

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: P179951

Luminaire Tested: **LDA6A65840D010TE LARH40FL 6LAL1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179951  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26691)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA6A65840D010TE LARH40FL 6LAL1LI 30°  
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 40° Flood, 30° Tilt  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6581.5 lumens  
Efficiency: N/A  
Efficacy: 84.4 lumens/watt  
Spacing Criteria (0/90/45): 2.62 / 0.52 / 1.36  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

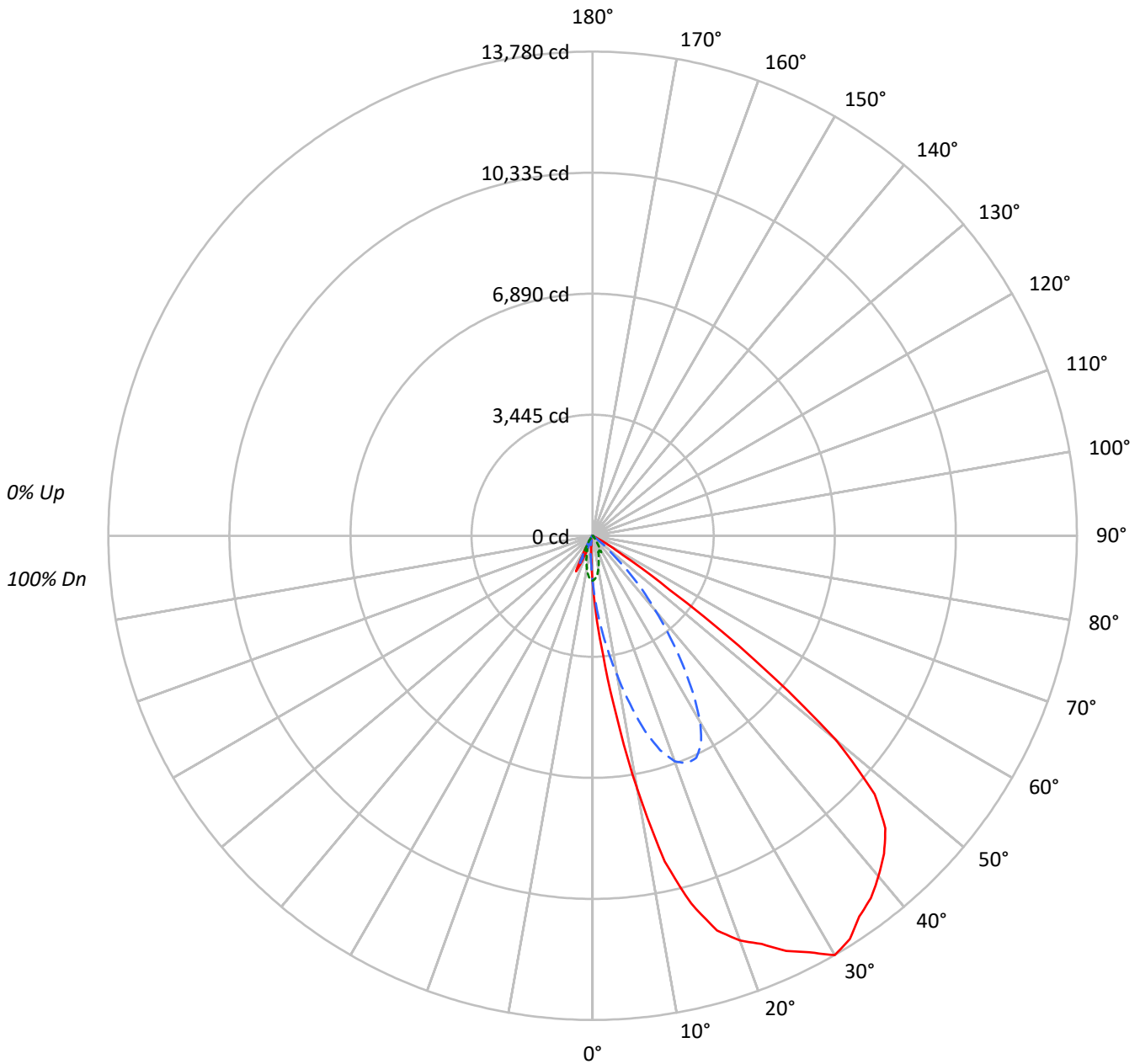
Input Watts (W): 78  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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	67	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	54	49	59	53	49	57	52	48	47																			
8	69	57	50	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	44	40	38																			
10	60	48	41	37	59	48	41	36	47	41	36	46	40	36	45	40	36	34																			

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

	0°	90°	180°
0°	70285	70285	70285
5°	186528	65166	24934
10°	407157	52693	7431
15°	614578	38502	6464
20°	714890	26433	10145
25°	788404	28520	67552
30°	872286	21472	21010
35°	885238	10982	7870
40°	905597	4473	3771
45°	913203	2752	2279
50°	769280	1876	1458
55°	254089	1290	822
60°	49941	1206	537
65°	5876	1583	636
70°	1571	1763	785
75°	254	2330	1292
80°	0	3852	1926
85°	0	7674	3082



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	170.6	2.6
10°-20°	861.6	13.1
20°-30°	1700.6	25.8
30°-40°	1918.2	29.1
40°-50°	1522.8	23.1
50°-60°	372.3	5.7
60°-70°	19.9	0.3
70°-80°	8.5	0.1
80°-90°	7.0	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°	2732.8	41.5
0°-40°	4651.0	70.7
0°-60°	6546.2	99.5
0°-90°	6581.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6581.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1282	1282	1282	1282	1282	
5°	3390	2540	1184	595	453	448
15°	10829	5755	678	134	114	3038
25°	13034	6976	472	854	1117	6037
35°	13228	4440	164	130	118	8319
45°	11779	1384	36	37	29	8828
55°	2658	60	14	14	9	3119
65°	45	11	12	10	5	111
75°	1	6	11	10	6	3
85°	0	6	12	9	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°	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1
