

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: P179673

Luminaire Tested: **LDA6A45930D010TE LARH30NF 6LAL1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179673  
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: LDA6A45930D010TE LARH30NF 6LAL1LI 30°  
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 30° Narrow Flood, 30° Tilt  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3682.6 lumens  
Efficiency: N/A  
Efficacy: 69.5 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

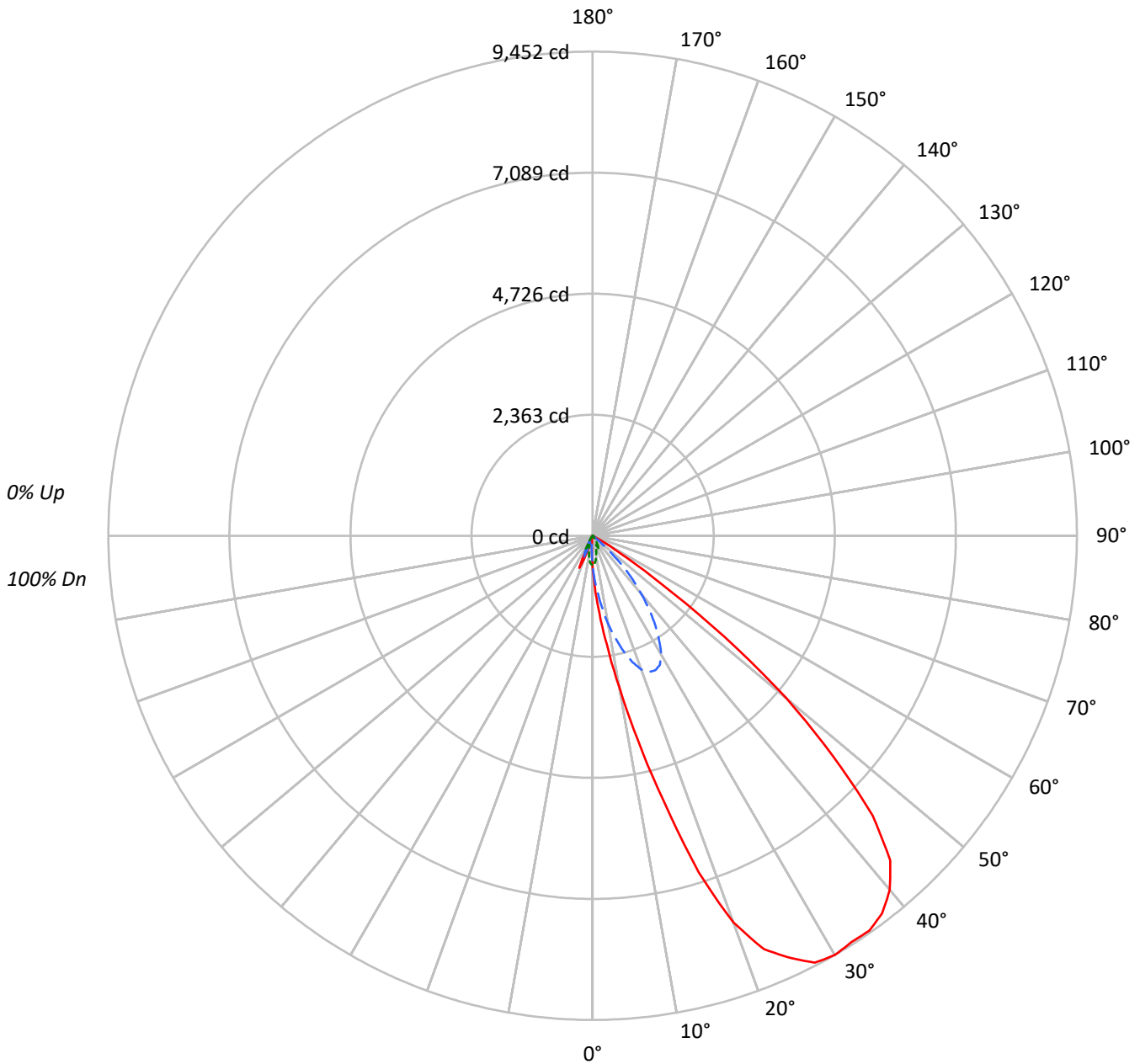
Input Watts (W): 53  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	31807	31807	31807
5°	83832	29017	9361
10°	167387	22244	3713
15°	304741	15613	4064
20°	468586	11207	25640
25°	549546	16737	21213
30°	598339	10508	6184
35°	629746	4357	2556
40°	645738	1925	1453
45°	599434	1264	1070
50°	420455	972	486
55°	153772	698	315
60°	32475	713	175
65°	2750	843	208
70°	914	1042	385
75°	169	1377	699
80°	253	2052	1042
85°	0	4088	1006



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	73.0	2.0
10°-20°	401.4	10.9
20°-30°	970.2	26.3
30°-40°	1140.6	31.0
40°-50°	861.6	23.4
50°-60°	216.2	5.9
60°-70°	10.5	0.3
70°-80°	5.0	0.1
80°-90°	4.1	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°	1444.7	39.2
0°-40°	2585.3	70.2
0°-60°	3663.1	99.5
0°-90°	3682.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3682.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	580	580	580	580	580	
5°	1523	1106	527	224	170	190
15°	5370	2329	275	74	72	1625
25°	9085	2898	277	384	351	4179
35°	9410	2135	65	46	38	5859
45°	7732	839	16	17	14	5697
55°	1609	24	7	6	3	1780
65°	21	6	6	6	2	57
75°	1	4	6	6	3	2
85°	0	4	6	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°	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2
2.5°	1012.4	996.1	984.7	965.2	955.4	959.5	939.1	911.5	903.3	878.9	836.6
5°	1523.4	1506.3	1479.5	1438.0	1407.1	1402.2	1362.3	1295.6	1253.3	1190.6	1106.0
7.5°	2150.9	2136.2	2091.5	2029.6	1977.5	1958.0	1899.4	1782.2	1688.6	1563.3	1417.6
10°	3007.0	2950.0	2866.2	2740.9	2621.3	2565.9	2462.6	2268.9	2116.7	1945.0	1747.2
