

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: P179644

Luminaire Tested: **LDA6A45827D010TE LARH30NF 6LA1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179644
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26671)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A45827D010TE LARH30NF 6LA1LI 30°
Description: PORTFOLIO 6" Adjustable Reflector, Angle-cut Trim, 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: 4433.3 lumens
Efficiency: N/A
Efficacy: 83.6 lumens/watt
Spacing Criteria (0/90/45): 2.69 / 0.5 / 1.42
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

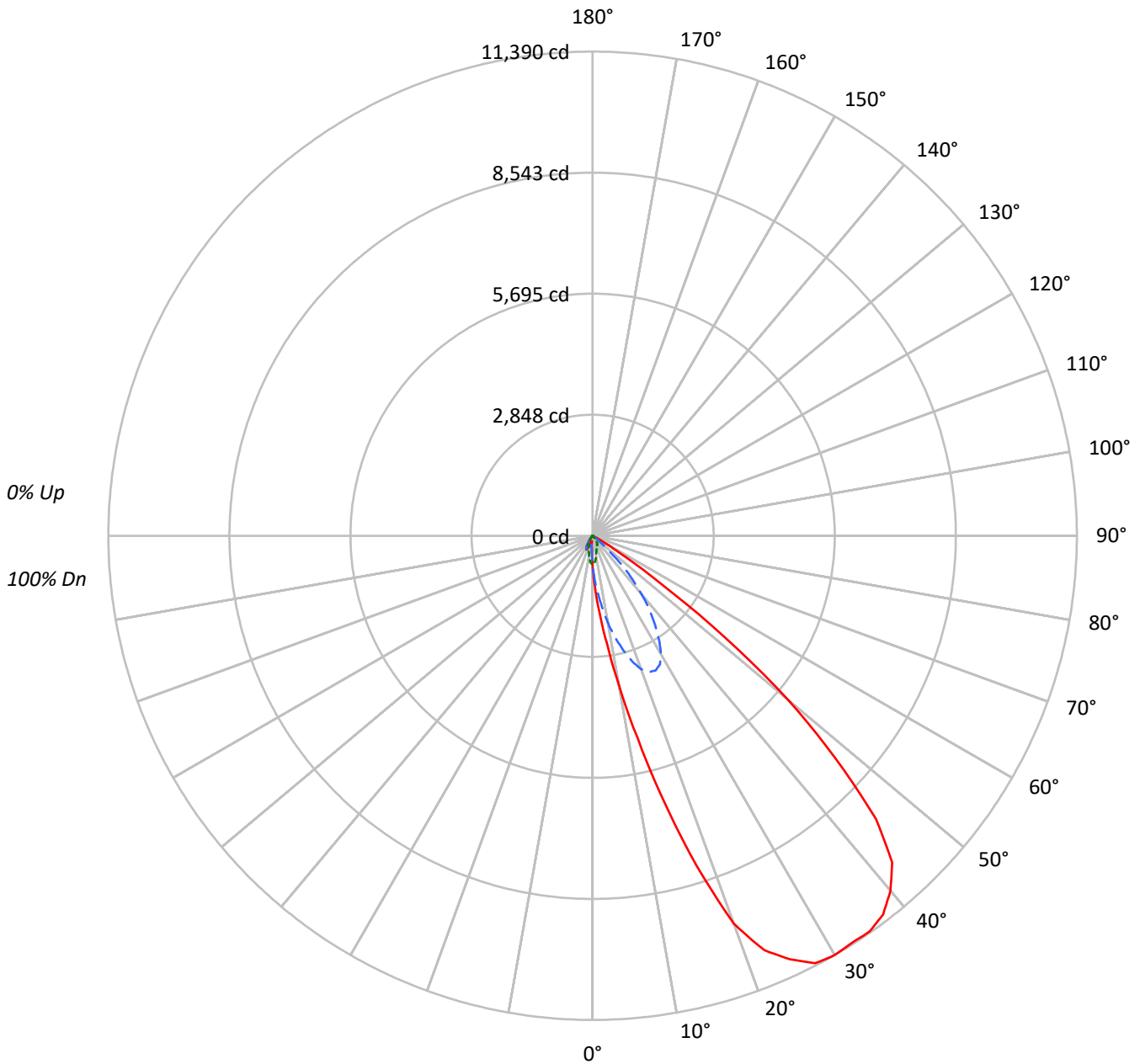
Input Watts (W): 53
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	93	91																			
2	105	99	94	89	102	97	92	88	94	90	86	91	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	68	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	60	54	77	66	59	54	65	58	53	63	57	53	62	57	53	51																			
7	73	61	54	48	71	60	53	48	59	53	48	58	52	48	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°	37245	37245	37245
5°	98178	33931	11677
10°	198376	26413	7097
15°	365280	19796	10233
20°	566326	15833	17052
25°	664913	14045	21648
30°	720978	14122	16775
35°	760226	8412	9021
40°	779754	3585	3907
45°	730502	1411	1341
50°	510772	623	307
55°	179224	612	0
60°	36148	702	0
65°	2244	830	0
70°	433	1170	0
75°	0	1546	0
80°	0	2305	284
85°	0	5158	566



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.1	2.0
10°-20°	486.1	11.0
20°-30°	1149.0	25.9
30°-40°	1399.7	31.6
40°-50°	1041.1	23.5
50°-60°	252.1	5.7
60°-70°	9.4	0.2
70°-80°	4.5	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°	1722.1	38.8
0°-40°	3121.8	70.4
0°-60°	4415.0	99.6
0°-90°	4433.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4433.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	679	679	679	679	679	
5°	1784	1334	617	288	212	224
15°	6436	2790	349	160	180	1940
25°	10993	3498	232	337	358	5048
35°	11360	2555	126	137	135	7075
45°	9422	974	18	20	17	6921
55°	1875	21	6	5	0	2121
65°	17	5	6	5	0	58
75°	0	5	7	6	0	0
85°	0	5	8	6	1	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°	679.4	679.4	679.4	679.4	679.4	679.4	679.4	679.4	679.4	679.4	679.4
