

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: P179935

Luminaire Tested: **LDA6A65840D010TE LARH30NF 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179935
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: LDA6A65840D010TE LARH30NF 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 30° Narrow Flood, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6255.8 lumens
Efficiency: N/A
Efficacy: 80.2 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

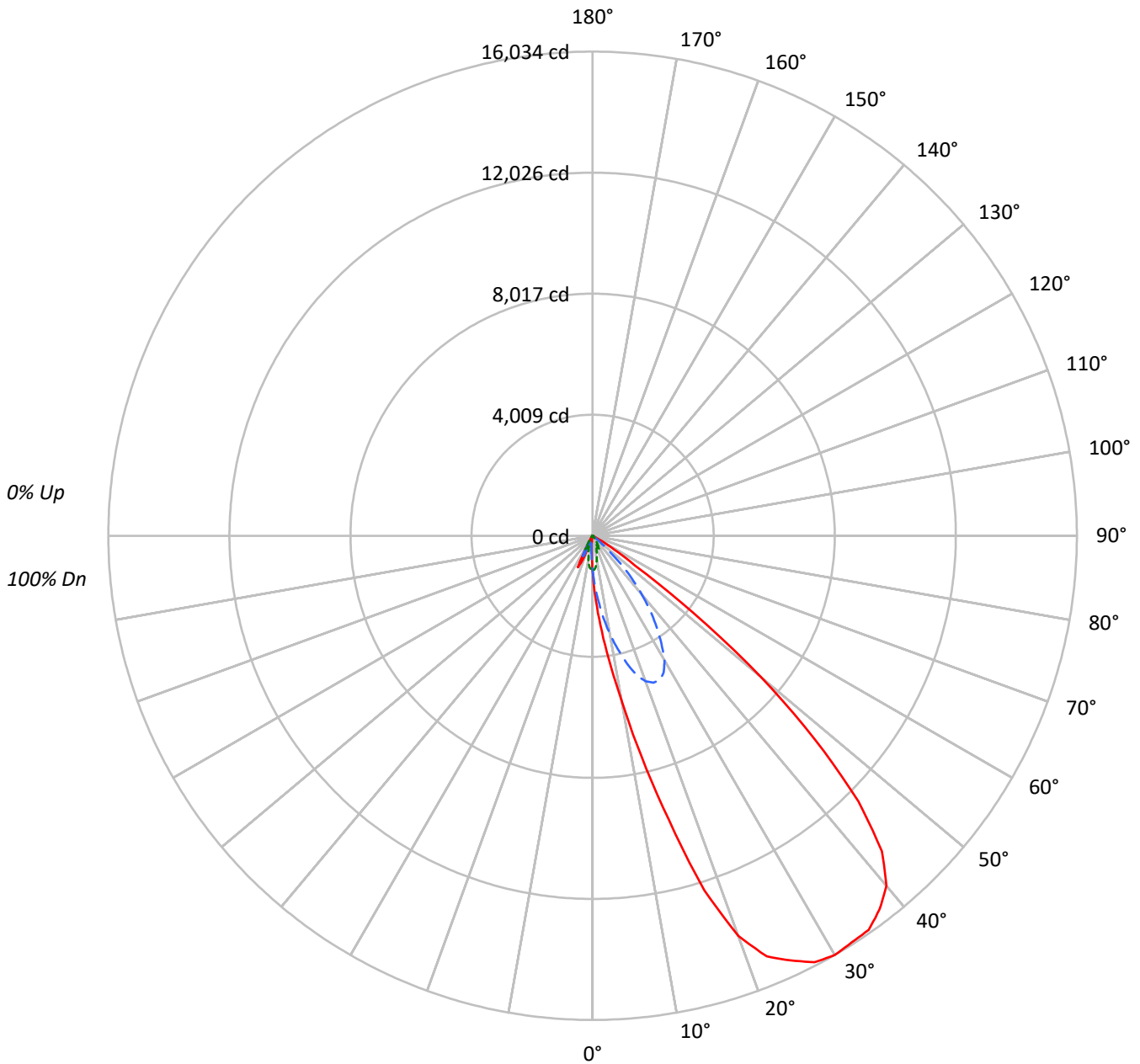
Input Watts (W): 78
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P179935

