

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: P179934

Luminaire Tested: **LDA6A65835D010TE LARH30NF 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179934
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: LDA6A65835D010TE LARH30NF 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 30° Narrow Flood, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6095.6 lumens
Efficiency: N/A
Efficacy: 78.1 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

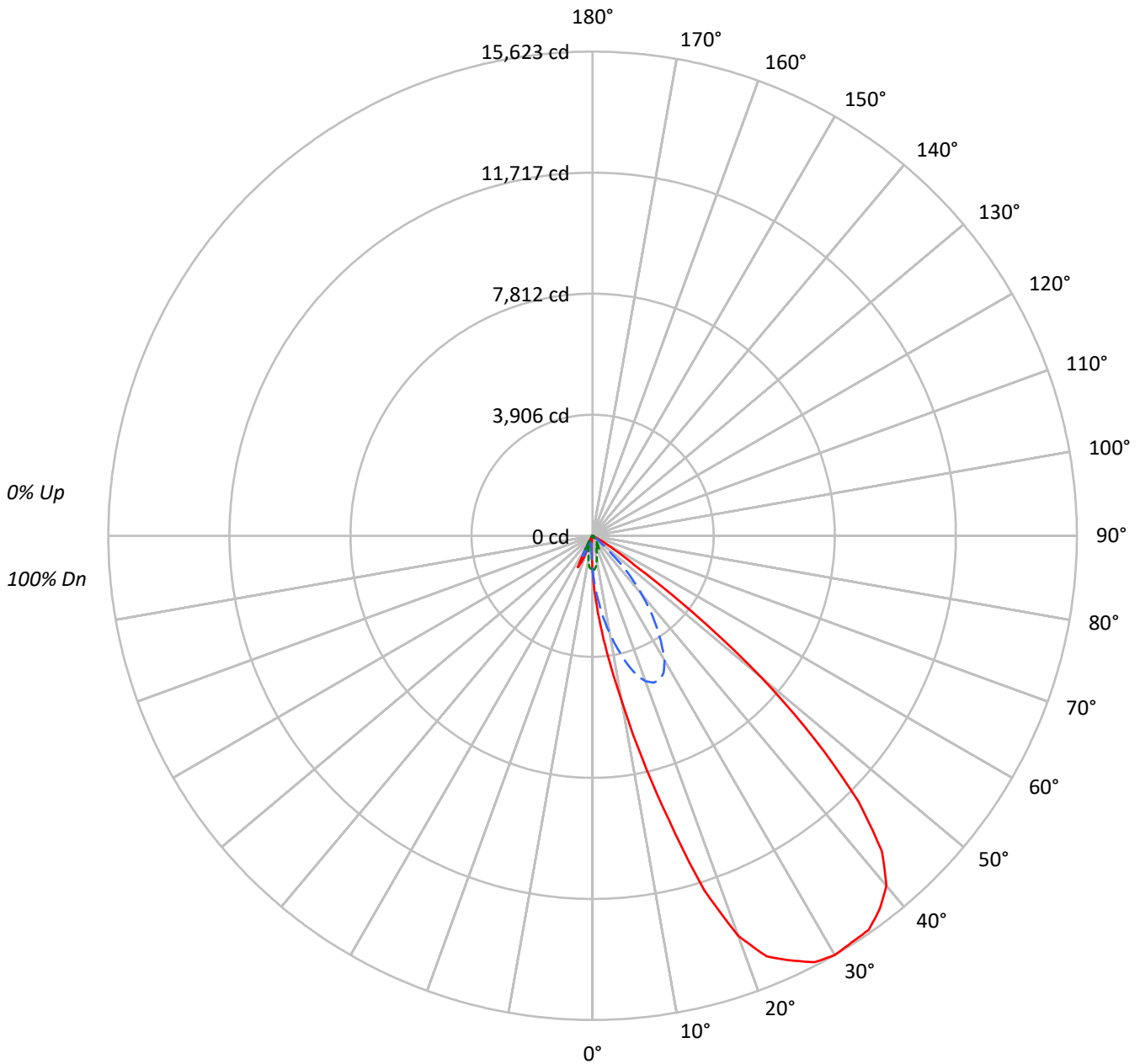
Input Watts (W): 78
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	61421	61421	61421
5°	158562	56928	17791
10°	300807	43436	5979
15°	537869	28235	5959
20°	801447	19211	10857
25°	914472	23959	68200
30°	988956	20016	20389
35°	1038833	9744	6391
40°	1055270	3499	3242
45°	940183	2310	1946
50°	603827	1629	1322
55°	158962	1137	688
60°	35447	1173	526
65°	3399	1388	623
70°	1154	1715	769
75°	254	2266	1271
80°	0	3757	1894
85°	0	6730	3019



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.0	2.2
10°-20°	710.1	11.6
20°-30°	1666.1	27.3
30°-40°	1916.4	31.4
40°-50°	1361.3	22.3
50°-60°	276.8	4.5
60°-70°	13.9	0.2
70°-80°	8.2	0.1
80°-90°	6.8	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°	2512.2	41.2
0°-40°	4428.6	72.7
0°-60°	6066.6	99.5
0°-90°	6095.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6095.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1120	1120	1120	1120	1120	
5°	2881	2084	1034	414	323	351
15°	9477	4261	498	112	105	2843
25°	15118	5132	396	865	1128	6968
35°	15523	3603	146	107	96	9643
45°	12127	1281	30	32	25	8937
55°	1663	33	12	12	7	2243
65°	26	10	11	10	5	63
75°	1	6	11	10	6	3
85°	0	6	11	8	5	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°	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4
2.5°	1930.5	1872.0	1843.4	1842.2	1758.7	1786.1	1758.7	1737.2	1659.7	1627.5	1573.8
5°	2881.4	2809.9	2752.6	2727.5	2584.4	2553.3	2539.0	2466.2	2304.0	2209.7	2084.4
7.5°	4003.0	3927.8	3833.6	3758.4	3550.8	3492.3	3454.2	3328.9	3089.1	2899.3	2665.5
10°	5403.8	5359.6	5206.9	5068.5	4753.5	4631.8	4517.3	4224.9	3911.1	3530.5	3228.7
12.5°	7290.1	7186.3	6914.3	6637.5	6143.5	5962.2	5772.4	5304.7	4825.1	4228.5	3729.8
