

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: P179930

Luminaire Tested: **LDA6A55935D010TE LARH30NF 6LAL1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179930  
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: LDA6A55935D010TE LARH30NF 6LAL1LI 30°  
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 30° Narrow Flood, 30° Tilt  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4367.9 lumens  
Efficiency: N/A  
Efficacy: 71.6 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

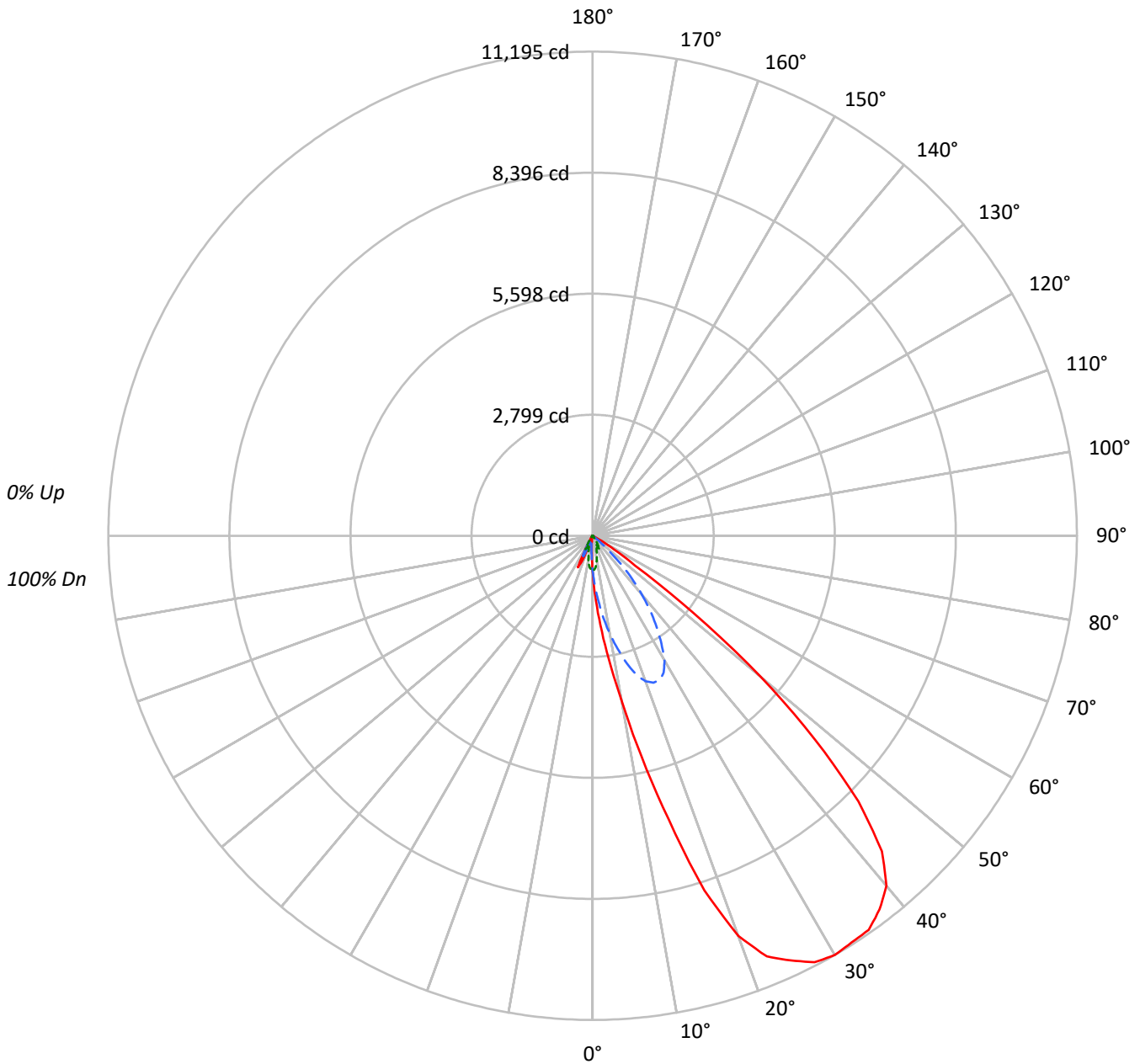
Input Watts (W): 61  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	44010	44010	44010
5°	113620	40793	12750
10°	215544	31123	4281
15°	385417	20233	4268
20°	574289	13768	7782
25°	655278	17166	48868
30°	708647	14344	14610
35°	744392	6980	4578
40°	756167	2512	2326
45°	673706	1659	1395
50°	432685	1168	947
55°	113908	812	487
60°	25404	844	373
65°	2439	999	441
70°	817	1234	545
75°	191	1631	911
80°	0	2683	1357
85°	0	4843	2139



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	97.5	2.2
10°-20°	508.8	11.6
20°-30°	1193.9	27.3
30°-40°	1373.2	31.4
40°-50°	975.5	22.3
50°-60°	198.3	4.5
60°-70°	9.9	0.2
70°-80°	5.9	0.1
80°-90°	4.9	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°	1800.2	41.2
0°-40°	3173.4	72.7
0°-60°	4347.1	99.5
0°-90°	4367.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4367.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	803	803	803	803	803	
5°	2065	1494	741	297	232	252
15°	6791	3053	356	80	75	2037
25°	10833	3677	284	620	808	4993
35°	11123	2582	104	77	68	6910
45°	8690	918	21	23	18	6404
55°	1192	24	8	8	5	1607
65°	19	7	8	7	3	45
75°	1	4	8	7	4	2
85°	0	4	8	6	3	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°	802.8	802.8	802.8	802.8	802.8	802.8	802.8	802.8	802.8	802.8	802.8
2.5°	1383.3	1341.4	1320.9	1320.1	1260.2	1279.9	1260.2	1244.8	1189.3	1166.2	1127.7
5°	2064.7	2013.4	1972.4	1954.5	1851.9	1829.6	1819.4	1767.2	1650.9	1583.4	1493.6
7.5°	2868.4	2814.6	2747.0	2693.1	2544.4	2502.5	2475.1	2385.4	2213.5	2077.6	1910.0
10°	3872.1	3840.5	3731.1	3631.9	3406.2	3319.0	3236.9	3027.4	2802.6	2529.8	2313.5