2.5°	2225.0	2182.2	2201.8	2171.1	2084.2	2057.3	2079.3	2046.2	1947.1	1909.1	1869.9
5°	3389.6	3351.6	3363.9	3294.1	3131.2	3074.9	3071.2	2970.8	2770.0	2657.3	2539.7
7.5°	5139.5	5086.8	5072.1	4904.4	4590.9	4473.3	4415.8	4168.4	3790.0	3521.8	3258.6
10°	7314.3	7365.7	7313.1	7041.2	6549.0	6328.5	6188.9	5721.1	5039.1	4528.4	4036.2
12.5°	9495.2	9527.1	9427.9	9089.9	8464.2	8199.7	7993.9	7395.1	6496.3	5629.3	4894.6
15°	10828.8	10979.4	10886.3	10650.0	10165.1	9844.2	9659.3	8919.7	7788.2	6835.5	5755.4
17.5°	11779.1	11918.7	11841.5	11648.0	11100.6	10842.3	10722.3	10113.6	8881.7	7670.6	6399.6
20°	12254.2	12424.4	12354.6	12135.4	11733.7	11518.2	11372.5	10778.6	9667.9	8291.5	6829.4
22.5°	12576.2	12764.8	12688.9	12489.3	12080.3	11829.3	11760.7	11198.6	10079.4	8663.8	7011.8
25°	13034.2	13192.2	12977.9	12731.8	12327.7	12063.1	12021.5	11447.2	10276.5	8804.6	6976.3
27.5°	13362.4	13549.8	13186.1	12936.3	12474.6	12196.6	12142.7	11602.7	10294.9	8693.2	6688.6
30°	13780.0	13658.8	13339.1	12976.7	12484.4	12188.1	12119.5	11512.1	10111.2	8282.9	6125.3
32.5°	13614.7	13585.3	13265.7	12839.5	12380.3	12081.5	11989.7	11232.9	9606.7	7575.1	5328.1
35°	13227.7	13320.8	13053.8	12789.3	12218.7	11907.6	11780.3	10821.4	8846.2	6664.1	4440.3
37.5°	13001.2	13059.9	12891.0	12567.7	12001.9	11592.9	11351.7	10129.6	7850.7	5515.4	3584.3
40°	12654.6	12804.0	12641.1	12270.1	11617.4	11056.6	10636.5	8879.3	6539.2	4348.4	2803.0
42.5°	12275.0	12408.5	12253.0	11808.4	10886.3	10134.5	9436.5	7409.8	5119.9	3322.2	2102.6
45°	11779.1	11899.1	11619.9	10928.0	9622.6	8585.4	7888.6	5819.1	3861.0	2440.5	1383.8
47.5°	10885.1	10853.3	10457.8	9382.6	7774.7	6845.3	6034.6	4168.4	2566.7	1382.5	688.2
50°	9020.1	8722.5	8140.9	6893.1	5217.9	4213.7	3660.2	2151.6	1164.6	669.8	432.3
52.5°	5842.4	5510.5	4977.8	3825.5	2505.5	2010.7	1612.7	972.3	607.4	378.4	170.2
55°	2658.5	2423.4	2083.0	1545.4	1075.2	893.9	756.8	492.3	325.7	140.8	60.0
57.5°	1012.7	934.3	830.3	662.5	497.2	429.8	356.3	236.3	101.6	52.7	35.5
60°	455.5	422.5	388.2	303.7	213.1	153.1	116.3	63.7	42.9	30.6	23.3
62.5°	155.5	129.8	107.8	77.1	57.6	50.2	44.1	35.5	25.7	20.8	15.9
65°	45.3	44.1	41.6	36.7	29.4	26.9	25.7	20.8	15.9	13.5	11.0
67.5°	22.0	20.8	19.6	18.4	14.7	13.5	13.5	12.2	9.8	8.6	7.3
70°	9.8	9.8	8.6	8.6	7.3	7.3	7.3	6.1	6.1	6.1	6.1
