

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: P179936

Luminaire Tested: **LDA6A65927D010TE LARH30NF 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179936
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: LDA6A65927D010TE LARH30NF 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 30° Narrow Flood, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4561.5 lumens
Efficiency: N/A
Efficacy: 58.5 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

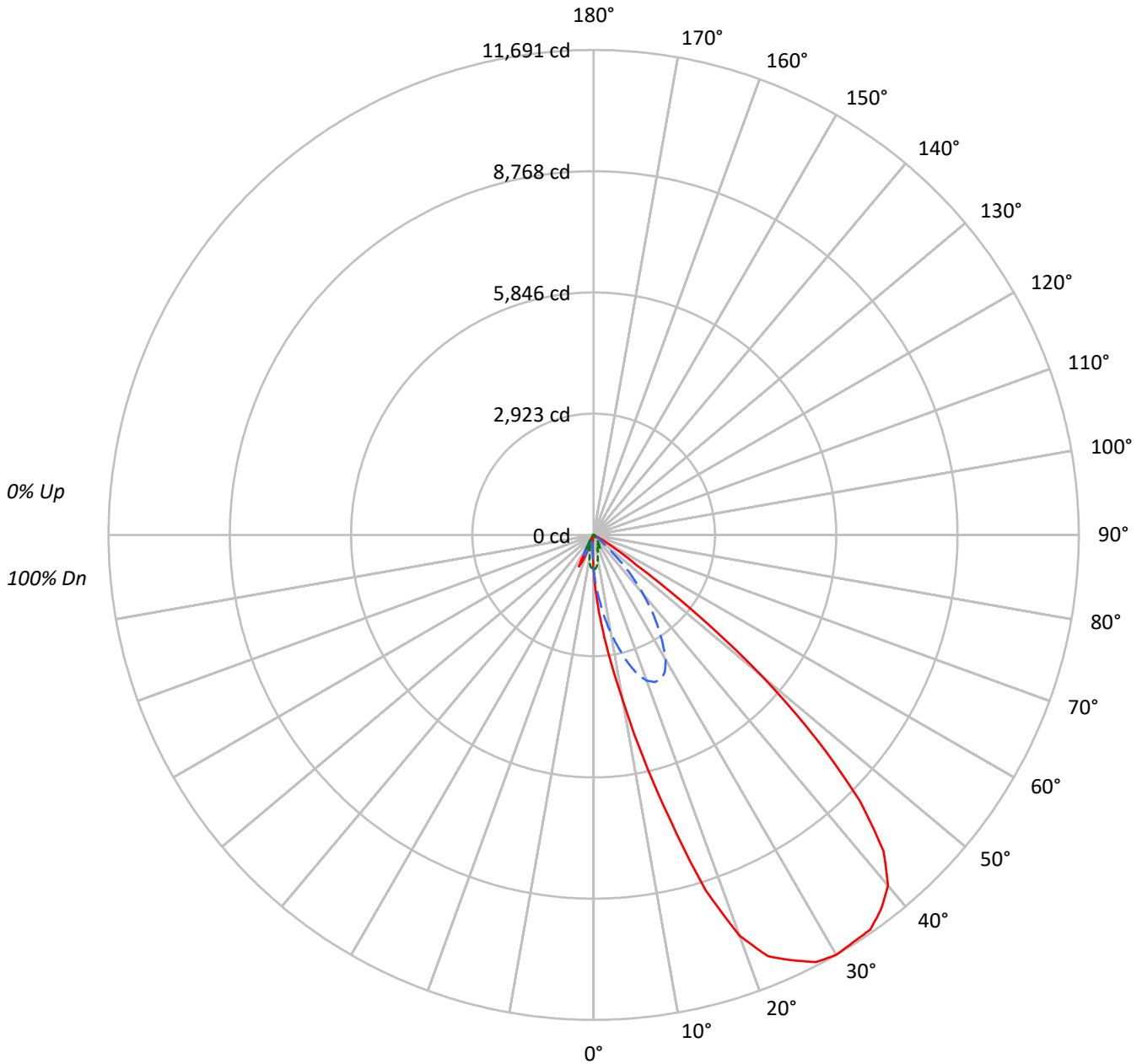
Input Watts (W): 78
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	45961	45961	45961
5°	118660	42598	13317
10°	225102	32503	4476
15°	402499	21130	4461
20°	599742	14375	8127
25°	684318	17928	51039
30°	740057	14977	15262
35°	777385	7288	4778
40°	789680	2619	2426
45°	703561	1729	1458
50°	451857	1220	989
55°	118954	851	516
60°	26533	877	395
65°	2542	1038	467
70°	866	1282	577
75°	191	1694	953
80°	0	2810	1421
85°	0	5032	2264



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	101.8	2.2
10°-20°	531.4	11.6
20°-30°	1246.8	27.3
30°-40°	1434.1	31.4
40°-50°	1018.7	22.3
50°-60°	207.1	4.5
60°-70°	10.4	0.2
70°-80°	6.2	0.1
80°-90°	5.1	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°	1879.9	41.2
0°-40°	3314.0	72.7
0°-60°	4539.8	99.5
0°-90°	4561.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4561.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	838	838	838	838	838	
5°	2156	1560	774	310	242	263
15°	7092	3188	372	84	79	2127
25°	11313	3840	296	647	844	5214
35°	11616	2696	109	80	71	7216
45°	9075	959	22	24	19	6688
55°	1245	25	9	9	5	1679
65°	20	7	8	7	4	47
75°	1	4	8	7	4	2
85°	0	4	8	6	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°	838.4	838.4	838.4	838.4	838.4	838.4	838.4	838.4	838.4	838.4	838.4
2.5°	1444.6	1400.9	1379.5	1378.6	1316.1	1336.6	1316.1	1300.0	1242.0	1217.9	1177.7
5°	2156.3	2102.7	2059.8	2041.1	1933.9	1910.7	1900.0	1845.5	1724.1	1653.6	1559.8
7.5°	2995.5	2939.3	2868.8	2812.5	2657.1	2613.4	2584.8	2491.1	2311.6	2169.6	1994.6
10°	4043.8	4010.7	3896.4	3792.9	3557.1	3466.1	3380.4	3161.6	2926.8	2642.0	2416.1
12.5°	5455.4	5377.7	5174.1	4967.0	4597.3	4461.6	4319.7	3969.6	3610.7	3164.3	2791.1