CATALOG NUMBER: LDA6A65840D010TE LARH30NF 6LAL1LI 30°

Luminous Intensity Polar Plot





TEST NUMBER: P179935

CATALOG NUMBER: LDA6A65840D010TE LARH30NF 6LAL1LI 30°

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°	63032	63032	63032
5°	162733	58425	18259
10°	308712	44577	6134
15°	552007	28979	6118
20°	822519	19718	11143
25°	938516	24588	69996
30°	1014954	20541	20927
35°	1066151	9998	6558
40°	1083015	3592	3328
45°	964906	2372	1992
50°	619707	1672	1356
55°	163148	1166	698
60°	36379	1206	537
65°	3489	1427	636
70°	1170	1763	785
75°	254	2330	1292
80°	0	3852	1926
85°	0	6919	3082



TEST NUMBER: P179935

CATALOG NUMBER: LDA6A65840D010TE LARH30NF 6LAL1LI 30°

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.6	2.2
10°-20°	728.7	11.6
20°-30°	1709.9	27.3
30°-40°	1966.8	31.4
40°-50°	1397.1	22.3
50°-60°	284.0	4.5
60°-70°	14.2	0.2
70°-80°	8.4	0.1
80°-90°	7.0	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°	2578.3	41.2
0°-40°	4545.0	72.7
0°-60°	6226.1	99.5
0°-90°	6255.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6255.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1150	1150	1150	1150	1150	
5°	2957	2139	1062	425	332	360
15°	9726	4373	511	115	108	2918
25°	15516	5267	406	888	1157	7151
35°	15931	3698	149	110	98	9897
45°	12446	1315	31	33	26	9172
55°	1707	34	12	12	7	2302
65°	27	10	11	10	5	65
75°	1	6	11	10	6	3
85°	0	6	11	9	5	0
90°	0	0	0	0	0	



TEST NUMBER: P179935

CATALOG NUMBER: LDA6A65840D010TE LARH30NF 6LAL1LI 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8
2.5°	1981.3	1921.3	1891.9	1890.7	1804.9	1833.1	1804.9	1782.9	1703.3	1670.2	1615.1
5°	2957.2	2883.7	2825.0	2799.2	2652.3	2620.5	2605.8	2531.1	2364.5	2267.8	2139.2
7.5°	4108.3	4031.1	3934.4	3857.2	3644.2	3584.2	3545.0	3416.4	3170.3	2975.6	2735.6
10°	5545.8	5500.5	5343.8	5201.7	4878.5	4753.6	4636.0	4336.0	4014.0	3623.3	3313.5
12.5°	7481.8	7375.3	7096.1	6812.0	6305.0	6118.9	5924.2	5444.2	4951.9	4339.7	3827.8
15°	9726.3	9635.7	9205.9	8743.0	8021.8	7715.7	7410.8	6655.2	5898.5	5109.9	4372.7
17.5°	12310.1	12138.6	11711.3	10928.8	9919.8	9438.6	8870.4	7907.9	6815.7	5744.2	4828.3
20°	14099.1	13997.5	13636.2	12885.6	11737.0	11101.5	10396.1	9074.9	7581.0	6252.4	5127.1
22.5°	15077.5	14975.8	14705.2	14042.8	13101.1	12463.1	11643.9	10019.0	8159.0	6594.0	5267.9
25°	15515.9	15449.7	15301.6	14761.5	13889.7	13315.4	12540.3	10671.7	8520.2	6749.5	5266.6
27.5°	15921.2	15938.3	15572.2	15127.7	14324.4	13747.6	13012.9	10965.5	8591.2	6671.2	5097.7
30°	16033.8	15991.0	15830.6	15204.8	14456.6	13828.5	13041.1	10810.0	8314.5	6324.6	4762.1
32.5°	15964.0	15965.2	15814.6	15149.7	14270.5	13567.6	12682.3	10252.9	7775.7	5780.9	4240.5
35°	15931.0	15919.9	15529.3	14945.2	13828.5	13001.9	11886.4	9359.0	7028.7	5086.6	3698.0
37.5°	15602.8	15536.7	15255.0	14462.8	13001.9	11945.2	10743.9	8265.5	6109.1	4364.2	3142.1
40°	15133.8	15050.5	14592.6	13456.2	11588.8	10409.6	9215.7	7027.5	5146.6	3645.4	2522.5
42.5°	14172.6	14035.4	13341.1	11833.7	9769.2	8672.0	7682.6	5788.3	4207.4	2959.7	1937.2
45°	12446.0	12221.9	11260.7	9685.9	7885.9	7025.1	6188.7	4639.7	3368.6	2204.1	1315.1
47.5°	9993.3	9748.4	8876.5	7611.6	6174.0	5476.0	4765.8	3416.4	2278.8	1284.5	660.0
50°	7266.3	7097.3	6327.1	5260.5	4082.5	3497.2	2952.3	1905.3	1093.5	620.8	270.6
52.5°	4186.6	4065.4	3529.1	2768.6	2008.2	1681.3	1351.9	831.4	557.2	246.1	86.9
55°	1707.0	1637.2	1402.1	1187.8	891.4	770.2	642.9	415.1	187.4	58.8	34.3
57.5°	835.1	826.5	689.4	552.3	406.5	328.2	247.4	83.3	45.3	29.4	22.0
60°	331.8	319.6	219.2	127.3	71.0	57.6	49.0	34.3	25.7	19.6	15.9
62.5°	57.6	56.3	47.8	40.4	33.1	29.4	26.9	20.8	17.1	13.5	12.2
65°	26.9	26.9	24.5	22.0	18.4	17.1	15.9	13.5	11.0	9.8	9.8
67.5°	13.5	13.5	12.2	11.0	9.8	9.8	8.6	8.6	7.3	7.3	7.3
70°	7.3	7.3	7.3	6.1	6.1	6.1	6.1	6.1	4.9	6.1	6.1
72.5°	4.9	4.9	4.9	3.7	2.4	3.7	3.7	3.7	4.9	6.1	6.1
75°	1.2	1.2	1.2	2.4	2.4	2.4	3.7	3.7	4.9	6.1	6.1
77.5°	1.2	1.2	1.2	1.2	2.4	2.4	2.4	3.7	4.9	6.1	6.1
80°	0.0	1.2	1.2	1.2	2.4	2.4	2.4	3.7	4.9	6.1	6.1
82.5°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.7	4.9	6.1	6.1
85°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.7	4.9	6.1	6.1
87.5°	0.0	0.0	1.2	1.2	2.4	2.4	2.4	3.7	4.9	6.1	6.1
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: P179935

