

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: P179658

Luminaire Tested: **LDA6A45935D010TE LARH40FL 6LA1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179658  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26672)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA6A45935D010TE LARH40FL 6LA1LI 30°  
Description: PORTFOLIO 6" Adjustable Reflector, Angle-cut Trim, Self-flanged, 40° Flood, 30° Tilt  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4302.9 lumens  
Efficiency: N/A  
Efficacy: 81.2 lumens/watt  
Spacing Criteria (0/90/45): 2.54 / 0.51 / 1.33  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

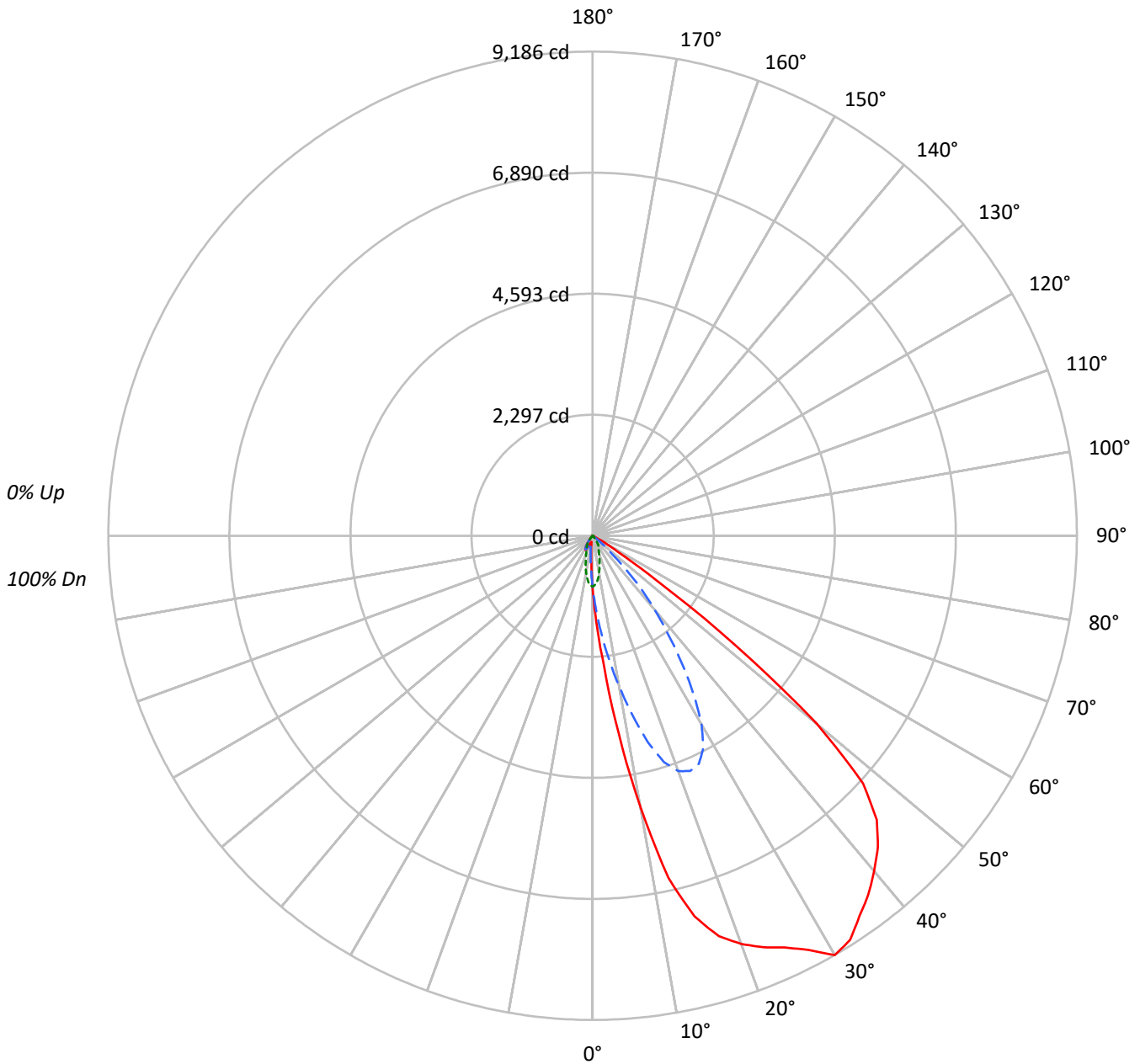
Input Watts (W): 53  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P179658

