

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: P179901

Luminaire Tested: **LDA6A65830D010TE LARH40FL 6LA1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179901  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26688)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA6A65830D010TE LARH40FL 6LA1LI 30°  
Description: PORTFOLIO 6" Adjustable Reflector, Angle-cut Trim, Self-flanged, 40° Flood, 30° Tilt  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6650.6 lumens  
Efficiency: N/A  
Efficacy: 85.3 lumens/watt  
Spacing Criteria (0/90/45): 2.63 / 0.54 / 1.37  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

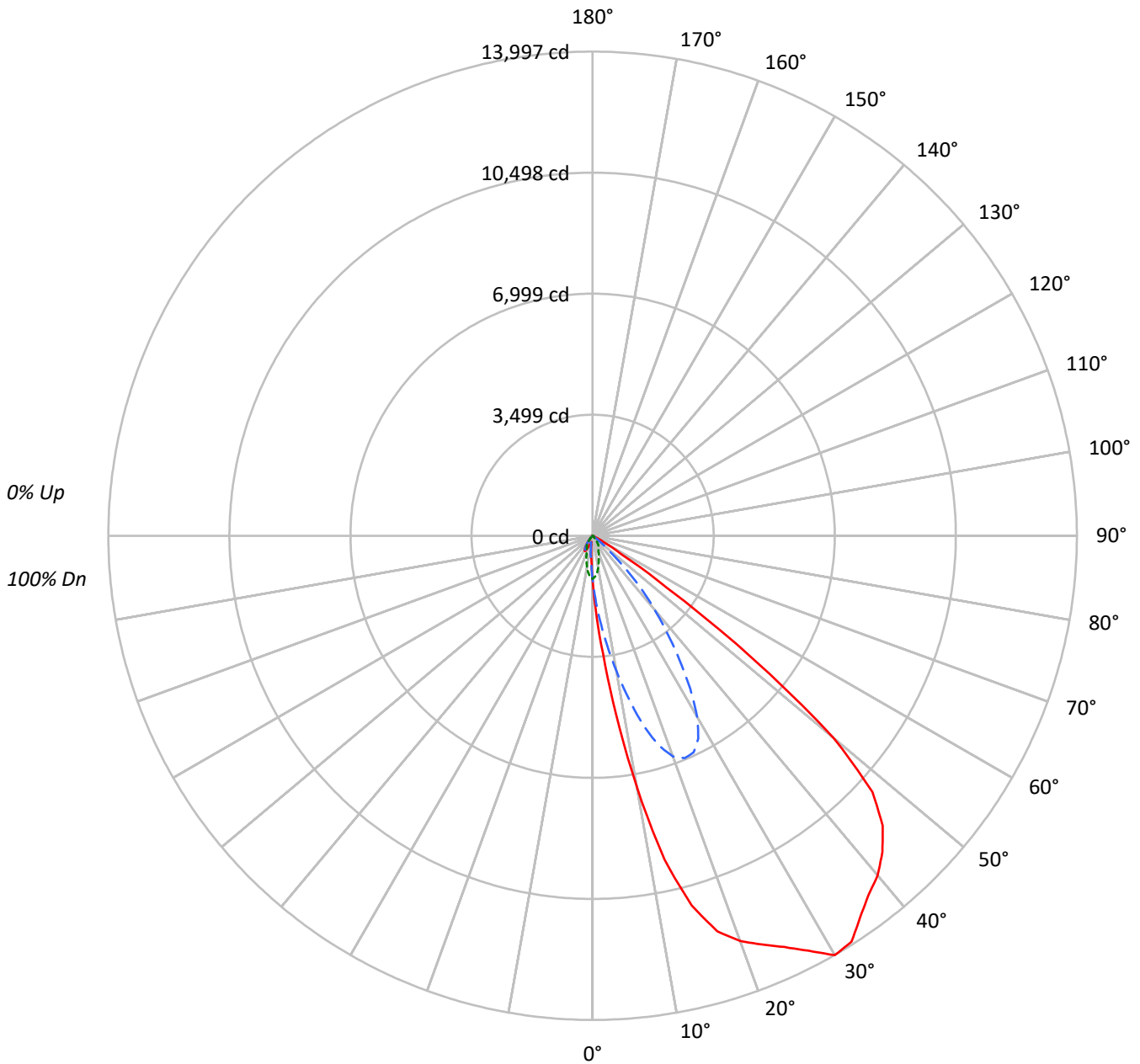
Input Watts (W): 78  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	88	83	78	86	81	77	83	79	76	81	77	74	73																			
4	91	82	75	70	89	80	74	69	78	73	68	76	71	67	74	70	67	65																			
5	85	74	67	62	83	73	66	61	71	65	61	70	64	60	68	63	60	58																			
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	54	52																			
7	74	62	55	49	72	61	54	49	60	53	49	59	53	49	57	52	48	46																			
8	69	57	49	44	67	56	49	44	55	49	44	54	48	44	53	47	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	41	36	46	40	36	45	40	36	34																			

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

	0°	90°	180°
0°	68328	68328	68328
5°	187552	62959	25688
10°	410992	51524	9792
15°	627790	39223	11487
20°	727357	29181	17846
25°	793449	23995	28792
30°	886035	21763	29403
35°	901494	14931	20164
40°	917333	7078	10205
45°	918824	2938	4458
50°	776776	1271	1373
55°	250132	879	220
60°	49667	1009	0
65°	5072	1193	0
70°	545	1651	0
75°	0	2182	0
80°	0	3631	347
85°	0	7233	692



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	169.2	2.5
10°-20°	875.1	13.2
20°-30°	1675.5	25.2
30°-40°	1974.1	29.7
40°-50°	1550.5	23.3
50°-60°	377.8	5.7
60°-70°	16.2	0.2
70°-80°	6.1	0.1
80°-90°	6.1	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°	2719.8	40.9
0°-40°	4693.9	70.6
0°-60°	6622.2	99.6
0°-90°	6650.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6650.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1246	1246	1246	1246	1246	
5°	3408	2466	1144	599	467	450
15°	11062	5681	691	198	202	3088
25°	13118	6908	397	415	476	6114
35°	13471	4367	223	288	301	8447
45°	11852	1350	38	53	58	8905
