

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: P179886

Luminaire Tested: **LDA6A65835D010TE LARH30NF 6LA1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179886  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26687)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA6A65835D010TE 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 / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6562.1 lumens  
Efficiency: N/A  
Efficacy: 84.1 lumens/watt  
Spacing Criteria (0/90/45): 2.58 / 0.47 / 1.37  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

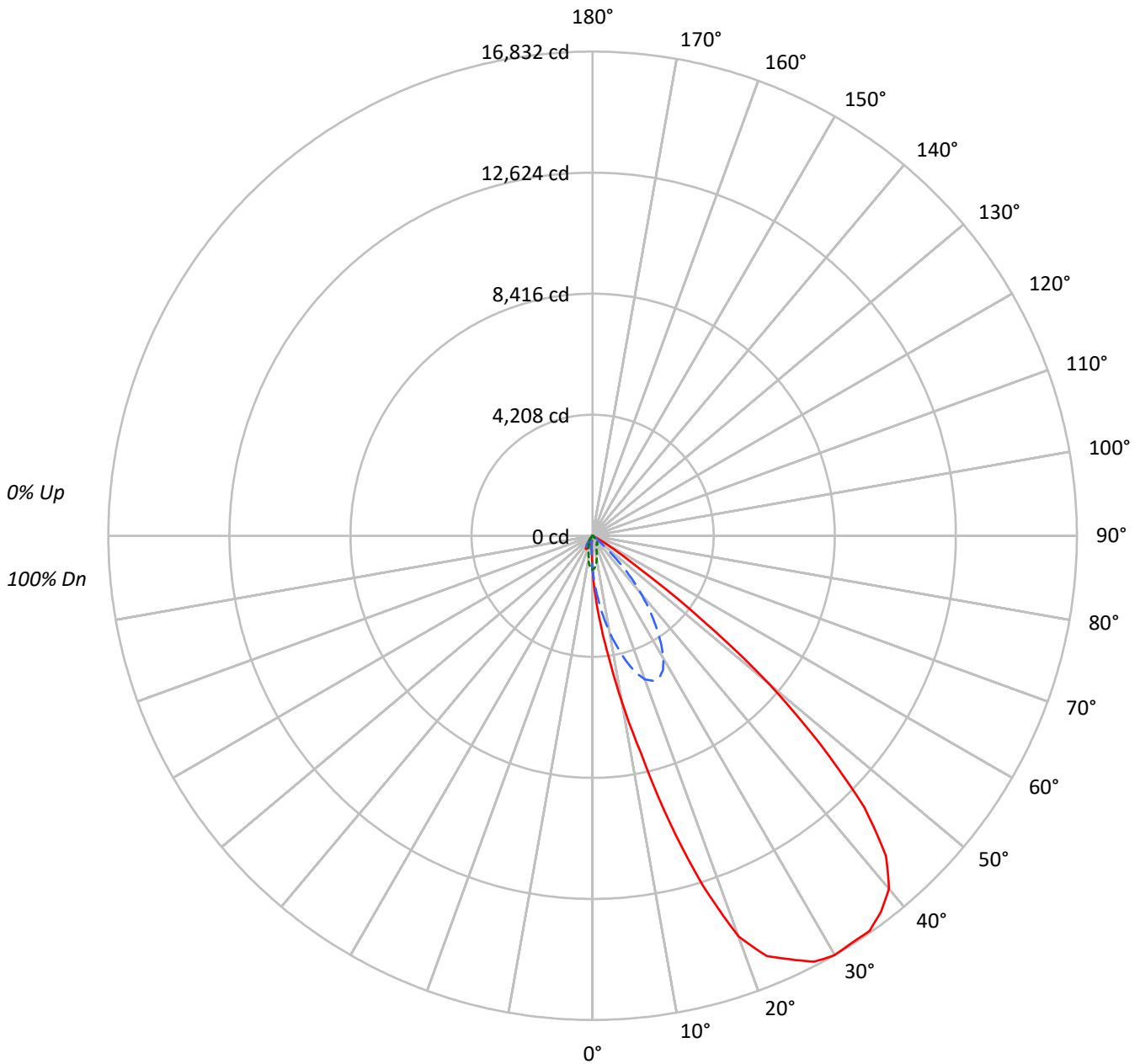
Input Watts (W): 78  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P179886

