

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: P179933

Luminaire Tested: **LDA6A65830D010TE LARH30NF 6LAL1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179933  
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: LDA6A65830D010TE LARH30NF 6LAL1LI 30°  
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 30° Narrow Flood, 30° Tilt  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5874.4 lumens  
Efficiency: N/A  
Efficacy: 75.3 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

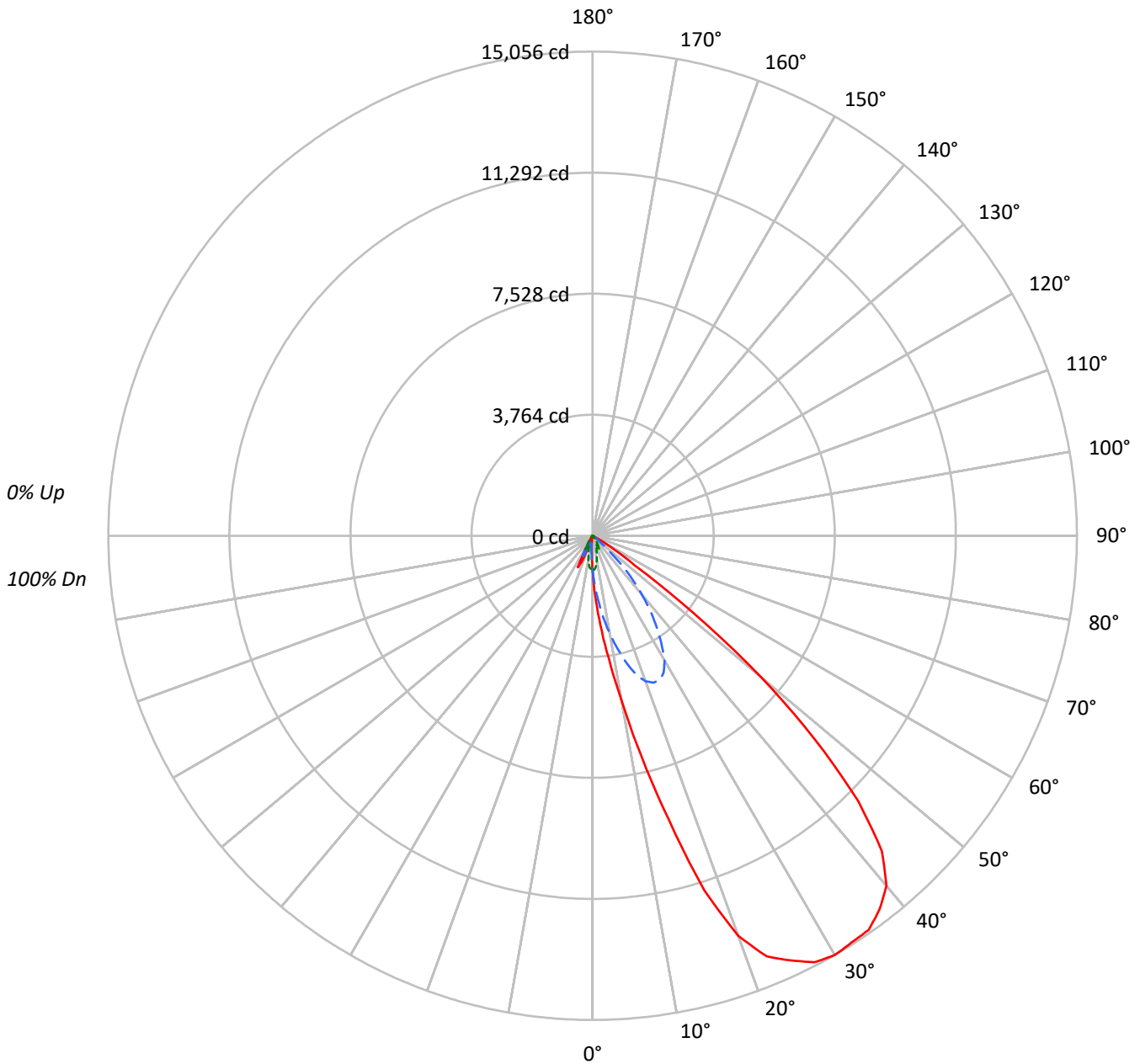
Input Watts (W): 78  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					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	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°	59189	59189	59189
5°	152817	54859	17147
10°	289897	41861	5761
15°	518363	27214	5744
20°	772383	18517	10466
25°	881307	23094	65726
30°	953090	19288	19655
35°	1001162	9389	6157
40°	1016998	3371	3127
45°	906094	2225	1868
50°	581934	1569	1271
55°	153199	1099	659
60°	34164	1129	504
65°	3282	1336	597
70°	1106	1651	737
75°	233	2182	1207
80°	0	3631	1799
85°	0	6479	2893



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	131.1	2.2
10°-20°	684.3	11.6
20°-30°	1605.7	27.3
30°-40°	1846.9	31.4
40°-50°	1311.9	22.3
50°-60°	266.7	4.5
60°-70°	13.3	0.2
70°-80°	7.9	0.1
80°-90°	6.6	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°	2421.1	41.2
0°-40°	4268.0	72.7
0°-60°	5846.6	99.5
0°-90°	5874.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5874.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1080	1080	1080	1080	1080	
5°	2777	2009	997	399	312	338
15°	9134	4106	480	108	101	2740
25°	14570	4946	382	834	1087	6715
35°	14960	3473	140	104	92	9294
45°	11687	1235	29	31	24	8613
55°	1603	32	12	12	7	2162
65°	25	9	10	9	5	61
75°	1	6	10	9	6	3
85°	0	6	10	8	5	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°	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7
2.5°	1860.5	1804.2	1776.6	1775.4	1694.9	1721.4	1694.9	1674.2	1599.5	1568.4	1516.7
5°	2777.0	2708.0	2652.8	2628.6	2490.6	2460.7	2446.9	2376.8	2220.4	2129.6	2008.8
7.5°	3857.8	3785.4	3694.6	3622.1	3422.0	3365.7	3328.9	3208.2	2977.0	2794.2	2568.8