15°	9477.2	9388.9	8970.1	8519.1	7816.3	7518.0	7220.9	6484.8	5747.4	4979.0	4260.7
17.5°	11994.7	11827.7	11411.3	10648.8	9665.7	9196.8	8643.2	7705.3	6641.1	5597.1	4704.6
20°	13737.9	13638.9	13286.9	12555.5	11436.3	10817.1	10129.8	8842.4	7386.8	6092.2	4995.7
22.5°	14691.2	14592.2	14328.5	13683.0	12765.5	12143.8	11345.6	9762.3	7949.9	6425.1	5132.9
25°	15118.4	15053.9	14909.6	14383.4	13533.9	12974.3	12219.0	10398.3	8301.9	6576.6	5131.7
27.5°	15513.3	15530.0	15173.2	14740.1	13957.4	13395.5	12679.6	10684.6	8371.1	6500.3	4967.1
30°	15623.1	15581.3	15425.0	14815.3	14086.3	13474.2	12707.0	10533.1	8101.5	6162.6	4640.1
32.5°	15555.1	15556.2	15409.5	14761.6	13904.9	13220.1	12357.4	9990.2	7576.5	5632.8	4131.9
35°	15522.8	15512.1	15131.5	14562.4	13474.2	12668.8	11581.9	9119.2	6848.7	4956.3	3603.3
37.5°	15203.1	15138.6	14864.2	14092.3	12668.8	11639.1	10468.7	8053.7	5952.6	4252.4	3061.6
40°	14746.1	14665.0	14218.7	13111.5	11291.9	10142.9	8979.6	6847.5	5014.8	3552.0	2457.9
42.5°	13809.5	13675.8	12999.3	11530.6	9518.9	8449.9	7485.8	5640.0	4099.7	2883.8	1887.6
45°	12127.1	11908.8	10972.2	9437.8	7683.9	6845.1	6030.2	4520.8	3282.3	2147.7	1281.4
47.5°	9737.3	9498.6	8649.1	7416.6	6015.8	5335.8	4643.7	3328.9	2220.4	1251.6	643.1
50°	7080.1	6915.5	6165.0	5125.8	3978.0	3407.6	2876.7	1856.5	1065.5	604.9	263.7
52.5°	4079.4	3961.2	3438.6	2697.7	1956.8	1638.2	1317.2	810.1	542.9	239.8	84.7
55°	1663.2	1595.2	1366.2	1157.4	868.6	750.5	626.4	404.5	182.6	57.3	33.4
57.5°	813.7	805.4	671.7	538.1	396.1	319.8	241.0	81.1	44.1	28.6	21.5
60°	323.3	311.4	213.6	124.1	69.2	56.1	47.7	33.4	25.1	19.1	15.5
62.5°	56.1	54.9	46.5	39.4	32.2	28.6	26.2	20.3	16.7	13.1	11.9
65°	26.2	26.2	23.9	21.5	17.9	16.7	15.5	13.1	10.7	9.5	9.5
67.5°	13.1	13.1	11.9	10.7	9.5	9.5	8.4	8.4	7.2	7.2	7.2
70°	7.2	7.2	7.2	6.0	6.0	6.0	6.0	6.0	4.8	6.0	6.0
72.5°	4.8	4.8	4.8	3.6	2.4	3.6	3.6	3.6	4.8	6.0	6.0
75°	1.2	1.2	1.2	2.4	2.4	2.4	3.6	3.6	4.8	6.0	6.0
77.5°	1.2	1.2	1.2	1.2	2.4	2.4	2.4	3.6	4.8	6.0	6.0
80°	0.0	1.2	1.2	1.2	2.4	2.4	2.4	3.6	4.8	6.0	6.0
82.5°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.6	4.8	6.0	6.0
85°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.6	4.8	6.0	6.0