CATALOG NUMBER: LDA6A65835D010TE LARH30NF 6LA1LI 30°

### Luminous Intensity Polar Plot





TEST NUMBER: P179886

CATALOG NUMBER: LDA6A65835D010TE LARH30NF 6LA1LI 30°

**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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	112	109	106	103	110	107	104	102	103	100	98	99	97	95	95	94	93	91					91			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	85	83	81					81			
3	98	90	84	79	96	89	83	78	86	81	77	83	79	76	81	77	74	73					73			
4	91	82	75	70	89	81	74	69	78	73	68	76	71	67	74	70	67	65					65			
5	85	74	67	62	83	73	67	61	71	65	61	70	64	60	68	63	60	58					58			
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	54	52					52			
7	74	62	55	49	72	61	54	49	60	53	49	59	53	49	57	52	48	46					46			
8	69	57	49	44	67	56	49	44	55	49	44	54	48	44	53	47	43	42					42			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	43	39	38					38			
10	60	48	41	36	59	48	41	36	47	40	36	46	40	36	45	40	36	34					34			

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

	0°	90°	180°
0°	64891	64891	64891
5°	166453	59030	18385
10°	324465	45368	8834
15°	582455	30812	11850
20°	864762	23388	19561
25°	982938	19271	30673
30°	1065512	21073	28853
35°	1122333	13652	17889
40°	1146605	6061	8709
45°	1035604	2310	3241
50°	681709	913	913
55°	186689	803	0
60°	37289	921	0
65°	2633	1232	0
70°	385	1523	0
75°	0	2266	0
80°	0	3378	379
85°	0	6730	755



TEST NUMBER: P179886

CATALOG NUMBER: LDA6A65835D010TE LARH30NF 6LA1LI 30°

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	145.0	2.2
10°-20°	770.3	11.7
20°-30°	1745.9	26.6
30°-40°	2095.7	31.9
40°-50°	1477.0	22.5
50°-60°	304.8	4.6
60°-70°	10.8	0.2
70°-80°	6.4	0.1
80°-90°	6.3	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°	2661.2	40.6
0°-40°	4756.9	72.5
0°-60°	6538.6	99.6
0°-90°	6562.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6562.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1184	1184	1184	1184	1184	
5°	3025	2204	1073	446	334	372
15°	10263	4515	543	193	209	3046
25°	16250	5461	319	446	507	7499
35°	16770	3824	204	267	267	10426
45°	13358	1311	30	41	42	9824
55°	1953	26	8	6	0	2574
65°	20	6	10	6	0	60
75°	0	6	11	7	0	0
85°	0	7	11	7	1	0
90°	0	0	0	0	0	