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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	101	99	99	97	96	95	94	93	91								
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	84	82								
3	98	90	84	79	96	89	83	79	86	81	77	84	80	76	81	78	75	73								
4	92	82	75	70	90	81	75	70	79	73	69	77	72	68	75	71	67	65								
5	85	75	68	62	83	74	67	62	72	66	62	70	65	61	69	64	60	59								
6	80	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53								
7	74	63	55	50	73	62	55	50	61	54	50	59	54	49	58	53	49	47								
8	69	58	50	45	68	57	50	45	56	49	45	55	49	45	54	48	45	43								
9	65	53	46	41	64	53	46	41	52	45	41	51	45	41	50	44	40	39								
10	61	49	42	37	60	49	42	37	48	41	37	47	41	37	46	41	37	35								

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	52951	52951	52951
5°	135406	48817	17813
10°	291016	39384	6557
15°	424526	28803	7503
20°	480714	20710	11569
25°	521129	16658	17941
30°	581463	13679	17268
35°	590181	8847	11511
40°	594535	4244	5818
45°	590813	1775	2434
50°	473033	793	793
55°	141070	564	76
60°	28803	647	0
65°	2750	765	0
70°	272	1090	0
75°	0	1440	0
80°	0	2399	253
85°	0	4780	503



TEST NUMBER: P179658

CATALOG NUMBER: LDA6A45935D010TE LARH40FL 6LA1LI 30°

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	124.7	2.9
10°-20°	603.5	14.0
20°-30°	1109.2	25.8
30°-40°	1272.5	29.6
40°-50°	962.8	22.4
50°-60°	213.3	5.0
60°-70°	9.0	0.2
70°-80°	4.0	0.1
80°-90°	3.9	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°	1837.4	42.7
0°-40°	3110.0	72.3
0°-60°	4286.1	99.6
0°-90°	4302.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4302.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	966	966	966	966	966	
5°	2461	1838	887	434	324	325
15°	7480	4057	508	131	132	2084
25°	8616	4770	275	267	297	4020
35°	8819	2944	132	165	172	5524
45°	7621	833	23	30	31	5687
55°	1476	31	6	4	1	1827
65°	21	4	6	3	0	56
75°	0	3	7	4	0	0
85°	0	4	8	4	1	0
90°	0	0	0	0	0	