2.5°	1184.9	1164.8	1163.0	1143.0	1135.7	1133.0	1104.7	1094.7	1057.4	1050.1	997.3
5°	1784.1	1753.2	1746.8	1701.3	1667.6	1621.1	1596.5	1554.6	1466.3	1419.8	1334.2
7.5°	2538.2	2497.2	2488.1	2417.1	2347.0	2286.0	2235.0	2137.5	1975.4	1864.3	1689.4
10°	3563.7	3449.0	3407.1	3256.8	3112.0	2998.2	2939.0	2724.9	2480.9	2331.5	2087.4
12.5°	4866.1	4674.8	4596.5	4364.3	4109.3	3922.6	3807.8	3471.7	3074.7	2788.7	2439.9
15°	6436.2	6214.0	6073.7	5781.4	5317.8	5051.9	4848.8	4310.5	3731.3	3298.7	2789.6
17.5°	8145.7	7971.7	7762.2	7304.1	6557.3	6237.7	5868.8	5163.0	4368.8	3766.8	3102.0
20°	9707.6	9416.1	9258.6	8748.6	7883.4	7461.7	7007.2	5949.9	4932.6	4148.4	3341.5
22.5°	10553.7	10271.3	10176.6	9734.0	8940.7	8471.7	7893.4	6642.9	5365.2	4409.8	3469.0
25°	10992.6	10734.9	10741.3	10341.5	9625.6	9184.8	8596.5	7166.6	5660.2	4547.3	3498.2
27.5°	11336.0	11019.0	10963.5	10664.8	10028.2	9577.3	9009.9	7451.7	5768.6	4532.8	3418.9
30°	11389.7	11130.2	11170.2	10754.9	10173.9	9704.8	9114.7	7436.2	5657.5	4349.7	3213.1
32.5°	11353.3	11095.5	11187.5	10736.7	10111.0	9596.5	8939.8	7133.8	5331.5	4010.9	2910.7
35°	11359.7	11063.7	10995.4	10613.8	9868.8	9265.0	8472.6	6581.9	4849.7	3570.1	2554.6
37.5°	11224.0	10825.1	10836.9	10334.2	9400.7	8600.1	7703.0	5846.0	4279.6	3099.2	2196.7
40°	10896.1	10597.4	10502.7	9755.8	8510.0	7571.9	6706.7	5046.4	3620.2	2607.4	1776.9
42.5°	10428.9	10069.1	9791.4	8756.8	7247.7	6387.0	5639.3	4213.1	2997.2	2137.5	1379.8
45°	9422.5	9033.6	8495.4	7254.0	5976.3	5229.5	4605.6	3419.8	2424.4	1652.1	973.6
47.5°	7730.4	7365.2	6811.4	5768.6	4771.4	4149.3	3663.0	2678.5	1772.3	1041.9	482.7
50°	5989.0	5711.2	5288.7	4383.4	3550.1	2968.1	2534.6	1682.1	904.4	475.4	202.2
52.5°	3903.4	3706.7	3330.6	2642.1	2006.4	1572.8	1278.7	715.8	426.2	200.4	59.2
55°	1875.2	1773.2	1500.9	1088.3	787.8	646.6	546.4	347.0	161.2	48.3	20.9
57.5°	747.7	725.9	646.6	487.2	373.4	316.9	245.9	95.6	31.9	20.0	12.8
60°	329.7	319.7	267.8	177.6	95.6	54.6	40.1	23.7	15.5	11.8	8.2
62.5°	47.4	43.7	37.3	29.1	23.7	20.0	17.3	12.8	8.2	6.4	5.5
65°	17.3	17.3	15.5	12.8	10.9	10.0	9.1	6.4	4.6	4.6	4.6
67.5°	7.3	7.3	7.3	5.5	5.5	4.6	3.6	3.6	3.6	3.6	4.6
70°	2.7	2.7	2.7	1.8	1.8	1.8	2.7	2.7	2.7	3.6	4.6
72.5°	0.0	0.9	0.9	0.9	1.8	1.8	1.8	2.7	2.7	3.6	4.6
75°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	2.7	3.6	4.6