TEST NUMBER: P179886

CATALOG NUMBER: LDA6A65835D010TE LARH30NF 6LA1LI 30°

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7
2.5°	2017.7	1956.9	1980.7	1910.3	1894.8	1881.7	1894.8	1818.4	1775.5	1720.6	1676.5
5°	3024.8	2952.0	2968.7	2845.8	2789.7	2751.5	2744.4	2586.9	2468.7	2338.7	2203.9
7.5°	4210.8	4141.6	4132.1	3941.2	3825.4	3759.8	3732.3	3506.8	3302.8	3071.3	2818.4
10°	5828.8	5671.3	5622.4	5345.6	5124.8	4985.2	4813.4	4453.0	4095.1	3745.5	3423.3
12.5°	7711.7	7625.8	7504.1	7016.0	6629.4	6431.4	6174.8	5611.6	5069.9	4492.4	3953.1
15°	10262.8	9957.3	9749.7	9044.5	8421.6	8116.2	7741.5	6880.0	6061.5	5330.0	4515.1
17.5°	12755.4	12595.5	12270.9	11355.7	10396.4	9914.3	9355.9	8185.4	7029.2	5988.7	4993.6
20°	14823.2	14672.8	14303.0	13440.3	12375.9	11664.8	10962.0	9355.9	7845.3	6513.7	5313.3
22.5°	15813.6	15718.1	15416.2	14677.6	13770.8	13094.2	12338.9	10352.3	8449.1	6857.4	5458.9
25°	16250.3	16206.1	16011.6	15429.3	14575.0	14001.1	13287.5	11057.4	8824.9	7017.2	5461.3
27.5°	16692.9	16701.3	16271.7	15811.2	15001.0	14449.7	13762.4	11370.1	8893.0	6927.8	5282.3
30°	16832.5	16744.3	16554.5	15893.5	15123.9	14538.0	13800.6	11225.7	8613.7	6560.2	4925.6
32.5°	16775.3	16740.7	16531.9	15832.6	14915.1	14269.5	13431.9	10652.9	8062.5	6035.2	4419.6
35°	16770.5	16706.1	16227.6	15627.4	14497.4	13700.4	12596.7	9727.0	7282.1	5343.2	3824.2
37.5°	16467.4	16307.5	15948.4	15139.4	13650.3	12639.6	11402.3	8595.9	6327.6	4566.4	3233.6
40°	16022.4	15807.6	15335.1	14110.8	12182.6	11018.1	9810.5	7310.8	5316.9	3800.4	2606.0
42.5°	15092.9	14768.3	14100.1	12416.5	10227.0	9176.9	8172.3	6009.0	4336.1	3096.4	1989.1
45°	13357.9	12914.1	12010.8	10162.5	8261.8	7405.0	6597.2	4834.9	3471.0	2296.9	1311.3
47.5°	10736.5	10324.8	9502.7	8089.9	6479.1	5754.8	5110.5	3596.3	2353.0	1330.4	626.4
50°	7993.3	7640.1	6998.1	5622.4	4349.2	3780.1	3228.8	2042.8	1102.5	632.4	260.1
52.5°	4769.2	4593.8	4024.7	3117.8	2147.8	1850.7	1485.5	865.1	556.0	229.1	70.4
55°	1953.3	1802.9	1589.3	1275.5	934.3	792.3	677.7	427.2	173.0	47.7	26.3
57.5°	883.0	849.6	752.9	591.8	429.6	360.3	243.4	81.1	38.2	23.9	15.5
60°	340.1	306.7	262.5	142.0	60.9	51.3	41.8	27.4	19.1	13.1	9.5
62.5°	48.9	46.5	41.8	33.4	26.3	23.9	20.3	14.3	10.7	8.4	7.2
65°	20.3	20.3	17.9	14.3	11.9	10.7	9.5	7.2	6.0	6.0	6.0
67.5°	8.4	8.4	7.2	6.0	4.8	4.8	4.8	3.6	4.8	4.8	6.0
70°	2.4	2.4	2.4	2.4	2.4	2.4	3.6	3.6	4.8	4.8	6.0
72.5°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.6	4.8	6.0	6.0
75°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.6	4.8	6.0	6.0
77.5°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.8	6.0	6.0
80°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.8	6.0	7.2
82.5°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.8	6.0	7.2
85°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.8	6.0	7.2
87.5°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.8	6.0	7.2
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: P179886

