

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: P179668

Luminaire Tested: **LDA6A45827D010TE LARH30NF 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179668
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: LDA6A45827D010TE LARH30NF 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 30° Narrow Flood, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4120.9 lumens
Efficiency: N/A
Efficacy: 77.8 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

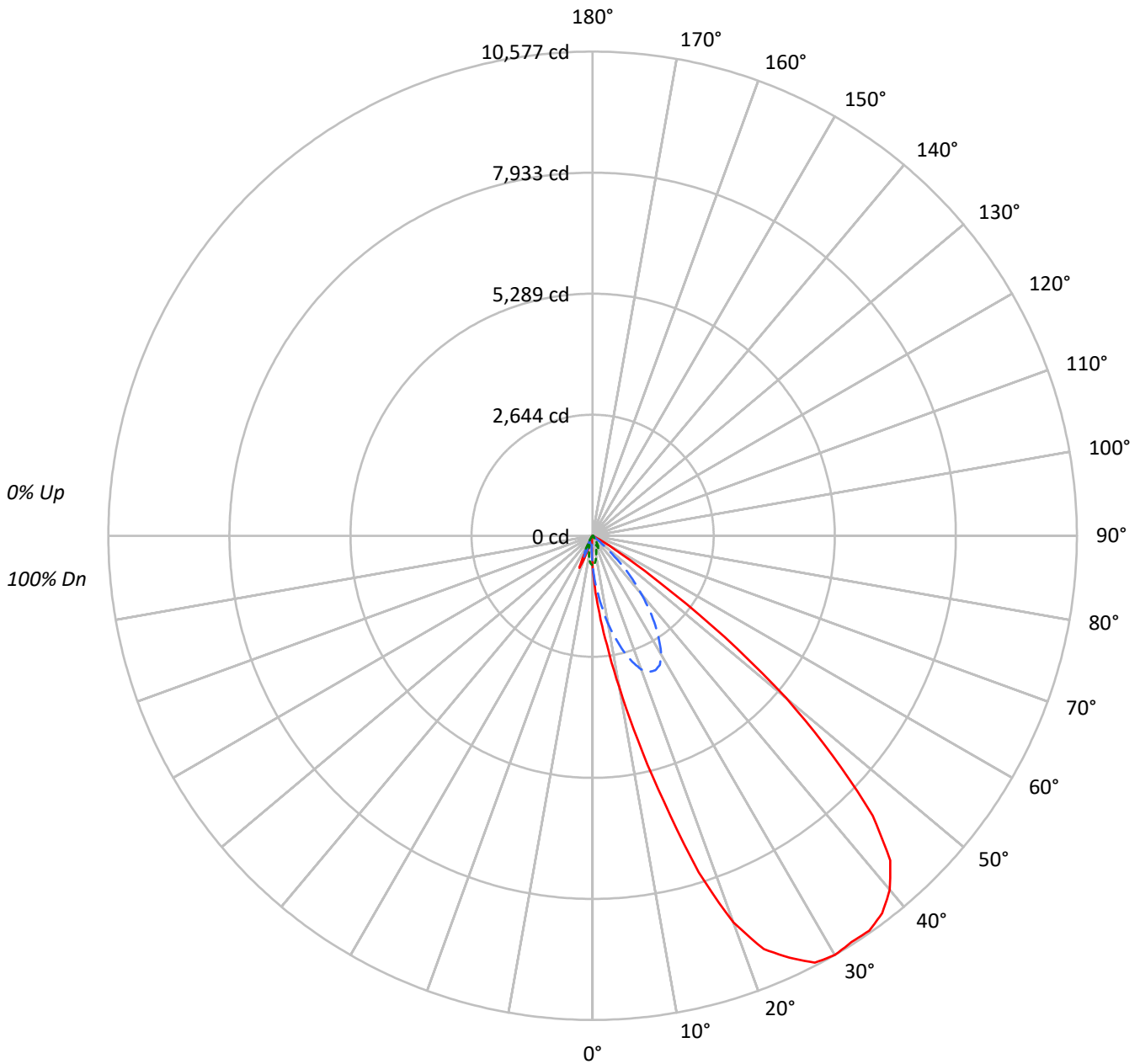
Input Watts (W): 53
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P179668

