

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: P179676

Luminaire Tested: **LDA6A45827D010TE LARH40FL 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179676
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: LDA6A45827D010TE LARH40FL 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 40° Flood, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4314.9 lumens
Efficiency: N/A
Efficacy: 81.4 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

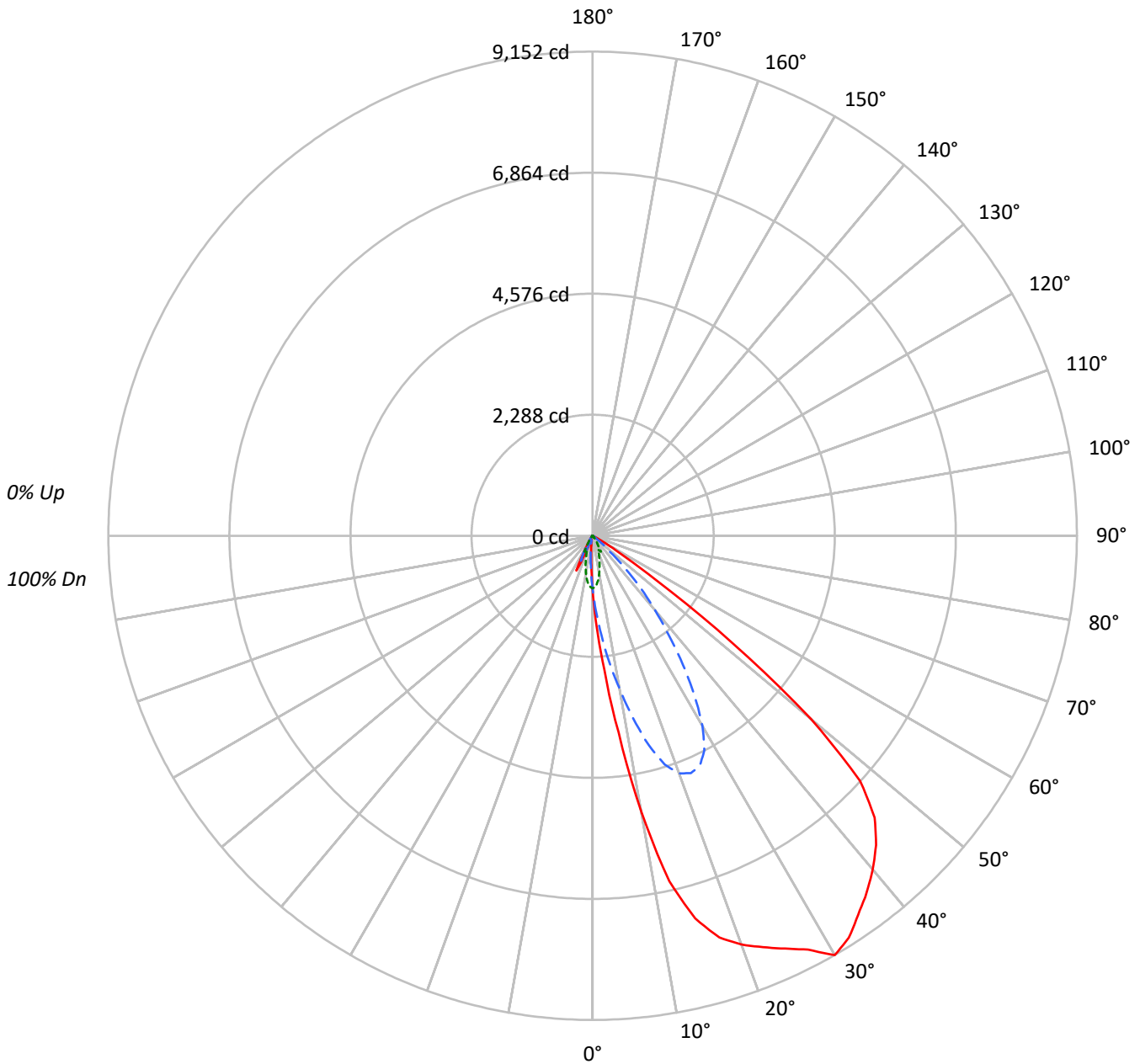
Input Watts (W): 53
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	54568	54568	54568
5°	139764	50314	18440
10°	294728	40146	5221
15°	425048	28479	4342
20°	479734	18913	6108
25°	520869	19060	44011
30°	579336	12565	15388
35°	585309	7127	5909
40°	589197	2934	2669
45°	584363	1837	1551
50°	458697	1245	1083
55°	138040	870	526
60°	29153	800	395
65°	3308	947	350
70°	882	1170	577
75°	191	1546	763
80°	0	2589	1137
85°	0	4592	2264



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.9	2.9
10°-20°	601.6	13.9
20°-30°	1134.2	26.3
30°-40°	1258.0	29.2
40°-50°	958.7	22.2
50°-60°	213.9	5.0
60°-70°	11.7	0.3
70°-80°	5.4	0.1
80°-90°	4.5	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°	1862.6	43.2
0°-40°	3120.7	72.3
0°-60°	4293.3	99.5
0°-90°	4314.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4314.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	995	995	995	995	995	
5°	2540	1881	914	439	335	329
15°	7489	4100	502	89	76	2088
25°	8611	4794	315	526	728	4008
35°	8746	2982	106	94	88	5478
45°	7538	878	24	25	20	5613
55°	1444	38	9	8	6	1783
65°	26	6	7	6	3	60
75°	1	4	7	6	4	1
85°	0	4	7	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°	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4
2.5°	1708.4	1678.3	1674.7	1664.7	1586.4	1585.5	1584.5	1543.6	1506.2	1487.1	1406.1
5°	2539.8	2518.0	2490.7	2456.0	2326.7	2308.5	2293.0	2232.0	2100.9	2024.4	1881.4
7.5°	3751.9	3740.1	3602.6	3584.4	3346.7	3288.4	3231.0	3074.4	2821.2	2657.3	2404.1
10°	5294.6	5238.1	5133.4	4991.3	4681.7	4571.5	4465.0	4144.4	3712.8	3369.4	2938.7
12.5°	6688.8	6616.8	6489.4	6323.6	5933.9	5783.6	5615.1	5221.7	4694.4	4136.2	3527.0
