

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: P179931

Luminaire Tested: **LDA6A55940D010TE LARH30NF 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179931
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26690)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A55940D010TE 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: 4467.0 lumens
Efficiency: N/A
Efficacy: 73.2 lumens/watt
Spacing Criteria (0/90/45): 2.55 / 0.46 / 1.37
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

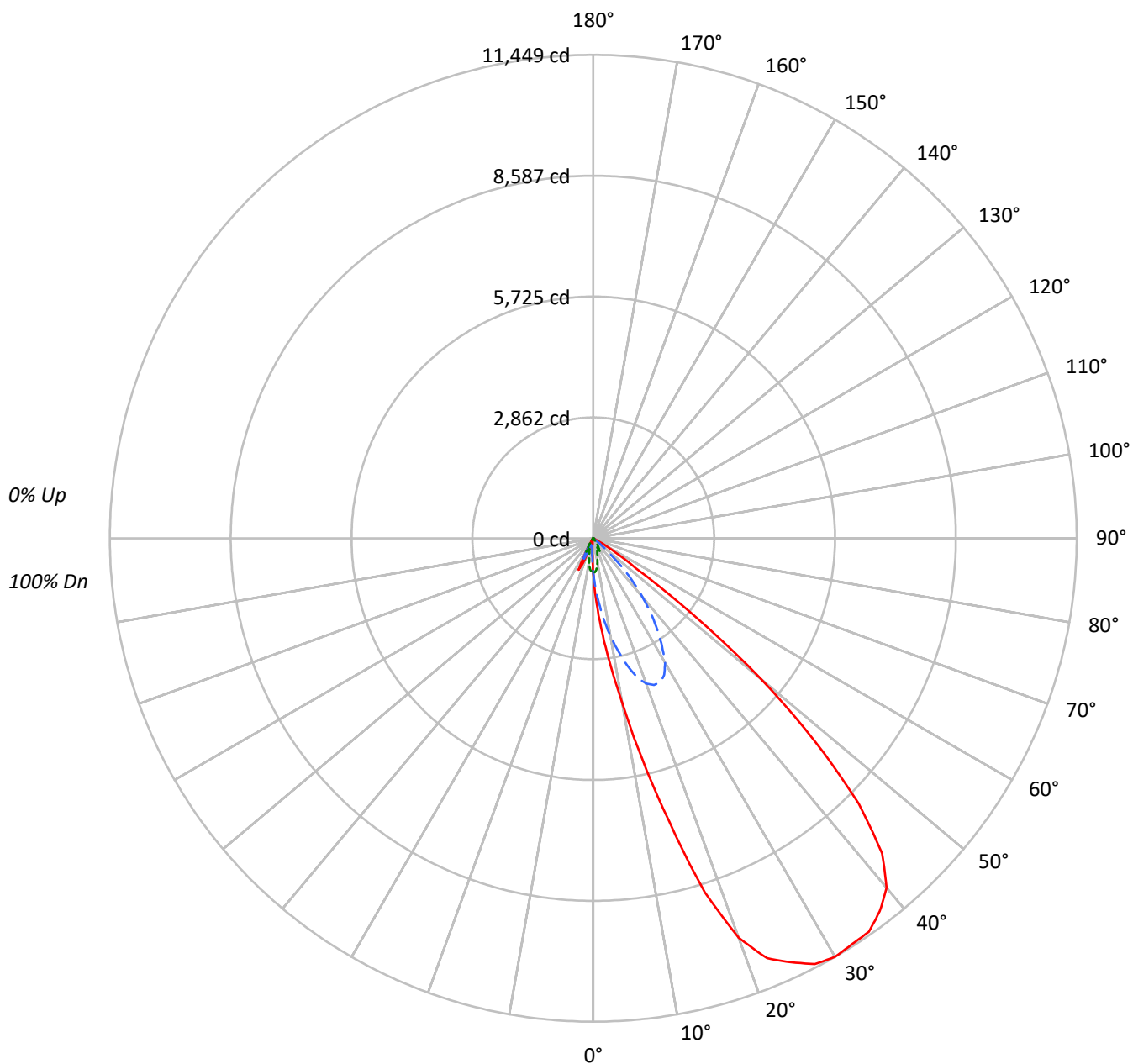
Input Watts (W): 61
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20							
RC	80				70				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	89	83	78	86	81	77	83	79	76	81	77	75	73						
4	91	82	75	70	89	81	74	69	78	73	68	76	71	68	74	70	67	65						
5	85	74	67	62	83	73	67	62	72	66	61	70	64	60	68	63	60	58						
6	79	68	60	55	77	67	60	55	65	59	55	64	58	54	62	58	54	52						
7	74	62	55	49	72	61	54	49	60	54	49	59	53	49	57	52	48	47						
8	69	57	49	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	43	39	38						
10	60	48	41	36	59	48	41	36	47	40	36	46	40	36	45	40	36	34						

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	45007	45007	45007
5°	116200	41718	13042
10°	220437	31830	4381
15°	394162	20693	4364
20°	587322	14077	7957
25°	670146	17559	49981
30°	724732	14667	14945
35°	761290	7141	4678
40°	773327	2562	2376
45°	688994	1698	1427
50°	442501	1194	972
55°	116498	832	497
60°	25985	866	384
65°	2491	1025	454
70°	833	1266	561
75°	191	1673	932
80°	0	2747	1389
85°	0	4969	2201



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	99.7	2.2
10°-20°	520.4	11.6
20°-30°	1221.0	27.3
30°-40°	1404.4	31.4
40°-50°	997.6	22.3
50°-60°	202.8	4.5
60°-70°	10.2	0.2
70°-80°	6.0	0.1
80°-90°	5.0	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°	1841.0	41.2
0°-40°	3245.4	72.7
0°-60°	4445.8	99.5
0°-90°	4467.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4467.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	821	821	821	821	821	
5°	2112	1528	758	303	237	257
15°	6945	3122	365	82	77	2083
25°	11079	3761	290	634	826	5106
35°	11376	2641	107	79	70	7067
45°	8887	939	22	24	18	6549
55°	1219	24	9	9	5	1644
65°	19	7	8	7	4	46
75°	1	4	8	7	4	2