55°	2617	49	9	6	2	3115
65°	39	6	9	6	0	104
75°	0	6	10	7	0	0
85°	0	7	12	7	1	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°	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4
2.5°	2136.4	2131.8	2100.8	2129.5	2042.1	2038.7	1999.6	1982.4	1931.8	1883.5	1814.5
5°	3408.2	3333.4	3272.5	3274.8	3106.9	3075.9	2988.5	2899.9	2764.3	2637.8	2466.4
7.5°	5195.1	5106.5	4977.7	4923.7	4602.9	4508.6	4328.1	4092.3	3796.8	3502.5	3185.1
10°	7383.2	7397.0	7230.3	7076.2	6591.0	6400.1	6108.0	5643.5	5083.5	4530.4	3968.2
12.5°	9585.2	9576.0	9377.1	9143.7	8545.7	8276.7	7888.0	7308.5	6566.8	5709.0	4829.4
15°	11061.6	11127.2	11043.2	10857.0	10346.4	10038.3	9600.2	8813.7	7909.9	6868.1	5681.4
17.5°	11988.4	12050.5	12020.6	11874.6	11423.8	11095.0	10729.3	10085.4	9040.2	7730.5	6353.0
20°	12467.9	12565.6	12551.8	12393.2	12052.8	11780.3	11376.7	10779.9	9875.0	8329.6	6787.6
22.5°	12787.6	12862.3	12883.0	12703.6	12351.8	12093.1	11797.5	11192.7	10341.8	8695.2	6960.1
25°	13117.6	13249.8	13119.9	12899.1	12576.0	12327.6	12012.6	11433.0	10564.9	8844.7	6908.3
27.5°	13522.3	13585.6	13291.2	13090.0	12731.2	12462.2	12127.5	11572.2	10604.0	8725.1	6612.8
30°	13997.2	13735.0	13529.2	13130.2	12723.2	12461.0	12120.6	11484.8	10398.2	8328.4	6040.2
32.5°	13919.0	13678.7	13445.3	13023.3	12620.8	12361.0	11981.5	11193.9	9911.8	7665.0	5250.2
35°	13470.6	13522.3	13270.5	12920.9	12465.6	12197.7	11783.7	10779.9	9086.2	6749.7	4367.2
37.5°	13092.3	13206.1	13041.7	12718.6	12256.3	11894.1	11335.3	10115.3	8008.8	5588.3	3530.1
40°	12818.6	12855.4	12766.9	12404.7	11849.3	11326.1	10679.9	8921.7	6700.2	4386.7	2786.1
42.5°	12394.3	12492.1	12335.7	11940.1	11098.4	10506.2	9570.3	7543.1	5204.3	3350.7	2097.3
45°	11851.6	11944.7	11751.5	11093.8	9923.3	9055.1	7913.3	5881.5	3849.7	2469.9	1349.9
47.5°	10966.2	11023.7	10650.0	9740.4	8038.7	7221.1	6050.6	4100.4	2480.2	1381.0	656.6
50°	9108.0	9080.4	8310.0	7191.2	5376.7	4518.9	3601.4	2222.7	1114.2	654.3	410.5
52.5°	5870.0	5806.8	5044.4	4026.8	2722.9	2077.8	1561.5	959.0	580.7	365.7	162.1
55°	2617.1	2592.9	2122.6	1648.9	1114.2	959.0	732.5	470.3	309.3	127.6	49.4
57.5°	970.5	948.6	835.9	701.4	538.1	447.3	355.3	225.4	79.3	42.5	26.4
60°	453.0	451.9	397.9	327.7	227.7	172.5	100.0	52.9	33.3	23.0	14.9
62.5°	144.9	141.4	98.9	72.4	51.7	44.8	35.6	26.4	17.2	12.6	9.2
65°	39.1	39.1	35.6	29.9	24.1	20.7	17.2	12.6	8.0	6.9	5.7