TEST NUMBER: P179658

CATALOG NUMBER: LDA6A45935D010TE LARH40FL 6LA1LI 30°

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	965.9	965.9	965.9	965.9	965.9	965.9	965.9	965.9	965.9	965.9	965.9
2.5°	1636.2	1620.1	1624.3	1644.6	1560.8	1558.2	1519.2	1514.1	1475.2	1404.0	1368.4
5°	2460.6	2450.4	2432.6	2439.4	2343.7	2279.3	2211.5	2162.3	2062.4	1927.6	1837.8
7.5°	3775.6	3665.5	3612.1	3509.6	3387.6	3263.0	3137.6	2991.9	2781.7	2547.0	2357.2
10°	5227.9	5179.6	5070.3	5005.1	4734.8	4551.8	4356.9	4058.6	3674.0	3248.6	2894.4
12.5°	6651.4	6594.6	6429.4	6290.5	5930.3	5766.8	5513.5	5137.3	4649.2	4043.4	3483.3
15°	7480.1	7492.8	7305.5	7298.8	6988.6	6776.0	6556.5	6111.7	5492.3	4796.6	4056.9
17.5°	7965.6	7996.9	7811.4	7863.9	7554.6	7334.3	7170.8	6845.4	6187.1	5352.5	4500.1
20°	8240.1	8290.1	8092.7	8133.4	7869.0	7719.9	7553.8	7231.8	6650.6	5729.5	4751.7
22.5°	8449.4	8468.9	8249.4	8303.7	8014.7	7865.6	7747.8	7446.2	6872.6	5928.7	4830.5
25°	8615.5	8664.6	8413.8	8418.1	8130.8	7981.7	7851.2	7576.7	6967.5	5981.2	4770.4
27.5°	8854.4	8894.3	8525.7	8493.5	8215.6	8051.2	7909.7	7639.4	6963.2	5864.3	4543.3
30°	9185.7	8963.7	8586.7	8503.6	8191.0	8024.1	7872.4	7521.6	6807.3	5549.1	4130.7
32.5°	9090.8	8911.2	8539.2	8407.0	8096.9	7918.1	7744.4	7317.4	6445.5	5061.0	3568.0
35°	8818.8	8761.2	8370.6	8329.1	7953.7	7766.5	7591.9	7008.1	5890.5	4423.0	2944.4
37.5°	8589.2	8490.9	8239.3	8174.0	7780.0	7573.3	7295.4	6546.3	5156.8	3609.6	2351.3
40°	8307.9	8241.8	7998.6	7929.2	7473.3	7158.1	6818.3	5709.2	4270.5	2809.7	1815.8
42.5°	8008.8	7949.5	7719.9	7574.1	6966.6	6549.7	6021.9	4695.8	3287.6	2117.4	1360.8
45°	7620.7	7536.9	7249.6	6978.5	6107.4	5510.9	4917.0	3583.3	2406.4	1507.4	832.9
47.5°	6953.9	6820.9	6472.6	5927.8	4857.7	4284.9	3666.3	2430.1	1486.2	776.1	419.4
50°	5546.5	5314.4	4850.9	4202.7	3111.3	2562.3	2077.6	1235.4	638.0	399.9	246.6
52.5°	3418.1	3205.4	2810.5	2185.2	1434.5	1104.9	870.2	575.3	351.6	226.2	91.5
55°	1476.0	1343.0	1154.0	880.4	625.3	514.3	413.5	287.2	181.3	69.5	31.4
57.5°	557.5	517.7	469.4	385.5	288.1	240.6	202.5	127.1	44.1	26.3	17.8
60°	262.7	238.1	210.1	166.9	110.2	79.6	50.0	32.2	21.2	14.4	10.2
62.5°	72.0	54.2	44.9	36.4	28.0	24.6	21.2	16.1	11.9	7.6	5.9
65°	21.2	18.6	17.8	15.3	12.7	11.0	9.3	7.6	5.9	4.2	4.2
67.5°	7.6	7.6	6.8	5.9	5.1	4.2	4.2	3.4	3.4	3.4	3.4
70°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.5	2.5	3.4	3.4
72.5°	0.0	0.0	0.8	0.8	1.7	1.7	1.7	2.5	2.5	3.4	3.4
75°	0.0	0.0	0.8	0.8	1.7	1.7	1.7	2.5	2.5	3.4	3.4
77.5°	0.0	0.0	0.8	0.8	1.7	1.7	1.7	2.5	3.4	3.4	4.2
80°	0.0	0.0	0.8	0.8	1.7	1.7	1.7	2.5	3.4	3.4	4.2
82.5°	0.0	0.0	0.8	0.8	1.7	1.7	1.7	2.5	3.4	3.4	4.2
85°	0.0	0.0	0.8	0.8	1.7	1.7	1.7	2.5	3.4	3.4	4.2
87.5°	0.0	0.0	0.8	0.8	1.7	1.7	1.7	2.5	3.4	3.4	4.2
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: P179658