CATALOG NUMBER: LDA6A65840D010TE LARH30NF 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8
2.5°	1590.6	1527.0	1485.3	1411.9	1381.3	1367.8	1300.4	1235.5	1173.1	1127.8	1058.0
5°	2041.3	1939.6	1784.1	1638.4	1574.7	1534.3	1402.1	1279.6	1163.3	1061.7	940.4
7.5°	2526.2	2316.8	2073.1	1839.2	1729.0	1655.5	1451.1	1272.3	1105.7	951.4	786.1
10°	2991.5	2662.1	2307.0	1972.7	1823.3	1713.1	1446.2	1217.2	1000.4	800.8	623.3
12.5°	3388.2	2962.1	2490.7	2057.2	1862.5	1721.7	1400.8	1121.7	858.4	644.1	489.8
15°	3722.5	3192.3	2611.9	2085.4	1851.5	1684.9	1312.7	990.6	702.9	510.6	395.5
17.5°	3957.6	3303.7	2640.1	2037.6	1774.3	1582.1	1179.2	822.9	552.3	412.7	312.3
20°	4094.8	3318.4	2571.5	1921.3	1639.6	1436.4	1011.5	646.5	448.2	338.0	242.5
22.5°	4115.6	3246.2	2436.8	1764.5	1484.1	1288.2	842.5	541.2	407.8	315.9	237.6
25°	4015.2	3102.9	2261.7	1611.5	1343.3	1142.5	728.6	547.4	458.0	406.5	422.5
27.5°	3820.5	2866.6	2060.9	1454.7	1196.4	993.1	688.2	573.1	499.6	508.2	537.6
30°	3521.7	2533.5	1771.9	1189.0	915.9	756.8	547.4	412.7	342.9	324.5	325.7
32.5°	3082.1	2116.0	1391.1	825.3	615.9	510.6	346.5	230.2	231.4	214.3	213.1
35°	2580.1	1703.3	1040.8	553.5	426.1	355.1	204.5	161.6	155.5	149.4	140.8
37.5°	2082.9	1316.4	693.1	378.4	271.8	197.1	102.9	84.5	78.4	73.5	73.5
40°	1585.7	920.8	428.6	198.4	110.2	80.8	61.2	51.4	50.2	50.2	49.0
42.5°	1151.0	543.7	232.7	78.4	61.2	53.9	42.9	38.0	38.0	38.0	38.0
45°	612.3	276.7	89.4	49.0	40.4	38.0	31.8	29.4	29.4	30.6	30.6
47.5°	282.9	104.1	45.3	33.1	28.2	28.2	24.5	23.3	23.3	24.5	24.5
50°	101.6	42.9	29.4	23.3	20.8	22.0	19.6	18.4	19.6	19.6	19.6
52.5°	39.2	26.9	20.8	18.4	15.9	17.1	14.7	14.7	15.9	15.9	15.9
55°	24.5	19.6	15.9	13.5	12.2	13.5	12.2	12.2	12.2	12.2	12.2
57.5°	17.1	14.7	12.2	11.0	9.8	11.0	11.0	11.0	11.0	11.0	11.0
60°	13.5	11.0	9.8	9.8	9.8	9.8	9.8	9.8	9.8	11.0	11.0
62.5°	11.0	9.8	9.8	9.8	9.8	9.8	9.8	9.8	11.0	11.0	11.0
65°	9.8	8.6	9.8	9.8	8.6	9.8	9.8	9.8	11.0	11.0	12.2
67.5°	7.3	7.3	7.3	8.6	8.6	8.6	9.8	9.8	11.0	11.0	11.0
70°	7.3	7.3	8.6	8.6	8.6	8.6	9.8	9.8	11.0	11.0	11.0
72.5°	7.3	7.3	8.6	8.6	8.6	9.8	9.8	9.8	11.0	11.0	11.0
75°	7.3	7.3	8.6	8.6	8.6	9.8	9.8	9.8	11.0	11.0	11.0
77.5°	7.3	7.3	8.6	8.6	8.6	9.8	9.8	11.0	11.0	11.0	11.0
80°	7.3	8.6	8.6	9.8	9.8	9.8	9.8	11.0	11.0	12.2	12.2
82.5°	7.3	8.6	8.6	9.8	9.8	9.8	9.8	11.0	11.0	12.2	12.2
85°	7.3	8.6	8.6	9.8	9.8	9.8	9.8	11.0	11.0	11.0	11.0
87.5°	7.3	8.6	8.6	9.8	9.8	9.8	9.8	9.8	11.0	11.0	11.0
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: P179935