15°	7092.0	7025.9	6712.5	6375.0	5849.1	5625.9	5403.6	4852.7	4300.9	3725.9	3188.4
17.5°	8975.9	8850.9	8539.3	7968.8	7233.0	6882.2	6467.9	5766.1	4969.7	4188.4	3520.5
20°	10280.4	10206.3	9942.9	9395.6	8558.1	8094.7	7580.4	6617.0	5527.7	4558.9	3738.4
22.5°	10993.8	10919.7	10722.3	10239.3	9552.7	9087.5	8490.2	7305.4	5949.1	4808.0	3841.1
25°	11313.4	11265.2	11157.2	10763.4	10127.7	9708.9	9143.8	7781.3	6212.5	4921.4	3840.2
27.5°	11608.9	11621.4	11354.5	11030.4	10444.7	10024.1	9488.4	7995.6	6264.3	4864.3	3717.0
30°	11691.1	11659.8	11542.9	11086.6	10541.1	10083.1	9508.9	7882.2	6062.5	4611.6	3472.3
32.5°	11640.2	11641.1	11531.3	11046.4	10405.4	9892.9	9247.3	7475.9	5669.7	4215.2	3092.0
35°	11616.1	11608.1	11323.2	10897.3	10083.1	9480.4	8667.0	6824.1	5125.0	3708.9	2696.4
37.5°	11376.8	11328.6	11123.2	10545.6	9480.4	8709.8	7833.9	6026.8	4454.5	3182.1	2291.1
40°	11034.8	10974.1	10640.2	9811.6	8450.0	7590.2	6719.7	5124.1	3752.7	2658.0	1839.3
42.5°	10333.9	10233.9	9727.7	8628.6	7123.2	6323.2	5601.8	4220.5	3067.9	2158.0	1412.5
45°	9075.0	8911.6	8210.7	7062.5	5750.0	5122.3	4512.5	3383.0	2456.3	1607.1	958.9
47.5°	7286.6	7108.0	6472.3	5550.0	4501.8	3992.9	3475.0	2491.1	1661.6	936.6	481.3
50°	5298.2	5175.0	4613.4	3835.7	2976.8	2550.0	2152.7	1389.3	797.3	452.7	197.3
52.5°	3052.7	2964.3	2573.2	2018.8	1464.3	1225.9	985.7	606.3	406.3	179.5	63.4
55°	1244.6	1193.8	1022.3	866.1	650.0	561.6	468.8	302.7	136.6	42.9	25.0
57.5°	608.9	602.7	502.7	402.7	296.4	239.3	180.4	60.7	33.0	21.4	16.1
60°	242.0	233.0	159.8	92.9	51.8	42.0	35.7	25.0	18.8	14.3	11.6
62.5°	42.0	41.1	34.8	29.5	24.1	21.4	19.6	15.2	12.5	9.8	8.9
65°	19.6	19.6	17.9	16.1	13.4	12.5	11.6	9.8	8.0	7.1	7.1
67.5°	9.8	9.8	8.9	8.0	7.1	7.1	6.3	6.3	5.4	5.4	5.4
70°	5.4	5.4	5.4	4.5	4.5	4.5	4.5	4.5	3.6	4.5	4.5
72.5°	3.6	3.6	3.6	2.7	1.8	2.7	2.7	2.7	3.6	4.5	4.5
75°	0.9	0.9	0.9	1.8	1.8	1.8	2.7	2.7	3.6	4.5	4.5
77.5°	0.9	0.9	0.9	0.9	1.8	1.8	1.8	2.7	3.6	4.5	4.5
80°	0.0	0.9	0.9	0.9	1.8	1.8	1.8	2.7	3.6	4.5	4.5
82.5°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	3.6	4.5	4.5
85°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	3.6	4.5	4.5