77.5°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	3.6	3.6	4.6
80°	0.0	0.0	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	3.6	4.6	4.6
85°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	3.6	3.6	4.6
87.5°	0.0	0.0	0.9	0.9	1.8	1.8	1.8	2.7	3.6	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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	679.4	679.4	679.4	679.4	679.4	679.4	679.4	679.4	679.4	679.4	679.4
2.5°	952.6	939.9	897.1	854.3	847.9	829.7	792.3	748.6	692.2	656.6	621.1
5°	1223.1	1159.4	1087.4	1004.5	979.0	942.6	864.3	780.5	686.7	616.6	551.0
7.5°	1539.2	1397.1	1261.4	1128.4	1078.3	1021.9	902.5	782.3	653.9	551.9	469.9
10°	1835.1	1616.6	1406.2	1217.7	1143.0	1066.5	906.2	751.4	592.0	474.5	390.7
12.5°	2130.2	1816.9	1529.1	1282.3	1181.2	1082.9	886.1	695.8	515.5	403.5	336.1
15°	2362.5	1998.2	1618.4	1315.1	1189.4	1069.2	837.0	619.3	440.8	348.8	288.7
17.5°	2523.7	2102.0	1652.1	1301.4	1157.6	1021.9	759.6	530.1	380.7	306.0	247.7
20°	2634.8	2134.8	1628.4	1245.0	1089.2	939.9	662.1	449.9	337.9	271.4	213.1
22.5°	2665.7	2102.9	1561.0	1160.3	1000.0	846.1	561.0	397.1	306.9	244.1	206.7
25°	2635.7	2021.8	1459.9	1059.2	890.7	729.5	476.3	365.2	283.2	232.2	240.4
27.5°	2526.4	1878.9	1319.7	929.0	755.9	603.8	418.9	327.0	249.5	245.0	255.0
30°	2346.1	1673.9	1153.0	762.3	597.4	481.8	351.5	257.7	218.6	223.1	229.5
32.5°	2086.5	1422.6	939.0	564.7	438.1	362.5	251.4	178.5	173.0	176.7	181.2
35°	1758.6	1157.6	703.1	389.8	310.6	249.5	147.5	126.6	123.9	125.7	127.5
37.5°	1427.1	894.3	478.1	262.3	188.5	126.6	88.3	82.9	81.1	82.0	82.9
40°	1107.5	622.0	300.5	125.7	73.8	62.8	54.6	51.9	50.1	50.1	51.0
42.5°	808.7	368.8	149.4	49.2	40.1	37.3	32.8	31.0	29.1	30.1	31.0
45°	452.6	163.9	51.0	27.3	24.6	22.8	20.0	19.1	18.2	18.2	18.2
47.5°	193.1	57.4	24.6	17.3	15.5	14.6	12.8	11.8	10.9	10.9	10.9
50°	63.8	22.8	15.5	11.8	10.0	9.1	8.2	7.3	7.3	7.3	8.2
52.5°	22.8	14.6	10.0	8.2	7.3	7.3	6.4	6.4	6.4	6.4	6.4
55°	13.7	10.0	7.3	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
57.5°	9.1	6.4	6.4	5.5	5.5	5.5	5.5	5.5	5.5	6.4	6.4
60°	6.4	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	6.4	6.4
62.5°	5.5	4.6	4.6	5.5	5.5	5.5	5.5	6.4	6.4	6.4	6.4
65°	4.6	4.6	4.6	5.5	5.5	5.5	5.5	6.4	6.4	6.4	6.4