CATALOG NUMBER: LDA6A45827D010TE LARH30NF 6LAL1LI 30°

Luminous Intensity Polar Plot





TEST NUMBER: P179668

CATALOG NUMBER: LDA6A45827D010TE LARH30NF 6LAL1LI 30°

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°	35595	35595	35595
5°	93809	32473	10472
10°	187310	24888	4158
15°	341007	17469	4546
20°	524357	12537	28691
25°	614945	18727	23741
30°	669546	11761	6919
35°	704693	4879	2864
40°	722590	2154	1632
45°	670775	1411	1202
50°	470492	1083	546
55°	172075	784	344
60°	36346	800	197
65°	3074	947	233
70°	1026	1170	433
75°	191	1546	763
80°	284	2305	1137
85°	0	4592	1132



TEST NUMBER: P179668

CATALOG NUMBER: LDA6A45827D010TE LARH30NF 6LAL1LI 30°

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.7	2.0
10°-20°	449.2	10.9
20°-30°	1085.7	26.3
30°-40°	1276.4	31.0
40°-50°	964.2	23.4
50°-60°	241.9	5.9
60°-70°	11.7	0.3
70°-80°	5.6	0.1
80°-90°	4.6	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°	1616.6	39.2
0°-40°	2893.0	70.2
0°-60°	4099.1	99.5
0°-90°	4120.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4120.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	649	649	649	649	649	
5°	1705	1238	590	250	190	212
15°	6008	2606	308	83	80	1819
25°	10166	3243	310	430	392	4677
35°	10530	2390	73	52	43	6557
45°	8652	939	18	19	16	6375
55°	1800	26	8	7	4	1992
65°	24	6	7	6	2	64
75°	1	5	7	6	4	2
85°	0	5	7	6	2	0
90°	0	0	0	0	0	



TEST NUMBER: P179668

CATALOG NUMBER: LDA6A45827D010TE LARH30NF 6LAL1LI 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	649.3	649.3	649.3	649.3	649.3	649.3	649.3	649.3	649.3	649.3	649.3
2.5°	1132.9	1114.6	1101.9	1080.0	1069.1	1073.7	1050.9	1019.9	1010.8	983.5	936.2
5°	1704.7	1685.6	1655.6	1609.1	1574.5	1569.1	1524.4	1449.8	1402.4	1332.3	1237.6
7.5°	2406.9	2390.5	2340.4	2271.2	2212.9	2191.0	2125.5	1994.3	1889.6	1749.4	1586.4
10°	3364.9	3301.1	3207.3	3067.1	2933.2	2871.3	2755.6	2538.9	2368.6	2176.5	1955.2
12.5°	4566.0	4453.1	4301.0	4090.7	3860.3	3744.6	3560.7	3229.2	2931.4	2601.7	2279.4
15°	6008.5	5894.7	5674.3	5348.3	4977.6	4791.9	4520.5	3997.8	3554.3	3070.7	2606.3
17.5°	7710.5	7524.7	7231.5	6758.9	6185.2	5893.8	5509.5	4785.5	4124.4	3493.3	2892.2
20°	8988.2	8852.5	8574.7	8080.2	7396.3	7021.1	6504.8	5507.6	4654.4	3831.1	3109.0
22.5°	9772.2	9650.2	9395.2	8981.8	8353.4	7937.3	7355.4	6141.5	5066.0	4065.2	3217.3
25°	10166.5	10079.1	9901.5	9540.9	8991.8	8573.8	7985.5	6610.4	5344.6	4191.7	3242.8
27.5°	10513.5	10366.9	10078.2	9832.3	9346.0	8920.8	8363.4	6843.6	5442.1	4177.2	3178.2
30°	10577.2	10493.5	10265.8	9914.3	9461.7	9031.9	8444.5	6809.9	5331.9	4007.8	3002.4
32.5°	10522.6	10449.8	10277.6	9894.3	9387.9	8913.5	8268.7	6533.0	5008.6	3693.6	2705.6
35°	10529.9	10414.2	10112.8	9785.0	9153.0	8595.7	7838.9	6026.7	4556.0	3285.6	2389.6
37.5°	10390.6	10200.2	9951.6	9529.1	8675.8	7984.6	7119.5	5373.8	4011.4	2869.5	2020.7
40°	10097.3	9952.5	9622.0	8972.7	7862.6	6993.8	6194.3	4624.3	3416.8	2415.1	1647.4
42.5°	9618.3	9445.3	8983.6	8004.6	6685.1	5927.4	5208.0	3857.5	2832.1	1975.2	1293.1
45°	8652.1	8388.0	7784.3	6616.8	5491.2	4848.3	4261.9	3145.4	2295.8	1545.4	938.9
47.5°	7108.6	6883.6	6245.3	5270.9	4384.8	3887.6	3387.6	2480.6	1708.4	993.5	482.6
50°	5516.7	5339.2	4852.0	3996.9	3257.4	2774.8	2381.4	1583.6	910.7	457.1	216.7
52.5°	3629.9	3517.9	3099.9	2495.2	1870.5	1526.3	1239.4	687.5	424.4	203.1	74.7
55°	1800.4	1656.5	1457.0	1080.0	781.3	632.0	536.4	338.8	175.8	58.3	26.4
57.5°	734.0	702.1	632.0	488.1	375.2	316.9	253.2	105.6	39.2	23.7	16.4
60°	331.5	316.9	275.0	193.1	104.7	64.7	45.5	29.1	20.0	14.6	10.9
62.5°	58.3	53.7	47.4	36.4	29.1	25.5	21.9	16.4	12.7	10.0	8.2
65°	23.7	23.7	21.9	19.1	15.5	14.6	12.7	10.0	8.2	7.3	6.4
67.5°	12.7	11.8	11.8	10.0	9.1	8.2	7.3	6.4	6.4	5.5	5.5
70°	6.4	6.4	6.4	5.5	4.6	4.6	4.6	4.6	4.6	4.6	4.6
72.5°	3.6	3.6	3.6	3.6	3.6	3.6	2.7	2.7	2.7	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	4.6
77.5°	0.9	0.9	0.9	0.9	1.8	1.8	1.8	2.7	3.6	3.6	4.6
80°	0.9	0.9	0.9	0.9	1.8	1.8	1.8	2.7	3.6	3.6	4.6
82.5°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	2.7	3.6	4.6
85°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	2.7	3.6	4.6
87.5°	0.0	0.0	0.9	0.9	0.9	1.8	1.8	2.7	2.7	3.6	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: P179668