67.5°	14.9	14.9	13.8	12.6	9.2	8.0	6.9	5.7	4.6	5.7	5.7
70°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	4.6	4.6	5.7
72.5°	0.0	0.0	1.1	1.1	2.3	2.3	3.4	3.4	4.6	5.7	5.7
75°	0.0	0.0	1.1	1.1	2.3	2.3	3.4	3.4	4.6	5.7	5.7
77.5°	0.0	0.0	1.1	1.1	2.3	2.3	3.4	3.4	4.6	5.7	5.7
80°	0.0	0.0	1.1	1.1	2.3	2.3	3.4	3.4	4.6	5.7	5.7
82.5°	0.0	0.0	1.1	2.3	2.3	2.3	3.4	4.6	4.6	5.7	6.9
85°	0.0	0.0	1.1	2.3	2.3	3.4	3.4	4.6	4.6	5.7	6.9
87.5°	0.0	0.0	1.1	2.3	2.3	3.4	3.4	4.6	4.6	5.7	6.9
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°	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4
2.5°	1763.9	1688.0	1583.4	1522.4	1507.5	1475.3	1418.9	1335.0	1266.0	1199.3	1160.2
5°	2321.6	2142.2	1941.0	1799.5	1742.0	1665.0	1528.2	1386.7	1256.8	1144.1	1055.6
7.5°	2912.6	2617.1	2291.7	2029.5	1935.2	1813.3	1590.3	1379.8	1201.6	1045.2	926.8
10°	3500.2	3024.1	2582.6	2203.1	2049.0	1883.5	1589.1	1316.6	1107.3	925.6	794.6
12.5°	4087.7	3403.6	2796.5	2307.8	2107.7	1898.4	1542.0	1220.0	987.7	802.6	677.3
15°	4630.5	3706.0	2941.3	2343.4	2101.9	1854.7	1446.5	1102.7	862.4	691.1	574.9
17.5°	5035.2	3864.7	2974.7	2289.4	2011.1	1737.4	1300.5	964.7	742.8	592.2	473.7
20°	5234.2	3890.0	2895.3	2135.3	1854.7	1570.7	1140.7	832.5	640.5	500.2	400.2
22.5°	5234.2	3770.4	2722.9	1942.1	1659.2	1378.7	986.6	723.3	560.0	435.8	351.9
25°	5035.2	3532.4	2491.7	1719.0	1444.2	1189.0	853.2	641.6	497.9	396.7	326.6
27.5°	4648.9	3203.5	2195.1	1470.7	1232.6	1019.9	747.4	566.9	450.7	357.6	358.8
30°	4117.6	2799.9	1854.7	1208.5	1015.3	838.2	629.0	474.9	361.1	343.8	354.2
32.5°	3503.6	2317.0	1469.5	937.1	786.5	660.0	478.3	335.8	287.5	289.8	301.3
35°	2873.5	1823.7	1106.2	694.5	585.3	478.3	313.9	220.8	218.5	223.1	231.1
37.5°	2268.7	1364.9	800.3	508.2	393.3	294.4	169.0	151.8	151.8	156.4	161.0
40°	1699.5	968.2	550.8	301.3	190.9	134.5	106.9	98.9	97.7	98.9	104.6
42.5°	1167.1	612.9	327.7	120.7	92.0	78.2	67.8	62.1	60.9	62.1	65.5
45°	655.4	377.2	127.6	64.4	55.2	49.4	42.5	39.1	37.9	37.9	40.2
47.5°	410.5	149.5	57.5	40.2	34.5	32.2	27.6	25.3	24.1	24.1	25.3
50°	157.5	58.6	35.6	26.4	23.0	20.7	18.4	16.1	14.9	14.9	16.1
52.5°	54.0	34.5	23.0	17.2	14.9	13.8	11.5	10.3	10.3	10.3	10.3
55°	29.9	20.7	13.8	10.3	9.2	9.2	9.2	9.2	9.2	9.2	9.2
57.5°	18.4	12.6	9.2	8.0	8.0	8.0	8.0	8.0	8.0	9.2	9.2
60°	10.3	8.0	6.9	6.9	6.9	6.9	8.0	8.0	8.0	9.2	9.2