67.5°	4.6	4.6	5.5	5.5	5.5	5.5	6.4	6.4	6.4	6.4	7.3
70°	4.6	4.6	5.5	5.5	5.5	6.4	6.4	6.4	6.4	7.3	7.3
72.5°	4.6	5.5	5.5	5.5	6.4	6.4	6.4	7.3	7.3	7.3	7.3
75°	4.6	5.5	5.5	6.4	6.4	6.4	6.4	7.3	7.3	7.3	7.3
77.5°	4.6	5.5	5.5	6.4	6.4	6.4	7.3	7.3	7.3	7.3	7.3
80°	5.5	5.5	6.4	6.4	6.4	7.3	7.3	7.3	7.3	7.3	8.2
82.5°	5.5	5.5	6.4	6.4	6.4	7.3	7.3	7.3	7.3	7.3	8.2
85°	5.5	5.5	6.4	6.4	6.4	7.3	7.3	7.3	7.3	8.2	8.2
87.5°	5.5	5.5	6.4	6.4	6.4	7.3	7.3	7.3	7.3	8.2	8.2
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°	679.4	679.4	679.4	679.4	679.4	679.4	679.4	679.4	679.4	679.4	679.4
2.5°	584.7	557.4	519.1	506.4	480.0	460.8	439.9	416.2	411.7	388.0	385.2
5°	487.2	443.5	399.8	383.4	360.7	341.5	320.6	297.8	287.8	265.0	251.4
7.5°	401.6	359.7	320.6	304.2	282.3	257.7	233.1	209.5	195.8	174.0	163.0
10°	337.0	295.1	253.2	236.8	216.8	189.4	163.0	138.4	129.3	123.9	124.8
12.5°	281.4	239.5	197.6	179.4	158.5	136.6	135.7	133.9	137.5	136.6	137.5
15°	235.9	191.3	151.2	145.7	145.7	149.4	153.0	153.9	160.3	160.3	162.1
17.5°	194.0	163.0	164.8	164.8	168.5	174.9	182.1	185.8	195.8	196.7	200.4
20°	180.3	187.6	195.8	197.6	204.0	214.0	224.0	231.3	244.1	247.7	255.0
22.5°	214.0	226.8	239.5	243.2	251.4	265.9	284.2	290.5	306.0	306.0	316.0
25°	252.3	271.4	284.2	288.7	297.8	310.6	322.4	326.0	337.0	333.3	337.0
27.5°	267.8	281.4	289.6	294.2	296.0	306.9	312.4	310.6	317.8	312.4	312.4
30°	237.7	247.7	252.3	255.0	255.0	263.2	263.2	260.5	265.0	260.5	257.7
32.5°	186.7	194.0	197.6	197.6	196.7	202.2	200.4	196.7	198.5	195.8	189.4
35°	130.2	135.7	138.4	137.5	136.6	141.2	138.4	135.7	136.6	134.8	130.2
37.5°	85.6	86.5	88.3	90.2	89.3	92.9	91.1	89.3	90.2	88.3	85.6
40°	51.9	53.7	55.6	55.6	55.6	56.5	56.5	55.6	57.4	55.6	53.7
42.5°	31.0	32.8	32.8	32.8	33.7	33.7	34.6	32.8	34.6	32.8	31.9
45°	19.1	19.1	19.1	20.0	19.1	20.0	20.0	19.1	20.0	19.1	18.2
47.5°	11.8	11.8	11.8	11.8	11.8	11.8	11.8	10.9	11.8	10.9	10.0
50°	7.3	8.2	7.3	7.3	7.3	7.3	7.3	6.4	6.4	5.5	5.5
52.5°	6.4	6.4	6.4	6.4	6.4	6.4	5.5	5.5	4.6	3.6	3.6
55°	6.4	6.4	6.4	5.5	5.5	5.5	5.5	4.6	4.6	3.6	2.7
57.5°	6.4	6.4	5.5	5.5	5.5	5.5	4.6	4.6	3.6	2.7	2.7
60°	6.4	6.4	6.4	5.5	5.5	5.5	4.6	4.6	3.6	2.7	2.7
62.5°	6.4	6.4	6.4	5.5	5.5	5.5	5.5	4.6	3.6	2.7	2.7
65°	6.4	6.4	6.4	6.4	6.4	5.5	5.5	4.6	4.6	3.6	2.7