85°	0	4	8	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°	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0
2.5°	1414.7	1371.9	1350.9	1350.0	1288.8	1308.9	1288.8	1273.1	1216.2	1192.6	1153.3
5°	2111.6	2059.1	2017.2	1998.8	1893.9	1871.2	1860.7	1807.3	1688.4	1619.3	1527.5
7.5°	2933.5	2878.4	2809.3	2754.3	2602.1	2559.3	2531.3	2439.5	2263.7	2124.7	1953.3
10°	3960.0	3927.7	3815.7	3714.3	3483.5	3394.3	3310.4	3096.1	2866.2	2587.3	2366.0
12.5°	5342.4	5266.3	5067.0	4864.1	4502.1	4369.2	4230.2	3887.4	3536.0	3098.8	2733.3
15°	6945.1	6880.4	6573.5	6243.0	5728.0	5509.4	5291.7	4752.2	4211.8	3648.7	3122.4
17.5°	8790.0	8667.6	8362.5	7803.7	7083.3	6739.6	6333.9	5646.7	4866.7	4101.7	3447.6
20°	10067.5	9994.9	9737.0	9201.0	8380.8	7927.0	7423.4	6480.0	5413.2	4464.5	3661.0
22.5°	10766.1	10693.5	10500.3	10027.3	9354.9	8899.3	8314.4	7154.1	5825.9	4708.5	3761.5
25°	11079.1	11031.9	10926.1	10540.5	9918.0	9507.9	8954.4	7620.1	6083.9	4819.5	3760.7
27.5°	11368.6	11380.8	11119.4	10802.0	10228.4	9816.5	9291.9	7830.0	6134.6	4763.6	3640.0
30°	11449.0	11418.4	11303.9	10857.0	10322.8	9874.3	9312.0	7718.9	5937.0	4516.1	3400.4
32.5°	11399.2	11400.0	11292.5	10817.7	10189.9	9688.0	9055.8	7321.1	5552.2	4127.9	3027.9
35°	11375.6	11367.7	11088.8	10671.7	9874.3	9284.1	8487.5	6682.8	5018.9	3632.1	2640.6
37.5°	11141.2	11094.0	10892.9	10327.2	9284.1	8529.5	7671.7	5902.0	4362.2	3116.3	2243.6
40°	10806.3	10746.9	10419.9	9608.4	8275.0	7433.0	6580.5	5018.0	3675.0	2603.0	1801.2
42.5°	10120.0	10022.0	9526.3	8449.9	6975.7	6192.3	5485.8	4133.1	3004.3	2113.4	1383.3
45°	8887.1	8727.1	8040.7	6916.3	5630.9	5016.3	4419.1	3313.0	2405.4	1573.9	939.1
47.5°	7135.7	6960.9	6338.3	5435.1	4408.6	3910.2	3403.0	2439.5	1627.2	917.2	471.3
50°	5188.5	5067.8	4517.9	3756.3	2915.1	2497.2	2108.1	1360.5	780.8	443.3	193.2
52.5°	2989.5	2902.9	2519.9	1976.9	1434.0	1200.5	965.3	593.7	397.8	175.7	62.1
55°	1218.9	1169.0	1001.2	848.1	636.5	550.0	459.0	296.4	133.8	42.0	24.5
57.5°	596.3	590.2	492.3	394.3	290.3	234.3	176.6	59.5	32.4	21.0	15.7
60°	237.0	228.2	156.5	90.9	50.7	41.1	35.0	24.5	18.4	14.0	11.4
62.5°	41.1	40.2	34.1	28.9	23.6	21.0	19.2	14.9	12.2	9.6	8.7
65°	19.2	19.2	17.5	15.7	13.1	12.2	11.4	9.6	7.9	7.0	7.0
67.5°	9.6	9.6	8.7	7.9	7.0	7.0	6.1	6.1	5.2	5.2	5.2