87.5°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	3.6	4.5	4.5
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°	838.4	838.4	838.4	838.4	838.4	838.4	838.4	838.4	838.4	838.4	838.4
2.5°	1159.8	1113.4	1083.0	1029.5	1007.1	997.3	948.2	900.9	855.4	822.3	771.4
5°	1488.4	1414.3	1300.9	1194.6	1148.2	1118.8	1022.3	933.0	848.2	774.1	685.7
7.5°	1842.0	1689.3	1511.6	1341.1	1260.7	1207.1	1058.0	927.7	806.3	693.8	573.2
10°	2181.3	1941.1	1682.1	1438.4	1329.5	1249.1	1054.5	887.5	729.5	583.9	454.5
12.5°	2470.5	2159.8	1816.1	1500.0	1358.0	1255.4	1021.4	817.9	625.9	469.6	357.1
15°	2714.3	2327.7	1904.5	1520.5	1350.0	1228.6	957.1	722.3	512.5	372.3	288.4
17.5°	2885.7	2408.9	1925.0	1485.7	1293.8	1153.6	859.8	600.0	402.7	300.9	227.7
20°	2985.7	2419.6	1875.0	1400.9	1195.5	1047.3	737.5	471.4	326.8	246.4	176.8
22.5°	3000.9	2367.0	1776.8	1286.6	1082.1	939.3	614.3	394.6	297.3	230.4	173.2
25°	2927.7	2262.5	1649.1	1175.0	979.5	833.0	531.3	399.1	333.9	296.4	308.0
27.5°	2785.7	2090.2	1502.7	1060.7	872.3	724.1	501.8	417.9	364.3	370.5	392.0
30°	2567.9	1847.3	1292.0	867.0	667.9	551.8	399.1	300.9	250.0	236.6	237.5
32.5°	2247.3	1542.9	1014.3	601.8	449.1	372.3	252.7	167.9	168.8	156.3	155.4
35°	1881.3	1242.0	758.9	403.6	310.7	258.9	149.1	117.9	113.4	108.9	102.7
37.5°	1518.8	959.8	505.4	275.9	198.2	143.8	75.0	61.6	57.1	53.6	53.6
40°	1156.3	671.4	312.5	144.6	80.4	58.9	44.6	37.5	36.6	36.6	35.7
42.5°	839.3	396.4	169.6	57.1	44.6	39.3	31.3	27.7	27.7	27.7	27.7
45°	446.4	201.8	65.2	35.7	29.5	27.7	23.2	21.4	21.4	22.3	22.3
47.5°	206.3	75.9	33.0	24.1	20.5	20.5	17.9	17.0	17.0	17.9	17.9
50°	74.1	31.3	21.4	17.0	15.2	16.1	14.3	13.4	14.3	14.3	14.3
52.5°	28.6	19.6	15.2	13.4	11.6	12.5	10.7	10.7	11.6	11.6	11.6
55°	17.9	14.3	11.6	9.8	8.9	9.8	8.9	8.9	8.9	8.9	8.9
57.5°	12.5	10.7	8.9	8.0	7.1	8.0	8.0	8.0	8.0	8.0	8.0
60°	9.8	8.0	7.1	7.1	7.1	7.1	7.1	7.1	7.1	8.0	8.0
62.5°	8.0	7.1	7.1	7.1	7.1	7.1	7.1	7.1	8.0	8.0	8.0
65°	7.1	6.3	7.1	7.1	6.3	7.1	7.1	7.1	8.0	8.0	8.9
67.5°	5.4	5.4	5.4	6.3	6.3	6.3	7.1	7.1	8.0	8.0	8.0
70°	5.4	5.4	6.3	6.3	6.3	6.3	7.1	7.1	8.0	8.0	8.0
72.5°	5.4	5.4	6.3	6.3	6.3	7.1	7.1	7.1	8.0	8.0	8.0
75°	5.4	5.4	6.3	6.3	6.3	7.1	7.1	7.1	8.0	8.0	8.0
