

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: P179926

Luminaire Tested: **LDA6A55835D010TE LARH30NF 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179926
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: LDA6A55835D010TE LARH30NF 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, 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: 5109.0 lumens
Efficiency: N/A
Efficacy: 83.8 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

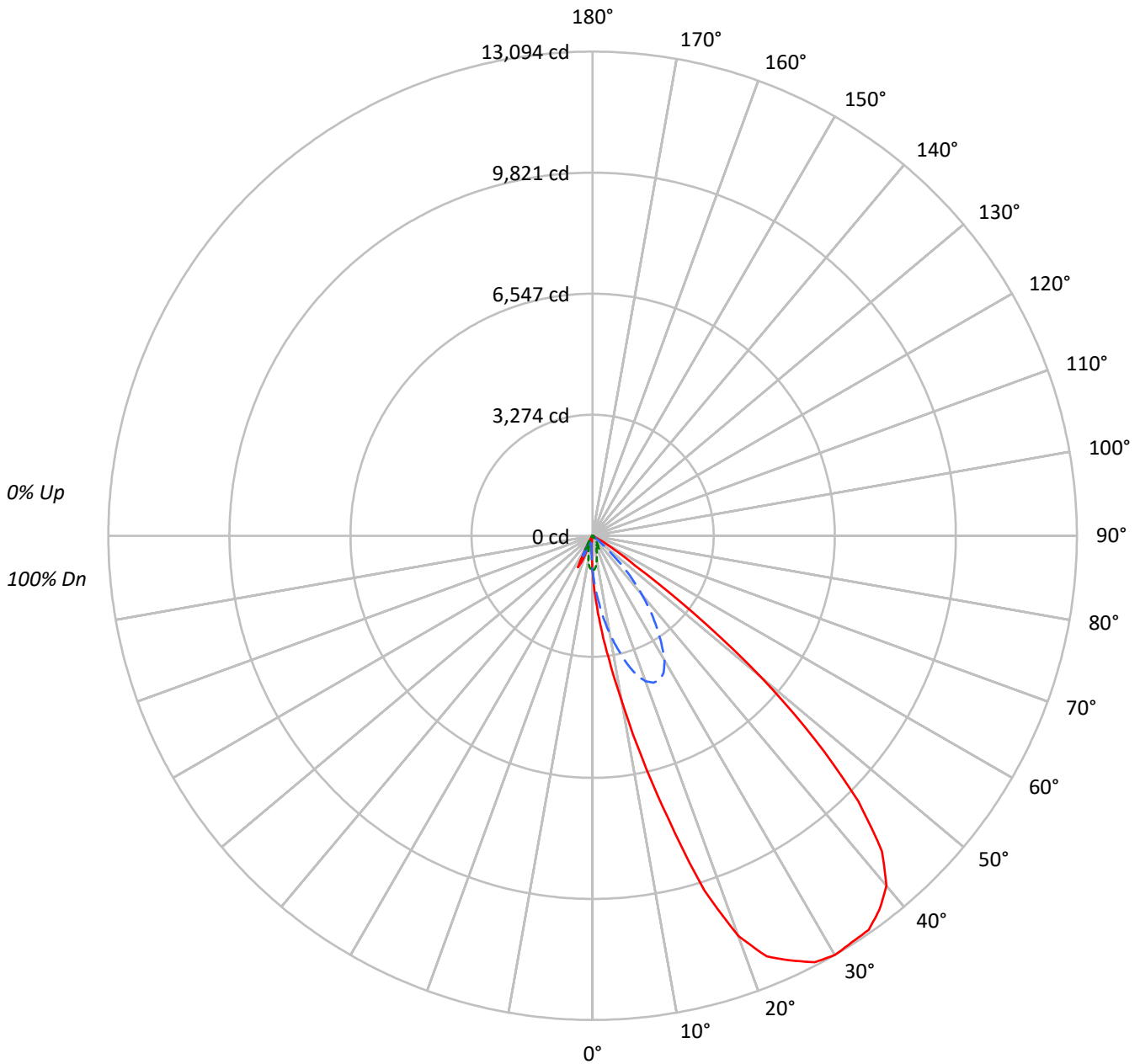
Input Watts (W): 61
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	51476	51476	51476
5°	132902	47711	14913
10°	252116	36405	5010
15°	450808	23666	4994
20°	671732	16101	9101
25°	766460	20082	57161
30°	828887	16775	17091
35°	870696	8165	5354
40°	884471	2934	2719
45°	788012	1938	1628
50°	506099	1365	1109
55°	133233	956	573
60°	29713	987	439
65°	2854	1167	519
70°	962	1443	641
75°	212	1906	1059
80°	0	3157	1578
85°	0	5661	2516



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	114.0	2.2
10°-20°	595.1	11.6
20°-30°	1396.4	27.3
30°-40°	1606.2	31.4
40°-50°	1141.0	22.3
50°-60°	232.0	4.5
60°-70°	11.6	0.2
70°-80°	6.9	0.1
80°-90°	5.7	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°	2105.6	41.2
0°-40°	3711.8	72.7
0°-60°	5084.7	99.5
0°-90°	5109.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5109.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	939	939	939	939	939	
5°	2415	1747	867	347	271	294
15°	7943	3571	417	94	88	2383
25°	12671	4301	332	725	945	5840
35°	13010	3020	122	90	80	8083
45°	10164	1074	25	27	21	7491
55°	1394	28	10	10	6	1880
65°	22	8	9	8	4	53
75°	1	5	9	8	5	2
85°	0	5	9	7	4	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°	939.0	939.0	939.0	939.0	939.0	939.0	939.0	939.0	939.0	939.0	939.0
2.5°	1618.1	1569.0	1545.0	1544.0	1474.0	1497.0	1474.0	1456.0	1391.0	1364.0	1319.0
5°	2415.1	2355.1	2307.1	2286.1	2166.1	2140.1	2128.1	2067.1	1931.1	1852.1	1747.1
7.5°	3355.1	3292.1	3213.1	3150.1	2976.1	2927.1	2895.1	2790.1	2589.1	2430.1	2234.1
10°	4529.1	4492.1	4364.1	4248.1	3984.1	3882.1	3786.1	3541.1	3278.1	2959.1	2706.1
12.5°	6110.2	6023.2	5795.2	5563.2	5149.2	4997.2	4838.1	4446.1	4044.1	3544.1	3126.1
15°	7943.2	7869.2	7518.2	7140.2	6551.2	6301.2	6052.2	5435.2	4817.1	4173.1	3571.1
17.5°	10053.3	9913.3	9564.3	8925.3	8101.3	7708.2	7244.2	6458.2	5566.2	4691.1	3943.1
20°	11514.4	11431.4	11136.3	10523.3	9585.3	9066.3	8490.3	7411.2	6191.2	5106.2	4187.1