70°	5.2	5.2	5.2	4.4	4.4	4.4	4.4	4.4	3.5	4.4	4.4
72.5°	3.5	3.5	3.5	2.6	1.7	2.6	2.6	2.6	3.5	4.4	4.4
75°	0.9	0.9	0.9	1.7	1.7	1.7	2.6	2.6	3.5	4.4	4.4
77.5°	0.9	0.9	0.9	0.9	1.7	1.7	1.7	2.6	3.5	4.4	4.4
80°	0.0	0.9	0.9	0.9	1.7	1.7	1.7	2.6	3.5	4.4	4.4
82.5°	0.0	0.0	0.9	0.9	1.7	1.7	1.7	2.6	3.5	4.4	4.4
85°	0.0	0.0	0.9	0.9	1.7	1.7	1.7	2.6	3.5	4.4	4.4
87.5°	0.0	0.0	0.9	0.9	1.7	1.7	1.7	2.6	3.5	4.4	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°	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0
2.5°	1135.8	1090.3	1060.6	1008.1	986.3	976.7	928.6	882.2	837.6	805.3	755.5
5°	1457.6	1385.0	1274.0	1169.9	1124.4	1095.6	1001.2	913.7	830.7	758.1	671.5
7.5°	1803.8	1654.3	1480.3	1313.3	1234.6	1182.1	1036.1	908.5	789.6	679.4	561.3
10°	2136.1	1900.9	1647.3	1408.6	1301.9	1223.2	1032.6	869.1	714.4	571.8	445.1
12.5°	2419.4	2115.1	1778.5	1468.9	1329.9	1229.4	1000.3	800.9	612.9	459.9	349.7
15°	2658.1	2279.5	1865.0	1489.1	1322.0	1203.1	937.3	707.4	501.9	364.6	282.4
17.5°	2826.0	2359.0	1885.1	1455.0	1267.0	1129.7	842.0	587.6	394.3	294.7	223.0
20°	2923.9	2369.5	1836.2	1371.9	1170.8	1025.6	722.2	461.7	320.0	241.3	173.1
22.5°	2938.8	2318.0	1740.0	1260.0	1059.7	919.8	601.6	386.5	291.2	225.6	169.6
25°	2867.1	2215.7	1615.0	1150.7	959.2	815.8	520.2	390.8	327.0	290.3	301.7
27.5°	2728.0	2046.9	1471.6	1038.8	854.3	709.1	491.4	409.2	356.7	362.9	383.8
30°	2514.7	1809.1	1265.2	849.0	654.0	540.4	390.8	294.7	244.8	231.7	232.6
32.5°	2200.8	1510.9	993.3	589.3	439.8	364.6	247.4	164.4	165.3	153.0	152.1
35°	1842.3	1216.2	743.2	395.2	304.3	253.6	146.0	115.4	111.0	106.7	100.6
37.5°	1487.3	939.9	494.9	270.2	194.1	140.8	73.4	60.3	56.0	52.5	52.5
40°	1132.3	657.5	306.0	141.6	78.7	57.7	43.7	36.7	35.8	35.8	35.0
42.5°	821.9	388.2	166.1	56.0	43.7	38.5	30.6	27.1	27.1	27.1	27.1
45°	437.2	197.6	63.8	35.0	28.9	27.1	22.7	21.0	21.0	21.9	21.9
47.5°	202.0	74.3	32.4	23.6	20.1	20.1	17.5	16.6	16.6	17.5	17.5
50°	72.6	30.6	21.0	16.6	14.9	15.7	14.0	13.1	14.0	14.0	14.0
52.5°	28.0	19.2	14.9	13.1	11.4	12.2	10.5	10.5	11.4	11.4	11.4
55°	17.5	14.0	11.4	9.6	8.7	9.6	8.7	8.7	8.7	8.7	8.7
57.5°	12.2	10.5	8.7	7.9	7.0	7.9	7.9	7.9	7.9	7.9	7.9
60°	9.6	7.9	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.9	7.9
62.5°	7.9	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.9	7.9	7.9
