

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: P179681

Luminaire Tested: **LDA6A45930D010TE LARH40FL 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179681
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: LDA6A45930D010TE LARH40FL 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 40° Flood, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3856.0 lumens
Efficiency: N/A
Efficacy: 72.8 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

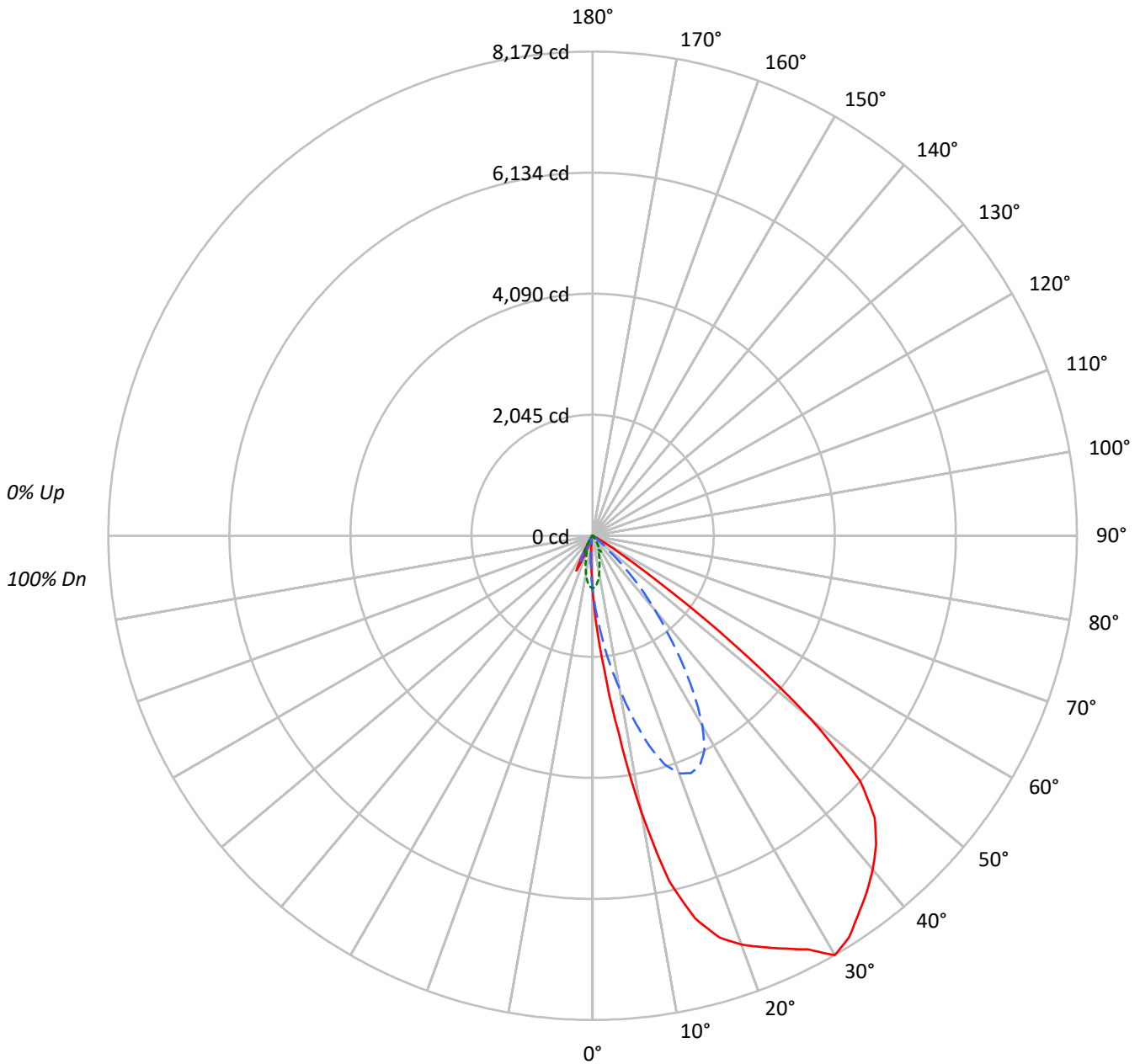
Input Watts (W): 53
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	48763	48763	48763
5°	124901	44965	16481
10°	263383	35877	4665
15°	379843	25449	3882
20°	428711	16901	5460
25°	465474	17033	39329
30°	517725	11230	13755
35°	523057	6371	5280
40°	526529	2619	2390
45°	522217	1644	1388
50°	409906	1109	972
55°	123360	774	468
60°	26051	713	362
65°	2958	843	311
70°	785	1042	529
75°	169	1377	699
80°	0	2305	1042
85°	0	4088	2076



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	113.4	2.9
10°-20°	537.6	13.9
20°-30°	1013.5	26.3
30°-40°	1124.2	29.2
40°-50°	856.8	22.2
50°-60°	191.2	5.0
60°-70°	10.4	0.3
70°-80°	4.8	0.1
80°-90°	4.0	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°	1664.5	43.2
0°-40°	2788.8	72.3
0°-60°	3836.7	99.5
0°-90°	3856.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3856.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	890	890	890	890	890	
5°	2270	1681	817	392	300	294
15°	6693	3664	448	80	68	1866
25°	7695	4284	282	470	650	3582
35°	7816	2665	95	84	79	4896
45°	6736	784	21	22	18	5016
55°	1291	34	8	7	5	1593
65°	23	6	6	6	2	53
75°	1	3	6	6	3	1
85°	0	3	6	5	3	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°	889.5	889.5	889.5	889.5	889.5	889.5	889.5	889.5	889.5	889.5	889.5
2.5°	1526.7	1499.8	1496.6	1487.6	1417.7	1416.8	1416.0	1379.4	1346.0	1328.9	1256.5
5°	2269.7	2250.2	2225.8	2194.8	2079.3	2063.0	2049.2	1994.6	1877.5	1809.1	1681.3
7.5°	3352.9	3342.3	3219.4	3203.1	2990.7	2938.7	2887.4	2747.4	2521.2	2374.7	2148.5
10°	4731.5	4681.0	4587.4	4460.5	4183.8	4085.3	3990.1	3703.6	3317.9	3011.1	2626.2
12.5°	5977.4	5913.1	5799.2	5651.1	5302.8	5168.5	5017.9	4666.4	4195.2	3696.3	3151.9
