

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: P179683

Luminaire Tested: **LDA6A45940D010TE LARH40FL 6LAL1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179683  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26675)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA6A45940D010TE LARH40FL 6LAL1LI 30°  
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 40° Flood, 30° Tilt  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4169.8 lumens  
Efficiency: N/A  
Efficacy: 78.7 lumens/watt  
Spacing Criteria (0/90/45): 2.52 / 0.5 / 1.32  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

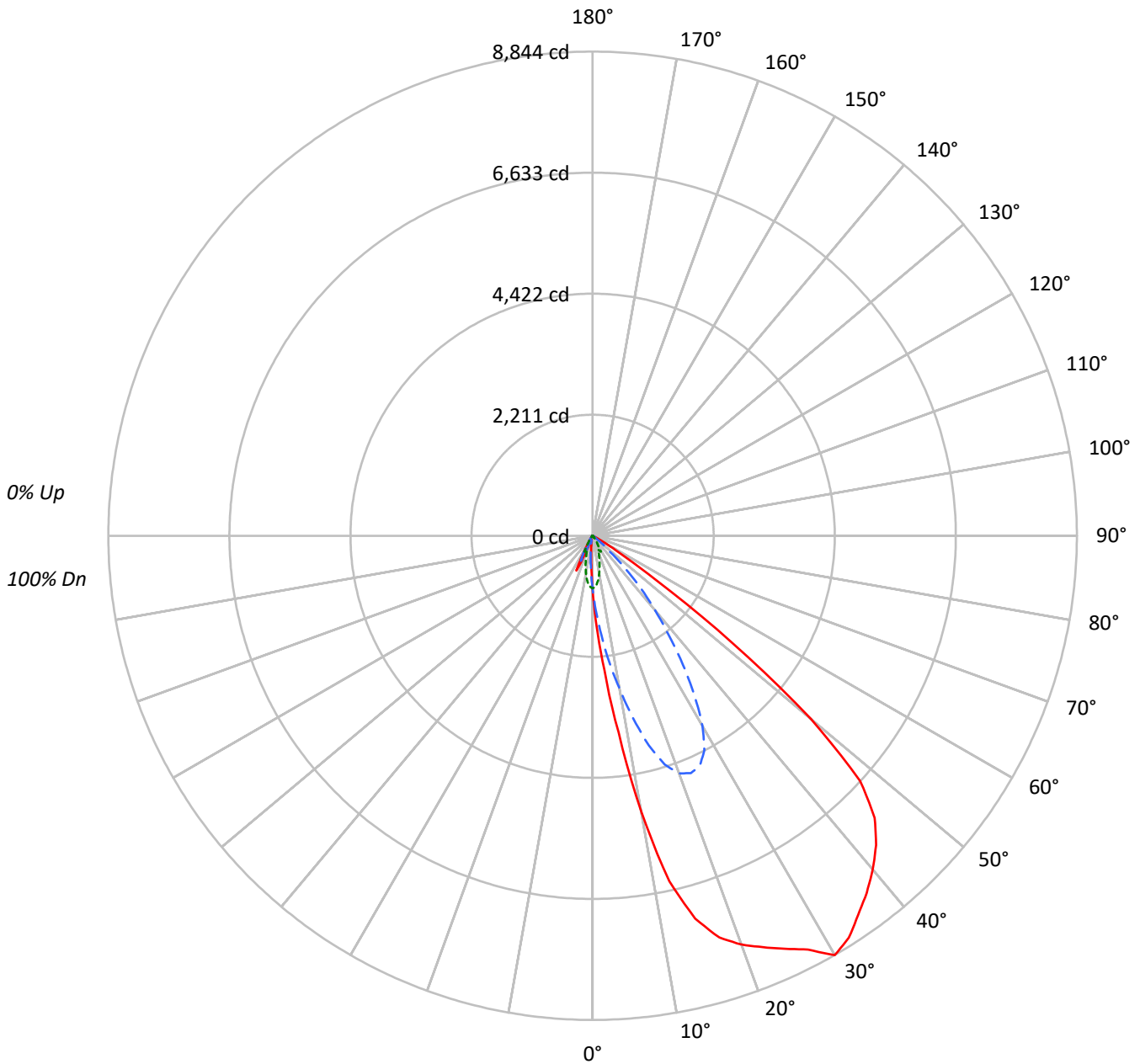
Input Watts (W): 53  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	101	99	99	97	96	95	94	93	91																			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	84	82																			
3	98	90	84	79	96	89	83	79	86	81	77	84	80	76	81	78	75	73																			
4	92	82	75	70	90	81	75	70	79	73	69	77	72	68	75	71	67	65																			
5	85	75	68	63	83	74	67	62	72	66	62	70	65	61	69	64	60	59																			
6	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53																			
7	74	63	55	50	73	62	55	50	61	54	50	59	54	50	58	53	49	48																			
8	69	58	50	45	68	57	50	45	56	50	45	55	49	45	54	48	45	43																			
9	65	53	46	41	64	53	46	41	52	45	41	51	45	41	50	44	41	39																			
10	61	49	42	37	60	49	42	37	48	42	37	47	41	37	46	41	37	35																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	52732	52732	52732
5°	135070	48624	17824
10°	284820	38799	5043
15°	410757	27520	4194
20°	463609	18277	5904
25°	503364	18418	42535
30°	559865	12147	14876
35°	565634	6893	5715
40°	569395	2834	2583
45°	564725	1775	1504
50°	443278	1203	1049
55°	133405	841	507
60°	28178	767	384
65°	3191	908	337
70°	850	1122	561
75°	191	1483	741
80°	0	2494	1105
85°	0	4403	2201



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	122.6	2.9
10°-20°	581.3	13.9
20°-30°	1096.1	26.3
30°-40°	1215.8	29.2
40°-50°	926.5	22.2
50°-60°	206.7	5.0
60°-70°	11.3	0.3
70°-80°	5.2	0.1
80°-90°	4.4	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°	1800.0	43.2
0°-40°	3015.8	72.3
0°-60°	4149.0	99.5
0°-90°	4169.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4169.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	962	962	962	962	962	