CATALOG NUMBER: LDA6A45827D010TE LARH30NF 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	649.3	649.3	649.3	649.3	649.3	649.3	649.3	649.3	649.3	649.3	649.3
2.5°	934.3	887.0	850.6	815.9	807.8	779.5	753.1	707.6	666.6	628.4	584.6
5°	1201.2	1108.3	1030.9	955.3	930.7	883.3	819.6	737.6	661.1	590.1	515.4
7.5°	1491.7	1334.1	1196.6	1069.1	1024.5	957.1	854.2	737.6	627.4	525.4	434.4
10°	1776.7	1541.7	1334.1	1150.2	1082.8	995.3	854.2	705.8	565.5	447.1	357.0
12.5°	2051.7	1729.3	1448.9	1205.7	1117.4	1008.1	831.4	650.2	487.2	370.6	295.1
15°	2266.6	1887.8	1529.9	1227.6	1117.4	990.8	778.6	572.8	408.0	307.8	240.4
17.5°	2427.8	1981.6	1557.2	1206.6	1079.1	937.1	698.5	481.7	336.0	255.0	190.3
20°	2521.6	2005.3	1529.0	1145.6	1006.3	856.0	599.2	397.0	285.0	214.9	153.9
22.5°	2543.5	1972.5	1463.4	1067.3	923.4	771.3	511.8	355.2	275.0	219.5	192.1
25°	2518.9	1906.0	1376.9	988.1	845.1	694.8	479.9	382.5	329.7	309.6	331.5
27.5°	2421.4	1782.2	1270.4	899.7	755.8	615.6	455.3	385.2	331.5	322.4	312.4
30°	2247.5	1595.5	1106.4	735.8	583.7	467.2	323.3	229.5	183.0	185.8	184.0
32.5°	1975.2	1324.1	866.0	514.5	401.6	316.0	214.0	135.7	127.5	127.5	125.7
35°	1675.6	1075.5	651.1	361.5	279.6	222.2	127.5	99.3	83.8	72.9	65.6
37.5°	1370.5	836.9	449.0	244.1	177.6	113.8	61.0	50.1	44.6	41.9	41.0
40°	1060.9	589.2	286.9	133.9	78.3	50.1	39.2	33.7	31.0	30.1	30.1
42.5°	785.0	379.7	154.8	52.8	41.9	34.6	28.2	24.6	23.7	23.7	22.8
45°	472.6	190.3	58.3	32.8	27.3	24.6	20.9	19.1	18.2	18.2	19.1
47.5°	218.6	71.0	31.9	21.9	20.0	18.2	16.4	15.5	15.5	15.5	16.4
50°	79.2	31.0	20.0	15.5	14.6	13.7	12.7	11.8	11.8	12.7	12.7
52.5°	30.1	19.1	14.6	11.8	10.9	10.9	10.0	10.0	10.0	10.0	10.0
55°	18.2	13.7	10.9	9.1	9.1	8.2	8.2	8.2	8.2	8.2	8.2
57.5°	11.8	10.0	8.2	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
60°	9.1	7.3	6.4	6.4	6.4	6.4	6.4	7.3	7.3	7.3	7.3
62.5°	7.3	6.4	6.4	6.4	6.4	6.4	6.4	6.4	7.3	7.3	7.3
65°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	7.3	7.3	7.3	8.2
67.5°	5.5	5.5	5.5	5.5	5.5	6.4	6.4	6.4	7.3	7.3	7.3
70°	4.6	4.6	5.5	5.5	5.5	6.4	6.4	6.4	7.3	7.3	7.3
72.5°	4.6	5.5	5.5	5.5	5.5	6.4	6.4	6.4	7.3	7.3	7.3
75°	4.6	5.5	5.5	5.5	6.4	6.4	6.4	6.4	7.3	7.3	7.3
77.5°	4.6	5.5	5.5	5.5	6.4	6.4	6.4	7.3	7.3	7.3	8.2
80°	4.6	5.5	5.5	6.4	6.4	6.4	6.4	7.3	7.3	7.3	8.2
82.5°	4.6	5.5	5.5	6.4	6.4	6.4	7.3	7.3	7.3	8.2	8.2
85°	4.6	5.5	5.5	6.4	6.4	6.4	7.3	7.3	7.3	7.3	8.2
87.5°	4.6	5.5	5.5	6.4	6.4	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