77.5°	5.4	5.4	6.3	6.3	6.3	7.1	7.1	8.0	8.0	8.0	8.0
80°	5.4	6.3	6.3	7.1	7.1	7.1	7.1	8.0	8.0	8.9	8.9
82.5°	5.4	6.3	6.3	7.1	7.1	7.1	7.1	8.0	8.0	8.9	8.9
85°	5.4	6.3	6.3	7.1	7.1	7.1	7.1	8.0	8.0	8.0	8.0
87.5°	5.4	6.3	6.3	7.1	7.1	7.1	7.1	7.1	8.0	8.0	8.0
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°	838.4	838.4	838.4	838.4	838.4	838.4	838.4	838.4	838.4	838.4	838.4
2.5°	737.5	693.8	650.0	628.6	609.8	583.0	549.1	521.4	492.0	476.8	442.0
5°	616.1	541.1	477.7	447.3	424.1	392.0	357.1	332.1	309.8	297.3	275.0
7.5°	476.8	405.4	350.0	326.8	309.8	277.7	251.8	225.9	202.7	185.7	163.4
10°	368.8	313.4	267.9	245.5	226.8	192.9	161.6	137.5	112.5	95.5	88.4
12.5°	292.9	241.1	194.6	172.3	152.7	117.9	94.6	90.2	85.7	83.9	81.3
15°	225.0	177.7	128.6	106.3	98.2	93.8	88.4	87.5	83.9	83.9	81.3
17.5°	168.8	116.1	98.2	96.4	95.5	93.8	91.1	90.2	89.3	89.3	88.4
20°	121.4	112.5	109.8	111.6	112.5	114.3	113.4	113.4	117.0	125.0	123.2
22.5°	170.5	184.8	200.0	205.4	225.0	244.6	262.5	284.8	337.5	398.2	412.5
25°	337.5	380.4	419.6	441.1	473.2	517.0	558.9	610.7	647.3	677.7	712.5
27.5°	419.6	435.7	429.5	432.1	428.6	422.3	424.1	434.8	429.5	413.4	419.6
30°	248.2	260.7	253.6	257.1	247.3	247.3	244.6	250.0	246.4	240.2	238.4
32.5°	161.6	168.8	167.9	167.9	164.3	162.5	156.3	154.5	148.2	136.6	133.9
35°	97.3	92.9	88.4	85.7	83.9	83.9	83.0	83.0	80.4	77.7	76.8
37.5°	52.7	53.6	53.6	53.6	53.6	55.4	54.5	54.5	54.5	52.7	52.7
40°	36.6	38.4	38.4	38.4	39.3	39.3	39.3	40.2	39.3	39.3	39.3
42.5°	28.6	29.5	28.6	28.6	29.5	29.5	29.5	30.4	30.4	30.4	29.5
45°	23.2	23.2	22.3	23.2	23.2	24.1	24.1	24.1	24.1	23.2	23.2
47.5°	18.8	18.8	18.8	18.8	19.6	19.6	19.6	19.6	19.6	19.6	19.6
50°	15.2	15.2	15.2	16.1	16.1	16.1	15.2	16.1	16.1	16.1	15.2
52.5°	11.6	11.6	11.6	11.6	11.6	10.7	10.7	10.7	10.7	10.7	9.8
55°	8.9	8.9	8.9	8.9	8.9	9.8	8.9	9.8	8.9	8.9	8.0
57.5°	8.0	8.0	8.0	8.0	8.9	8.9	8.0	8.0	8.0	7.1	7.1
60°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.1	6.3	6.3
62.5°	8.9	8.9	8.0	8.0	8.0	8.0	7.1	7.1	7.1	6.3	6.3
65°	8.9	8.9	8.0	8.9	8.9	8.0	8.0	7.1	7.1	6.3	6.3
67.5°	8.9	8.9	8.9	8.9	8.9	8.9	8.0	8.0	7.1	7.1	6.3
70°	8.9	8.9	8.9	8.9	8.9	8.9	8.0	8.0	7.1	7.1	6.3