CATALOG NUMBER: LDA6A65835D010TE LARH30NF 6LA1LI 30°

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7
2.5°	1638.3	1561.9	1540.4	1473.6	1417.5	1390.1	1355.5	1277.9	1219.5	1141.9	1095.4
5°	2109.6	1965.2	1850.7	1711.1	1619.2	1559.5	1466.4	1324.5	1209.9	1072.7	974.8
7.5°	2619.1	2355.4	2149.0	1918.7	1786.2	1682.4	1523.7	1319.7	1151.4	968.9	817.3
10°	3110.7	2716.9	2392.4	2061.9	1887.7	1743.3	1524.9	1268.4	1045.2	815.0	655.1
12.5°	3543.8	3035.5	2578.5	2153.7	1937.8	1757.6	1484.3	1176.5	906.8	670.6	529.8
15°	3905.4	3282.5	2709.8	2188.3	1941.3	1726.6	1399.6	1045.2	752.9	542.9	443.9
17.5°	4179.8	3412.6	2750.3	2146.6	1872.1	1638.3	1269.6	879.4	610.9	460.6	373.5
20°	4321.8	3437.6	2691.9	2033.2	1744.5	1504.6	1098.9	713.5	517.9	400.9	312.6
22.5°	4339.7	3367.2	2552.3	1870.9	1583.4	1342.4	910.4	595.4	461.8	354.4	275.6
25°	4233.5	3214.5	2353.0	1687.2	1406.8	1156.2	741.0	533.4	420.0	318.6	317.4
27.5°	4006.8	2952.0	2114.4	1473.6	1193.2	940.2	628.8	482.1	374.7	337.7	359.2
30°	3687.0	2615.5	1820.8	1203.9	931.9	723.1	529.8	397.3	329.3	332.9	350.8
32.5°	3253.9	2197.9	1476.0	881.8	667.0	544.1	397.3	270.9	273.2	274.4	289.9
35°	2709.8	1762.4	1102.5	593.0	468.9	383.0	224.3	199.3	202.8	204.0	214.8
37.5°	2171.6	1354.3	732.6	395.0	294.7	201.7	139.6	133.6	136.0	134.8	146.8
40°	1663.3	943.8	439.1	195.7	113.4	94.3	85.9	82.3	83.5	84.7	91.9
42.5°	1177.7	511.9	217.2	74.0	59.7	54.9	51.3	48.9	50.1	50.1	54.9
45°	597.8	242.2	74.0	40.6	37.0	33.4	31.0	29.8	29.8	29.8	32.2
47.5°	258.9	79.9	34.6	25.1	22.7	21.5	19.1	17.9	17.9	17.9	19.1
50°	81.1	32.2	21.5	16.7	14.3	13.1	11.9	11.9	11.9	10.7	11.9
52.5°	29.8	20.3	14.3	10.7	9.5	9.5	9.5	8.4	9.5	8.4	9.5
55°	17.9	13.1	9.5	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
57.5°	11.9	9.5	8.4	8.4	7.2	7.2	8.4	8.4	8.4	8.4	8.4
60°	8.4	8.4	7.2	7.2	7.2	7.2	8.4	8.4	8.4	8.4	8.4
62.5°	7.2	7.2	7.2	7.2	7.2	7.2	8.4	8.4	8.4	8.4	9.5
65°	6.0	7.2	7.2	7.2	7.2	7.2	8.4	8.4	9.5	9.5	9.5
67.5°	6.0	7.2	7.2	8.4	8.4	8.4	8.4	9.5	9.5	9.5	9.5
70°	7.2	7.2	8.4	8.4	8.4	8.4	9.5	9.5	9.5	9.5	10.7
72.5°	7.2	7.2	8.4	8.4	8.4	8.4	9.5	9.5	10.7	10.7	10.7
75°	7.2	8.4	8.4	8.4	8.4	9.5	9.5	9.5	10.7	10.7	10.7
77.5°	7.2	8.4	8.4	9.5	9.5	9.5	9.5	10.7	10.7	10.7	10.7
80°	7.2	8.4	8.4	9.5	9.5	9.5	10.7	10.7	10.7	10.7	11.9
82.5°	7.2	8.4	8.4	9.5	9.5	9.5	10.7	10.7	10.7	10.7	11.9
85°	8.4	8.4	9.5	9.5	9.5	9.5	10.7	10.7	10.7	10.7	11.9
87.5°	8.4	8.4	9.5	9.5	9.5	9.5	10.7	10.7	11.9	10.7	11.9
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: P179886