62.5°	6.9	6.9	6.9	6.9	6.9	6.9	8.0	8.0	9.2	9.2	9.2
65°	5.7	5.7	5.7	6.9	6.9	6.9	8.0	8.0	9.2	9.2	9.2
67.5°	5.7	5.7	6.9	6.9	6.9	8.0	8.0	9.2	9.2	9.2	9.2
70°	5.7	6.9	6.9	8.0	8.0	8.0	9.2	9.2	9.2	10.3	10.3
72.5°	5.7	6.9	6.9	8.0	8.0	8.0	9.2	9.2	10.3	10.3	10.3
75°	6.9	6.9	6.9	8.0	8.0	8.0	9.2	10.3	10.3	10.3	10.3
77.5°	6.9	6.9	8.0	8.0	8.0	9.2	9.2	10.3	10.3	10.3	10.3
80°	6.9	6.9	8.0	8.0	9.2	9.2	10.3	10.3	10.3	11.5	11.5
82.5°	6.9	6.9	8.0	9.2	9.2	9.2	10.3	10.3	11.5	11.5	11.5
85°	6.9	8.0	8.0	9.2	9.2	9.2	10.3	10.3	11.5	11.5	11.5
87.5°	6.9	8.0	8.0	9.2	9.2	9.2	10.3	10.3	11.5	11.5	11.5
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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4
2.5°	1108.5	1060.2	1011.9	976.2	959.0	941.7	903.8	854.3	833.6	803.8	786.5
5°	965.9	884.2	819.8	777.3	752.0	718.7	675.0	626.7	599.1	568.0	547.3
7.5°	818.7	723.3	661.2	622.1	596.8	555.4	500.2	442.7	409.3	374.9	350.7
10°	689.9	599.1	528.9	484.1	451.9	403.6	348.4	308.2	279.4	249.5	225.4
12.5°	576.1	478.3	403.6	365.7	343.8	297.8	251.8	207.0	189.7	184.0	184.0
15°	466.8	378.3	315.1	282.9	259.9	210.4	201.2	198.9	197.8	196.6	198.9
17.5°	380.6	305.9	239.2	223.1	220.8	219.6	220.8	220.8	221.9	225.4	231.1
20°	319.7	250.7	246.1	247.2	247.2	251.8	257.6	262.2	266.8	272.5	282.9
22.5°	284.0	282.9	290.9	292.1	297.8	304.7	315.1	322.0	333.5	339.2	354.2
25°	327.7	335.8	350.7	355.3	364.5	376.0	392.1	401.3	415.1	422.0	439.2
27.5°	371.4	384.1	402.5	408.2	416.2	434.6	446.1	454.2	461.1	465.7	476.0
30°	368.0	379.5	397.9	399.0	410.5	423.1	430.0	436.9	441.5	440.4	446.1
32.5°	311.6	322.0	339.2	339.2	351.9	362.2	365.7	371.4	371.4	371.4	373.7
35°	239.2	246.1	257.6	261.0	271.4	278.3	280.6	287.5	287.5	285.2	285.2
37.5°	165.6	174.8	182.8	185.1	192.0	196.6	202.4	203.5	201.2	202.4	202.4
40°	108.1	113.8	119.6	120.7	126.5	129.9	135.7	135.7	136.8	135.7	138.0
42.5°	66.7	71.3	74.7	77.0	79.3	81.6	85.1	86.2	87.4	86.2	88.5
45°	41.4	43.7	46.0	47.1	48.3	49.4	52.9	52.9	52.9	52.9	54.0
47.5°	25.3	26.4	27.6	27.6	28.7	29.9	31.0	31.0	31.0	31.0	32.2
50°	14.9	16.1	16.1	16.1	17.2	17.2	18.4	18.4	18.4	17.2	18.4
52.5°	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	9.2	10.3
55°	9.2	9.2	8.0	8.0	8.0	8.0	8.0	6.9	5.7	5.7	4.6
57.5°	8.0	8.0	8.0	8.0	8.0	6.9	6.9	5.7	5.7	4.6	3.4
60°	8.0	8.0	8.0	8.0	8.0	6.9	6.9	5.7	4.6	4.6	3.4
62.5°	9.2	8.0	8.0	8.0	8.0	6.9	6.9	5.7	4.6	4.6	3.4
