

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: P179675

Luminaire Tested: **LDA6A45940D010TE LARH30NF 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179675
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26674)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A45940D010TE LARH30NF 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 30° Narrow Flood, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3982.4 lumens
Efficiency: N/A
Efficacy: 75.1 lumens/watt
Spacing Criteria (0/90/45): 2.68 / 0.47 / 1.42
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

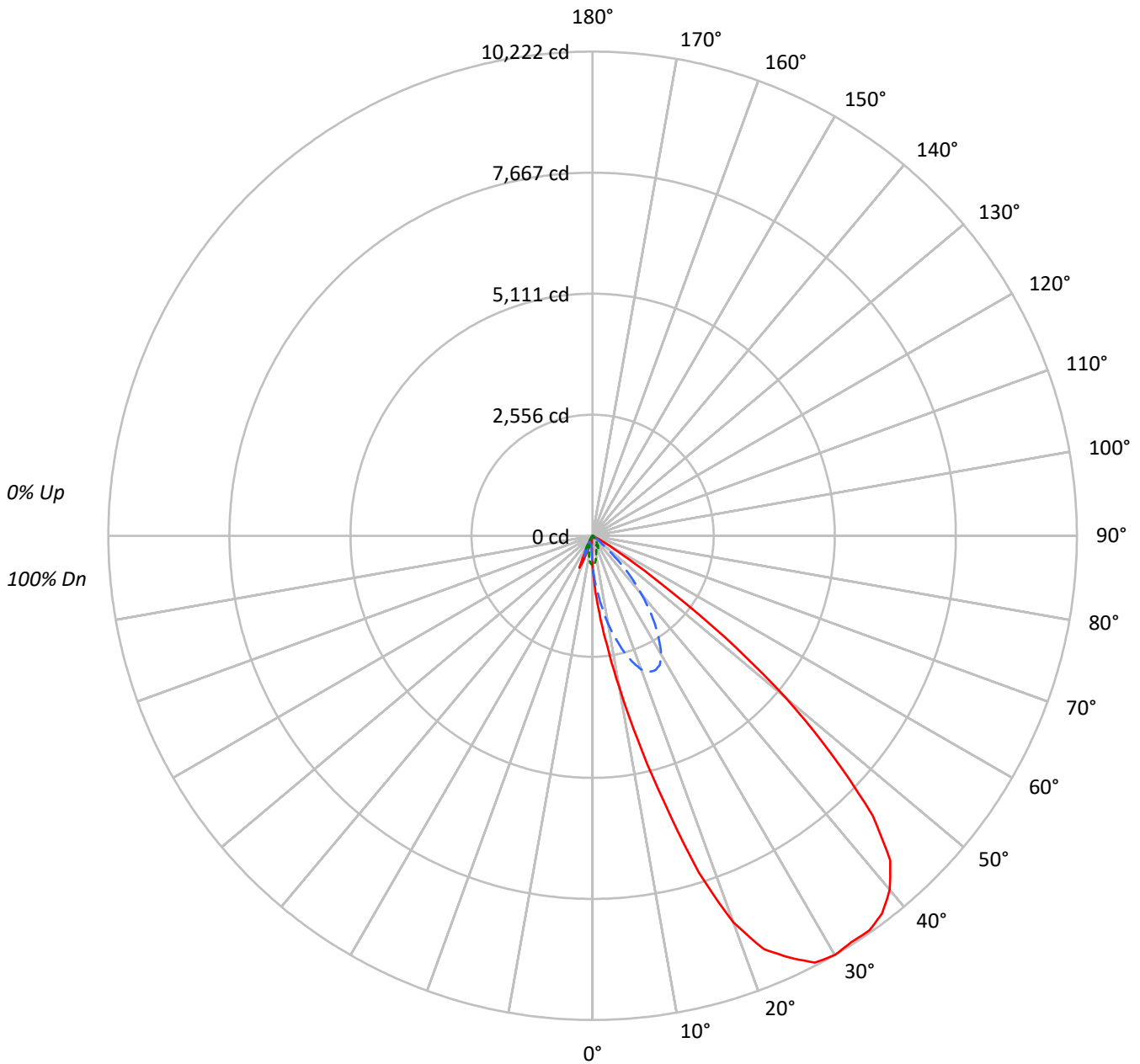
Input Watts (W): 53
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	101	102	100	98	99	97	95	95	94	92	91																			
2	105	99	94	89	102	97	92	88	94	90	86	90	87	85	88	85	83	81																			
3	98	89	83	78	95	88	82	78	85	80	76	83	79	75	80	77	74	72																			
4	91	81	74	69	89	80	73	68	78	72	67	75	71	67	73	69	66	64																			
5	84	74	66	61	82	73	66	61	71	65	60	69	64	59	67	63	59	57																			
6	78	67	59	54	77	66	59	54	65	58	53	63	57	53	61	57	53	51																			
7	73	61	54	48	71	60	53	48	59	53	48	58	52	47	56	51	47	45																			
8	68	56	48	43	66	55	48	43	54	48	43	53	47	43	52	46	42	41																			
9	63	51	44	39	62	51	44	39	50	43	39	49	43	39	48	42	38	37																			
10	59	47	40	35	58	47	40	35	46	39	35	45	39	35	44	39	35	33																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	34400	34400	34400
5°	90656	31383	10120
10°	181014	24053	4019
15°	329548	16884	4393
20°	506733	12117	27722
25°	594276	18098	22943
30°	647049	11363	6685
35°	681009	4711	2771
40°	698308	2075	1574
45°	648230	1364	1163
50°	454680	1049	529
55°	166293	755	335
60°	35118	767	197
65°	2970	908	233
70°	994	1122	417
75°	191	1483	741
80°	284	2210	1105
85°	0	4403	1132



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	79.0	2.0
10°-20°	434.1	10.9
20°-30°	1049.2	26.3
30°-40°	1233.5	31.0
40°-50°	931.8	23.4
50°-60°	233.7	5.9
60°-70°	11.3	0.3
70°-80°	5.4	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°	1562.3	39.2
0°-40°	2795.7	70.2
0°-60°	3961.3	99.5
0°-90°	3982.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3982.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	628	628	628	628	628	
5°	1647	1196	570	242	184	205