CATALOG NUMBER: LDA6A65835D010TE LARH30NF 6LA1LI 30°

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7
2.5°	1033.3	964.1	916.4	898.5	863.9	809.0	776.8	746.9	690.9	678.9	647.9
5°	862.7	751.7	673.0	643.1	603.8	557.2	511.9	482.1	446.3	431.9	410.5
7.5°	680.1	569.2	501.1	477.3	449.8	411.7	371.1	341.3	304.3	285.2	267.3
10°	534.6	452.2	395.0	371.1	342.4	301.9	260.1	220.7	188.5	168.2	164.7
12.5°	434.3	366.3	305.5	280.4	247.0	206.4	176.6	175.4	173.0	171.8	174.2
15°	355.6	289.9	225.5	198.1	188.5	187.3	190.9	194.5	193.3	196.9	199.3
17.5°	292.3	221.9	207.6	208.8	210.0	213.6	219.5	229.1	230.3	236.3	241.0
20°	238.6	235.1	241.0	245.8	249.4	256.5	269.7	281.6	285.2	293.5	303.1
22.5°	270.9	281.6	294.7	300.7	305.5	318.6	332.9	352.0	359.2	369.9	383.0
25°	326.9	344.8	365.1	372.3	379.4	400.9	417.6	440.3	446.3	459.4	472.5
27.5°	373.5	392.6	414.0	423.6	429.6	451.0	465.4	479.7	479.7	486.8	496.4
30°	366.3	381.8	399.7	406.9	409.3	424.8	439.1	443.9	441.5	445.1	452.2
32.5°	304.3	316.2	330.5	336.5	338.9	349.6	361.5	361.5	360.3	360.3	365.1
35°	225.5	233.9	241.0	247.0	250.6	257.7	268.5	267.3	267.3	264.9	268.5
37.5°	151.5	156.3	164.7	167.0	168.2	173.0	181.4	181.4	179.0	180.2	182.6
40°	91.9	97.8	102.6	103.8	106.2	109.8	115.7	115.7	115.7	115.7	116.9
42.5°	54.9	58.5	62.0	62.0	63.2	68.0	70.4	70.4	70.4	70.4	71.6
45°	32.2	33.4	35.8	37.0	37.0	39.4	40.6	40.6	40.6	40.6	41.8
47.5°	19.1	20.3	20.3	21.5	21.5	22.7	23.9	23.9	22.7	22.7	22.7
50°	11.9	11.9	11.9	11.9	13.1	13.1	13.1	13.1	13.1	13.1	11.9
52.5°	9.5	9.5	9.5	9.5	8.4	8.4	8.4	8.4	7.2	7.2	6.0
55°	8.4	8.4	8.4	8.4	8.4	7.2	7.2	7.2	6.0	4.8	3.6
57.5°	8.4	8.4	8.4	8.4	8.4	7.2	7.2	6.0	4.8	4.8	3.6
60°	8.4	8.4	8.4	8.4	8.4	7.2	7.2	6.0	4.8	4.8	3.6
62.5°	9.5	9.5	8.4	8.4	8.4	7.2	7.2	6.0	6.0	4.8	3.6
65°	9.5	9.5	8.4	8.4	8.4	8.4	7.2	7.2	6.0	4.8	3.6
67.5°	9.5	9.5	9.5	9.5	8.4	8.4	8.4	7.2	6.0	4.8	3.6
70°	10.7	10.7	9.5	9.5	9.5	8.4	8.4	7.2	6.0	6.0	4.8
72.5°	10.7	10.7	9.5	9.5	9.5	9.5	8.4	7.2	7.2	6.0	4.8
75°	10.7	10.7	10.7	10.7	9.5	9.5	8.4	8.4	7.2	6.0	4.8
77.5°	10.7	10.7	10.7	10.7	9.5	9.5	9.5	8.4	7.2	6.0	4.8
80°	10.7	10.7	10.7	10.7	10.7	9.5	9.5	8.4	7.2	6.0	4.8
82.5°	11.9	11.9	10.7	10.7	10.7	9.5	9.5	8.4	7.2	6.0	6.0
85°	11.9	11.9	10.7	10.7	10.7	9.5	9.5	8.4	7.2	7.2	6.0
87.5°	11.9	11.9	10.7	10.7	10.7	9.5	9.5	8.4	7.2	7.2	6.0
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: P179886