12.5°	4080.4	3979.5	3843.6	3655.6	3449.7	3346.4	3182.0	2885.7	2619.6	2325.0	2036.9
15°	5369.5	5267.7	5070.8	4779.5	4448.2	4282.2	4039.7	3572.6	3176.3	2744.1	2329.1
17.5°	6890.5	6724.5	6462.4	6040.0	5527.3	5266.9	4923.5	4276.5	3685.7	3121.7	2584.6
20°	8032.2	7911.0	7662.8	7220.9	6609.7	6274.4	5813.0	4921.9	4159.3	3423.7	2778.3
22.5°	8732.9	8623.9	8396.0	8026.5	7465.0	7093.1	6573.1	5488.3	4527.2	3632.8	2875.2
25°	9085.3	9007.2	8848.5	8526.2	8035.5	7662.0	7136.2	5907.4	4776.2	3745.9	2898.0
27.5°	9395.4	9264.3	9006.4	8786.6	8352.1	7972.0	7474.0	6115.7	4863.3	3732.9	2840.2
30°	9452.3	9377.4	9174.0	8859.9	8455.4	8071.3	7546.4	6085.6	4764.8	3581.5	2683.1
32.5°	9403.5	9338.4	9184.6	8842.0	8389.5	7965.5	7389.3	5838.2	4475.9	3300.8	2417.8
35°	9410.0	9306.6	9037.3	8744.3	8179.5	7681.5	7005.2	5385.7	4071.5	2936.2	2135.4
37.5°	9285.5	9115.4	8893.2	8515.6	7753.1	7135.4	6362.3	4802.3	3584.8	2564.3	1805.8
40°	9023.4	8894.1	8598.6	8018.4	7026.4	6250.0	5535.5	4132.5	3053.4	2158.2	1472.2
42.5°	8595.4	8440.8	8028.2	7153.3	5974.1	5297.0	4654.1	3447.3	2530.9	1765.1	1155.6
45°	7731.9	7495.9	6956.4	5913.1	4907.2	4332.7	3808.6	2810.9	2051.6	1381.0	839.0
47.5°	6352.5	6151.5	5581.1	4710.3	3918.5	3474.1	3027.3	2216.8	1526.7	887.9	431.3
50°	4930.0	4771.3	4335.9	3571.8	2911.0	2479.7	2128.1	1415.2	813.8	408.5	193.7
52.5°	3243.8	3143.7	2770.2	2229.8	1671.6	1363.9	1107.6	614.4	379.2	181.5	66.7
55°	1608.9	1480.3	1302.1	965.2	698.2	564.8	479.3	302.7	157.1	52.1	23.6
57.5°	655.9	627.4	564.8	436.2	335.3	283.2	226.2	94.4	35.0	21.2	14.6
60°	296.2	283.2	245.8	172.5	93.6	57.8	40.7	26.0	17.9	13.0	9.8
62.5°	52.1	48.0	42.3	32.6	26.0	22.8	19.5	14.6	11.4	9.0	7.3
65°	21.2	21.2	19.5	17.1	13.8	13.0	11.4	9.0	7.3	6.5	5.7
67.5°	11.4	10.6	10.6	9.0	8.1	7.3	6.5	5.7	5.7	4.9	4.9
70°	5.7	5.7	5.7	4.9	4.1	4.1	4.1	4.1	4.1	4.1	4.1
72.5°	3.3	3.3	3.3	3.3	3.3	3.3	2.4	2.4	2.4	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	4.1
77.5°	0.8	0.8	0.8	0.8	1.6	1.6	1.6	2.4	3.3	3.3	4.1
80°	0.8	0.8	0.8	0.8	1.6	1.6	1.6	2.4	3.3	3.3	4.1
82.5°	0.0	0.0	0.8	0.8	1.6	1.6	1.6	2.4	2.4	3.3	4.1
85°	0.0	0.0	0.8	0.8	1.6	1.6	1.6	2.4	2.4	3.3	4.1