TEST NUMBER: P179668

CATALOG NUMBER: LDA6A45827D010TE LARH30NF 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	649.3	649.3	649.3	649.3	649.3	649.3	649.3	649.3	649.3	649.3	649.3
2.5°	561.0	523.6	497.2	473.5	464.4	443.5	420.7	394.3	372.5	370.6	352.4
5°	465.3	413.4	376.1	352.4	340.6	318.7	292.3	275.0	250.4	243.1	224.9
7.5°	376.1	327.8	293.2	271.4	257.7	231.3	201.3	182.1	162.1	146.6	126.6
10°	306.0	259.5	222.2	200.3	186.7	158.5	127.5	105.6	87.4	83.8	82.0
12.5°	245.9	198.5	161.2	137.5	122.9	96.5	88.3	84.7	82.0	79.2	79.2
15°	191.2	143.0	102.9	93.8	91.1	88.3	86.5	84.7	82.9	82.0	82.9
17.5°	139.3	101.1	96.5	95.6	93.8	93.8	95.6	96.5	98.4	100.2	102.9
20°	122.9	123.8	133.9	141.2	138.4	152.1	171.2	186.7	224.0	246.8	277.7
22.5°	220.4	253.2	299.6	327.8	343.3	388.8	438.9	514.5	552.8	607.4	656.6
25°	377.0	415.3	455.3	466.3	474.5	479.0	472.6	438.0	429.8	414.3	409.8
27.5°	282.3	264.1	270.5	273.2	270.5	266.8	255.9	236.8	232.2	224.9	226.8
30°	166.6	161.2	168.5	167.6	167.6	167.6	163.9	148.4	141.2	133.0	127.5
32.5°	122.9	112.9	104.7	97.4	94.7	90.2	87.4	81.0	78.3	74.7	74.7
35°	61.0	58.3	58.3	56.5	55.5	56.5	56.5	53.7	51.9	51.0	51.0
37.5°	40.1	40.1	41.0	40.1	40.1	40.1	40.1	39.2	38.2	37.3	37.3
40°	30.1	30.1	31.0	31.0	30.1	30.1	30.1	29.1	29.1	29.1	29.1
42.5°	23.7	23.7	23.7	23.7	22.8	23.7	23.7	23.7	22.8	22.8	21.9
45°	20.0	19.1	19.1	19.1	19.1	19.1	20.0	19.1	19.1	18.2	18.2
47.5°	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	15.5	15.5
50°	12.7	12.7	12.7	12.7	12.7	11.8	11.8	10.9	10.9	10.0	10.0
52.5°	10.0	10.0	9.1	9.1	9.1	9.1	9.1	9.1	8.2	8.2	8.2
55°	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	7.3	6.4	6.4
57.5°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	6.4	6.4	5.5
60°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	6.4	5.5	5.5	5.5
62.5°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	6.4	5.5	5.5	4.6
65°	8.2	8.2	8.2	8.2	7.3	7.3	7.3	6.4	6.4	5.5	5.5
67.5°	8.2	8.2	8.2	8.2	8.2	7.3	7.3	7.3	6.4	6.4	5.5
70°	8.2	8.2	8.2	8.2	8.2	7.3	7.3	7.3	6.4	6.4	5.5
72.5°	8.2	8.2	8.2	8.2	8.2	7.3	7.3	7.3	6.4	6.4	5.5
75°	8.2	8.2	8.2	8.2	8.2	7.3	7.3	7.3	6.4	6.4	5.5
77.5°	8.2	8.2	8.2	8.2	8.2	7.3	7.3	7.3	6.4	6.4	5.5
80°	8.2	8.2	8.2	8.2	8.2	7.3	7.3	7.3	6.4	6.4	5.5
82.5°	8.2	8.2	8.2	8.2	8.2	7.3	7.3	7.3	6.4	6.4	5.5
85°	8.2	8.2	7.3	7.3	7.3	7.3	7.3	6.4	5.5	5.5	4.6
87.5°	7.3	7.3	7.3	7.3	7.3	6.4	6.4	5.5	4.6	4.6	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