15°	7489.3	7477.4	7329.9	7262.5	6948.3	6795.3	6656.0	6203.4	5545.0	4888.4	4099.8
17.5°	7962.8	7963.7	7855.3	7815.3	7523.0	7377.2	7259.8	6930.1	6240.7	5443.9	4534.2
20°	8223.3	8249.7	8148.6	8085.7	7881.8	7752.4	7643.2	7303.5	6703.4	5819.1	4780.0
22.5°	8417.2	8430.0	8307.0	8255.1	8026.5	7901.8	7832.6	7507.5	6921.0	6019.5	4854.7
25°	8611.2	8604.8	8466.4	8362.6	8137.7	8016.5	7931.8	7650.4	7012.1	6065.9	4793.7
27.5°	8816.1	8845.2	8588.4	8422.7	8221.4	8079.4	7984.7	7694.2	7005.7	5944.8	4572.4
30°	9152.1	8916.3	8659.5	8430.9	8199.6	8049.3	7940.9	7571.2	6829.9	5623.3	4151.7
32.5°	9011.0	8844.3	8592.1	8357.1	8109.4	7943.7	7811.6	7372.7	6461.1	5094.2	3587.1
35°	8746.0	8701.3	8451.8	8260.6	7979.2	7800.7	7646.8	7066.7	5889.2	4457.7	2982.4
37.5°	8507.4	8460.9	8312.5	8114.9	7795.2	7608.6	7326.3	6580.4	5145.2	3660.8	2345.9
40°	8233.3	8222.3	8056.6	7873.6	7489.3	7145.0	6852.7	5722.6	4259.2	2878.6	1825.0
42.5°	7930.0	7923.6	7788.9	7518.4	6953.8	6526.7	6037.7	4754.6	3274.7	2184.7	1356.0
45°	7537.5	7500.2	7268.0	6873.7	6063.2	5445.7	4866.6	3632.6	2401.4	1560.9	877.9
47.5°	6857.3	6791.7	6452.9	5778.1	4806.5	4175.4	3642.6	2497.9	1498.0	882.4	435.3
50°	5378.4	5204.4	4721.8	4012.4	3016.1	2467.9	2049.0	1239.4	664.8	438.0	278.7
52.5°	3322.1	3134.5	2678.2	2142.8	1376.0	1066.4	879.7	597.4	367.9	252.3	107.5
55°	1444.3	1356.0	1119.2	890.6	636.6	506.3	437.1	302.3	191.2	92.0	38.2
57.5°	563.7	546.4	476.3	401.6	301.4	245.9	217.6	136.6	52.8	32.8	21.9
60°	265.9	248.6	214.0	177.6	111.1	80.1	61.9	38.2	26.4	20.0	14.6
62.5°	72.9	62.8	51.0	43.7	33.7	30.1	26.4	20.9	16.4	12.7	10.0
65°	25.5	25.5	22.8	20.9	17.3	15.5	14.6	11.8	10.0	8.2	6.4
67.5°	11.8	11.8	10.9	10.0	8.2	8.2	7.3	6.4	5.5	4.6	4.6
70°	5.5	4.6	4.6	4.6	4.6	3.6	3.6	3.6	3.6	3.6	3.6
72.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.7	3.6	3.6	3.6
75°	0.9	0.9	0.9	0.9	1.8	1.8	1.8	2.7	3.6	3.6	3.6
77.5°	0.0	0.9	0.9	0.9	1.8	1.8	1.8	2.7	3.6	3.6	3.6
80°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	3.6	3.6	3.6
82.5°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	2.7	3.6	3.6
85°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	3.6	3.6	3.6