15°	6692.8	6682.2	6550.3	6490.1	6209.3	6072.6	5948.1	5543.7	4955.3	4368.5	3663.8
17.5°	7115.9	7116.7	7019.9	6984.1	6722.9	6592.7	6487.7	6193.1	5577.0	4864.9	4051.9
20°	7348.7	7372.3	7281.9	7225.8	7043.5	6927.9	6830.3	6526.7	5990.4	5200.2	4271.7
22.5°	7522.0	7533.4	7423.5	7377.2	7172.9	7061.4	6999.6	6709.0	6184.9	5379.3	4338.4
25°	7695.4	7689.7	7566.0	7473.2	7272.2	7163.9	7088.3	6836.8	6266.3	5420.8	4283.9
27.5°	7878.5	7904.5	7675.0	7526.9	7347.1	7220.1	7135.5	6875.9	6260.6	5312.5	4086.1
30°	8178.8	7968.0	7738.5	7534.2	7327.5	7193.2	7096.4	6766.0	6103.6	5025.3	3710.1
32.5°	8052.6	7903.7	7678.3	7468.3	7247.0	7098.8	6980.8	6588.6	5774.0	4552.4	3205.6
35°	7815.8	7775.9	7552.9	7382.0	7130.6	6971.1	6833.5	6315.1	5262.9	3983.6	2665.2
37.5°	7602.6	7561.1	7428.4	7251.8	6966.2	6799.4	6547.1	5880.6	4598.0	3271.5	2096.4
40°	7357.6	7347.9	7199.8	7036.2	6692.8	6385.1	6123.9	5114.0	3806.2	2572.4	1630.9
42.5°	7086.6	7080.9	6960.5	6718.8	6214.2	5832.6	5395.5	4248.9	2926.5	1952.3	1211.8
45°	6735.9	6702.5	6495.0	6142.6	5418.3	4866.6	4349.0	3246.3	2146.0	1394.9	784.5
47.5°	6128.0	6069.4	5766.6	5163.6	4295.3	3731.3	3255.2	2232.3	1338.7	788.6	389.0
50°	4806.3	4650.9	4219.6	3585.6	2695.3	2205.4	1831.1	1107.6	594.1	391.4	249.0
52.5°	2968.8	2801.1	2393.4	1914.9	1229.7	953.0	786.1	533.9	328.8	225.4	96.0
55°	1290.7	1211.8	1000.2	795.9	568.9	452.5	390.6	270.2	170.9	82.2	34.2
57.5°	503.7	488.3	425.6	358.9	269.4	219.7	194.5	122.1	47.2	29.3	19.5
60°	237.6	222.2	191.2	158.7	99.3	71.6	55.3	34.2	23.6	17.9	13.0
62.5°	65.1	56.2	45.6	39.1	30.1	26.9	23.6	18.7	14.6	11.4	9.0
65°	22.8	22.8	20.3	18.7	15.5	13.8	13.0	10.6	9.0	7.3	5.7
67.5°	10.6	10.6	9.8	9.0	7.3	7.3	6.5	5.7	4.9	4.1	4.1
70°	4.9	4.1	4.1	4.1	4.1	3.3	3.3	3.3	3.3	3.3	3.3
72.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.4	3.3	3.3	3.3
75°	0.8	0.8	0.8	0.8	1.6	1.6	1.6	2.4	3.3	3.3	3.3
77.5°	0.0	0.8	0.8	0.8	1.6	1.6	1.6	2.4	3.3	3.3	3.3
80°	0.0	0.0	0.8	0.8	1.6	1.6	1.6	2.4	3.3	3.3	3.3
82.5°	0.0	0.0	0.8	0.8	1.6	1.6	1.6	2.4	2.4	3.3	3.3
85°	0.0	0.0	0.8	0.8	1.6	1.6	1.6	2.4	3.3	3.3	3.3
87.5°	0.0	0.0	0.8	0.8	1.6	1.6	1.6	2.4	2.4	3.3	3.3