CATALOG NUMBER: LDA6A65835D010TE LARH30NF 6LA1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7	1183.7
2.5°	628.8	593.0	581.1	589.4	579.9	572.7	563.2	558.4
5°	393.8	367.5	359.2	361.5	353.2	346.0	336.5	334.1
7.5°	242.2	217.2	207.6	207.6	198.1	189.7	183.8	180.2
10°	162.3	157.5	158.7	159.9	158.7	159.9	156.3	158.7
12.5°	174.2	171.8	174.2	175.4	175.4	177.8	173.0	176.6
15°	202.8	200.5	204.0	206.4	206.4	210.0	205.2	208.8
17.5°	248.2	247.0	253.0	255.3	256.5	262.5	256.5	261.3
20°	313.8	312.6	321.0	324.6	323.4	335.3	326.9	335.3
22.5°	398.5	396.1	408.1	411.7	412.8	428.4	421.2	427.2
25°	483.2	485.6	491.6	497.6	498.8	511.9	501.1	507.1
27.5°	501.1	497.6	501.1	508.3	509.5	515.5	505.9	510.7
30°	453.4	447.5	448.6	457.0	459.4	461.8	453.4	455.8
32.5°	368.7	359.2	359.2	367.5	369.9	373.5	359.2	365.1
35°	272.1	263.7	263.7	269.7	270.9	273.2	262.5	267.3
37.5°	186.1	179.0	181.4	183.8	184.9	187.3	186.1	184.9
40°	119.3	114.5	118.1	118.1	119.3	120.5	120.5	121.7
42.5°	72.8	69.2	71.6	71.6	72.8	72.8	72.8	74.0
45°	41.8	40.6	40.6	41.8	41.8	41.8	40.6	41.8
47.5°	22.7	21.5	22.7	22.7	22.7	22.7	22.7	22.7
50°	11.9	10.7	10.7	10.7	10.7	10.7	10.7	10.7
52.5°	6.0	4.8	4.8	4.8	3.6	4.8	3.6	3.6
55°	3.6	2.4	2.4	2.4	1.2	1.2	0.0	0.0
57.5°	2.4	1.2	1.2	1.2	0.0	0.0	0.0	0.0
60°	2.4	1.2	1.2	1.2	0.0	0.0	0.0	0.0
62.5°	2.4	1.2	1.2	1.2	0.0	0.0	0.0	0.0
65°	2.4	1.2	1.2	1.2	0.0	0.0	0.0	0.0
67.5°	3.6	2.4	1.2	1.2	1.2	0.0	0.0	0.0
70°	3.6	2.4	2.4	1.2	1.2	0.0	0.0	0.0
72.5°	3.6	2.4	2.4	2.4	1.2	1.2	0.0	0.0
75°	3.6	2.4	2.4	2.4	1.2	1.2	0.0	0.0
77.5°	3.6	3.6	2.4	2.4	1.2	1.2	1.2	0.0
80°	4.8	3.6	2.4	2.4	2.4	1.2	1.2	1.2
82.5°	4.8	3.6	2.4	2.4	2.4	1.2	1.2	1.2
85°	4.8	3.6	3.6	2.4	2.4	1.2	1.2	1.2
87.5°	4.8	3.6	3.6	2.4	2.4	1.2	1.2	1.2
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)