22.5°	12313.4	12230.4	12009.4	11468.4	10699.3	10178.3	9509.3	8182.3	6663.2	5385.2	4302.1
25°	12671.4	12617.4	12496.4	12055.4	11343.4	10874.3	10241.3	8715.3	6958.2	5512.2	4301.1
27.5°	13002.4	13016.4	12717.4	12354.4	11698.4	11227.3	10627.3	8955.3	7016.2	5448.2	4163.1
30°	13094.4	13059.4	12928.4	12417.4	11806.4	11293.3	10650.3	8828.3	6790.2	5165.2	3889.1
32.5°	13037.4	13038.4	12915.4	12372.4	11654.4	11080.3	10357.3	8373.3	6350.2	4721.1	3463.1
35°	13010.4	13001.4	12682.4	12205.4	11293.3	10618.3	9707.3	7643.2	5740.2	4154.1	3020.1
37.5°	12742.4	12688.4	12458.4	11811.4	10618.3	9755.3	8774.3	6750.2	4989.2	3564.1	2566.1
40°	12359.4	12291.4	11917.4	10989.3	9464.3	8501.3	7526.2	5739.2	4203.1	2977.1	2060.1
42.5°	11574.4	11462.4	10895.3	9664.3	7978.2	7082.2	6274.2	4727.1	3436.1	2417.1	1582.0
45°	10164.3	9981.3	9196.3	7910.2	6440.2	5737.2	5054.2	3789.1	2751.1	1800.1	1074.0
47.5°	8161.3	7961.2	7249.2	6216.2	5042.2	4472.1	3892.1	2790.1	1861.1	1049.0	539.0
50°	5934.2	5796.2	5167.2	4296.1	3334.1	2856.1	2411.1	1556.0	893.0	507.0	221.0
52.5°	3419.1	3320.1	2882.1	2261.1	1640.1	1373.0	1104.0	679.0	455.0	201.0	71.0
55°	1394.0	1337.0	1145.0	970.0	728.0	629.0	525.0	339.0	153.0	48.0	28.0
57.5°	682.0	675.0	563.0	451.0	332.0	268.0	202.0	68.0	37.0	24.0	18.0
60°	271.0	261.0	179.0	104.0	58.0	47.0	40.0	28.0	21.0	16.0	13.0
62.5°	47.0	46.0	39.0	33.0	27.0	24.0	22.0	17.0	14.0	11.0	10.0
65°	22.0	22.0	20.0	18.0	15.0	14.0	13.0	11.0	9.0	8.0	8.0
67.5°	11.0	11.0	10.0	9.0	8.0	8.0	7.0	7.0	6.0	6.0	6.0
70°	6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0
72.5°	4.0	4.0	4.0	3.0	2.0	3.0	3.0	3.0	4.0	5.0	5.0
75°	1.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	4.0	5.0	5.0
77.5°	1.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	5.0	5.0
80°	0.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	5.0	5.0
82.5°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	5.0	5.0
85°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	5.0	5.0
87.5°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	5.0	5.0
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°	939.0	939.0	939.0	939.0	939.0	939.0	939.0	939.0	939.0	939.0	939.0
2.5°	1299.0	1247.0	1213.0	1153.0	1128.0	1117.0	1062.0	1009.0	958.0	921.0	864.0
5°	1667.1	1584.0	1457.0	1338.0	1286.0	1253.0	1145.0	1045.0	950.0	867.0	768.0
7.5°	2063.1	1892.1	1693.1	1502.0	1412.0	1352.0	1185.0	1039.0	903.0	777.0	642.0
10°	2443.1	2174.1	1884.1	1611.0	1489.0	1399.0	1181.0	994.0	817.0	654.0	509.0