10°	5207.8	5165.2	5018.1	4884.7	4581.1	4463.8	4353.4	4071.7	3769.3	3402.5	3111.6
12.5°	7025.8	6925.7	6663.5	6396.8	5920.7	5745.9	5563.1	5112.4	4650.1	4075.2	3594.5
15°	9133.5	9048.4	8644.8	8210.1	7532.8	7245.4	6959.1	6249.6	5539.0	4798.4	4106.2
17.5°	11559.7	11398.7	10997.4	10262.7	9315.2	8863.3	8329.7	7425.9	6400.2	5394.1	4534.0
20°	13239.7	13144.2	12805.0	12100.2	11021.6	10424.8	9762.5	8521.7	7118.9	5871.3	4814.5
22.5°	14158.4	14063.0	13808.9	13186.8	12302.5	11703.5	10934.2	9408.3	7661.6	6192.1	4946.8
25°	14570.1	14508.0	14368.9	13861.8	13043.1	12503.8	11775.9	10021.2	8000.8	6338.1	4945.6
27.5°	14950.7	14966.8	14623.0	14205.6	13451.3	12909.7	12219.7	10297.2	8067.5	6264.5	4786.9
30°	15056.5	15016.2	14865.6	14278.0	13575.5	12985.6	12246.2	10151.1	7807.7	5939.1	4471.9
32.5°	14991.0	14992.1	14850.7	14226.3	13400.7	12740.6	11909.3	9627.9	7301.7	5428.6	3982.0
35°	14959.9	14949.6	14582.7	14034.3	12985.6	12209.4	11161.9	8788.5	6600.3	4776.6	3472.6
37.5°	14651.7	14589.6	14325.2	13581.2	12209.4	11217.1	10089.0	7761.7	5736.7	4098.2	2950.6
40°	14211.3	14133.1	13703.1	12636.0	10882.4	9775.1	8654.0	6599.1	4832.9	3423.2	2368.7
42.5°	13308.7	13179.9	12527.9	11112.4	9173.7	8143.4	7214.3	5435.5	3951.0	2779.3	1819.1
45°	11687.4	11476.9	10574.3	9095.5	7405.2	6596.8	5811.5	4356.9	3163.3	2069.8	1235.0
47.5°	9384.1	9154.2	8335.5	7147.6	5797.7	5142.3	4475.3	3208.2	2139.9	1206.2	619.8
50°	6823.4	6664.7	5941.4	4939.9	3833.7	3284.0	2772.4	1789.2	1026.8	583.0	254.1
52.5°	3931.4	3817.6	3313.9	2599.9	1885.8	1578.8	1269.5	780.8	523.2	231.1	81.6
55°	1602.9	1537.4	1316.6	1115.4	837.1	723.3	603.7	389.8	175.9	55.2	32.2
57.5°	784.2	776.2	647.4	518.6	381.8	308.2	232.3	78.2	42.5	27.6	20.7
60°	311.6	300.1	205.8	119.6	66.7	54.0	46.0	32.2	24.1	18.4	14.9
62.5°	54.0	52.9	44.8	37.9	31.0	27.6	25.3	19.5	16.1	12.6	11.5
65°	25.3	25.3	23.0	20.7	17.2	16.1	14.9	12.6	10.3	9.2	9.2
67.5°	12.6	12.6	11.5	10.3	9.2	9.2	8.0	8.0	6.9	6.9	6.9
70°	6.9	6.9	6.9	5.7	5.7	5.7	5.7	5.7	4.6	5.7	5.7
72.5°	4.6	4.6	4.6	3.4	2.3	3.4	3.4	3.4	4.6	5.7	5.7
75°	1.1	1.1	1.1	2.3	2.3	2.3	3.4	3.4	4.6	5.7	5.7
77.5°	1.1	1.1	1.1	1.1	2.3	2.3	2.3	3.4	4.6	5.7	5.7
80°	0.0	1.1	1.1	1.1	2.3	2.3	2.3	3.4	4.6	5.7	5.7
82.5°	0.0	0.0	1.1	1.1	2.3	2.3	2.3	3.4	4.6	5.7	5.7