5°	2454	1818	884	424	324	318
15°	7238	3962	485	86	74	2018
25°	8322	4633	304	509	703	3873
35°	8452	2882	103	91	85	5294
45°	7284	848	23	24	19	5424
55°	1396	37	9	8	5	1723
65°	25	6	7	6	3	58
75°	1	4	7	6	4	1
85°	0	4	7	5	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°	961.9	961.9	961.9	961.9	961.9	961.9	961.9	961.9	961.9	961.9	961.9
2.5°	1651.0	1621.9	1618.4	1608.7	1533.1	1532.2	1531.3	1491.7	1455.6	1437.1	1358.8
5°	2454.5	2433.3	2406.9	2373.5	2248.5	2230.9	2216.0	2157.0	2030.3	1956.4	1818.2
7.5°	3625.8	3614.4	3481.5	3463.9	3234.2	3177.9	3122.4	2971.1	2726.4	2568.0	2323.3
10°	5116.6	5062.1	4960.9	4823.6	4524.3	4417.9	4314.9	4005.1	3588.0	3256.2	2839.9
12.5°	6464.0	6394.5	6271.3	6111.1	5734.4	5589.2	5426.4	5046.2	4536.7	3997.2	3408.4
15°	7237.5	7226.1	7083.5	7018.4	6714.8	6567.0	6432.3	5994.9	5358.6	4724.1	3962.0
17.5°	7695.2	7696.1	7591.3	7552.6	7270.1	7129.3	7015.8	6697.2	6031.0	5261.0	4381.8
20°	7946.9	7972.4	7874.7	7814.0	7616.9	7491.9	7386.3	7058.0	6478.1	5623.5	4619.4
22.5°	8134.3	8146.6	8027.8	7977.7	7756.8	7636.2	7569.3	7255.2	6688.4	5817.1	4691.6
25°	8321.8	8315.6	8181.8	8081.5	7864.1	7747.1	7665.3	7393.3	6776.4	5862.0	4632.6
27.5°	8519.8	8547.9	8299.8	8139.6	7945.1	7807.8	7716.3	7435.6	6770.2	5745.0	4418.7
30°	8844.5	8616.6	8368.4	8147.5	7924.0	7778.8	7674.1	7316.8	6600.4	5434.3	4012.2
32.5°	8708.1	8547.1	8303.3	8076.2	7836.9	7676.7	7549.1	7124.9	6244.0	4923.0	3466.5
35°	8452.0	8408.9	8167.8	7983.0	7711.0	7538.5	7389.8	6829.2	5691.3	4307.9	2882.2
37.5°	8221.4	8176.6	8033.1	7842.1	7533.2	7352.8	7080.0	6359.3	4972.3	3537.8	2267.0
40°	7956.6	7946.0	7785.8	7608.9	7237.5	6904.9	6622.4	5530.2	4116.0	2781.8	1763.6
42.5°	7663.5	7657.3	7527.1	7265.7	6720.1	6307.3	5834.7	4594.8	3164.7	2111.2	1310.4
45°	7284.2	7248.1	7023.7	6642.6	5859.4	5262.7	4703.0	3510.5	2320.7	1508.4	848.4
47.5°	6626.8	6563.4	6236.1	5583.9	4644.9	4035.0	3520.2	2414.0	1447.7	852.8	420.7
50°	5197.6	5029.5	4563.1	3877.5	2914.7	2384.9	1980.1	1197.8	642.4	423.3	269.3
52.5°	3210.4	3029.1	2588.2	2070.8	1329.8	1030.5	850.1	577.3	355.5	243.8	103.8
55°	1395.8	1310.4	1081.6	860.7	615.2	489.3	422.4	292.2	184.8	88.9	37.0
57.5°	544.8	528.0	460.3	388.1	291.3	237.6	210.3	132.0	51.0	31.7	21.1
60°	257.0	240.3	206.8	171.6	107.4	77.4	59.8	37.0	25.5	19.4	14.1
62.5°	70.4	60.7	49.3	42.2	32.6	29.0	25.5	20.2	15.8	12.3	9.7