87.5°	0.0	0.0	0.8	0.8	0.8	1.6	1.6	2.4	2.4	3.3	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



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2
2.5°	835.0	792.6	760.1	729.2	721.8	696.6	673.0	632.3	595.7	561.5	522.5
5°	1073.4	990.4	921.2	853.7	831.7	789.4	732.4	659.2	590.8	527.3	460.6
7.5°	1333.0	1192.2	1069.3	955.4	915.5	855.3	763.3	659.2	560.7	469.6	388.2
10°	1587.7	1377.8	1192.2	1027.8	967.6	889.5	763.3	630.7	505.4	399.6	319.0
12.5°	1833.5	1545.4	1294.8	1077.5	998.5	900.9	743.0	581.1	435.4	331.2	263.7
15°	2025.6	1687.0	1367.2	1097.0	998.5	885.4	695.8	511.9	364.6	275.1	214.8
17.5°	2169.6	1770.8	1391.6	1078.3	964.4	837.4	624.2	430.5	300.3	227.9	170.1
20°	2253.4	1792.0	1366.4	1023.8	899.3	765.0	535.5	354.8	254.7	192.1	137.5
22.5°	2273.0	1762.7	1307.8	953.8	825.2	689.3	457.4	317.4	245.8	196.1	171.7
25°	2251.0	1703.3	1230.5	883.0	755.2	620.9	428.9	341.8	294.6	276.7	296.2
27.5°	2163.9	1592.6	1135.3	804.0	675.5	550.1	406.9	344.2	296.2	288.1	279.1
30°	2008.5	1425.8	988.8	657.6	521.6	417.5	288.9	205.1	163.6	166.0	164.4
32.5°	1765.1	1183.3	773.9	459.8	358.9	282.4	191.2	121.3	113.9	113.9	112.3
35°	1497.4	961.1	581.9	323.1	249.8	198.6	113.9	88.7	74.9	65.1	58.6
37.5°	1224.8	747.9	401.2	218.1	158.7	101.7	54.5	44.8	39.9	37.4	36.6
40°	948.1	526.5	256.3	119.6	70.0	44.8	35.0	30.1	27.7	26.9	26.9
42.5°	701.5	339.4	138.3	47.2	37.4	30.9	25.2	22.0	21.2	21.2	20.3
45°	422.4	170.1	52.1	29.3	24.4	22.0	18.7	17.1	16.3	16.3	17.1
47.5°	195.3	63.5	28.5	19.5	17.9	16.3	14.6	13.8	13.8	13.8	14.6
50°	70.8	27.7	17.9	13.8	13.0	12.2	11.4	10.6	10.6	11.4	11.4
52.5°	26.9	17.1	13.0	10.6	9.8	9.8	9.0	9.0	9.0	9.0	9.0
55°	16.3	12.2	9.8	8.1	8.1	7.3	7.3	7.3	7.3	7.3	7.3
57.5°	10.6	9.0	7.3	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
60°	8.1	6.5	5.7	5.7	5.7	5.7	5.7	6.5	6.5	6.5	6.5
62.5°	6.5	5.7	5.7	5.7	5.7	5.7	5.7	5.7	6.5	6.5	6.5
65°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	6.5	6.5	6.5	7.3
67.5°	4.9	4.9	4.9	4.9	4.9	5.7	5.7	5.7	6.5	6.5	6.5
70°	4.1	4.1	4.9	4.9	4.9	5.7	5.7	5.7	6.5	6.5	6.5
72.5°	4.1	4.9	4.9	4.9	4.9	5.7	5.7	5.7	6.5	6.5	6.5
75°	4.1	4.9	4.9	4.9	5.7	5.7	5.7	5.7	6.5	6.5	6.5
77.5°	4.1	4.9	4.9	4.9	5.7	5.7	5.7	6.5	6.5	6.5	7.3