87.5°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.6	4.8	6.0	6.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4
2.5°	1549.9	1487.9	1447.3	1375.7	1345.9	1332.7	1267.1	1203.9	1143.0	1098.9	1030.9
5°	1989.0	1889.9	1738.4	1596.4	1534.4	1495.0	1366.2	1246.8	1133.5	1034.5	916.3
7.5°	2461.5	2257.4	2020.0	1792.1	1684.7	1613.1	1413.9	1239.7	1077.4	927.1	766.0
10°	2914.9	2593.9	2247.9	1922.2	1776.6	1669.2	1409.1	1186.0	974.8	780.3	607.3
12.5°	3301.4	2886.2	2426.9	2004.5	1814.8	1677.6	1365.0	1092.9	836.4	627.6	477.3
15°	3627.2	3110.5	2545.0	2031.9	1804.0	1641.8	1279.1	965.3	684.9	497.5	385.4
17.5°	3856.2	3219.1	2572.4	1985.4	1728.9	1541.5	1149.0	801.8	538.1	402.1	304.3
20°	3989.9	3233.4	2505.6	1872.0	1597.6	1399.6	985.5	630.0	436.7	329.3	236.2
22.5°	4010.2	3163.0	2374.4	1719.3	1446.1	1255.2	820.9	527.4	397.3	307.8	231.5
25°	3912.3	3023.4	2203.7	1570.2	1308.9	1113.2	709.9	533.3	446.2	396.1	411.6
27.5°	3722.6	2793.2	2008.1	1417.5	1165.7	967.6	670.5	558.4	486.8	495.2	523.8
30°	3431.5	2468.6	1726.5	1158.5	892.5	737.4	533.3	402.1	334.1	316.2	317.4
32.5°	3003.1	2061.8	1355.4	804.2	600.2	497.5	337.7	224.3	225.5	208.8	207.6
35°	2514.0	1659.7	1014.2	539.3	415.2	346.0	199.3	157.5	151.5	145.6	137.2
37.5°	2029.5	1282.6	675.3	368.7	264.9	192.1	100.2	82.3	76.4	71.6	71.6
40°	1545.1	897.2	417.6	193.3	107.4	78.7	59.7	50.1	48.9	48.9	47.7
42.5°	1121.6	529.8	226.7	76.4	59.7	52.5	41.8	37.0	37.0	37.0	37.0
45°	596.6	269.7	87.1	47.7	39.4	37.0	31.0	28.6	28.6	29.8	29.8
47.5°	275.6	101.4	44.1	32.2	27.4	27.4	23.9	22.7	22.7	23.9	23.9
50°	99.0	41.8	28.6	22.7	20.3	21.5	19.1	17.9	19.1	19.1	19.1
52.5°	38.2	26.2	20.3	17.9	15.5	16.7	14.3	14.3	15.5	15.5	15.5
55°	23.9	19.1	15.5	13.1	11.9	13.1	11.9	11.9	11.9	11.9	11.9
57.5°	16.7	14.3	11.9	10.7	9.5	10.7	10.7	10.7	10.7	10.7	10.7
60°	13.1	10.7	9.5	9.5	9.5	9.5	9.5	9.5	9.5	10.7	10.7
62.5°	10.7	9.5	9.5	9.5	9.5	9.5	9.5	9.5	10.7	10.7	10.7
65°	9.5	8.4	9.5	9.5	8.4	9.5	9.5	9.5	10.7	10.7	11.9
67.5°	7.2	7.2	7.2	8.4	8.4	8.4	9.5	9.5	10.7	10.7	10.7
70°	7.2	7.2	8.4	8.4	8.4	8.4	9.5	9.5	10.7	10.7	10.7
72.5°	7.2	7.2	8.4	8.4	8.4	9.5	9.5	9.5	10.7	10.7	10.7
75°	7.2	7.2	8.4	8.4	8.4	9.5	9.5	9.5	10.7	10.7	10.7
77.5°	7.2	7.2	8.4	8.4	8.4	9.5	9.5	10.7	10.7	10.7	10.7