15°	5807	2519	298	80	77	1757
25°	9825	3134	299	415	379	4520
35°	10176	2309	70	50	41	6336
45°	8361	907	18	18	15	6161
55°	1740	26	8	7	4	1925
65°	23	6	7	6	2	62
75°	1	4	7	6	4	2
85°	0	4	7	5	2	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°	627.5	627.5	627.5	627.5	627.5	627.5	627.5	627.5	627.5	627.5	627.5
2.5°	1094.8	1077.2	1064.9	1043.7	1033.2	1037.6	1015.6	985.7	976.9	950.5	904.7
5°	1647.4	1629.0	1599.9	1555.0	1521.6	1516.3	1473.2	1401.0	1355.3	1287.5	1196.0
7.5°	2326.0	2310.1	2261.7	2194.8	2138.5	2117.4	2054.0	1927.3	1826.1	1690.6	1533.0
10°	3251.8	3190.2	3099.5	2964.0	2834.6	2774.8	2663.0	2453.6	2289.0	2103.3	1889.5
12.5°	4412.6	4303.4	4156.5	3953.2	3730.5	3618.8	3441.0	3120.6	2832.9	2514.3	2202.8
15°	5806.6	5696.5	5483.6	5168.5	4810.3	4630.8	4368.6	3863.4	3434.8	2967.5	2518.7
17.5°	7451.4	7271.8	6988.5	6531.7	5977.3	5695.7	5324.3	4624.6	3985.7	3375.9	2795.0
20°	8686.1	8554.9	8286.5	7808.7	7147.7	6785.2	6286.2	5322.5	4497.9	3702.4	3004.5
22.5°	9443.8	9325.9	9079.4	8679.9	8072.7	7670.5	7108.1	5935.0	4895.7	3928.5	3109.2
25°	9824.8	9740.4	9568.8	9220.3	8689.6	8285.6	7717.1	6388.3	5165.0	4050.9	3133.8
27.5°	10160.1	10018.5	9739.5	9501.9	9031.9	8620.9	8082.4	6613.6	5259.2	4036.8	3071.4
30°	10221.8	10140.8	9920.8	9581.1	9143.7	8728.3	8160.7	6581.0	5152.7	3873.1	2901.5
32.5°	10168.9	10098.5	9932.2	9561.7	9072.4	8613.9	7990.8	6313.5	4840.3	3569.5	2614.6
35°	10176.0	10064.2	9772.9	9456.1	8845.4	8306.8	7575.4	5824.2	4402.9	3175.2	2309.2
37.5°	10041.3	9857.4	9617.2	9208.8	8384.2	7716.3	6880.2	5193.2	3876.6	2773.0	1952.8
40°	9758.0	9618.0	9298.6	8671.1	7598.3	6758.8	5986.1	4468.9	3301.9	2333.9	1592.0
42.5°	9295.1	9127.9	8681.7	7735.6	6460.4	5728.2	5033.0	3727.9	2736.9	1908.8	1249.7
45°	8361.3	8106.1	7522.6	6394.4	5306.7	4685.4	4118.6	3039.7	2218.6	1493.4	907.3
47.5°	6869.7	6652.3	6035.4	5093.7	4237.4	3756.9	3273.8	2397.2	1651.0	960.1	466.4
50°	5331.3	5159.7	4688.9	3862.5	3147.9	2681.5	2301.3	1530.4	880.0	441.8	209.5
52.5°	3507.9	3399.6	2995.7	2411.3	1807.6	1475.0	1197.7	664.4	410.1	196.3	72.2
55°	1739.9	1600.8	1408.1	1043.7	755.1	610.8	518.3	327.4	169.8	56.3	25.5
57.5°	709.3	678.5	610.8	471.7	362.6	306.3	244.7	102.1	37.8	22.9	15.8
60°	320.3	306.3	265.8	186.6	101.2	62.5	44.0	28.2	19.4	14.1	10.6
62.5°	56.3	51.9	45.8	35.2	28.2	24.6	21.1	15.8	12.3	9.7	7.9