65°	7.0	6.1	7.0	7.0	6.1	7.0	7.0	7.0	7.9	7.9	8.7
67.5°	5.2	5.2	5.2	6.1	6.1	6.1	7.0	7.0	7.9	7.9	7.9
70°	5.2	5.2	6.1	6.1	6.1	6.1	7.0	7.0	7.9	7.9	7.9
72.5°	5.2	5.2	6.1	6.1	6.1	7.0	7.0	7.0	7.9	7.9	7.9
75°	5.2	5.2	6.1	6.1	6.1	7.0	7.0	7.0	7.9	7.9	7.9
77.5°	5.2	5.2	6.1	6.1	6.1	7.0	7.0	7.9	7.9	7.9	7.9
80°	5.2	6.1	6.1	7.0	7.0	7.0	7.0	7.9	7.9	8.7	8.7
82.5°	5.2	6.1	6.1	7.0	7.0	7.0	7.0	7.9	7.9	8.7	8.7
85°	5.2	6.1	6.1	7.0	7.0	7.0	7.0	7.9	7.9	7.9	7.9
87.5°	5.2	6.1	6.1	7.0	7.0	7.0	7.0	7.0	7.9	7.9	7.9
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0
2.5°	722.2	679.4	636.5	615.6	597.2	571.0	537.7	510.6	481.8	466.9	432.8
5°	603.3	529.9	467.8	438.1	415.3	383.8	349.7	325.3	303.4	291.2	269.3
7.5°	466.9	397.0	342.8	320.0	303.4	271.9	246.6	221.2	198.5	181.9	160.0
10°	361.1	306.9	262.3	240.5	222.1	188.9	158.3	134.7	110.2	93.6	86.6
12.5°	286.8	236.1	190.6	168.8	149.5	115.4	92.7	88.3	83.9	82.2	79.6
15°	220.3	174.0	125.9	104.0	96.2	91.8	86.6	85.7	82.2	82.2	79.6
17.5°	165.3	113.7	96.2	94.4	93.6	91.8	89.2	88.3	87.4	87.4	86.6
20°	118.9	110.2	107.5	109.3	110.2	111.9	111.0	111.0	114.5	122.4	120.7
22.5°	167.0	181.0	195.9	201.1	220.3	239.6	257.1	278.9	330.5	390.0	404.0
25°	330.5	372.5	411.0	431.9	463.4	506.3	547.4	598.1	633.9	663.6	697.7
27.5°	411.0	426.7	420.6	423.2	419.7	413.6	415.3	425.8	420.6	404.8	411.0
30°	243.1	255.3	248.3	251.8	242.2	242.2	239.6	244.8	241.3	235.2	233.5
32.5°	158.3	165.3	164.4	164.4	160.9	159.1	153.0	151.3	145.1	133.8	131.2
35°	95.3	90.9	86.6	83.9	82.2	82.2	81.3	81.3	78.7	76.1	75.2
37.5°	51.6	52.5	52.5	52.5	52.5	54.2	53.3	53.3	53.3	51.6	51.6
40°	35.8	37.6	37.6	37.6	38.5	38.5	38.5	39.3	38.5	38.5	38.5
42.5°	28.0	28.9	28.0	28.0	28.9	28.9	28.9	29.7	29.7	29.7	28.9
45°	22.7	22.7	21.9	22.7	22.7	23.6	23.6	23.6	23.6	22.7	22.7
47.5°	18.4	18.4	18.4	18.4	19.2	19.2	19.2	19.2	19.2	19.2	19.2
50°	14.9	14.9	14.9	15.7	15.7	15.7	14.9	15.7	15.7	15.7	14.9
52.5°	11.4	11.4	11.4	11.4	11.4	10.5	10.5	10.5	10.5	10.5	9.6
55°	8.7	8.7	8.7	8.7	8.7	9.6	8.7	9.6	8.7	8.7	7.9
57.5°	7.9	7.9	7.9	7.9	8.7	8.7	7.9	7.9	7.9	7.0	7.0
60°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.0	6.1	6.1
62.5°	8.7	8.7	7.9	7.9	7.9	7.9	7.0	7.0	7.0	6.1	6.1
65°	8.7	8.7	7.9	8.7	8.7	7.9	7.9	7.0	7.0	6.1	6.1