85°	0.0	0.0	1.1	1.1	2.3	2.3	2.3	3.4	4.6	5.7	5.7
87.5°	0.0	0.0	1.1	1.1	2.3	2.3	2.3	3.4	4.6	5.7	5.7
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7
2.5°	1493.7	1433.9	1394.8	1325.8	1297.1	1284.4	1221.2	1160.2	1101.6	1059.0	993.5
5°	1916.8	1821.4	1675.4	1538.5	1478.7	1440.8	1316.6	1201.6	1092.4	996.9	883.1
7.5°	2372.2	2175.6	1946.7	1727.1	1623.6	1554.6	1362.6	1194.7	1038.3	893.5	738.2
10°	2809.2	2499.8	2166.4	1852.5	1712.2	1608.7	1358.0	1143.0	939.4	752.0	585.3
12.5°	3181.7	2781.6	2338.9	1931.8	1749.0	1616.7	1315.5	1053.3	806.1	604.8	460.0
15°	3495.6	2997.7	2452.7	1958.2	1738.6	1582.2	1232.7	930.3	660.0	479.5	371.4
17.5°	3716.4	3102.4	2479.1	1913.4	1666.2	1485.6	1107.3	772.7	518.6	387.5	293.2
20°	3845.2	3116.2	2414.7	1804.2	1539.7	1348.8	949.8	607.1	420.9	317.4	227.7
22.5°	3864.7	3048.3	2288.3	1657.0	1393.7	1209.7	791.1	508.2	382.9	296.7	223.1
25°	3770.4	2913.8	2123.8	1513.2	1261.4	1072.8	684.2	514.0	430.1	381.8	396.7
27.5°	3587.6	2691.9	1935.2	1366.1	1123.4	932.6	646.2	538.1	469.1	477.2	504.8
30°	3307.0	2379.1	1663.9	1116.5	860.1	710.6	514.0	387.5	322.0	304.7	305.9
32.5°	2894.2	1987.0	1306.3	775.0	578.4	479.5	325.4	216.2	217.3	201.2	200.1
35°	2422.8	1599.5	977.4	519.7	400.2	333.5	192.0	151.8	146.0	140.3	132.2
37.5°	1955.9	1236.1	650.8	355.3	255.3	185.1	96.6	79.3	73.6	69.0	69.0
40°	1489.1	864.7	402.5	186.3	103.5	75.9	57.5	48.3	47.1	47.1	46.0
42.5°	1080.9	510.5	218.5	73.6	57.5	50.6	40.2	35.6	35.6	35.6	35.6
45°	574.9	259.9	83.9	46.0	37.9	35.6	29.9	27.6	27.6	28.7	28.7
47.5°	265.6	97.7	42.5	31.0	26.4	26.4	23.0	21.8	21.8	23.0	23.0
50°	95.4	40.2	27.6	21.8	19.5	20.7	18.4	17.2	18.4	18.4	18.4
52.5°	36.8	25.3	19.5	17.2	14.9	16.1	13.8	13.8	14.9	14.9	14.9
55°	23.0	18.4	14.9	12.6	11.5	12.6	11.5	11.5	11.5	11.5	11.5
57.5°	16.1	13.8	11.5	10.3	9.2	10.3	10.3	10.3	10.3	10.3	10.3
60°	12.6	10.3	9.2	9.2	9.2	9.2	9.2	9.2	9.2	10.3	10.3
62.5°	10.3	9.2	9.2	9.2	9.2	9.2	9.2	9.2	10.3	10.3	10.3
65°	9.2	8.0	9.2	9.2	8.0	9.2	9.2	9.2	10.3	10.3	11.5
67.5°	6.9	6.9	6.9	8.0	8.0	8.0	9.2	9.2	10.3	10.3	10.3
70°	6.9	6.9	8.0	8.0	8.0	8.0	9.2	9.2	10.3	10.3	10.3
72.5°	6.9	6.9	8.0	8.0	8.0	9.2	9.2	9.2	10.3	10.3	10.3
75°	6.9	6.9	8.0	8.0	8.0	9.2	9.2	9.2	10.3	10.3	10.3