65°	22.9	22.9	21.1	18.5	15.0	14.1	12.3	9.7	7.9	7.0	6.2
67.5°	12.3	11.4	11.4	9.7	8.8	7.9	7.0	6.2	6.2	5.3	5.3
70°	6.2	6.2	6.2	5.3	4.4	4.4	4.4	4.4	4.4	4.4	4.4
72.5°	3.5	3.5	3.5	3.5	3.5	3.5	2.6	2.6	2.6	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	4.4
77.5°	0.9	0.9	0.9	0.9	1.8	1.8	1.8	2.6	3.5	3.5	4.4
80°	0.9	0.9	0.9	0.9	1.8	1.8	1.8	2.6	3.5	3.5	4.4
82.5°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.6	2.6	3.5	4.4
85°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.6	2.6	3.5	4.4
87.5°	0.0	0.0	0.9	0.9	0.9	1.8	1.8	2.6	2.6	3.5	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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	627.5	627.5	627.5	627.5	627.5	627.5	627.5	627.5	627.5	627.5	627.5
2.5°	902.9	857.2	822.0	788.5	780.6	753.3	727.8	683.8	644.2	607.2	565.0
5°	1160.8	1071.0	996.2	923.2	899.4	853.6	792.0	712.8	638.9	570.3	498.1
7.5°	1441.5	1289.3	1156.4	1033.2	990.1	924.9	825.5	712.8	606.4	507.8	419.8
10°	1717.0	1489.9	1289.3	1111.5	1046.4	961.9	825.5	682.0	546.5	432.1	345.0
12.5°	1982.7	1671.2	1400.2	1165.2	1079.8	974.2	803.5	628.4	470.8	358.2	285.1
15°	2190.4	1824.3	1478.5	1186.3	1079.8	957.5	752.4	553.5	394.3	297.5	232.3
17.5°	2346.2	1915.0	1504.9	1166.1	1042.9	905.6	675.0	465.5	324.7	246.4	183.9
20°	2436.9	1937.9	1477.6	1107.1	972.5	827.2	579.1	383.7	275.5	207.7	148.7
22.5°	2458.0	1906.2	1414.2	1031.4	892.4	745.4	494.6	343.2	265.8	212.1	185.7
25°	2434.2	1841.9	1330.6	954.9	816.7	671.5	463.8	369.6	318.6	299.2	320.3
27.5°	2340.0	1722.3	1227.7	869.5	730.4	594.9	440.0	372.3	320.3	311.5	301.9
30°	2172.0	1541.8	1069.3	711.1	564.1	451.5	312.4	221.8	176.9	179.5	177.8
32.5°	1908.8	1279.6	836.9	497.2	388.1	305.4	206.8	131.1	123.2	123.2	121.4
35°	1619.3	1039.3	629.2	349.4	270.2	214.7	123.2	95.9	81.0	70.4	63.4
37.5°	1324.5	808.8	433.9	235.9	171.6	110.0	59.0	48.4	43.1	40.5	39.6
40°	1025.3	569.4	277.2	129.4	75.7	48.4	37.8	32.6	29.9	29.0	29.0
42.5°	758.6	367.0	149.6	51.0	40.5	33.4	27.3	23.8	22.9	22.9	22.0
45°	456.7	183.9	56.3	31.7	26.4	23.8	20.2	18.5	17.6	17.6	18.5
47.5°	211.2	68.6	30.8	21.1	19.4	17.6	15.8	15.0	15.0	15.0	15.8
50°	76.6	29.9	19.4	15.0	14.1	13.2	12.3	11.4	11.4	12.3	12.3
52.5°	29.0	18.5	14.1	11.4	10.6	10.6	9.7	9.7	9.7	9.7	9.7
55°	17.6	13.2	10.6	8.8	8.8	7.9	7.9	7.9	7.9	7.9	7.9
57.5°	11.4	9.7	7.9	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