CATALOG NUMBER: LDA6A65840D010TE LARH30NF 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8
2.5°	1011.5	951.4	891.4	862.1	836.3	799.6	753.1	715.1	674.7	653.9	606.1
5°	844.9	742.1	655.1	613.5	581.6	537.6	489.8	455.5	424.9	407.8	377.2
7.5°	653.9	555.9	480.0	448.2	424.9	380.8	345.3	309.8	278.0	254.7	224.1
10°	505.7	429.8	367.4	336.7	311.0	264.5	221.6	188.6	154.3	131.0	121.2
12.5°	401.6	330.6	266.9	236.3	209.4	161.6	129.8	123.7	117.6	115.1	111.4
15°	308.6	243.7	176.3	145.7	134.7	128.6	121.2	120.0	115.1	115.1	111.4
17.5°	231.4	159.2	134.7	132.2	131.0	128.6	124.9	123.7	122.5	122.5	121.2
20°	166.5	154.3	150.6	153.1	154.3	156.7	155.5	155.5	160.4	171.4	169.0
22.5°	233.9	253.5	274.3	281.6	308.6	335.5	360.0	390.6	462.9	546.1	565.7
25°	462.9	521.6	575.5	604.9	649.0	709.0	766.5	837.6	887.8	929.4	977.2
27.5°	575.5	597.6	589.0	592.7	587.8	579.2	581.6	596.3	589.0	567.0	575.5
30°	340.4	357.6	347.8	352.7	339.2	339.2	335.5	342.9	338.0	329.4	326.9
32.5°	221.6	231.4	230.2	230.2	225.3	222.9	214.3	211.8	203.3	187.4	183.7
35°	133.5	127.3	121.2	117.6	115.1	115.1	113.9	113.9	110.2	106.5	105.3
37.5°	72.2	73.5	73.5	73.5	73.5	75.9	74.7	74.7	74.7	72.2	72.2
40°	50.2	52.7	52.7	52.7	53.9	53.9	53.9	55.1	53.9	53.9	53.9
42.5°	39.2	40.4	39.2	39.2	40.4	40.4	40.4	41.6	41.6	41.6	40.4
45°	31.8	31.8	30.6	31.8	31.8	33.1	33.1	33.1	33.1	31.8	31.8
47.5°	25.7	25.7	25.7	25.7	26.9	26.9	26.9	26.9	26.9	26.9	26.9
50°	20.8	20.8	20.8	22.0	22.0	22.0	20.8	22.0	22.0	22.0	20.8
52.5°	15.9	15.9	15.9	15.9	15.9	14.7	14.7	14.7	14.7	14.7	13.5
55°	12.2	12.2	12.2	12.2	12.2	13.5	12.2	13.5	12.2	12.2	11.0
57.5°	11.0	11.0	11.0	11.0	12.2	12.2	11.0	11.0	11.0	9.8	9.8
60°	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	9.8	8.6	8.6
62.5°	12.2	12.2	11.0	11.0	11.0	11.0	9.8	9.8	9.8	8.6	8.6
65°	12.2	12.2	11.0	12.2	12.2	11.0	11.0	9.8	9.8	8.6	8.6
67.5°	12.2	12.2	12.2	12.2	12.2	12.2	11.0	11.0	9.8	9.8	8.6
70°	12.2	12.2	12.2	12.2	12.2	12.2	11.0	11.0	9.8	9.8	8.6
72.5°	12.2	12.2	12.2	12.2	12.2	12.2	11.0	11.0	11.0	9.8	8.6
75°	12.2	12.2	12.2	12.2	12.2	11.0	11.0	11.0	9.8	9.8	8.6
77.5°	12.2	12.2	12.2	12.2	12.2	11.0	11.0	11.0	9.8	9.8	8.6
80°	12.2	12.2	12.2	12.2	12.2	12.2	11.0	11.0	9.8	9.8	8.6
82.5°	12.2	12.2	12.2	12.2	12.2	11.0	11.0	11.0	9.8	9.8	8.6
85°	12.2	11.0	11.0	11.0	11.0	11.0	9.8	9.8	8.6	8.6	7.3
87.5°	11.0	11.0	11.0	11.0	11.0	9.8	9.8	8.6	7.3	6.1	6.1
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: P179935