12.5°	5223.9	5149.5	4954.5	4756.2	4402.2	4272.3	4136.3	3801.2	3457.5	3030.0	2672.6
15°	6791.0	6727.7	6427.6	6104.5	5600.9	5387.2	5174.3	4646.7	4118.4	3567.8	3053.1
17.5°	8595.0	8475.3	8176.9	7630.6	6926.1	6590.1	6193.4	5521.4	4758.7	4010.7	3371.1
20°	9844.1	9773.1	9520.9	8996.8	8194.9	7751.1	7258.7	6336.2	5293.1	4365.5	3579.7
22.5°	10527.2	10456.3	10267.3	9804.8	9147.3	8701.9	8129.9	6995.3	5696.6	4604.0	3678.1
25°	10833.3	10787.1	10683.7	10306.6	9697.9	9296.9	8755.7	7451.0	5948.9	4712.6	3677.2
27.5°	11116.3	11128.3	10872.6	10562.3	10001.4	9598.7	9085.7	7656.2	5998.5	4657.9	3559.2
30°	11194.9	11165.0	11053.0	10616.1	10093.7	9655.1	9105.4	7547.7	5805.2	4415.9	3325.0
32.5°	11146.2	11147.1	11041.9	10577.7	9963.8	9473.0	8854.9	7158.6	5429.0	4036.3	2960.8
35°	11123.1	11115.4	10842.7	10434.9	9655.1	9078.0	8299.2	6534.5	4907.5	3551.5	2582.0
37.5°	10894.0	10847.8	10651.2	10098.0	9078.0	8340.2	7501.5	5771.0	4265.4	3047.1	2193.8
40°	10566.5	10508.4	10188.6	9395.2	8091.4	7268.1	6434.5	4906.7	3593.4	2545.2	1761.2
42.5°	9895.4	9799.6	9314.9	8262.4	6820.9	6054.9	5364.1	4041.4	2937.7	2066.5	1352.6
45°	8689.9	8533.4	7862.3	6762.8	5506.0	4904.9	4321.0	3239.5	2352.0	1538.9	918.2
47.5°	6977.4	6806.4	6197.7	5314.5	4310.7	3823.4	3327.5	2385.4	1591.1	896.9	460.8
50°	5073.4	4955.4	4417.6	3672.9	2850.5	2441.8	2061.3	1330.3	763.5	433.5	188.9
52.5°	2923.1	2838.5	2464.0	1933.1	1402.1	1173.9	943.9	580.5	389.0	171.8	60.7
55°	1191.8	1143.1	978.9	829.3	622.4	537.8	448.9	289.8	130.8	41.0	23.9
57.5°	583.1	577.1	481.3	385.6	283.8	229.1	172.7	58.1	31.6	20.5	15.4
60°	231.7	223.1	153.0	88.9	49.6	40.2	34.2	23.9	18.0	13.7	11.1
62.5°	40.2	39.3	33.3	28.2	23.1	20.5	18.8	14.5	12.0	9.4	8.5
65°	18.8	18.8	17.1	15.4	12.8	12.0	11.1	9.4	7.7	6.8	6.8
67.5°	9.4	9.4	8.5	7.7	6.8	6.8	6.0	6.0	5.1	5.1	5.1
70°	5.1	5.1	5.1	4.3	4.3	4.3	4.3	4.3	3.4	4.3	4.3
72.5°	3.4	3.4	3.4	2.6	1.7	2.6	2.6	2.6	3.4	4.3	4.3
75°	0.9	0.9	0.9	1.7	1.7	1.7	2.6	2.6	3.4	4.3	4.3
77.5°	0.9	0.9	0.9	0.9	1.7	1.7	1.7	2.6	3.4	4.3	4.3
80°	0.0	0.9	0.9	0.9	1.7	1.7	1.7	2.6	3.4	4.3	4.3
82.5°	0.0	0.0	0.9	0.9	1.7	1.7	1.7	2.6	3.4	4.3	4.3
85°	0.0	0.0	0.9	0.9	1.7	1.7	1.7	2.6	3.4	4.3	4.3