72.5°	8.9	8.9	8.9	8.9	8.9	8.9	8.0	8.0	8.0	7.1	6.3
75°	8.9	8.9	8.9	8.9	8.9	8.0	8.0	8.0	7.1	7.1	6.3
77.5°	8.9	8.9	8.9	8.9	8.9	8.0	8.0	8.0	7.1	7.1	6.3
80°	8.9	8.9	8.9	8.9	8.9	8.9	8.0	8.0	7.1	7.1	6.3
82.5°	8.9	8.9	8.9	8.9	8.9	8.0	8.0	8.0	7.1	7.1	6.3
85°	8.9	8.0	8.0	8.0	8.0	8.0	7.1	7.1	6.3	6.3	5.4
87.5°	8.0	8.0	8.0	8.0	8.0	7.1	7.1	6.3	5.4	4.5	4.5
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: P179936

CATALOG NUMBER: LDA6A65927D010TE LARH30NF 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	838.4	838.4	838.4	838.4	838.4	838.4	838.4	838.4
2.5°	442.0	433.9	430.4	424.1	418.8	416.1	406.3	417.9
5°	270.5	260.7	258.0	252.7	246.4	242.9	235.7	242.0
7.5°	154.5	142.9	137.5	133.0	126.8	121.4	115.2	118.8
10°	86.6	83.0	83.9	81.3	80.4	79.5	78.6	80.4
12.5°	80.4	77.7	78.6	76.8	75.9	75.9	75.0	75.9
15°	81.3	78.6	80.4	78.6	77.7	77.7	76.8	78.6
17.5°	88.4	86.6	88.4	86.6	87.5	86.6	87.5	88.4
20°	124.1	126.8	132.1	128.6	131.3	134.8	139.3	139.3
22.5°	436.6	493.8	500.9	529.5	602.7	600.0	649.1	650.9
25°	762.5	766.1	798.2	787.5	788.4	825.9	822.3	843.8
27.5°	438.4	437.5	443.8	432.1	435.7	438.4	428.6	440.2
30°	244.6	240.2	242.9	236.6	236.6	238.4	235.7	241.1
32.5°	135.7	132.1	132.1	127.7	126.8	125.9	123.2	125.9
35°	77.7	75.0	75.9	74.1	72.3	71.4	70.5	71.4
37.5°	53.6	51.8	52.7	50.9	49.1	48.2	47.3	48.2
40°	39.3	38.4	38.4	36.6	35.7	34.8	33.9	33.9
42.5°	29.5	28.6	28.6	26.8	25.9	25.0	24.1	25.0
45°	22.3	21.4	21.4	20.5	19.6	18.8	18.8	18.8
47.5°	19.6	18.8	19.6	18.8	17.9	17.9	17.9	17.9
50°	15.2	15.2	15.2	14.3	13.4	13.4	12.5	11.6
52.5°	9.8	8.9	8.9	8.0	8.0	7.1	7.1	7.1
55°	8.0	7.1	7.1	6.3	6.3	5.4	5.4	5.4
57.5°	6.3	6.3	5.4	5.4	4.5	4.5	4.5	4.5
60°	5.4	5.4	5.4	4.5	4.5	3.6	3.6	3.6
62.5°	5.4	4.5	4.5	4.5	3.6	3.6	3.6	3.6
65°	5.4	4.5	4.5	4.5	3.6	3.6	3.6	3.6
67.5°	5.4	4.5	4.5	4.5	3.6	3.6	3.6	3.6
70°	6.3	5.4	5.4	4.5	4.5	4.5	3.6	3.6
72.5°	6.3	5.4	5.4	5.4	4.5	4.5	4.5	4.5
75°	6.3	5.4	5.4	5.4	4.5	4.5	4.5	4.5
77.5°	6.3	5.4	5.4	5.4	4.5	4.5	4.5	4.5
80°	6.3	5.4	5.4	5.4	4.5	4.5	4.5	4.5
82.5°	5.4	5.4	5.4	4.5	4.5	4.5	4.5	4.5
85°	5.4	4.5	4.5	4.5	3.6	3.6	3.6	3.6
87.5°	3.6	3.6	2.7	2.7	2.7	1.8	1.8	1.8
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)