CATALOG NUMBER: LDA6A65840D010TE LARH30NF 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8	1149.8
2.5°	606.1	595.1	590.2	581.6	574.3	570.6	557.2	573.1
5°	371.0	357.6	353.9	346.5	338.0	333.1	323.3	331.8
7.5°	211.8	195.9	188.6	182.5	173.9	166.5	158.0	162.9
10°	118.8	113.9	115.1	111.4	110.2	109.0	107.8	110.2
12.5°	110.2	106.5	107.8	105.3	104.1	104.1	102.9	104.1
15°	111.4	107.8	110.2	107.8	106.5	106.5	105.3	107.8
17.5°	121.2	118.8	121.2	118.8	120.0	118.8	120.0	121.2
20°	170.2	173.9	181.2	176.3	180.0	184.9	191.0	191.0
22.5°	598.8	677.2	687.0	726.1	826.5	822.9	890.2	892.7
25°	1045.7	1050.6	1094.7	1080.0	1081.2	1132.7	1127.8	1157.2
27.5°	601.2	600.0	608.6	592.7	597.6	601.2	587.8	603.7
30°	335.5	329.4	333.1	324.5	324.5	326.9	323.3	330.6
32.5°	186.1	181.2	181.2	175.1	173.9	172.7	169.0	172.7
35°	106.5	102.9	104.1	101.6	99.2	98.0	96.7	98.0
37.5°	73.5	71.0	72.2	69.8	67.3	66.1	64.9	66.1
40°	53.9	52.7	52.7	50.2	49.0	47.8	46.5	46.5
42.5°	40.4	39.2	39.2	36.7	35.5	34.3	33.1	34.3
45°	30.6	29.4	29.4	28.2	26.9	25.7	25.7	25.7
47.5°	26.9	25.7	26.9	25.7	24.5	24.5	24.5	24.5
50°	20.8	20.8	20.8	19.6	18.4	18.4	17.1	15.9
52.5°	13.5	12.2	12.2	11.0	11.0	9.8	9.8	9.8
55°	11.0	9.8	9.8	8.6	8.6	7.3	7.3	7.3
57.5°	8.6	8.6	7.3	7.3	6.1	6.1	6.1	6.1
60°	7.3	7.3	7.3	6.1	6.1	4.9	4.9	4.9
62.5°	7.3	6.1	6.1	6.1	4.9	4.9	4.9	4.9
65°	7.3	6.1	6.1	6.1	4.9	4.9	4.9	4.9
67.5°	7.3	6.1	6.1	6.1	4.9	4.9	4.9	4.9
70°	8.6	7.3	7.3	6.1	6.1	6.1	4.9	4.9
72.5°	8.6	7.3	7.3	7.3	6.1	6.1	6.1	6.1
75°	8.6	7.3	7.3	7.3	6.1	6.1	6.1	6.1
77.5°	8.6	7.3	7.3	7.3	6.1	6.1	6.1	6.1
80°	8.6	7.3	7.3	7.3	6.1	6.1	6.1	6.1
82.5°	7.3	7.3	7.3	6.1	6.1	6.1	6.1	6.1
85°	7.3	6.1	6.1	6.1	4.9	4.9	4.9	4.9
87.5°	4.9	4.9	3.7	3.7	3.7	2.4	2.4	2.4
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)