60°	8.8	7.0	6.2	6.2	6.2	6.2	6.2	7.0	7.0	7.0	7.0
62.5°	7.0	6.2	6.2	6.2	6.2	6.2	6.2	6.2	7.0	7.0	7.0
65°	6.2	6.2	6.2	6.2	6.2	6.2	6.2	7.0	7.0	7.0	7.9
67.5°	5.3	5.3	5.3	5.3	5.3	6.2	6.2	6.2	7.0	7.0	7.0
70°	4.4	4.4	5.3	5.3	5.3	6.2	6.2	6.2	7.0	7.0	7.0
72.5°	4.4	5.3	5.3	5.3	5.3	6.2	6.2	6.2	7.0	7.0	7.0
75°	4.4	5.3	5.3	5.3	6.2	6.2	6.2	6.2	7.0	7.0	7.0
77.5°	4.4	5.3	5.3	5.3	6.2	6.2	6.2	7.0	7.0	7.0	7.9
80°	4.4	5.3	5.3	6.2	6.2	6.2	6.2	7.0	7.0	7.0	7.9
82.5°	4.4	5.3	5.3	6.2	6.2	6.2	7.0	7.0	7.0	7.9	7.9
85°	4.4	5.3	5.3	6.2	6.2	6.2	7.0	7.0	7.0	7.0	7.9
87.5°	4.4	5.3	5.3	6.2	6.2	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°	627.5	627.5	627.5	627.5	627.5	627.5	627.5	627.5	627.5	627.5	627.5
2.5°	542.1	506.0	480.5	457.6	448.8	428.6	406.6	381.1	359.9	358.2	340.6
5°	449.7	399.5	363.5	340.6	329.1	308.0	282.5	265.8	242.0	235.0	217.4
7.5°	363.5	316.8	283.4	262.3	249.1	223.5	194.5	176.0	156.6	141.7	122.3
10°	295.7	250.8	214.7	193.6	180.4	153.1	123.2	102.1	84.5	81.0	79.2
12.5°	237.6	191.9	155.8	132.9	118.8	93.3	85.4	81.8	79.2	76.6	76.6
15°	184.8	138.2	99.4	90.6	88.0	85.4	83.6	81.8	80.1	79.2	80.1
17.5°	134.6	97.7	93.3	92.4	90.6	90.6	92.4	93.3	95.0	96.8	99.4
20°	118.8	119.7	129.4	136.4	133.8	147.0	165.4	180.4	216.5	238.5	268.4
22.5°	213.0	244.7	289.5	316.8	331.8	375.8	424.2	497.2	534.2	587.0	634.5
25°	364.3	401.3	440.0	450.6	458.5	462.9	456.7	423.3	415.4	400.4	396.0
27.5°	272.8	255.2	261.4	264.0	261.4	257.9	247.3	228.8	224.4	217.4	219.1
30°	161.0	155.8	162.8	161.9	161.9	161.9	158.4	143.4	136.4	128.5	123.2
32.5°	118.8	109.1	101.2	94.2	91.5	87.1	84.5	78.3	75.7	72.2	72.2
35°	59.0	56.3	56.3	54.6	53.7	54.6	54.6	51.9	50.2	49.3	49.3
37.5°	38.7	38.7	39.6	38.7	38.7	38.7	38.7	37.8	37.0	36.1	36.1
40°	29.0	29.0	29.9	29.9	29.0	29.0	29.0	28.2	28.2	28.2	28.2
42.5°	22.9	22.9	22.9	22.9	22.0	22.9	22.9	22.9	22.0	22.0	21.1
45°	19.4	18.5	18.5	18.5	18.5	18.5	19.4	18.5	18.5	17.6	17.6
47.5°	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.0	15.0
50°	12.3	12.3	12.3	12.3	12.3	11.4	11.4	10.6	10.6	9.7	9.7
52.5°	9.7	9.7	8.8	8.8	8.8	8.8	8.8	8.8	7.9	7.9	7.9
55°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.0	6.2	6.2
57.5°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.2	6.2	5.3
60°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.2	5.3	5.3	5.3
62.5°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.2	5.3	5.3	4.4