65°	24.6	24.6	22.0	20.2	16.7	15.0	14.1	11.4	9.7	7.9	6.2
67.5°	11.4	11.4	10.6	9.7	7.9	7.9	7.0	6.2	5.3	4.4	4.4
70°	5.3	4.4	4.4	4.4	4.4	3.5	3.5	3.5	3.5	3.5	3.5
72.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.6	3.5	3.5	3.5
75°	0.9	0.9	0.9	0.9	1.8	1.8	1.8	2.6	3.5	3.5	3.5
77.5°	0.0	0.9	0.9	0.9	1.8	1.8	1.8	2.6	3.5	3.5	3.5
80°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.6	3.5	3.5	3.5
82.5°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.6	2.6	3.5	3.5
85°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.6	3.5	3.5	3.5
87.5°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.6	2.6	3.5	3.5
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°	961.9	961.9	961.9	961.9	961.9	961.9	961.9	961.9	961.9	961.9	961.9
2.5°	1325.4	1291.9	1247.9	1174.9	1142.3	1135.3	1075.4	1020.9	972.5	937.3	881.8
5°	1728.4	1631.6	1513.7	1372.0	1318.3	1280.5	1166.1	1056.9	963.7	883.6	799.1
7.5°	2128.0	1936.1	1759.2	1552.4	1452.1	1376.4	1206.6	1051.7	910.9	801.7	690.0
10°	2512.5	2239.7	1940.5	1668.6	1533.9	1419.5	1196.9	1000.6	824.6	697.0	579.1
12.5°	2877.8	2486.1	2088.4	1726.7	1565.6	1422.2	1149.3	918.8	729.6	592.3	469.1
15°	3240.4	2664.8	2174.6	1739.0	1544.5	1372.0	1063.1	809.6	623.1	484.9	376.7
17.5°	3466.5	2764.2	2175.5	1684.4	1465.3	1277.0	945.2	696.1	514.8	390.7	295.7
20°	3578.3	2751.9	2092.8	1558.6	1330.6	1140.5	806.1	580.0	416.3	313.3	233.2
22.5°	3545.7	2642.8	1947.6	1392.2	1181.0	1000.6	686.4	486.7	359.1	271.9	211.2
25°	3392.6	2465.9	1775.9	1235.6	1033.2	862.5	602.8	447.9	353.8	304.5	262.3
27.5°	3127.7	2233.6	1565.6	1071.0	888.9	752.4	546.5	434.7	366.1	328.3	331.8
30°	2737.0	1925.6	1293.7	851.0	696.1	585.2	410.1	302.7	223.5	191.9	191.9
32.5°	2299.6	1574.4	999.7	629.2	503.4	425.1	288.7	206.8	165.4	150.5	143.4
35°	1889.5	1232.1	741.9	455.9	363.5	302.7	189.2	116.2	106.5	103.0	101.2
37.5°	1486.4	924.9	537.7	330.9	252.6	200.7	96.8	74.8	65.1	60.7	57.2
40°	1114.1	649.5	372.3	202.4	139.9	92.4	56.3	45.8	40.5	39.6	37.8
42.5°	779.7	435.6	230.6	88.9	65.1	51.9	38.7	32.6	29.9	29.0	28.2
45°	456.7	271.9	94.2	49.3	40.5	36.1	28.2	24.6	22.9	22.9	22.0
47.5°	286.9	110.0	50.2	31.7	27.3	25.5	21.1	18.5	17.6	17.6	17.6
50°	117.9	48.4	29.9	22.0	19.4	18.5	15.8	14.1	14.1	14.1	14.1
52.5°	43.1	27.3	20.2	15.8	14.1	13.2	11.4	10.6	10.6	11.4	10.6
55°	24.6	18.5	14.1	11.4	9.7	9.7	8.8	8.8	8.8	8.8	8.8
57.5°	15.8	12.3	9.7	7.9	7.0	7.0	7.0	7.0	7.0	7.9	7.0