72.5°	4.9	4.9	4.9	3.7	3.7	3.7	3.7	4.9	4.9	6.1	6.1
75°	1.2	2.4	2.4	2.4	2.4	3.7	3.7	4.9	4.9	6.1	6.1
77.5°	1.2	1.2	1.2	2.4	2.4	2.4	3.7	4.9	4.9	6.1	6.1
80°	0.0	1.2	1.2	2.4	2.4	2.4	3.7	3.7	4.9	6.1	6.1
82.5°	0.0	1.2	1.2	2.4	2.4	2.4	3.7	3.7	4.9	6.1	6.1
85°	0.0	0.0	1.2	1.2	2.4	2.4	3.7	3.7	4.9	6.1	6.1
87.5°	0.0	0.0	1.2	1.2	2.4	2.4	3.7	3.7	4.9	6.1	6.1
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°	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1
2.5°	1774.4	1748.7	1647.0	1568.7	1531.9	1529.5	1447.4	1397.2	1309.1	1240.5	1175.6
5°	2332.8	2218.9	2013.2	1850.3	1771.9	1731.5	1569.9	1453.6	1301.7	1184.2	1067.8
7.5°	2901.0	2684.2	2395.2	2085.4	1958.1	1879.7	1629.9	1443.8	1241.7	1077.6	933.1
10°	3482.7	3100.6	2669.5	2260.5	2076.9	1944.6	1623.8	1371.5	1138.8	946.6	788.6
12.5°	4088.8	3486.3	2886.3	2374.4	2132.0	1958.1	1568.7	1266.2	1012.7	808.2	657.6
15°	4599.5	3785.1	3023.4	2401.4	2114.8	1904.2	1451.1	1132.7	878.0	678.4	541.3
17.5°	4993.8	3952.9	3049.2	2335.2	2019.3	1784.2	1299.3	985.8	736.0	559.6	423.7
20°	5192.1	3978.6	2968.3	2178.5	1846.6	1604.2	1126.6	836.4	617.2	453.1	336.8
22.5°	5206.8	3858.6	2792.0	1976.4	1656.8	1410.7	984.5	721.3	541.3	406.6	319.6
25°	5015.8	3627.1	2555.7	1769.5	1462.1	1240.5	882.9	691.9	544.9	471.5	433.5
27.5°	4653.3	3306.3	2296.1	1562.5	1294.4	1122.9	841.3	691.9	590.2	532.7	546.2
30°	4151.3	2897.3	1934.8	1280.9	1053.1	903.7	661.3	518.0	406.6	339.2	327.0
32.5°	3499.8	2370.8	1500.1	946.6	767.8	651.5	447.0	324.5	262.1	255.9	248.6
35°	2880.2	1872.4	1138.8	699.2	565.7	460.4	285.3	191.0	173.9	164.1	156.7
37.5°	2275.2	1400.9	818.0	508.2	388.2	292.7	146.9	123.7	107.8	98.0	89.4
40°	1710.7	1006.6	576.8	307.4	203.3	126.1	88.2	75.9	67.4	62.5	60.0
42.5°	1209.9	669.8	357.6	129.8	96.7	79.6	61.2	53.9	49.0	46.5	44.1
45°	702.9	416.4	144.5	75.9	61.2	55.1	45.3	40.4	38.0	35.5	34.3
47.5°	439.6	167.8	74.7	49.0	42.9	39.2	33.1	31.8	29.4	28.2	28.2
50°	177.6	74.7	46.5	34.3	30.6	29.4	25.7	24.5	22.0	22.0	22.0
52.5°	67.4	44.1	31.8	24.5	22.0	20.8	18.4	18.4	17.1	17.1	17.1
55°	39.2	29.4	22.0	17.1	15.9	15.9	14.7	14.7	13.5	13.5	13.5
57.5°	25.7	19.6	15.9	12.2	12.2	12.2	11.0	11.0	11.0	11.0	11.0
60°	17.1	13.5	11.0	9.8	9.8	9.8	9.8	11.0	11.0	11.0	11.0
62.5°	12.2	11.0	9.8	9.8	9.8	9.8	9.8	11.0	11.0	11.0	12.2
65°	9.8	8.6	8.6	8.6	8.6	9.8	9.8	11.0	11.0	12.2	12.2