87.5°	0.0	0.0	0.9	0.9	1.7	1.7	1.7	2.6	3.4	4.3	4.3
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°	802.8	802.8	802.8	802.8	802.8	802.8	802.8	802.8	802.8	802.8	802.8
2.5°	1110.6	1066.1	1037.1	985.8	964.4	955.0	908.0	862.7	819.1	787.4	738.7
5°	1425.2	1354.3	1245.7	1143.9	1099.5	1071.3	978.9	893.4	812.2	741.3	656.6
7.5°	1763.8	1617.6	1447.5	1284.2	1207.2	1155.9	1013.1	888.3	772.0	664.3	548.9
10°	2088.7	1858.7	1610.8	1377.4	1273.0	1196.1	1009.7	849.8	698.5	559.1	435.2
12.5°	2365.7	2068.2	1739.0	1436.3	1300.4	1202.1	978.1	783.2	599.3	449.7	342.0
15°	2599.1	2228.9	1823.6	1456.0	1292.7	1176.4	916.5	691.7	490.8	356.5	276.2
17.5°	2763.3	2306.7	1843.3	1422.7	1238.8	1104.6	823.3	574.5	385.6	288.1	218.0
20°	2859.0	2317.0	1795.4	1341.4	1144.8	1002.9	706.2	451.4	312.9	236.0	169.3
22.5°	2873.5	2266.5	1701.4	1232.0	1036.2	899.4	588.2	377.9	284.7	220.6	165.9
25°	2803.4	2166.5	1579.1	1125.1	937.9	797.7	508.7	382.2	319.8	283.8	295.0
27.5°	2667.5	2001.5	1438.9	1015.7	835.3	693.4	480.5	400.1	348.8	354.8	375.3
30°	2458.9	1768.9	1237.1	830.2	639.5	528.4	382.2	288.1	239.4	226.6	227.4
32.5°	2152.0	1477.4	971.2	576.2	430.0	356.5	242.0	160.7	161.6	149.6	148.8
35°	1801.4	1189.3	726.7	386.4	297.5	247.9	142.8	112.9	108.6	104.3	98.3
37.5°	1454.3	919.1	483.9	264.2	189.8	137.6	71.8	59.0	54.7	51.3	51.3
40°	1107.2	642.9	299.2	138.5	76.9	56.4	42.7	35.9	35.1	35.1	34.2
42.5°	803.7	379.6	162.4	54.7	42.7	37.6	29.9	26.5	26.5	26.5	26.5
45°	427.5	193.2	62.4	34.2	28.2	26.5	22.2	20.5	20.5	21.4	21.4
47.5°	197.5	72.7	31.6	23.1	19.7	19.7	17.1	16.2	16.2	17.1	17.1
50°	71.0	29.9	20.5	16.2	14.5	15.4	13.7	12.8	13.7	13.7	13.7
52.5°	27.4	18.8	14.5	12.8	11.1	12.0	10.3	10.3	11.1	11.1	11.1
55°	17.1	13.7	11.1	9.4	8.5	9.4	8.5	8.5	8.5	8.5	8.5
57.5°	12.0	10.3	8.5	7.7	6.8	7.7	7.7	7.7	7.7	7.7	7.7
60°	9.4	7.7	6.8	6.8	6.8	6.8	6.8	6.8	6.8	7.7	7.7
62.5°	7.7	6.8	6.8	6.8	6.8	6.8	6.8	6.8	7.7	7.7	7.7
65°	6.8	6.0	6.8	6.8	6.0	6.8	6.8	6.8	7.7	7.7	8.5
67.5°	5.1	5.1	5.1	6.0	6.0	6.0	6.8	6.8	7.7	7.7	7.7
70°	5.1	5.1	6.0	6.0	6.0	6.0	6.8	6.8	7.7	7.7	7.7
72.5°	5.1	5.1	6.0	6.0	6.0	6.8	6.8	6.8	7.7	7.7	7.7
75°	5.1	5.1	6.0	6.0	6.0	6.8	6.8	6.8	7.7	7.7	7.7