87.5°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	2.7	3.6	3.6
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°	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4
2.5°	1371.5	1336.8	1291.3	1215.7	1182.0	1174.8	1112.8	1056.4	1006.3	969.9	912.5
5°	1788.5	1688.4	1566.3	1419.7	1364.2	1325.0	1206.6	1093.7	997.2	914.3	826.9
7.5°	2202.0	2003.5	1820.4	1606.4	1502.6	1424.3	1248.5	1088.2	942.5	829.6	714.0
10°	2599.9	2317.6	2008.0	1726.6	1587.3	1468.9	1238.5	1035.4	853.3	721.2	599.2
12.5°	2977.9	2572.6	2161.0	1786.7	1620.1	1471.6	1189.3	950.7	754.9	612.9	485.4
15°	3353.0	2757.5	2250.2	1799.5	1598.2	1419.7	1100.1	837.8	644.7	501.8	389.8
17.5°	3587.1	2860.4	2251.1	1743.0	1516.2	1321.4	978.0	720.3	532.7	404.3	306.0
20°	3702.7	2847.6	2165.5	1612.8	1376.9	1180.2	834.2	600.1	430.7	324.2	241.3
22.5°	3669.0	2734.7	2015.3	1440.7	1222.1	1035.4	710.3	503.6	371.5	281.4	218.6
25°	3510.6	2551.7	1837.7	1278.6	1069.1	892.4	623.8	463.5	366.1	315.1	271.4
27.5°	3236.5	2311.3	1620.1	1108.3	919.8	778.6	565.5	449.9	378.8	339.7	343.3
30°	2832.1	1992.5	1338.7	880.6	720.3	605.6	424.4	313.3	231.3	198.5	198.5
32.5°	2379.6	1629.2	1034.5	651.1	520.9	439.8	298.7	214.0	171.2	155.7	148.4
35°	1955.2	1274.9	767.7	471.7	376.1	313.3	195.8	120.2	110.2	106.5	104.7
37.5°	1538.1	957.1	556.4	342.4	261.4	207.6	100.2	77.4	67.4	62.8	59.2
40°	1152.9	672.1	385.2	209.5	144.8	95.6	58.3	47.4	41.9	41.0	39.2
42.5°	806.8	450.8	238.6	92.0	67.4	53.7	40.1	33.7	31.0	30.1	29.1
45°	472.6	281.4	97.4	51.0	41.9	37.3	29.1	25.5	23.7	23.7	22.8
47.5°	296.9	113.8	51.9	32.8	28.2	26.4	21.9	19.1	18.2	18.2	18.2
50°	122.0	50.1	31.0	22.8	20.0	19.1	16.4	14.6	14.6	14.6	14.6
52.5°	44.6	28.2	20.9	16.4	14.6	13.7	11.8	10.9	10.9	11.8	10.9
55°	25.5	19.1	14.6	11.8	10.0	10.0	9.1	9.1	9.1	9.1	9.1
57.5°	16.4	12.7	10.0	8.2	7.3	7.3	7.3	7.3	7.3	8.2	7.3
60°	10.9	9.1	7.3	6.4	6.4	6.4	6.4	6.4	7.3	7.3	7.3
62.5°	8.2	6.4	6.4	6.4	6.4	6.4	6.4	6.4	7.3	7.3	7.3
65°	6.4	5.5	6.4	6.4	6.4	6.4	6.4	7.3	7.3	7.3	8.2
67.5°	4.6	4.6	5.5	5.5	5.5	5.5	6.4	6.4	7.3	7.3	8.2
70°	4.6	4.6	5.5	5.5	5.5	5.5	6.4	6.4	7.3	7.3	8.2
72.5°	4.6	4.6	5.5	5.5	5.5	5.5	6.4	6.4	7.3	7.3	8.2
75°	4.6	4.6	5.5	5.5	5.5	6.4	6.4	6.4	7.3	7.3	8.2