77.5°	6.9	6.9	8.0	8.0	8.0	9.2	9.2	10.3	10.3	10.3	10.3
80°	6.9	8.0	8.0	9.2	9.2	9.2	9.2	10.3	10.3	11.5	11.5
82.5°	6.9	8.0	8.0	9.2	9.2	9.2	9.2	10.3	10.3	11.5	11.5
85°	6.9	8.0	8.0	9.2	9.2	9.2	9.2	10.3	10.3	10.3	10.3
87.5°	6.9	8.0	8.0	9.2	9.2	9.2	9.2	9.2	10.3	10.3	10.3
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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7
2.5°	949.8	893.5	837.1	809.5	785.4	750.9	707.2	671.5	633.6	614.0	569.2
5°	793.4	696.8	615.2	576.1	546.2	504.8	460.0	427.8	399.0	382.9	354.2
7.5°	614.0	522.0	450.8	420.9	399.0	357.6	324.3	290.9	261.0	239.2	210.4
10°	474.9	403.6	345.0	316.2	292.1	248.4	208.1	177.1	144.9	123.0	113.8
12.5°	377.2	310.5	250.7	221.9	196.6	151.8	121.9	116.1	110.4	108.1	104.6
15°	289.8	228.8	165.6	136.8	126.5	120.7	113.8	112.7	108.1	108.1	104.6
17.5°	217.3	149.5	126.5	124.2	123.0	120.7	117.3	116.1	115.0	115.0	113.8
20°	156.4	144.9	141.4	143.7	144.9	147.2	146.0	146.0	150.6	161.0	158.7
22.5°	219.6	238.0	257.6	264.5	289.8	315.1	338.1	366.8	434.7	512.8	531.2
25°	434.7	489.8	540.4	568.0	609.4	665.8	719.8	786.5	833.7	872.8	917.6
27.5°	540.4	561.1	553.1	556.5	551.9	543.9	546.2	560.0	553.1	532.4	540.4
30°	319.7	335.8	326.6	331.2	318.5	318.5	315.1	322.0	317.4	309.3	307.0
32.5°	208.1	217.3	216.2	216.2	211.6	209.3	201.2	198.9	190.9	175.9	172.5
35°	125.3	119.6	113.8	110.4	108.1	108.1	106.9	106.9	103.5	100.0	98.9
37.5°	67.8	69.0	69.0	69.0	69.0	71.3	70.1	70.1	70.1	67.8	67.8
40°	47.1	49.4	49.4	49.4	50.6	50.6	50.6	51.7	50.6	50.6	50.6
42.5°	36.8	37.9	36.8	36.8	37.9	37.9	37.9	39.1	39.1	39.1	37.9
45°	29.9	29.9	28.7	29.9	29.9	31.0	31.0	31.0	31.0	29.9	29.9
47.5°	24.1	24.1	24.1	24.1	25.3	25.3	25.3	25.3	25.3	25.3	25.3
50°	19.5	19.5	19.5	20.7	20.7	20.7	19.5	20.7	20.7	20.7	19.5
52.5°	14.9	14.9	14.9	14.9	14.9	13.8	13.8	13.8	13.8	13.8	12.6
55°	11.5	11.5	11.5	11.5	11.5	12.6	11.5	12.6	11.5	11.5	10.3
57.5°	10.3	10.3	10.3	10.3	11.5	11.5	10.3	10.3	10.3	9.2	9.2
60°	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	9.2	8.0	8.0
62.5°	11.5	11.5	10.3	10.3	10.3	10.3	9.2	9.2	9.2	8.0	8.0
65°	11.5	11.5	10.3	11.5	11.5	10.3	10.3	9.2	9.2	8.0	8.0
67.5°	11.5	11.5	11.5	11.5	11.5	11.5	10.3	10.3	9.2	9.2	8.0
70°	11.5	11.5	11.5	11.5	11.5	11.5	10.3	10.3	9.2	9.2	8.0