CATALOG NUMBER: LDA6A45935D010TE LARH40FL 6LA1LI 30°

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	965.9	965.9	965.9	965.9	965.9	965.9	965.9	965.9	965.9	965.9	965.9
2.5°	1338.8	1289.6	1220.1	1184.5	1153.2	1144.7	1080.3	1038.8	989.7	938.8	885.4
5°	1753.9	1628.5	1495.5	1383.7	1326.9	1293.8	1168.4	1074.4	983.7	887.1	804.9
7.5°	2165.7	1941.2	1747.2	1566.7	1467.5	1393.0	1213.4	1071.9	934.6	809.2	698.2
10°	2564.0	2240.3	1931.0	1687.0	1550.6	1439.6	1207.4	1023.6	851.6	707.5	591.4
12.5°	2967.3	2495.3	2084.4	1751.4	1588.7	1446.4	1166.8	943.1	760.9	608.4	488.1
15°	3327.4	2693.6	2180.1	1766.6	1570.1	1402.3	1087.1	840.5	659.2	507.5	402.5
17.5°	3577.4	2800.4	2186.1	1710.7	1492.1	1311.6	976.1	732.9	556.7	422.8	330.5
20°	3690.9	2797.0	2105.6	1594.6	1365.9	1177.8	844.8	622.8	464.3	355.0	276.2
22.5°	3657.0	2690.2	1963.2	1430.3	1211.7	1023.6	722.8	525.3	399.1	305.0	242.3
25°	3487.5	2503.8	1796.3	1265.9	1045.6	870.2	612.6	449.1	346.6	275.4	220.3
27.5°	3210.5	2249.6	1571.8	1073.5	871.9	735.5	516.0	388.1	305.0	243.2	229.6
30°	2805.5	1941.2	1308.3	866.0	704.1	582.1	418.6	312.7	244.0	216.1	216.9
32.5°	2358.9	1601.4	1028.6	661.8	530.4	449.1	309.3	218.6	178.8	177.1	177.9
35°	1914.1	1247.2	765.1	483.8	388.9	323.7	199.1	137.3	133.0	132.2	133.9
37.5°	1519.2	927.8	551.6	338.1	257.6	197.4	107.6	93.2	89.8	91.5	92.4
40°	1134.6	650.7	372.8	200.0	125.4	90.7	65.2	60.2	58.5	59.3	59.3
42.5°	780.4	406.7	222.0	83.0	60.2	50.0	41.5	39.0	37.3	36.4	37.3
45°	420.3	253.3	86.4	42.4	35.6	32.2	26.3	24.6	23.7	22.9	22.9
47.5°	268.6	94.1	39.0	26.3	22.9	21.2	17.8	16.1	15.3	14.4	14.4
50°	100.8	36.4	23.7	16.9	14.4	13.6	11.0	10.2	9.3	9.3	9.3
52.5°	34.7	22.0	15.3	11.0	9.3	8.5	7.6	6.8	6.8	6.8	6.8
55°	19.5	13.6	9.3	6.8	6.8	5.9	5.9	5.9	5.9	5.9	5.9
57.5°	11.9	7.6	5.9	5.1	5.1	5.1	5.1	5.9	5.9	5.9	5.9
60°	6.8	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.9	5.9	5.9
62.5°	4.2	4.2	4.2	4.2	4.2	5.1	5.1	5.9	5.9	5.9	5.9
65°	4.2	4.2	4.2	4.2	4.2	5.1	5.1	5.9	5.9	5.9	5.9
67.5°	3.4	4.2	4.2	5.1	5.1	5.1	5.1	5.9	5.9	6.8	5.9
70°	4.2	4.2	4.2	5.1	5.1	5.1	5.9	5.9	6.8	6.8	6.8
72.5°	4.2	4.2	4.2	5.1	5.1	5.1	5.9	5.9	6.8	6.8	6.8
75°	4.2	4.2	5.1	5.1	5.1	5.9	5.9	6.8	6.8	6.8	6.8
77.5°	4.2	4.2	5.1	5.1	5.1	5.9	5.9	6.8	6.8	7.6	6.8
80°	4.2	4.2	5.1	5.9	5.9	5.9	5.9	6.8	6.8	7.6	7.6
82.5°	4.2	5.1	5.1	5.9	5.9	5.9	6.8	6.8	7.6	7.6	7.6
85°	4.2	5.1	5.1	5.9	5.9	5.9	6.8	6.8	7.6	7.6	7.6
87.5°	4.2	5.1	5.1	5.9	5.9	5.9	6.8	6.8	7.6	7.6	7.6
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: P179658