67.5°	7.3	7.3	7.3	7.3	8.6	8.6	9.8	11.0	11.0	11.0	12.2
70°	6.1	7.3	7.3	8.6	8.6	8.6	9.8	9.8	11.0	11.0	12.2
72.5°	6.1	7.3	7.3	8.6	8.6	8.6	9.8	11.0	11.0	11.0	12.2
75°	6.1	7.3	7.3	8.6	8.6	8.6	9.8	11.0	11.0	11.0	12.2
77.5°	7.3	7.3	8.6	8.6	8.6	9.8	9.8	11.0	11.0	12.2	12.2
80°	7.3	7.3	8.6	8.6	8.6	9.8	9.8	11.0	11.0	12.2	12.2
82.5°	7.3	7.3	8.6	8.6	8.6	9.8	9.8	11.0	11.0	12.2	12.2
85°	7.3	7.3	8.6	8.6	8.6	9.8	9.8	11.0	11.0	12.2	12.2
87.5°	7.3	7.3	8.6	8.6	8.6	9.8	9.8	11.0	11.0	11.0	12.2
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°	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1
2.5°	1143.7	1087.4	1026.2	1006.6	987.0	949.0	925.8	884.1	853.5	822.9	798.4
5°	990.7	901.3	826.6	794.7	764.1	711.5	674.7	630.6	595.1	564.5	536.4
7.5°	831.5	728.6	653.9	622.1	591.5	533.9	487.4	432.3	390.6	356.3	328.2
10°	684.5	586.6	505.7	467.8	432.3	372.3	328.2	284.1	248.6	219.2	193.5
12.5°	557.2	451.9	369.8	341.7	307.4	258.4	216.7	169.0	148.2	139.6	133.5
15°	432.3	338.0	269.4	243.7	213.1	166.5	148.2	139.6	133.5	129.8	124.9
17.5°	329.4	251.0	183.7	166.5	156.7	146.9	142.0	135.9	132.3	131.0	127.4
20°	258.4	189.8	172.7	167.8	167.8	165.3	161.6	161.6	160.4	164.1	164.1
22.5°	265.7	265.7	280.4	279.2	298.8	318.4	333.1	380.8	407.8	465.3	504.5
25°	464.1	508.2	559.6	575.5	613.5	669.8	728.6	802.1	853.5	908.6	930.7
27.5°	579.2	586.6	579.2	597.6	573.1	558.4	563.3	571.9	571.9	575.5	590.2
30°	342.9	360.0	375.9	388.2	382.1	375.9	373.5	355.1	355.1	347.8	341.7
32.5°	232.7	230.2	227.8	232.7	227.8	227.8	224.1	225.3	218.0	213.1	210.6
35°	159.2	151.8	143.3	144.5	139.6	138.4	134.7	134.7	129.8	127.4	126.1
37.5°	88.2	88.2	84.5	85.7	84.5	84.5	84.5	85.7	84.5	84.5	85.7
40°	60.0	60.0	58.8	60.0	58.8	60.0	61.2	61.2	61.2	61.2	60.0
42.5°	45.3	45.3	44.1	45.3	44.1	45.3	46.5	46.5	46.5	46.5	46.5
45°	35.5	35.5	35.5	35.5	35.5	35.5	35.5	36.7	36.7	35.5	35.5
47.5°	28.2	29.4	28.2	28.2	28.2	28.2	29.4	29.4	28.2	28.2	28.2
50°	23.3	23.3	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
52.5°	18.4	17.1	17.1	15.9	15.9	15.9	15.9	15.9	15.9	15.9	14.7
55°	13.5	13.5	12.2	12.2	12.2	13.5	13.5	13.5	13.5	12.2	12.2
57.5°	12.2	12.2	12.2	11.0	11.0	12.2	12.2	11.0	11.0	11.0	9.8
60°	11.0	12.2	11.0	11.0	11.0	11.0	11.0	9.8	9.8	9.8	8.6
62.5°	12.2	12.2	11.0	11.0	11.0	11.0	9.8	9.8	9.8	8.6	8.6
65°	12.2	12.2	12.2	11.0	11.0	11.0	11.0	9.8	9.8	8.6	8.6