80°	4.1	4.9	4.9	5.7	5.7	5.7	5.7	6.5	6.5	6.5	7.3
82.5°	4.1	4.9	4.9	5.7	5.7	5.7	6.5	6.5	6.5	7.3	7.3
85°	4.1	4.9	4.9	5.7	5.7	5.7	6.5	6.5	6.5	6.5	7.3
87.5°	4.1	4.9	4.9	5.7	5.7	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°	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2
2.5°	501.3	467.9	444.3	423.2	415.0	396.3	376.0	352.4	332.8	331.2	314.9
5°	415.9	369.5	336.1	314.9	304.4	284.8	261.2	245.8	223.8	217.3	201.0
7.5°	336.1	293.0	262.0	242.5	230.3	206.7	179.9	162.8	144.9	131.0	113.1
10°	273.4	231.9	198.6	179.0	166.8	141.6	113.9	94.4	78.1	74.9	73.2
12.5°	219.7	177.4	144.0	122.9	109.9	86.3	78.9	75.7	73.2	70.8	70.8
15°	170.9	127.8	92.0	83.8	81.4	78.9	77.3	75.7	74.1	73.2	74.1
17.5°	124.5	90.3	86.3	85.4	83.8	83.8	85.4	86.3	87.9	89.5	92.0
20°	109.9	110.7	119.6	126.1	123.7	135.9	153.0	166.8	200.2	220.5	248.2
22.5°	196.9	226.2	267.7	293.0	306.8	347.5	392.3	459.8	494.0	542.8	586.8
25°	336.9	371.1	406.9	416.7	424.0	428.1	422.4	391.4	384.1	370.3	366.2
27.5°	252.3	236.0	241.7	244.1	241.7	238.4	228.7	211.6	207.5	201.0	202.6
30°	148.9	144.0	150.6	149.7	149.7	149.7	146.5	132.6	126.1	118.8	113.9
32.5°	109.9	100.9	93.6	87.1	84.6	80.6	78.1	72.4	70.0	66.7	66.7
35°	54.5	52.1	52.1	50.5	49.6	50.5	50.5	48.0	46.4	45.6	45.6
37.5°	35.8	35.8	36.6	35.8	35.8	35.8	35.8	35.0	34.2	33.4	33.4
40°	26.9	26.9	27.7	27.7	26.9	26.9	26.9	26.0	26.0	26.0	26.0
42.5°	21.2	21.2	21.2	21.2	20.3	21.2	21.2	21.2	20.3	20.3	19.5
45°	17.9	17.1	17.1	17.1	17.1	17.1	17.9	17.1	17.1	16.3	16.3
47.5°	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	13.8	13.8
50°	11.4	11.4	11.4	11.4	11.4	10.6	10.6	9.8	9.8	9.0	9.0
52.5°	9.0	9.0	8.1	8.1	8.1	8.1	8.1	8.1	7.3	7.3	7.3
55°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	6.5	5.7	5.7
57.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	5.7	5.7	4.9
60°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	5.7	4.9	4.9	4.9
62.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	5.7	4.9	4.9	4.1
65°	7.3	7.3	7.3	7.3	6.5	6.5	6.5	5.7	5.7	4.9	4.9
67.5°	7.3	7.3	7.3	7.3	7.3	6.5	6.5	6.5	5.7	5.7	4.9
70°	7.3	7.3	7.3	7.3	7.3	6.5	6.5	6.5	5.7	5.7	4.9