CATALOG NUMBER: LDA6A45935D010TE LARH40FL 6LA1LI 30°

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	965.9	965.9	965.9	965.9	965.9	965.9	965.9	965.9	965.9	965.9	965.9
2.5°	856.6	807.5	767.7	768.5	735.5	710.0	677.9	660.1	645.7	621.9	599.9
5°	744.8	669.4	612.6	601.6	563.5	524.5	484.7	455.0	433.8	410.9	389.8
7.5°	623.6	537.2	472.0	456.7	424.5	388.1	351.6	322.0	296.6	272.0	246.6
10°	505.8	427.0	367.7	352.5	320.3	282.2	247.4	221.1	201.7	182.2	162.7
12.5°	409.3	339.8	283.9	264.4	238.1	208.4	180.5	155.1	133.9	125.4	122.9
15°	331.3	265.2	221.1	205.0	183.0	152.5	136.4	132.2	131.3	131.3	131.3
17.5°	267.8	216.1	176.2	159.3	148.3	146.6	146.6	146.6	147.4	149.1	152.5
20°	224.5	178.8	163.5	165.2	165.2	166.9	170.3	172.9	176.2	180.5	185.6
22.5°	199.1	189.8	188.1	193.2	194.0	199.1	205.9	211.0	216.9	223.7	227.9
25°	217.8	221.1	223.7	231.3	233.9	242.3	252.5	260.1	266.9	274.5	279.6
27.5°	237.2	243.2	248.3	255.9	257.6	268.6	277.1	282.2	287.2	290.6	294.0
30°	223.7	229.6	234.7	241.5	241.5	253.3	257.6	261.8	266.1	267.8	271.1
32.5°	183.9	189.8	194.9	200.0	200.8	209.3	214.4	216.1	219.5	220.3	222.8
35°	138.1	140.7	145.7	150.0	150.8	156.8	161.0	162.7	165.2	165.2	166.9
37.5°	94.9	96.6	100.8	103.4	105.1	109.3	111.8	113.5	115.2	116.1	116.9
40°	61.9	62.7	65.2	67.8	69.5	72.0	73.7	75.4	76.3	78.0	78.0
42.5°	38.1	39.0	40.7	42.4	42.4	44.9	45.8	47.4	48.3	49.1	49.1
45°	23.7	24.6	24.6	25.4	26.3	27.1	28.8	28.8	29.7	29.7	29.7
47.5°	14.4	15.3	14.4	15.3	15.3	16.1	16.9	16.9	16.9	16.9	16.9
50°	9.3	9.3	9.3	9.3	9.3	9.3	10.2	10.2	10.2	10.2	9.3
52.5°	6.8	6.8	5.9	6.8	5.9	5.9	5.9	5.9	5.9	5.9	5.1
55°	5.9	5.9	5.9	5.9	5.1	5.1	5.1	4.2	4.2	3.4	3.4
57.5°	5.9	5.9	5.1	5.1	5.1	4.2	4.2	4.2	3.4	3.4	2.5
60°	5.9	5.9	5.1	5.1	5.1	4.2	4.2	3.4	3.4	2.5	2.5
62.5°	5.9	5.9	5.1	5.1	5.1	5.1	4.2	4.2	3.4	3.4	2.5
65°	5.9	5.9	5.9	5.1	5.1	5.1	4.2	4.2	3.4	3.4	2.5
67.5°	5.9	5.9	5.9	5.9	5.1	5.1	5.1	4.2	3.4	3.4	2.5
70°	5.9	5.9	5.9	5.9	5.9	5.1	5.1	4.2	4.2	3.4	2.5
72.5°	6.8	6.8	5.9	5.9	5.9	5.1	5.1	4.2	4.2	3.4	3.4
75°	6.8	6.8	5.9	5.9	5.9	5.1	5.1	4.2	4.2	3.4	3.4
77.5°	6.8	6.8	6.8	6.8	5.9	5.9	5.1	5.1	4.2	4.2	3.4
80°	6.8	6.8	6.8	6.8	5.9	5.9	5.9	5.1	4.2	4.2	3.4
82.5°	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.1	4.2	4.2	3.4
85°	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.1	4.2	4.2	3.4
87.5°	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.1	4.2	4.2	3.4
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: P179658