77.5°	5.1	5.1	6.0	6.0	6.0	6.8	6.8	7.7	7.7	7.7	7.7
80°	5.1	6.0	6.0	6.8	6.8	6.8	6.8	7.7	7.7	8.5	8.5
82.5°	5.1	6.0	6.0	6.8	6.8	6.8	6.8	7.7	7.7	8.5	8.5
85°	5.1	6.0	6.0	6.8	6.8	6.8	6.8	7.7	7.7	7.7	7.7
87.5°	5.1	6.0	6.0	6.8	6.8	6.8	6.8	6.8	7.7	7.7	7.7
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°	802.8	802.8	802.8	802.8	802.8	802.8	802.8	802.8	802.8	802.8	802.8
2.5°	706.2	664.3	622.4	601.9	583.9	558.3	525.8	499.3	471.1	456.6	423.2
5°	589.9	518.1	457.4	428.3	406.1	375.3	342.0	318.0	296.7	284.7	263.3
7.5°	456.6	388.2	335.1	312.9	296.7	265.9	241.1	216.3	194.1	177.8	156.5
10°	353.1	300.1	256.5	235.1	217.2	184.7	154.7	131.7	107.7	91.5	84.6
12.5°	280.4	230.8	186.4	165.0	146.2	112.9	90.6	86.4	82.1	80.4	77.8
15°	215.5	170.1	123.1	101.7	94.0	89.8	84.6	83.8	80.4	80.4	77.8
17.5°	161.6	111.1	94.0	92.3	91.5	89.8	87.2	86.4	85.5	85.5	84.6
20°	116.3	107.7	105.2	106.9	107.7	109.4	108.6	108.6	112.0	119.7	118.0
22.5°	163.3	177.0	191.5	196.6	215.5	234.3	251.4	272.7	323.2	381.3	395.0
25°	323.2	364.2	401.8	422.4	453.1	495.0	535.2	584.8	619.9	648.9	682.3
27.5°	401.8	417.2	411.2	413.8	410.4	404.4	406.1	416.4	411.2	395.8	401.8
30°	237.7	249.7	242.8	246.2	236.8	236.8	234.3	239.4	236.0	230.0	228.3
32.5°	154.7	161.6	160.7	160.7	157.3	155.6	149.6	147.9	141.9	130.8	128.2
35°	93.2	88.9	84.6	82.1	80.4	80.4	79.5	79.5	76.9	74.4	73.5
37.5°	50.4	51.3	51.3	51.3	51.3	53.0	52.2	52.2	52.2	50.4	50.4
40°	35.1	36.8	36.8	36.8	37.6	37.6	37.6	38.5	37.6	37.6	37.6
42.5°	27.4	28.2	27.4	27.4	28.2	28.2	28.2	29.1	29.1	29.1	28.2
45°	22.2	22.2	21.4	22.2	22.2	23.1	23.1	23.1	23.1	22.2	22.2
47.5°	18.0	18.0	18.0	18.0	18.8	18.8	18.8	18.8	18.8	18.8	18.8
50°	14.5	14.5	14.5	15.4	15.4	15.4	14.5	15.4	15.4	15.4	14.5
52.5°	11.1	11.1	11.1	11.1	11.1	10.3	10.3	10.3	10.3	10.3	9.4
55°	8.5	8.5	8.5	8.5	8.5	9.4	8.5	9.4	8.5	8.5	7.7
57.5°	7.7	7.7	7.7	7.7	8.5	8.5	7.7	7.7	7.7	6.8	6.8
60°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	6.8	6.0	6.0
62.5°	8.5	8.5	7.7	7.7	7.7	7.7	6.8	6.8	6.8	6.0	6.0
65°	8.5	8.5	7.7	8.5	8.5	7.7	7.7	6.8	6.8	6.0	6.0
67.5°	8.5	8.5	8.5	8.5	8.5	8.5	7.7	7.7	6.8	6.8	6.0
70°	8.5	8.5	8.5	8.5	8.5	8.5	7.7	7.7	6.8	6.8	6.0