65°	9.2	9.2	8.0	8.0	8.0	6.9	6.9	5.7	5.7	4.6	3.4
67.5°	9.2	9.2	9.2	8.0	9.2	8.0	6.9	6.9	5.7	4.6	4.6
70°	10.3	9.2	9.2	9.2	9.2	8.0	8.0	6.9	5.7	4.6	4.6
72.5°	10.3	10.3	9.2	9.2	9.2	8.0	8.0	6.9	5.7	5.7	4.6
75°	10.3	10.3	9.2	9.2	9.2	8.0	8.0	6.9	6.9	5.7	4.6
77.5°	10.3	10.3	10.3	9.2	9.2	9.2	8.0	8.0	6.9	5.7	4.6
80°	10.3	10.3	10.3	10.3	10.3	9.2	9.2	8.0	6.9	5.7	4.6
82.5°	11.5	10.3	10.3	10.3	10.3	9.2	9.2	8.0	6.9	5.7	5.7
85°	11.5	11.5	10.3	10.3	10.3	9.2	9.2	8.0	6.9	6.9	5.7
87.5°	11.5	10.3	10.3	10.3	10.3	9.2	9.2	8.0	6.9	5.7	5.7
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: P179901

CATALOG NUMBER: LDA6A65830D010TE LARH40FL 6LA1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4	1246.4
2.5°	769.3	760.1	760.1	744.0	741.7	729.0	739.4	732.5
5°	524.3	509.4	504.8	488.7	482.9	468.0	472.6	466.8
7.5°	330.0	315.1	310.5	299.0	292.1	280.6	281.7	278.3
10°	201.2	187.4	184.0	180.5	177.1	175.9	177.1	175.9
12.5°	182.8	181.7	179.4	180.5	178.2	179.4	180.5	179.4
15°	198.9	201.2	198.9	200.1	198.9	201.2	202.4	202.4
17.5°	233.4	238.0	235.7	239.2	238.0	243.8	243.8	243.8
20°	286.3	294.4	292.1	296.7	296.7	303.6	303.6	305.9
22.5°	359.9	370.3	369.1	379.5	377.2	385.2	385.2	387.5
25°	448.4	458.8	459.9	466.8	465.7	473.7	473.7	476.0
27.5°	485.2	491.0	489.8	493.3	494.4	499.0	502.5	500.2
30°	455.3	459.9	458.8	461.1	461.1	464.5	468.0	464.5
32.5°	382.9	386.4	386.4	391.0	387.5	388.7	394.4	391.0
35°	293.2	295.5	293.2	295.5	296.7	296.7	302.4	301.3
37.5°	209.3	210.4	210.4	213.9	210.4	210.4	216.2	217.3
40°	140.3	141.4	140.3	144.9	142.6	142.6	146.0	142.6
42.5°	89.7	90.8	89.7	93.1	90.8	93.1	94.3	95.4
45°	55.2	55.2	54.0	56.3	55.2	56.3	57.5	57.5
47.5°	32.2	32.2	31.0	33.3	32.2	32.2	32.2	33.3
50°	17.2	17.2	17.2	18.4	17.2	17.2	17.2	16.1
52.5°	9.2	9.2	8.0	9.2	8.0	8.0	8.0	8.0
55°	4.6	3.4	3.4	3.4	2.3	2.3	2.3	2.3
57.5°	3.4	2.3	2.3	1.1	1.1	1.1	0.0	0.0
60°	2.3	2.3	1.1	1.1	0.0	0.0	0.0	0.0
62.5°	2.3	2.3	1.1	1.1	0.0	0.0	0.0	0.0
65°	2.3	2.3	1.1	1.1	0.0	0.0	0.0	0.0
67.5°	3.4	2.3	2.3	1.1	1.1	0.0	0.0	0.0
70°	3.4	2.3	2.3	1.1	1.1	0.0	0.0	0.0
72.5°	3.4	2.3	2.3	2.3	1.1	1.1	0.0	0.0
75°	3.4	3.4	2.3	2.3	1.1	1.1	0.0	0.0
77.5°	4.6	3.4	2.3	2.3	1.1	1.1	0.0	0.0
80°	4.6	3.4	2.3	2.3	2.3	1.1	1.1	1.1
82.5°	4.6	3.4	3.4	2.3	2.3	1.1	1.1	1.1
85°	4.6	3.4	3.4	2.3	2.3	1.1	1.1	1.1
87.5°	4.6	3.4	3.4	2.3	2.3	1.1	1.1	1.1
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)