CATALOG NUMBER: LDA6A45935D010TE LARH40FL 6LA1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	965.9	965.9	965.9	965.9	965.9	965.9	965.9	965.9
2.5°	579.6	568.5	567.7	558.4	539.7	549.1	537.2	528.7
5°	371.1	359.3	347.4	349.1	335.5	338.1	328.8	323.7
7.5°	235.6	222.8	219.5	219.5	204.2	204.2	198.3	194.9
10°	148.3	138.1	134.7	128.8	122.0	121.2	118.6	117.8
12.5°	120.3	120.3	117.8	118.6	118.6	118.6	117.8	117.8
15°	131.3	132.2	129.6	130.5	132.2	131.3	132.2	132.2
17.5°	151.7	155.9	152.5	154.2	157.6	156.8	157.6	158.4
20°	185.6	192.3	188.1	191.5	195.7	194.9	197.4	198.3
22.5°	231.3	239.8	235.6	238.9	245.7	244.0	247.4	249.1
25°	282.2	290.6	285.5	289.8	294.0	295.7	295.7	296.6
27.5°	294.0	299.1	295.7	299.9	301.6	303.3	301.6	302.5
30°	269.4	273.7	270.3	274.5	274.5	276.2	274.5	272.8
32.5°	222.0	225.4	221.1	226.2	225.4	226.2	227.1	227.9
35°	167.8	169.5	166.9	167.8	168.6	169.5	172.0	172.0
37.5°	116.9	119.5	116.9	117.8	117.8	119.5	121.2	121.2
40°	78.0	80.5	78.0	79.6	78.8	79.6	81.3	81.3
42.5°	49.1	50.8	49.1	50.0	50.0	50.0	50.8	51.7
45°	29.7	30.5	29.7	30.5	30.5	30.5	31.4	31.4
47.5°	16.9	17.8	16.9	16.9	17.8	16.9	17.8	17.8
50°	9.3	9.3	9.3	9.3	9.3	8.5	8.5	9.3
52.5°	5.1	5.1	4.2	4.2	4.2	4.2	4.2	4.2
55°	2.5	2.5	1.7	1.7	1.7	0.8	1.7	0.8
57.5°	1.7	1.7	0.8	0.8	0.8	0.8	0.0	0.0
60°	1.7	1.7	0.8	0.8	0.8	0.0	0.0	0.0
62.5°	1.7	1.7	0.8	0.8	0.8	0.0	0.0	0.0
65°	1.7	1.7	0.8	0.8	0.8	0.0	0.0	0.0
67.5°	2.5	1.7	0.8	0.8	0.8	0.0	0.0	0.0
70°	2.5	1.7	1.7	0.8	0.8	0.0	0.0	0.0
72.5°	2.5	1.7	1.7	1.7	0.8	0.8	0.0	0.0
75°	2.5	1.7	1.7	1.7	0.8	0.8	0.0	0.0
77.5°	2.5	2.5	1.7	1.7	0.8	0.8	0.8	0.0
80°	2.5	2.5	1.7	1.7	1.7	0.8	0.8	0.8
82.5°	2.5	2.5	1.7	1.7	1.7	0.8	0.8	0.8
85°	2.5	2.5	1.7	1.7	1.7	0.8	0.8	0.8
87.5°	2.5	2.5	1.7	1.7	1.7	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)