67.5°	12.2	12.2	12.2	12.2	11.0	11.0	11.0	9.8	9.8	9.8	8.6
70°	12.2	12.2	12.2	12.2	12.2	11.0	11.0	11.0	9.8	9.8	8.6
72.5°	12.2	12.2	12.2	11.0	11.0	11.0	11.0	11.0	9.8	9.8	8.6
75°	12.2	12.2	12.2	11.0	11.0	11.0	11.0	9.8	9.8	9.8	8.6
77.5°	12.2	12.2	12.2	11.0	11.0	11.0	11.0	9.8	9.8	9.8	8.6
80°	12.2	12.2	12.2	11.0	11.0	11.0	11.0	9.8	9.8	9.8	8.6
82.5°	12.2	12.2	12.2	11.0	11.0	11.0	11.0	9.8	9.8	8.6	8.6
85°	12.2	12.2	11.0	11.0	11.0	11.0	9.8	9.8	8.6	8.6	7.3
87.5°	11.0	11.0	11.0	11.0	9.8	9.8	9.8	8.6	7.3	7.3	6.1
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: P179951

CATALOG NUMBER: LDA6A65840D010TE LARH40FL 6LAL1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1	1282.1
2.5°	769.0	764.1	760.5	767.8	765.4	734.7	738.4	737.2
5°	504.5	493.5	484.9	488.6	478.8	465.3	455.5	453.1
7.5°	300.0	287.8	280.4	273.1	270.6	253.5	246.1	251.0
10°	165.3	148.2	146.9	143.3	138.4	134.7	132.3	133.5
12.5°	127.4	126.1	123.7	122.5	120.0	118.8	117.6	116.3
15°	121.2	120.0	118.8	117.6	116.3	115.1	113.9	113.9
17.5°	124.9	124.9	123.7	122.5	122.5	123.7	122.5	121.2
20°	162.9	162.9	165.3	169.0	169.0	172.7	177.6	173.9
22.5°	529.0	556.0	589.0	598.8	656.4	702.9	788.6	750.7
25°	967.4	1028.6	1043.3	1064.1	1096.0	1111.9	1096.0	1116.8
27.5°	587.8	608.6	611.1	612.3	619.6	618.4	602.5	612.3
30°	341.7	349.0	346.6	345.3	342.9	329.4	327.0	331.9
32.5°	214.3	211.8	210.6	209.4	209.4	202.1	205.7	203.3
35°	122.5	126.1	124.9	123.7	120.0	118.8	118.8	117.6
37.5°	82.0	83.3	82.0	80.8	78.4	77.1	75.9	74.7
40°	58.8	60.0	58.8	57.6	56.3	55.1	53.9	52.7
42.5°	44.1	45.3	44.1	44.1	41.6	40.4	39.2	38.0
45°	34.3	33.1	33.1	33.1	31.8	30.6	29.4	29.4
47.5°	28.2	28.2	28.2	26.9	25.7	25.7	25.7	24.5
50°	20.8	22.0	20.8	20.8	19.6	18.4	18.4	17.1
52.5°	14.7	14.7	13.5	13.5	12.2	11.0	11.0	11.0
55°	11.0	11.0	11.0	9.8	9.8	8.6	8.6	8.6
57.5°	9.8	8.6	8.6	8.6	7.3	7.3	6.1	6.1
60°	8.6	7.3	7.3	6.1	6.1	4.9	4.9	4.9
62.5°	7.3	6.1	6.1	6.1	4.9	4.9	4.9	4.9
65°	7.3	6.1	6.1	6.1	4.9	4.9	4.9	4.9
67.5°	7.3	7.3	6.1	6.1	6.1	4.9	4.9	4.9
70°	7.3	7.3	7.3	6.1	6.1	6.1	4.9	4.9
72.5°	8.6	7.3	7.3	7.3	6.1	6.1	6.1	6.1
75°	8.6	7.3	7.3	7.3	6.1	6.1	6.1	6.1
77.5°	8.6	7.3	7.3	7.3	6.1	6.1	6.1	6.1
80°	7.3	7.3	7.3	6.1	6.1	6.1	6.1	6.1
82.5°	7.3	7.3	7.3	7.3	6.1	6.1	6.1	6.1
85°	7.3	6.1	6.1	6.1	4.9	4.9	4.9	4.9
87.5°	6.1	4.9	4.9	3.7	3.7	3.7	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)