80°	7.2	8.4	8.4	9.5	9.5	9.5	9.5	10.7	10.7	11.9	11.9
82.5°	7.2	8.4	8.4	9.5	9.5	9.5	9.5	10.7	10.7	11.9	11.9
85°	7.2	8.4	8.4	9.5	9.5	9.5	9.5	10.7	10.7	10.7	10.7
87.5°	7.2	8.4	8.4	9.5	9.5	9.5	9.5	9.5	10.7	10.7	10.7
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°	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4
2.5°	985.5	927.1	868.6	840.0	814.9	779.1	733.8	696.8	657.4	637.1	590.6
5°	823.3	723.0	638.3	597.8	566.7	523.8	477.3	443.9	414.0	397.3	367.5
7.5°	637.1	541.7	467.7	436.7	414.0	371.1	336.5	301.9	270.8	248.2	218.3
10°	492.8	418.8	357.9	328.1	303.1	257.7	216.0	183.7	150.3	127.7	118.1
12.5°	391.4	322.1	260.1	230.3	204.0	157.5	126.5	120.5	114.5	112.2	108.6
15°	300.7	237.4	171.8	142.0	131.2	125.3	118.1	116.9	112.2	112.2	108.6
17.5°	225.5	155.1	131.2	128.9	127.7	125.3	121.7	120.5	119.3	119.3	118.1
20°	162.3	150.3	146.8	149.1	150.3	152.7	151.5	151.5	156.3	167.0	164.7
22.5°	227.9	247.0	267.3	274.4	300.7	326.9	350.8	380.6	451.0	532.1	551.2
25°	451.0	508.3	560.8	589.4	632.4	690.8	746.9	816.1	865.0	905.6	952.1
27.5°	560.8	582.3	573.9	577.5	572.7	564.4	566.7	581.1	573.9	552.4	560.8
30°	331.7	348.4	338.9	343.6	330.5	330.5	326.9	334.1	329.3	321.0	318.6
32.5°	216.0	225.5	224.3	224.3	219.5	217.2	208.8	206.4	198.1	182.6	179.0
35°	130.1	124.1	118.1	114.5	112.2	112.2	111.0	111.0	107.4	103.8	102.6
37.5°	70.4	71.6	71.6	71.6	71.6	74.0	72.8	72.8	72.8	70.4	70.4
40°	48.9	51.3	51.3	51.3	52.5	52.5	52.5	53.7	52.5	52.5	52.5
42.5°	38.2	39.4	38.2	38.2	39.4	39.4	39.4	40.6	40.6	40.6	39.4
45°	31.0	31.0	29.8	31.0	31.0	32.2	32.2	32.2	32.2	31.0	31.0
47.5°	25.1	25.1	25.1	25.1	26.2	26.2	26.2	26.2	26.2	26.2	26.2
50°	20.3	20.3	20.3	21.5	21.5	21.5	20.3	21.5	21.5	21.5	20.3
52.5°	15.5	15.5	15.5	15.5	15.5	14.3	14.3	14.3	14.3	14.3	13.1
55°	11.9	11.9	11.9	11.9	11.9	13.1	11.9	13.1	11.9	11.9	10.7
57.5°	10.7	10.7	10.7	10.7	11.9	11.9	10.7	10.7	10.7	9.5	9.5
60°	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	9.5	8.4	8.4
62.5°	11.9	11.9	10.7	10.7	10.7	10.7	9.5	9.5	9.5	8.4	8.4
65°	11.9	11.9	10.7	11.9	11.9	10.7	10.7	9.5	9.5	8.4	8.4
67.5°	11.9	11.9	11.9	11.9	11.9	11.9	10.7	10.7	9.5	9.5	8.4
70°	11.9	11.9	11.9	11.9	11.9	11.9	10.7	10.7	9.5	9.5	8.4