77.5°	4.6	4.6	5.5	5.5	5.5	6.4	6.4	7.3	7.3	7.3	8.2
80°	4.6	4.6	5.5	5.5	5.5	6.4	6.4	7.3	7.3	8.2	8.2
82.5°	4.6	4.6	5.5	5.5	5.5	6.4	6.4	7.3	7.3	8.2	8.2
85°	4.6	5.5	5.5	5.5	5.5	6.4	6.4	7.3	7.3	7.3	8.2
87.5°	4.6	4.6	5.5	5.5	5.5	6.4	6.4	7.3	7.3	7.3	7.3
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°	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4
2.5°	873.3	833.3	800.5	783.2	764.0	731.3	700.3	672.1	660.2	622.0	629.3
5°	758.6	690.3	635.6	611.1	582.8	537.3	497.2	459.0	438.9	406.2	394.3
7.5°	631.1	550.9	485.4	457.2	432.6	389.8	352.4	316.9	291.4	257.7	244.1
10°	505.4	428.9	368.8	344.2	316.9	274.1	236.8	205.8	184.9	159.4	146.6
12.5°	399.8	331.5	270.5	245.9	223.1	187.6	158.5	130.2	107.5	93.8	90.2
15°	311.4	245.9	195.8	175.8	156.6	122.0	100.2	92.9	89.2	85.6	84.7
17.5°	234.0	181.2	136.6	116.6	105.6	96.5	92.9	89.2	87.4	84.7	85.6
20°	180.3	129.3	111.1	108.4	106.5	102.0	101.1	100.2	99.3	100.2	102.0
22.5°	171.2	161.2	166.7	170.3	178.5	179.4	194.0	205.8	216.7	246.8	261.4
25°	288.7	306.0	333.3	350.6	374.3	398.9	444.4	484.5	526.4	564.6	598.3
27.5°	361.5	369.7	369.7	378.8	368.8	367.0	361.5	357.0	376.1	369.7	389.8
30°	200.3	209.5	224.9	233.1	243.1	250.4	247.7	238.6	244.1	236.8	244.1
32.5°	143.0	143.0	146.6	147.5	149.3	150.3	151.2	152.1	153.0	148.4	151.2
35°	102.0	98.4	96.5	96.5	95.6	93.8	92.9	92.9	93.8	89.2	91.1
37.5°	57.4	55.6	55.6	55.6	55.6	55.6	56.5	57.4	57.4	57.4	59.2
40°	38.2	38.2	38.2	39.2	39.2	39.2	40.1	40.1	41.0	41.0	41.9
42.5°	29.1	28.2	29.1	29.1	29.1	30.1	30.1	31.0	31.0	31.0	31.9
45°	22.8	22.8	22.8	22.8	23.7	23.7	23.7	23.7	24.6	23.7	24.6
47.5°	18.2	18.2	18.2	19.1	19.1	18.2	19.1	19.1	19.1	19.1	19.1
50°	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	15.5	14.6	15.5
52.5°	11.8	10.9	10.9	10.9	10.9	10.0	10.0	10.9	10.9	10.0	10.0
55°	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
57.5°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	6.4
60°	7.3	7.3	7.3	7.3	7.3	6.4	6.4	6.4	6.4	6.4	5.5
62.5°	7.3	7.3	7.3	7.3	7.3	6.4	6.4	6.4	6.4	5.5	5.5
65°	8.2	7.3	7.3	7.3	7.3	7.3	6.4	6.4	6.4	5.5	5.5
67.5°	8.2	8.2	7.3	7.3	7.3	7.3	7.3	6.4	6.4	5.5	5.5
