	7.6	6.7	6.7
65°	9.6	9.6	8.6	9.6	9.6	8.6	8.6	7.6	7.6	6.7	6.7
67.5°	9.6	9.6	9.6	9.6	9.6	9.6	8.6	8.6	7.6	7.6	6.7
70°	9.6	9.6	9.6	9.6	9.6	9.6	8.6	8.6	7.6	7.6	6.7
72.5°	9.6	9.6	9.6	9.6	9.6	9.6	8.6	8.6	8.6	7.6	6.7
75°	9.6	9.6	9.6	9.6	9.6	8.6	8.6	8.6	7.6	7.6	6.7
77.5°	9.6	9.6	9.6	9.6	9.6	8.6	8.6	8.6	7.6	7.6	6.7
80°	9.6	9.6	9.6	9.6	9.6	9.6	8.6	8.6	7.6	7.6	6.7
82.5°	9.6	9.6	9.6	9.6	9.6	8.6	8.6	8.6	7.6	7.6	6.7
85°	9.6	8.6	8.6	8.6	8.6	8.6	7.6	7.6	6.7	6.7	5.7
87.5°	8.6	8.6	8.6	8.6	8.6	7.6	7.6	6.7	5.7	4.8	4.8
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: P179937

CATALOG NUMBER: LDA6A65930D010TE LARH30NF 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	897.3	897.3	897.3	897.3	897.3	897.3	897.3	897.3
2.5°	473.0	464.4	460.6	453.9	448.2	445.3	434.8	447.2
5°	289.5	279.0	276.2	270.4	263.7	259.9	252.3	259.0
7.5°	165.3	152.9	147.2	142.4	135.7	130.0	123.3	127.1
10°	92.7	88.9	89.8	87.0	86.0	85.0	84.1	86.0
12.5°	86.0	83.1	84.1	82.2	81.2	81.2	80.3	81.2
15°	87.0	84.1	86.0	84.1	83.1	83.1	82.2	84.1
17.5°	94.6	92.7	94.6	92.7	93.6	92.7	93.6	94.6
20°	132.8	135.7	141.4	137.6	140.5	144.3	149.1	149.1
22.5°	467.3	528.4	536.1	566.7	645.0	642.2	694.7	696.6
25°	816.1	819.9	854.3	842.8	843.8	883.9	880.1	903.0
27.5°	469.2	468.2	474.9	462.5	466.3	469.2	458.7	471.1
30°	261.8	257.1	259.9	253.2	253.2	255.1	252.3	258.0
32.5°	145.3	141.4	141.4	136.7	135.7	134.7	131.9	134.7
35°	83.1	80.3	81.2	79.3	77.4	76.4	75.5	76.4
37.5°	57.3	55.4	56.4	54.5	52.6	51.6	50.6	51.6
40°	42.0	41.1	41.1	39.2	38.2	37.3	36.3	36.3
42.5°	31.5	30.6	30.6	28.7	27.7	26.8	25.8	26.8
45°	23.9	22.9	22.9	22.0	21.0	20.1	20.1	20.1
47.5°	21.0	20.1	21.0	20.1	19.1	19.1	19.1	19.1
50°	16.2	16.2	16.2	15.3	14.3	14.3	13.4	12.4
52.5°	10.5	9.6	9.6	8.6	8.6	7.6	7.6	7.6
55°	8.6	7.6	7.6	6.7	6.7	5.7	5.7	5.7
57.5°	6.7	6.7	5.7	5.7	4.8	4.8	4.8	4.8
60°	5.7	5.7	5.7	4.8	4.8	3.8	3.8	3.8
62.5°	5.7	4.8	4.8	4.8	3.8	3.8	3.8	3.8
65°	5.7	4.8	4.8	4.8	3.8	3.8	3.8	3.8
67.5°	5.7	4.8	4.8	4.8	3.8	3.8	3.8	3.8
70°	6.7	5.7	5.7	4.8	4.8	4.8	3.8	3.8
72.5°	6.7	5.7	5.7	5.7	4.8	4.8	4.8	4.8
75°	6.7	5.7	5.7	5.7	4.8	4.8	4.8	4.8
77.5°	6.7	5.7	5.7	5.7	4.8	4.8	4.8	4.8
80°	6.7	5.7	5.7	5.7	4.8	4.8	4.8	4.8
82.5°	5.7	5.7	5.7	4.8	4.8	4.8	4.8	4.8
85°	5.7	4.8	4.8	4.8	3.8	3.8	3.8	3.8
87.5°	3.8	3.8	2.9	2.9	2.9	1.9	1.9	1.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)