72.5°	11.9	11.9	11.9	11.9	11.9	11.9	10.7	10.7	10.7	9.5	8.4
75°	11.9	11.9	11.9	11.9	11.9	10.7	10.7	10.7	9.5	9.5	8.4
77.5°	11.9	11.9	11.9	11.9	11.9	10.7	10.7	10.7	9.5	9.5	8.4
80°	11.9	11.9	11.9	11.9	11.9	11.9	10.7	10.7	9.5	9.5	8.4
82.5°	11.9	11.9	11.9	11.9	11.9	10.7	10.7	10.7	9.5	9.5	8.4
85°	11.9	10.7	10.7	10.7	10.7	10.7	9.5	9.5	8.4	8.4	7.2
87.5°	10.7	10.7	10.7	10.7	10.7	9.5	9.5	8.4	7.2	6.0	6.0
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: P179934

CATALOG NUMBER: LDA6A65835D010TE LARH30NF 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4	1120.4
2.5°	590.6	579.9	575.1	566.7	559.6	556.0	542.9	558.4
5°	361.5	348.4	344.8	337.7	329.3	324.5	315.0	323.3
7.5°	206.4	190.9	183.7	177.8	169.4	162.3	153.9	158.7
10°	115.7	111.0	112.2	108.6	107.4	106.2	105.0	107.4
12.5°	107.4	103.8	105.0	102.6	101.4	101.4	100.2	101.4
15°	108.6	105.0	107.4	105.0	103.8	103.8	102.6	105.0
17.5°	118.1	115.7	118.1	115.7	116.9	115.7	116.9	118.1
20°	165.8	169.4	176.6	171.8	175.4	180.2	186.1	186.1
22.5°	583.4	659.8	669.4	707.5	805.4	801.8	867.4	869.8
25°	1018.9	1023.7	1066.7	1052.4	1053.5	1103.7	1098.9	1127.5
27.5°	585.8	584.6	593.0	577.5	582.3	585.8	572.7	588.2
30°	326.9	321.0	324.5	316.2	316.2	318.6	315.0	322.1
32.5°	181.4	176.6	176.6	170.6	169.4	168.2	164.7	168.2
35°	103.8	100.2	101.4	99.0	96.6	95.5	94.3	95.5
37.5°	71.6	69.2	70.4	68.0	65.6	64.4	63.2	64.4
40°	52.5	51.3	51.3	48.9	47.7	46.5	45.3	45.3
42.5°	39.4	38.2	38.2	35.8	34.6	33.4	32.2	33.4
45°	29.8	28.6	28.6	27.4	26.2	25.1	25.1	25.1
47.5°	26.2	25.1	26.2	25.1	23.9	23.9	23.9	23.9
50°	20.3	20.3	20.3	19.1	17.9	17.9	16.7	15.5
52.5°	13.1	11.9	11.9	10.7	10.7	9.5	9.5	9.5
55°	10.7	9.5	9.5	8.4	8.4	7.2	7.2	7.2
57.5°	8.4	8.4	7.2	7.2	6.0	6.0	6.0	6.0
60°	7.2	7.2	7.2	6.0	6.0	4.8	4.8	4.8
62.5°	7.2	6.0	6.0	6.0	4.8	4.8	4.8	4.8
65°	7.2	6.0	6.0	6.0	4.8	4.8	4.8	4.8
67.5°	7.2	6.0	6.0	6.0	4.8	4.8	4.8	4.8
70°	8.4	7.2	7.2	6.0	6.0	6.0	4.8	4.8
72.5°	8.4	7.2	7.2	7.2	6.0	6.0	6.0	6.0
75°	8.4	7.2	7.2	7.2	6.0	6.0	6.0	6.0
77.5°	8.4	7.2	7.2	7.2	6.0	6.0	6.0	6.0
80°	8.4	7.2	7.2	7.2	6.0	6.0	6.0	6.0
82.5°	7.2	7.2	7.2	6.0	6.0	6.0	6.0	6.0
85°	7.2	6.0	6.0	6.0	4.8	4.8	4.8	4.8
87.5°	4.8	4.8	3.6	3.6	3.6	2.4	2.4	2.4
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)