72.5°	11.5	11.5	11.5	11.5	11.5	11.5	10.3	10.3	10.3	9.2	8.0
75°	11.5	11.5	11.5	11.5	11.5	10.3	10.3	10.3	9.2	9.2	8.0
77.5°	11.5	11.5	11.5	11.5	11.5	10.3	10.3	10.3	9.2	9.2	8.0
80°	11.5	11.5	11.5	11.5	11.5	11.5	10.3	10.3	9.2	9.2	8.0
82.5°	11.5	11.5	11.5	11.5	11.5	10.3	10.3	10.3	9.2	9.2	8.0
85°	11.5	10.3	10.3	10.3	10.3	10.3	9.2	9.2	8.0	8.0	6.9
87.5°	10.3	10.3	10.3	10.3	10.3	9.2	9.2	8.0	6.9	5.7	5.7
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: P179933

CATALOG NUMBER: LDA6A65830D010TE LARH30NF 6LAL1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7	1079.7
2.5°	569.2	558.8	554.2	546.2	539.3	535.8	523.2	538.1
5°	348.4	335.8	332.3	325.4	317.4	312.8	303.6	311.6
7.5°	198.9	184.0	177.1	171.3	163.3	156.4	148.3	152.9
10°	111.5	106.9	108.1	104.6	103.5	102.3	101.2	103.5
12.5°	103.5	100.0	101.2	98.9	97.7	97.7	96.6	97.7
15°	104.6	101.2	103.5	101.2	100.0	100.0	98.9	101.2
17.5°	113.8	111.5	113.8	111.5	112.7	111.5	112.7	113.8
20°	159.8	163.3	170.2	165.6	169.0	173.6	179.4	179.4
22.5°	562.3	635.9	645.1	681.9	776.2	772.7	836.0	838.3
25°	982.0	986.6	1028.0	1014.2	1015.3	1063.6	1059.0	1086.6
27.5°	564.6	563.4	571.5	556.5	561.1	564.6	551.9	566.9
30°	315.1	309.3	312.8	304.7	304.7	307.0	303.6	310.5
32.5°	174.8	170.2	170.2	164.4	163.3	162.1	158.7	162.1
35°	100.0	96.6	97.7	95.4	93.1	92.0	90.8	92.0
37.5°	69.0	66.7	67.8	65.5	63.2	62.1	60.9	62.1
40°	50.6	49.4	49.4	47.1	46.0	44.8	43.7	43.7
42.5°	37.9	36.8	36.8	34.5	33.3	32.2	31.0	32.2
45°	28.7	27.6	27.6	26.4	25.3	24.1	24.1	24.1
47.5°	25.3	24.1	25.3	24.1	23.0	23.0	23.0	23.0
50°	19.5	19.5	19.5	18.4	17.2	17.2	16.1	14.9
52.5°	12.6	11.5	11.5	10.3	10.3	9.2	9.2	9.2
55°	10.3	9.2	9.2	8.0	8.0	6.9	6.9	6.9
57.5°	8.0	8.0	6.9	6.9	5.7	5.7	5.7	5.7
60°	6.9	6.9	6.9	5.7	5.7	4.6	4.6	4.6
62.5°	6.9	5.7	5.7	5.7	4.6	4.6	4.6	4.6
65°	6.9	5.7	5.7	5.7	4.6	4.6	4.6	4.6
67.5°	6.9	5.7	5.7	5.7	4.6	4.6	4.6	4.6
70°	8.0	6.9	6.9	5.7	5.7	5.7	4.6	4.6
72.5°	8.0	6.9	6.9	6.9	5.7	5.7	5.7	5.7
75°	8.0	6.9	6.9	6.9	5.7	5.7	5.7	5.7
77.5°	8.0	6.9	6.9	6.9	5.7	5.7	5.7	5.7
80°	8.0	6.9	6.9	6.9	5.7	5.7	5.7	5.7
82.5°	6.9	6.9	6.9	5.7	5.7	5.7	5.7	5.7
85°	6.9	5.7	5.7	5.7	4.6	4.6	4.6	4.6
87.5°	4.6	4.6	3.4	3.4	3.4	2.3	2.3	2.3
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)