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	889.5	889.5	889.5	889.5	889.5	889.5	889.5	889.5	889.5	889.5	889.5
2.5°	1225.6	1194.7	1154.0	1086.4	1056.3	1049.8	994.5	944.0	899.3	866.7	815.4
5°	1598.3	1508.8	1399.7	1268.7	1219.1	1184.1	1078.3	977.4	891.1	817.1	738.9
7.5°	1967.8	1790.4	1626.8	1435.6	1342.8	1272.8	1115.7	972.5	842.3	741.4	638.0
10°	2323.4	2071.1	1794.4	1543.0	1418.5	1312.7	1106.8	925.3	762.5	644.5	535.5
12.5°	2661.1	2299.0	1931.2	1596.7	1447.8	1315.1	1062.8	849.6	674.6	547.7	433.8
15°	2996.4	2464.2	2010.9	1608.1	1428.2	1268.7	983.1	748.7	576.2	448.4	348.3
17.5°	3205.6	2556.2	2011.7	1557.6	1355.0	1180.8	874.0	643.7	476.1	361.3	273.4
20°	3308.9	2544.8	1935.2	1441.3	1230.5	1054.7	745.4	536.3	384.9	289.7	215.7
22.5°	3278.8	2443.9	1801.0	1287.4	1092.1	925.3	634.8	450.0	332.0	251.5	195.3
25°	3137.2	2280.3	1642.3	1142.6	955.4	797.5	557.5	414.2	327.2	281.6	242.5
27.5°	2892.3	2065.4	1447.8	990.4	821.9	695.8	505.4	402.0	338.5	303.6	306.8
30°	2530.9	1780.6	1196.3	787.0	643.7	541.2	379.2	279.9	206.7	177.4	177.4
32.5°	2126.5	1455.9	924.5	581.9	465.5	393.1	266.9	191.2	153.0	139.2	132.7
35°	1747.2	1139.3	686.0	421.6	336.1	279.9	175.0	107.4	98.5	95.2	93.6
37.5°	1374.5	855.3	497.2	306.0	233.6	185.5	89.5	69.2	60.2	56.2	52.9
40°	1030.3	600.6	344.2	187.2	129.4	85.4	52.1	42.3	37.4	36.6	35.0
42.5°	721.0	402.8	213.2	82.2	60.2	48.0	35.8	30.1	27.7	26.9	26.0
45°	422.4	251.5	87.1	45.6	37.4	33.4	26.0	22.8	21.2	21.2	20.3
47.5°	265.3	101.7	46.4	29.3	25.2	23.6	19.5	17.1	16.3	16.3	16.3
50°	109.1	44.8	27.7	20.3	17.9	17.1	14.6	13.0	13.0	13.0	13.0
52.5°	39.9	25.2	18.7	14.6	13.0	12.2	10.6	9.8	9.8	10.6	9.8
55°	22.8	17.1	13.0	10.6	9.0	9.0	8.1	8.1	8.1	8.1	8.1
57.5°	14.6	11.4	9.0	7.3	6.5	6.5	6.5	6.5	6.5	7.3	6.5
60°	9.8	8.1	6.5	5.7	5.7	5.7	5.7	5.7	6.5	6.5	6.5
62.5°	7.3	5.7	5.7	5.7	5.7	5.7	5.7	5.7	6.5	6.5	6.5
65°	5.7	4.9	5.7	5.7	5.7	5.7	5.7	6.5	6.5	6.5	7.3
67.5°	4.1	4.1	4.9	4.9	4.9	4.9	5.7	5.7	6.5	6.5	7.3
70°	4.1	4.1	4.9	4.9	4.9	4.9	5.7	5.7	6.5	6.5	7.3
72.5°	4.1	4.1	4.9	4.9	4.9	4.9	5.7	5.7	6.5	6.5	7.3
75°	4.1	4.1	4.9	4.9	4.9	5.7	5.7	5.7	6.5	6.5	7.3
77.5°	4.1	4.1	4.9	4.9	4.9	5.7	5.7	6.5	6.5	6.5	7.3