72.5°	7.3	7.3	7.3	7.3	7.3	6.5	6.5	6.5	5.7	5.7	4.9
75°	7.3	7.3	7.3	7.3	7.3	6.5	6.5	6.5	5.7	5.7	4.9
77.5°	7.3	7.3	7.3	7.3	7.3	6.5	6.5	6.5	5.7	5.7	4.9
80°	7.3	7.3	7.3	7.3	7.3	6.5	6.5	6.5	5.7	5.7	4.9
82.5°	7.3	7.3	7.3	7.3	7.3	6.5	6.5	6.5	5.7	5.7	4.9
85°	7.3	7.3	6.5	6.5	6.5	6.5	6.5	5.7	4.9	4.9	4.1
87.5°	6.5	6.5	6.5	6.5	6.5	5.7	5.7	4.9	4.1	4.1	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





TEST NUMBER: P179673

CATALOG NUMBER: LDA6A45930D010TE LARH30NF 6LAL1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	580.2	580.2	580.2	580.2	580.2	580.2	580.2	580.2
2.5°	311.7	300.3	297.9	301.1	288.1	288.1	288.1	293.8
5°	194.5	183.1	179.9	180.7	170.1	162.8	166.8	170.1
7.5°	105.8	93.6	89.5	89.5	78.9	74.9	75.7	77.3
10°	70.8	69.2	69.2	68.4	66.7	65.9	66.7	66.7
12.5°	68.4	67.5	67.5	66.7	66.7	65.9	65.9	66.7
15°	71.6	71.6	71.6	70.8	70.8	70.0	71.6	71.6
17.5°	91.1	92.8	96.0	97.7	100.9	97.7	103.4	102.5
20°	267.7	294.6	344.2	363.0	416.7	390.6	446.8	439.5
22.5°	606.3	625.8	634.0	638.0	638.8	664.9	668.9	677.9
25°	358.1	353.2	349.1	349.1	334.5	351.6	348.3	350.7
27.5°	191.2	189.6	185.5	187.2	179.9	185.5	187.2	187.2
30°	108.2	105.0	101.7	101.7	95.2	98.5	97.7	97.7
32.5°	62.7	61.0	59.4	58.6	57.0	57.0	56.2	56.2
35°	43.1	42.3	41.5	40.7	39.1	38.2	38.2	38.2
37.5°	31.7	30.9	30.1	30.1	29.3	27.7	27.7	27.7
40°	24.4	23.6	22.8	22.8	22.0	20.3	20.3	20.3
42.5°	18.7	17.9	17.1	16.3	16.3	15.5	14.6	14.6
45°	15.5	15.5	14.6	14.6	13.8	13.8	13.8	13.8
47.5°	13.0	13.0	12.2	12.2	12.2	11.4	11.4	10.6
50°	8.1	7.3	7.3	6.5	6.5	5.7	5.7	5.7
52.5°	6.5	5.7	5.7	4.9	4.9	4.1	4.1	4.1
55°	4.9	4.9	4.1	4.1	4.1	3.3	3.3	3.3
57.5°	4.1	4.1	3.3	3.3	3.3	2.4	2.4	2.4
60°	4.1	3.3	3.3	2.4	2.4	2.4	1.6	1.6
62.5°	4.1	3.3	3.3	2.4	2.4	1.6	1.6	1.6
65°	4.1	3.3	3.3	2.4	2.4	2.4	2.4	1.6
67.5°	4.1	4.1	3.3	3.3	3.3	2.4	2.4	2.4
70°	4.9	4.1	4.1	3.3	3.3	3.3	3.3	2.4
72.5°	4.9	4.1	4.1	4.1	3.3	3.3	3.3	3.3
75°	4.9	4.1	4.1	4.1	3.3	3.3	3.3	3.3
77.5°	4.9	4.1	4.1	4.1	3.3	3.3	3.3	3.3
80°	4.9	4.1	4.1	4.1	3.3	3.3	3.3	3.3
82.5°	4.1	4.1	4.1	3.3	3.3	3.3	3.3	3.3
85°	3.3	3.3	3.3	2.4	2.4	2.4	2.4	1.6
87.5°	2.4	2.4	1.6	1.6	0.8	0.8	0.8	0.8
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)