65°	7.9	7.9	7.9	7.9	7.0	7.0	7.0	6.2	6.2	5.3	5.3
67.5°	7.9	7.9	7.9	7.9	7.9	7.0	7.0	7.0	6.2	6.2	5.3
70°	7.9	7.9	7.9	7.9	7.9	7.0	7.0	7.0	6.2	6.2	5.3
72.5°	7.9	7.9	7.9	7.9	7.9	7.0	7.0	7.0	6.2	6.2	5.3
75°	7.9	7.9	7.9	7.9	7.9	7.0	7.0	7.0	6.2	6.2	5.3
77.5°	7.9	7.9	7.9	7.9	7.9	7.0	7.0	7.0	6.2	6.2	5.3
80°	7.9	7.9	7.9	7.9	7.9	7.0	7.0	7.0	6.2	6.2	5.3
82.5°	7.9	7.9	7.9	7.9	7.9	7.0	7.0	7.0	6.2	6.2	5.3
85°	7.9	7.9	7.0	7.0	7.0	7.0	7.0	6.2	5.3	5.3	4.4
87.5°	7.0	7.0	7.0	7.0	7.0	6.2	6.2	5.3	4.4	4.4	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



TEST NUMBER: P179675

CATALOG NUMBER: LDA6A45940D010TE LARH30NF 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	627.5	627.5	627.5	627.5	627.5	627.5	627.5	627.5
2.5°	337.1	324.7	322.1	325.6	311.5	311.5	311.5	317.7
5°	210.3	198.0	194.5	195.4	183.9	176.0	180.4	183.9
7.5°	114.4	101.2	96.8	96.8	85.4	81.0	81.8	83.6
10°	76.6	74.8	74.8	73.9	72.2	71.3	72.2	72.2
12.5°	73.9	73.0	73.0	72.2	72.2	71.3	71.3	72.2
15°	77.4	77.4	77.4	76.6	76.6	75.7	77.4	77.4
17.5°	98.6	100.3	103.8	105.6	109.1	105.6	111.8	110.9
20°	289.5	318.6	372.3	392.5	450.6	422.4	483.1	475.2
22.5°	655.6	676.8	685.6	690.0	690.8	719.0	723.4	733.1
25°	387.2	381.9	377.5	377.5	361.7	380.2	376.7	379.3
27.5°	206.8	205.1	200.7	202.4	194.5	200.7	202.4	202.4
30°	117.0	113.5	110.0	110.0	103.0	106.5	105.6	105.6
32.5°	67.8	66.0	64.2	63.4	61.6	61.6	60.7	60.7
35°	46.6	45.8	44.9	44.0	42.2	41.4	41.4	41.4
37.5°	34.3	33.4	32.6	32.6	31.7	29.9	29.9	29.9
40°	26.4	25.5	24.6	24.6	23.8	22.0	22.0	22.0
42.5°	20.2	19.4	18.5	17.6	17.6	16.7	15.8	15.8
45°	16.7	16.7	15.8	15.8	15.0	15.0	15.0	15.0
47.5°	14.1	14.1	13.2	13.2	13.2	12.3	12.3	11.4
50°	8.8	7.9	7.9	7.0	7.0	6.2	6.2	6.2
52.5°	7.0	6.2	6.2	5.3	5.3	4.4	4.4	4.4
55°	5.3	5.3	4.4	4.4	4.4	3.5	3.5	3.5
57.5°	4.4	4.4	3.5	3.5	3.5	2.6	2.6	2.6
60°	4.4	3.5	3.5	2.6	2.6	2.6	1.8	1.8
62.5°	4.4	3.5	3.5	2.6	2.6	1.8	1.8	1.8
65°	4.4	3.5	3.5	2.6	2.6	2.6	2.6	1.8
67.5°	4.4	4.4	3.5	3.5	3.5	2.6	2.6	2.6
70°	5.3	4.4	4.4	3.5	3.5	3.5	3.5	2.6
72.5°	5.3	4.4	4.4	4.4	3.5	3.5	3.5	3.5
75°	5.3	4.4	4.4	4.4	3.5	3.5	3.5	3.5
77.5°	5.3	4.4	4.4	4.4	3.5	3.5	3.5	3.5
80°	5.3	4.4	4.4	4.4	3.5	3.5	3.5	3.5
82.5°	4.4	4.4	4.4	3.5	3.5	3.5	3.5	3.5
85°	3.5	3.5	3.5	2.6	2.6	2.6	2.6	1.8
87.5°	2.6	2.6	1.8	1.8	0.9	0.9	0.9	0.9
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)