60°	10.6	8.8	7.0	6.2	6.2	6.2	6.2	6.2	7.0	7.0	7.0
62.5°	7.9	6.2	6.2	6.2	6.2	6.2	6.2	6.2	7.0	7.0	7.0
65°	6.2	5.3	6.2	6.2	6.2	6.2	6.2	7.0	7.0	7.0	7.9
67.5°	4.4	4.4	5.3	5.3	5.3	5.3	6.2	6.2	7.0	7.0	7.9
70°	4.4	4.4	5.3	5.3	5.3	5.3	6.2	6.2	7.0	7.0	7.9
72.5°	4.4	4.4	5.3	5.3	5.3	5.3	6.2	6.2	7.0	7.0	7.9
75°	4.4	4.4	5.3	5.3	5.3	6.2	6.2	6.2	7.0	7.0	7.9
77.5°	4.4	4.4	5.3	5.3	5.3	6.2	6.2	7.0	7.0	7.0	7.9
80°	4.4	4.4	5.3	5.3	5.3	6.2	6.2	7.0	7.0	7.9	7.9
82.5°	4.4	4.4	5.3	5.3	5.3	6.2	6.2	7.0	7.0	7.9	7.9
85°	4.4	5.3	5.3	5.3	5.3	6.2	6.2	7.0	7.0	7.0	7.9
87.5°	4.4	4.4	5.3	5.3	5.3	6.2	6.2	7.0	7.0	7.0	7.0
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°	961.9	961.9	961.9	961.9	961.9	961.9	961.9	961.9	961.9	961.9	961.9
2.5°	844.0	805.2	773.6	756.8	738.4	706.7	676.8	649.5	638.0	601.1	608.1
5°	733.1	667.1	614.3	590.5	563.2	519.2	480.5	443.5	424.2	392.5	381.1
7.5°	609.9	532.4	469.1	441.8	418.0	376.7	340.6	306.3	281.6	249.1	235.9
10°	488.4	414.5	356.4	332.7	306.3	264.9	228.8	198.9	178.7	154.0	141.7
12.5°	386.3	320.3	261.4	237.6	215.6	181.3	153.1	125.8	103.8	90.6	87.1
15°	301.0	237.6	189.2	169.9	151.4	117.9	96.8	89.8	86.2	82.7	81.8
17.5°	226.2	175.1	132.0	112.6	102.1	93.3	89.8	86.2	84.5	81.8	82.7
20°	174.3	125.0	107.4	104.7	103.0	98.6	97.7	96.8	95.9	96.8	98.6
22.5°	165.4	155.8	161.0	164.6	172.5	173.4	187.5	198.9	209.5	238.5	252.6
25°	279.0	295.7	322.1	338.8	361.7	385.5	429.5	468.2	508.7	545.6	578.2
27.5°	349.4	357.3	357.3	366.1	356.4	354.7	349.4	345.0	363.5	357.3	376.7
30°	193.6	202.4	217.4	225.3	235.0	242.0	239.4	230.6	235.9	228.8	235.9
32.5°	138.2	138.2	141.7	142.6	144.3	145.2	146.1	147.0	147.8	143.4	146.1
35°	98.6	95.0	93.3	93.3	92.4	90.6	89.8	89.8	90.6	86.2	88.0
37.5°	55.4	53.7	53.7	53.7	53.7	53.7	54.6	55.4	55.4	55.4	57.2
40°	37.0	37.0	37.0	37.8	37.8	37.8	38.7	38.7	39.6	39.6	40.5
42.5°	28.2	27.3	28.2	28.2	28.2	29.0	29.0	29.9	29.9	29.9	30.8
45°	22.0	22.0	22.0	22.0	22.9	22.9	22.9	22.9	23.8	22.9	23.8
47.5°	17.6	17.6	17.6	18.5	18.5	17.6	18.5	18.5	18.5	18.5	18.5
50°	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	15.0	14.1	15.0
52.5°	11.4	10.6	10.6	10.6	10.6	9.7	9.7	10.6	10.6	9.7	9.7
55°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
57.5°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.2
60°	7.0	7.0	7.0	7.0	7.0	6.2	6.2	6.2	6.2	6.2	5.3
62.5°	7.0	7.0	7.0	7.0	7.0	6.2	6.2	6.2	6.2	5.3	5.3