67.5°	8.7	8.7	8.7	8.7	8.7	8.7	7.9	7.9	7.0	7.0	6.1
70°	8.7	8.7	8.7	8.7	8.7	8.7	7.9	7.9	7.0	7.0	6.1
72.5°	8.7	8.7	8.7	8.7	8.7	8.7	7.9	7.9	7.9	7.0	6.1
75°	8.7	8.7	8.7	8.7	8.7	7.9	7.9	7.9	7.0	7.0	6.1
77.5°	8.7	8.7	8.7	8.7	8.7	7.9	7.9	7.9	7.0	7.0	6.1
80°	8.7	8.7	8.7	8.7	8.7	8.7	7.9	7.9	7.0	7.0	6.1
82.5°	8.7	8.7	8.7	8.7	8.7	7.9	7.9	7.9	7.0	7.0	6.1
85°	8.7	7.9	7.9	7.9	7.9	7.9	7.0	7.0	6.1	6.1	5.2
87.5°	7.9	7.9	7.9	7.9	7.9	7.0	7.0	6.1	5.2	4.4	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



TEST NUMBER: P179931

CATALOG NUMBER: LDA6A55940D010TE LARH30NF 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	821.0	821.0	821.0	821.0	821.0	821.0	821.0	821.0
2.5°	432.8	424.9	421.4	415.3	410.1	407.5	397.8	409.2
5°	264.9	255.3	252.7	247.4	241.3	237.8	230.8	237.0
7.5°	151.3	139.9	134.7	130.3	124.2	118.9	112.8	116.3
10°	84.8	81.3	82.2	79.6	78.7	77.8	76.9	78.7
12.5°	78.7	76.1	76.9	75.2	74.3	74.3	73.4	74.3
15°	79.6	76.9	78.7	76.9	76.1	76.1	75.2	76.9
17.5°	86.6	84.8	86.6	84.8	85.7	84.8	85.7	86.6
20°	121.5	124.2	129.4	125.9	128.5	132.0	136.4	136.4
22.5°	427.6	483.5	490.5	518.5	590.2	587.6	635.7	637.4
25°	746.7	750.2	781.7	771.2	772.1	808.8	805.3	826.3
27.5°	429.3	428.4	434.6	423.2	426.7	429.3	419.7	431.1
30°	239.6	235.2	237.8	231.7	231.7	233.5	230.8	236.1
32.5°	132.9	129.4	129.4	125.0	124.2	123.3	120.7	123.3
35°	76.1	73.4	74.3	72.6	70.8	69.9	69.1	69.9
37.5°	52.5	50.7	51.6	49.8	48.1	47.2	46.3	47.2
40°	38.5	37.6	37.6	35.8	35.0	34.1	33.2	33.2
42.5°	28.9	28.0	28.0	26.2	25.4	24.5	23.6	24.5
45°	21.9	21.0	21.0	20.1	19.2	18.4	18.4	18.4
47.5°	19.2	18.4	19.2	18.4	17.5	17.5	17.5	17.5
50°	14.9	14.9	14.9	14.0	13.1	13.1	12.2	11.4
52.5°	9.6	8.7	8.7	7.9	7.9	7.0	7.0	7.0
55°	7.9	7.0	7.0	6.1	6.1	5.2	5.2	5.2
57.5°	6.1	6.1	5.2	5.2	4.4	4.4	4.4	4.4
60°	5.2	5.2	5.2	4.4	4.4	3.5	3.5	3.5
62.5°	5.2	4.4	4.4	4.4	3.5	3.5	3.5	3.5
65°	5.2	4.4	4.4	4.4	3.5	3.5	3.5	3.5
67.5°	5.2	4.4	4.4	4.4	3.5	3.5	3.5	3.5
70°	6.1	5.2	5.2	4.4	4.4	4.4	3.5	3.5
72.5°	6.1	5.2	5.2	5.2	4.4	4.4	4.4	4.4
75°	6.1	5.2	5.2	5.2	4.4	4.4	4.4	4.4
77.5°	6.1	5.2	5.2	5.2	4.4	4.4	4.4	4.4
80°	6.1	5.2	5.2	5.2	4.4	4.4	4.4	4.4
82.5°	5.2	5.2	5.2	4.4	4.4	4.4	4.4	4.4
85°	5.2	4.4	4.4	4.4	3.5	3.5	3.5	3.5
87.5°	3.5	3.5	2.6	2.6	2.6	1.7	1.7	1.7
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)