70°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	6.4	6.4	6.4	5.5
72.5°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	6.4	6.4	6.4	6.4
75°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	6.4	6.4	6.4	6.4
77.5°	7.3	7.3	7.3	7.3	7.3	7.3	6.4	6.4	6.4	6.4	5.5
80°	8.2	7.3	7.3	7.3	7.3	7.3	6.4	6.4	6.4	6.4	5.5
82.5°	7.3	7.3	7.3	7.3	7.3	7.3	6.4	6.4	6.4	5.5	5.5
85°	7.3	7.3	7.3	7.3	7.3	6.4	6.4	6.4	5.5	5.5	5.5
87.5°	7.3	7.3	7.3	6.4	6.4	6.4	6.4	5.5	5.5	4.6	4.6
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: P179676

CATALOG NUMBER: LDA6A45827D010TE LARH40FL 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4
2.5°	591.0	578.3	589.2	575.5	571.0	561.0	556.4	561.0
5°	372.5	358.8	361.5	352.4	337.9	337.9	333.3	335.1
7.5°	224.9	211.3	212.2	204.0	193.1	191.2	186.7	188.5
10°	130.2	115.7	115.7	106.5	97.4	96.5	93.8	93.8
12.5°	86.5	84.7	82.9	82.0	80.1	80.1	80.1	78.3
15°	81.0	80.1	79.2	79.2	77.4	77.4	78.3	76.5
17.5°	82.9	82.0	81.0	81.0	81.0	81.0	82.0	80.1
20°	99.3	100.2	100.2	102.9	104.7	105.6	108.4	104.7
22.5°	260.4	268.6	275.0	308.7	337.9	326.9	347.0	313.3
25°	622.9	645.7	664.8	668.4	686.6	712.1	728.5	727.6
27.5°	389.8	390.7	401.6	401.6	398.0	412.5	422.5	420.7
30°	240.4	239.5	243.1	234.0	233.1	239.5	243.1	243.1
32.5°	148.4	147.5	150.3	148.4	143.9	151.2	149.3	149.3
35°	89.2	90.2	88.3	88.3	84.7	88.3	87.4	88.3
37.5°	58.3	57.4	56.5	56.5	54.6	55.6	54.6	52.8
40°	41.0	41.0	40.1	40.1	39.2	38.2	38.2	37.3
42.5°	31.0	31.0	30.1	30.1	29.1	28.2	28.2	27.3
45°	23.7	22.8	21.9	21.9	21.9	20.9	20.9	20.0
47.5°	18.2	18.2	18.2	17.3	17.3	16.4	16.4	15.5
50°	14.6	14.6	14.6	14.6	13.7	13.7	13.7	12.7
52.5°	10.0	10.0	9.1	9.1	8.2	8.2	8.2	7.3
55°	7.3	7.3	7.3	6.4	6.4	6.4	5.5	5.5
57.5°	6.4	6.4	5.5	5.5	5.5	4.6	4.6	4.6
60°	5.5	4.6	4.6	4.6	3.6	3.6	3.6	3.6
62.5°	4.6	4.6	4.6	3.6	3.6	3.6	3.6	2.7
65°	4.6	4.6	3.6	3.6	3.6	2.7	2.7	2.7
67.5°	4.6	4.6	4.6	3.6	3.6	3.6	3.6	2.7
70°	5.5	4.6	4.6	4.6	3.6	3.6	3.6	3.6
72.5°	5.5	4.6	4.6	4.6	4.6	3.6	3.6	3.6
75°	5.5	5.5	4.6	4.6	4.6	4.6	4.6	3.6
77.5°	5.5	4.6	4.6	4.6	4.6	4.6	3.6	3.6
80°	5.5	4.6	4.6	4.6	4.6	3.6	3.6	3.6
82.5°	5.5	4.6	4.6	4.6	3.6	3.6	3.6	3.6
85°	4.6	4.6	3.6	3.6	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)