80°	4.1	4.1	4.9	4.9	4.9	5.7	5.7	6.5	6.5	7.3	7.3
82.5°	4.1	4.1	4.9	4.9	4.9	5.7	5.7	6.5	6.5	7.3	7.3
85°	4.1	4.9	4.9	4.9	4.9	5.7	5.7	6.5	6.5	6.5	7.3
87.5°	4.1	4.1	4.9	4.9	4.9	5.7	5.7	6.5	6.5	6.5	6.5
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°	889.5	889.5	889.5	889.5	889.5	889.5	889.5	889.5	889.5	889.5	889.5
2.5°	780.4	744.6	715.3	699.9	682.8	653.5	625.8	600.6	590.0	555.8	562.3
5°	677.9	616.9	568.0	546.1	520.8	480.1	444.3	410.2	392.3	363.0	352.4
7.5°	564.0	492.4	433.8	408.5	386.6	348.3	314.9	283.2	260.4	230.3	218.1
10°	451.7	383.3	329.6	307.6	283.2	245.0	211.6	183.9	165.2	142.4	131.0
12.5°	357.3	296.2	241.7	219.7	199.4	167.6	141.6	116.4	96.0	83.8	80.6
15°	278.3	219.7	175.0	157.1	140.0	109.1	89.5	83.0	79.8	76.5	75.7
17.5°	209.1	161.9	122.1	104.2	94.4	86.3	83.0	79.8	78.1	75.7	76.5
20°	161.1	115.6	99.3	96.8	95.2	91.1	90.3	89.5	88.7	89.5	91.1
22.5°	153.0	144.0	148.9	152.2	159.5	160.3	173.3	183.9	193.7	220.5	233.6
25°	258.0	273.4	297.9	313.3	334.5	356.4	397.1	432.9	470.4	504.6	534.7
27.5°	323.1	330.4	330.4	338.5	329.6	328.0	323.1	319.0	336.1	330.4	348.3
30°	179.0	187.2	201.0	208.3	217.3	223.8	221.4	213.2	218.1	211.6	218.1
32.5°	127.8	127.8	131.0	131.8	133.5	134.3	135.1	135.9	136.7	132.7	135.1
35°	91.1	87.9	86.3	86.3	85.4	83.8	83.0	83.0	83.8	79.8	81.4
37.5°	51.3	49.6	49.6	49.6	49.6	49.6	50.5	51.3	51.3	51.3	52.9
40°	34.2	34.2	34.2	35.0	35.0	35.0	35.8	35.8	36.6	36.6	37.4
42.5°	26.0	25.2	26.0	26.0	26.0	26.9	26.9	27.7	27.7	27.7	28.5
45°	20.3	20.3	20.3	20.3	21.2	21.2	21.2	21.2	22.0	21.2	22.0
47.5°	16.3	16.3	16.3	17.1	17.1	16.3	17.1	17.1	17.1	17.1	17.1
50°	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.8	13.0	13.8
52.5°	10.6	9.8	9.8	9.8	9.8	9.0	9.0	9.8	9.8	9.0	9.0
55°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
57.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	5.7
60°	6.5	6.5	6.5	6.5	6.5	5.7	5.7	5.7	5.7	5.7	4.9
62.5°	6.5	6.5	6.5	6.5	6.5	5.7	5.7	5.7	5.7	4.9	4.9
65°	7.3	6.5	6.5	6.5	6.5	6.5	5.7	5.7	5.7	4.9	4.9
67.5°	7.3	7.3	6.5	6.5	6.5	6.5	6.5	5.7	5.7	4.9	4.9
70°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	5.7	5.7	5.7	4.9
72.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	5.7	5.7	5.7	5.7