67.5°	7.3	6.4	6.4	6.4	6.4	6.4	5.5	4.6	4.6	3.6	2.7
70°	7.3	7.3	6.4	6.4	6.4	6.4	5.5	5.5	4.6	3.6	2.7
72.5°	7.3	7.3	7.3	7.3	6.4	6.4	6.4	5.5	4.6	3.6	3.6
75°	7.3	7.3	7.3	7.3	7.3	6.4	6.4	5.5	5.5	4.6	3.6
77.5°	8.2	7.3	7.3	7.3	7.3	7.3	6.4	5.5	5.5	4.6	3.6
80°	8.2	8.2	7.3	7.3	7.3	7.3	6.4	5.5	5.5	4.6	3.6
82.5°	8.2	8.2	7.3	7.3	7.3	7.3	6.4	6.4	5.5	4.6	3.6
85°	8.2	8.2	7.3	7.3	7.3	7.3	6.4	5.5	5.5	4.6	3.6
87.5°	8.2	8.2	7.3	7.3	7.3	7.3	6.4	5.5	5.5	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: P179644

CATALOG NUMBER: LDA6A45827D010TE LARH30NF 6LA1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	679.4	679.4	679.4	679.4	679.4	679.4	679.4	679.4
2.5°	368.8	367.0	360.7	362.5	357.9	347.9	348.8	345.2
5°	242.3	236.8	230.4	230.4	224.0	214.9	214.9	212.2
7.5°	147.5	139.3	133.0	132.1	125.7	121.1	121.1	120.2
10°	124.8	125.7	125.7	126.6	125.7	125.7	126.6	127.5
12.5°	140.3	143.0	143.0	143.9	143.0	144.8	144.8	146.6
15°	167.6	172.1	173.0	174.9	174.0	176.7	178.5	180.3
17.5°	210.4	215.8	217.7	223.1	222.2	225.0	226.8	230.4
20°	265.0	273.2	276.0	283.2	282.3	285.1	289.6	292.3
22.5°	326.0	336.1	337.0	343.3	342.4	345.2	347.0	347.9
25°	342.4	348.8	347.9	351.5	351.5	352.5	352.5	357.9
27.5°	313.3	317.8	317.8	317.8	318.8	319.7	319.7	324.2
30°	257.7	259.6	260.5	257.7	259.6	260.5	260.5	265.0
32.5°	191.3	192.2	193.1	189.4	192.2	192.2	192.2	195.8
35°	132.1	132.1	133.0	130.2	132.1	133.0	132.1	134.8
37.5°	86.5	86.5	86.5	86.5	86.5	86.5	85.6	88.3
40°	53.7	54.6	53.7	53.7	52.8	52.8	52.8	54.6
42.5°	31.9	31.9	31.0	31.0	31.0	31.0	31.9	31.9
45°	18.2	18.2	17.3	17.3	16.4	17.3	17.3	17.3
47.5°	10.0	9.1	9.1	9.1	8.2	8.2	8.2	9.1
50°	4.6	4.6	4.6	3.6	3.6	3.6	2.7	3.6
52.5°	2.7	1.8	1.8	1.8	0.9	0.9	0.0	0.9
55°	1.8	1.8	0.9	0.9	0.0	0.0	0.0	0.0
57.5°	1.8	0.9	0.9	0.9	0.0	0.0	0.0	0.0
60°	1.8	0.9	0.9	0.9	0.0	0.0	0.0	0.0
62.5°	1.8	0.9	0.9	0.9	0.0	0.0	0.0	0.0
65°	1.8	0.9	0.9	0.9	0.0	0.0	0.0	0.0
67.5°	1.8	1.8	0.9	0.9	0.9	0.0	0.0	0.0
70°	2.7	1.8	1.8	0.9	0.9	0.0	0.0	0.0
72.5°	2.7	1.8	1.8	1.8	0.9	0.9	0.0	0.0
75°	2.7	1.8	1.8	1.8	0.9	0.9	0.0	0.0
77.5°	2.7	2.7	1.8	1.8	0.9	0.9	0.9	0.9
80°	2.7	2.7	1.8	1.8	1.8	0.9	0.9	0.9
82.5°	2.7	2.7	1.8	1.8	1.8	0.9	0.9	0.9
85°	2.7	2.7	1.8	1.8	1.8	0.9	0.9	0.9
87.5°	2.7	2.7	1.8	1.8	1.8	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)