65°	7.9	7.0	7.0	7.0	7.0	7.0	6.2	6.2	6.2	5.3	5.3
67.5°	7.9	7.9	7.0	7.0	7.0	7.0	7.0	6.2	6.2	5.3	5.3
70°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.2	6.2	6.2	5.3
72.5°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.2	6.2	6.2	6.2
75°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.2	6.2	6.2	6.2
77.5°	7.0	7.0	7.0	7.0	7.0	7.0	6.2	6.2	6.2	6.2	5.3
80°	7.9	7.0	7.0	7.0	7.0	7.0	6.2	6.2	6.2	6.2	5.3
82.5°	7.0	7.0	7.0	7.0	7.0	7.0	6.2	6.2	6.2	5.3	5.3
85°	7.0	7.0	7.0	7.0	7.0	6.2	6.2	6.2	5.3	5.3	5.3
87.5°	7.0	7.0	7.0	6.2	6.2	6.2	6.2	5.3	5.3	4.4	4.4
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: P179683

CATALOG NUMBER: LDA6A45940D010TE LARH40FL 6LAL1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	961.9	961.9	961.9	961.9	961.9	961.9	961.9	961.9
2.5°	571.2	558.8	569.4	556.2	551.8	542.1	537.7	542.1
5°	359.9	346.7	349.4	340.6	326.5	326.5	322.1	323.9
7.5°	217.4	204.2	205.1	197.1	186.6	184.8	180.4	182.2
10°	125.8	111.8	111.8	103.0	94.2	93.3	90.6	90.6
12.5°	83.6	81.8	80.1	79.2	77.4	77.4	77.4	75.7
15°	78.3	77.4	76.6	76.6	74.8	74.8	75.7	73.9
17.5°	80.1	79.2	78.3	78.3	78.3	78.3	79.2	77.4
20°	95.9	96.8	96.8	99.4	101.2	102.1	104.7	101.2
22.5°	251.7	259.6	265.8	298.3	326.5	315.9	335.3	302.7
25°	602.0	624.0	642.4	646.0	663.6	688.2	704.0	703.2
27.5°	376.7	377.5	388.1	388.1	384.6	398.7	408.3	406.6
30°	232.3	231.5	235.0	226.2	225.3	231.5	235.0	235.0
32.5°	143.4	142.6	145.2	143.4	139.0	146.1	144.3	144.3
35°	86.2	87.1	85.4	85.4	81.8	85.4	84.5	85.4
37.5°	56.3	55.4	54.6	54.6	52.8	53.7	52.8	51.0
40°	39.6	39.6	38.7	38.7	37.8	37.0	37.0	36.1
42.5°	29.9	29.9	29.0	29.0	28.2	27.3	27.3	26.4
45°	22.9	22.0	21.1	21.1	21.1	20.2	20.2	19.4
47.5°	17.6	17.6	17.6	16.7	16.7	15.8	15.8	15.0
50°	14.1	14.1	14.1	14.1	13.2	13.2	13.2	12.3
52.5°	9.7	9.7	8.8	8.8	7.9	7.9	7.9	7.0
55°	7.0	7.0	7.0	6.2	6.2	6.2	5.3	5.3
57.5°	6.2	6.2	5.3	5.3	5.3	4.4	4.4	4.4
60°	5.3	4.4	4.4	4.4	3.5	3.5	3.5	3.5
62.5°	4.4	4.4	4.4	3.5	3.5	3.5	3.5	2.6
65°	4.4	4.4	3.5	3.5	3.5	2.6	2.6	2.6
67.5°	4.4	4.4	4.4	3.5	3.5	3.5	3.5	2.6
70°	5.3	4.4	4.4	4.4	3.5	3.5	3.5	3.5
72.5°	5.3	4.4	4.4	4.4	4.4	3.5	3.5	3.5
75°	5.3	5.3	4.4	4.4	4.4	4.4	4.4	3.5
77.5°	5.3	4.4	4.4	4.4	4.4	4.4	3.5	3.5
80°	5.3	4.4	4.4	4.4	4.4	3.5	3.5	3.5
82.5°	5.3	4.4	4.4	4.4	3.5	3.5	3.5	3.5
85°	4.4	4.4	3.5	3.5	3.5	3.5	3.5	3.5
87.5°	3.5	3.5	2.6	2.6	2.6	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)