TEST NUMBER: P179668

CATALOG NUMBER: LDA6A45827D010TE LARH30NF 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	649.3	649.3	649.3	649.3	649.3	649.3	649.3	649.3
2.5°	348.8	336.0	333.3	336.9	322.4	322.4	322.4	328.7
5°	217.6	204.9	201.3	202.2	190.3	182.1	186.7	190.3
7.5°	118.4	104.7	100.2	100.2	88.3	83.8	84.7	86.5
10°	79.2	77.4	77.4	76.5	74.7	73.8	74.7	74.7
12.5°	76.5	75.6	75.6	74.7	74.7	73.8	73.8	74.7
15°	80.1	80.1	80.1	79.2	79.2	78.3	80.1	80.1
17.5°	102.0	103.8	107.5	109.3	112.9	109.3	115.7	114.7
20°	299.6	329.7	385.2	406.2	466.3	437.1	499.9	491.8
22.5°	678.4	700.3	709.4	714.0	714.9	744.0	748.6	758.6
25°	400.7	395.2	390.7	390.7	374.3	393.4	389.8	392.5
27.5°	214.0	212.2	207.6	209.5	201.3	207.6	209.5	209.5
30°	121.1	117.5	113.8	113.8	106.5	110.2	109.3	109.3
32.5°	70.1	68.3	66.5	65.6	63.7	63.7	62.8	62.8
35°	48.3	47.4	46.4	45.5	43.7	42.8	42.8	42.8
37.5°	35.5	34.6	33.7	33.7	32.8	31.0	31.0	31.0
40°	27.3	26.4	25.5	25.5	24.6	22.8	22.8	22.8
42.5°	20.9	20.0	19.1	18.2	18.2	17.3	16.4	16.4
45°	17.3	17.3	16.4	16.4	15.5	15.5	15.5	15.5
47.5°	14.6	14.6	13.7	13.7	13.7	12.7	12.7	11.8
50°	9.1	8.2	8.2	7.3	7.3	6.4	6.4	6.4
52.5°	7.3	6.4	6.4	5.5	5.5	4.6	4.6	4.6
55°	5.5	5.5	4.6	4.6	4.6	3.6	3.6	3.6
57.5°	4.6	4.6	3.6	3.6	3.6	2.7	2.7	2.7
60°	4.6	3.6	3.6	2.7	2.7	2.7	1.8	1.8
62.5°	4.6	3.6	3.6	2.7	2.7	1.8	1.8	1.8
65°	4.6	3.6	3.6	2.7	2.7	2.7	2.7	1.8
67.5°	4.6	4.6	3.6	3.6	3.6	2.7	2.7	2.7
70°	5.5	4.6	4.6	3.6	3.6	3.6	3.6	2.7
72.5°	5.5	4.6	4.6	4.6	3.6	3.6	3.6	3.6
75°	5.5	4.6	4.6	4.6	3.6	3.6	3.6	3.6
77.5°	5.5	4.6	4.6	4.6	3.6	3.6	3.6	3.6
80°	5.5	4.6	4.6	4.6	3.6	3.6	3.6	3.6
82.5°	4.6	4.6	4.6	3.6	3.6	3.6	3.6	3.6
85°	3.6	3.6	3.6	2.7	2.7	2.7	2.7	1.8
87.5°	2.7	2.7	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)