72.5°	8.5	8.5	8.5	8.5	8.5	8.5	7.7	7.7	7.7	6.8	6.0
75°	8.5	8.5	8.5	8.5	8.5	7.7	7.7	7.7	6.8	6.8	6.0
77.5°	8.5	8.5	8.5	8.5	8.5	7.7	7.7	7.7	6.8	6.8	6.0
80°	8.5	8.5	8.5	8.5	8.5	8.5	7.7	7.7	6.8	6.8	6.0
82.5°	8.5	8.5	8.5	8.5	8.5	7.7	7.7	7.7	6.8	6.8	6.0
85°	8.5	7.7	7.7	7.7	7.7	7.7	6.8	6.8	6.0	6.0	5.1
87.5°	7.7	7.7	7.7	7.7	7.7	6.8	6.8	6.0	5.1	4.3	4.3
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: P179930

CATALOG NUMBER: LDA6A55935D010TE LARH30NF 6LAL1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	802.8	802.8	802.8	802.8	802.8	802.8	802.8	802.8
2.5°	423.2	415.5	412.1	406.1	401.0	398.4	389.0	400.1
5°	259.1	249.7	247.1	242.0	236.0	232.6	225.7	231.7
7.5°	147.9	136.8	131.7	127.4	121.4	116.3	110.3	113.7
10°	82.9	79.5	80.4	77.8	76.9	76.1	75.2	76.9
12.5°	76.9	74.4	75.2	73.5	72.7	72.7	71.8	72.7
15°	77.8	75.2	76.9	75.2	74.4	74.4	73.5	75.2
17.5°	84.6	82.9	84.6	82.9	83.8	82.9	83.8	84.6
20°	118.8	121.4	126.5	123.1	125.7	129.1	133.4	133.4
22.5°	418.1	472.8	479.6	507.0	577.1	574.5	621.6	623.3
25°	730.1	733.6	764.3	754.1	754.9	790.8	787.4	807.9
27.5°	419.8	418.9	424.9	413.8	417.2	419.8	410.4	421.5
30°	234.3	230.0	232.6	226.6	226.6	228.3	225.7	230.8
32.5°	130.0	126.5	126.5	122.3	121.4	120.6	118.0	120.6
35°	74.4	71.8	72.7	71.0	69.3	68.4	67.5	68.4
37.5°	51.3	49.6	50.4	48.7	47.0	46.2	45.3	46.2
40°	37.6	36.8	36.8	35.1	34.2	33.3	32.5	32.5
42.5°	28.2	27.4	27.4	25.6	24.8	23.9	23.1	23.9
45°	21.4	20.5	20.5	19.7	18.8	18.0	18.0	18.0
47.5°	18.8	18.0	18.8	18.0	17.1	17.1	17.1	17.1
50°	14.5	14.5	14.5	13.7	12.8	12.8	12.0	11.1
52.5°	9.4	8.5	8.5	7.7	7.7	6.8	6.8	6.8
55°	7.7	6.8	6.8	6.0	6.0	5.1	5.1	5.1
57.5°	6.0	6.0	5.1	5.1	4.3	4.3	4.3	4.3
60°	5.1	5.1	5.1	4.3	4.3	3.4	3.4	3.4
62.5°	5.1	4.3	4.3	4.3	3.4	3.4	3.4	3.4
65°	5.1	4.3	4.3	4.3	3.4	3.4	3.4	3.4
67.5°	5.1	4.3	4.3	4.3	3.4	3.4	3.4	3.4
70°	6.0	5.1	5.1	4.3	4.3	4.3	3.4	3.4
72.5°	6.0	5.1	5.1	5.1	4.3	4.3	4.3	4.3
75°	6.0	5.1	5.1	5.1	4.3	4.3	4.3	4.3
77.5°	6.0	5.1	5.1	5.1	4.3	4.3	4.3	4.3
80°	6.0	5.1	5.1	5.1	4.3	4.3	4.3	4.3
82.5°	5.1	5.1	5.1	4.3	4.3	4.3	4.3	4.3
85°	5.1	4.3	4.3	4.3	3.4	3.4	3.4	3.4
87.5°	3.4	3.4	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)