75°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	5.7	5.7	5.7	5.7
77.5°	6.5	6.5	6.5	6.5	6.5	6.5	5.7	5.7	5.7	5.7	4.9
80°	7.3	6.5	6.5	6.5	6.5	6.5	5.7	5.7	5.7	5.7	4.9
82.5°	6.5	6.5	6.5	6.5	6.5	6.5	5.7	5.7	5.7	4.9	4.9
85°	6.5	6.5	6.5	6.5	6.5	5.7	5.7	5.7	4.9	4.9	4.9
87.5°	6.5	6.5	6.5	5.7	5.7	5.7	5.7	4.9	4.9	4.1	4.1
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: P179681

CATALOG NUMBER: LDA6A45930D010TE LARH40FL 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	889.5	889.5	889.5	889.5	889.5	889.5	889.5	889.5
2.5°	528.2	516.8	526.5	514.3	510.3	501.3	497.2	501.3
5°	332.8	320.6	323.1	314.9	301.9	301.9	297.9	299.5
7.5°	201.0	188.8	189.6	182.3	172.5	170.9	166.8	168.5
10°	116.4	103.4	103.4	95.2	87.1	86.3	83.8	83.8
12.5°	77.3	75.7	74.1	73.2	71.6	71.6	71.6	70.0
15°	72.4	71.6	70.8	70.8	69.2	69.2	70.0	68.4
17.5°	74.1	73.2	72.4	72.4	72.4	72.4	73.2	71.6
20°	88.7	89.5	89.5	92.0	93.6	94.4	96.8	93.6
22.5°	232.7	240.1	245.8	275.9	301.9	292.2	310.1	279.9
25°	556.6	577.0	594.1	597.3	613.6	636.4	651.0	650.2
27.5°	348.3	349.1	358.9	358.9	355.6	368.7	377.6	376.0
30°	214.8	214.0	217.3	209.1	208.3	214.0	217.3	217.3
32.5°	132.7	131.8	134.3	132.7	128.6	135.1	133.5	133.5
35°	79.8	80.6	78.9	78.9	75.7	78.9	78.1	78.9
37.5°	52.1	51.3	50.5	50.5	48.8	49.6	48.8	47.2
40°	36.6	36.6	35.8	35.8	35.0	34.2	34.2	33.4
42.5°	27.7	27.7	26.9	26.9	26.0	25.2	25.2	24.4
45°	21.2	20.3	19.5	19.5	19.5	18.7	18.7	17.9
47.5°	16.3	16.3	16.3	15.5	15.5	14.6	14.6	13.8
50°	13.0	13.0	13.0	13.0	12.2	12.2	12.2	11.4
52.5°	9.0	9.0	8.1	8.1	7.3	7.3	7.3	6.5
55°	6.5	6.5	6.5	5.7	5.7	5.7	4.9	4.9
57.5°	5.7	5.7	4.9	4.9	4.9	4.1	4.1	4.1
60°	4.9	4.1	4.1	4.1	3.3	3.3	3.3	3.3
62.5°	4.1	4.1	4.1	3.3	3.3	3.3	3.3	2.4
65°	4.1	4.1	3.3	3.3	3.3	2.4	2.4	2.4
67.5°	4.1	4.1	4.1	3.3	3.3	3.3	3.3	2.4
70°	4.9	4.1	4.1	4.1	3.3	3.3	3.3	3.3
72.5°	4.9	4.1	4.1	4.1	4.1	3.3	3.3	3.3
75°	4.9	4.9	4.1	4.1	4.1	4.1	4.1	3.3
77.5°	4.9	4.1	4.1	4.1	4.1	4.1	3.3	3.3
80°	4.9	4.1	4.1	4.1	4.1	3.3	3.3	3.3
82.5°	4.9	4.1	4.1	4.1	3.3	3.3	3.3	3.3
85°	4.1	4.1	3.3	3.3	3.3	3.3	3.3	3.3
87.5°	3.3	3.3	2.4	2.4	2.4	1.6	1.6	1.6
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)