12.5°	2767.1	2419.1	2034.1	1680.1	1521.0	1406.0	1144.0	916.0	701.0	526.0	400.0
15°	3040.1	2607.1	2133.1	1703.1	1512.0	1376.0	1072.0	809.0	574.0	417.0	323.0
17.5°	3232.1	2698.1	2156.1	1664.1	1449.0	1292.0	963.0	672.0	451.0	337.0	255.0
20°	3344.1	2710.1	2100.1	1569.0	1339.0	1173.0	826.0	528.0	366.0	276.0	198.0
22.5°	3361.1	2651.1	1990.1	1441.0	1212.0	1052.0	688.0	442.0	333.0	258.0	194.0
25°	3279.1	2534.1	1847.1	1316.0	1097.0	933.0	595.0	447.0	374.0	332.0	345.0
27.5°	3120.1	2341.1	1683.1	1188.0	977.0	811.0	562.0	468.0	408.0	415.0	439.0
30°	2876.1	2069.1	1447.0	971.0	748.0	618.0	447.0	337.0	280.0	265.0	266.0
32.5°	2517.1	1728.1	1136.0	674.0	503.0	417.0	283.0	188.0	189.0	175.0	174.0
35°	2107.1	1391.0	850.0	452.0	348.0	290.0	167.0	132.0	127.0	122.0	115.0
37.5°	1701.1	1075.0	566.0	309.0	222.0	161.0	84.0	69.0	64.0	60.0	60.0
40°	1295.0	752.0	350.0	162.0	90.0	66.0	50.0	42.0	41.0	41.0	40.0
42.5°	940.0	444.0	190.0	64.0	50.0	44.0	35.0	31.0	31.0	31.0	31.0
45°	500.0	226.0	73.0	40.0	33.0	31.0	26.0	24.0	24.0	25.0	25.0
47.5°	231.0	85.0	37.0	27.0	23.0	23.0	20.0	19.0	19.0	20.0	20.0
50°	83.0	35.0	24.0	19.0	17.0	18.0	16.0	15.0	16.0	16.0	16.0
52.5°	32.0	22.0	17.0	15.0	13.0	14.0	12.0	12.0	13.0	13.0	13.0
55°	20.0	16.0	13.0	11.0	10.0	11.0	10.0	10.0	10.0	10.0	10.0
57.5°	14.0	12.0	10.0	9.0	8.0	9.0	9.0	9.0	9.0	9.0	9.0
60°	11.0	9.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0	9.0
62.5°	9.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0	9.0	9.0
65°	8.0	7.0	8.0	8.0	7.0	8.0	8.0	8.0	9.0	9.0	10.0
67.5°	6.0	6.0	6.0	7.0	7.0	7.0	8.0	8.0	9.0	9.0	9.0
70°	6.0	6.0	7.0	7.0	7.0	7.0	8.0	8.0	9.0	9.0	9.0
72.5°	6.0	6.0	7.0	7.0	7.0	8.0	8.0	8.0	9.0	9.0	9.0
75°	6.0	6.0	7.0	7.0	7.0	8.0	8.0	8.0	9.0	9.0	9.0
77.5°	6.0	6.0	7.0	7.0	7.0	8.0	8.0	9.0	9.0	9.0	9.0
80°	6.0	7.0	7.0	8.0	8.0	8.0	8.0	9.0	9.0	10.0	10.0
82.5°	6.0	7.0	7.0	8.0	8.0	8.0	8.0	9.0	9.0	10.0	10.0
85°	6.0	7.0	7.0	8.0	8.0	8.0	8.0	9.0	9.0	9.0	9.0
87.5°	6.0	7.0	7.0	8.0	8.0	8.0	8.0	8.0	9.0	9.0	9.0
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°	939.0	939.0	939.0	939.0	939.0	939.0	939.0	939.0	939.0	939.0	939.0
2.5°	826.0	777.0	728.0	704.0	683.0	653.0	615.0	584.0	551.0	534.0	495.0
5°	690.0	606.0	535.0	501.0	475.0	439.0	400.0	372.0	347.0	333.0	308.0
7.5°	534.0	454.0	392.0	366.0	347.0	311.0	282.0	253.0	227.0	208.0	183.0
10°	413.0	351.0	300.0	275.0	254.0	216.0	181.0	154.0	126.0	107.0	99.0
12.5°	328.0	270.0	218.0	193.0	171.0	132.0	106.0	101.0	96.0	94.0	91.0
15°	252.0	199.0	144.0	119.0	110.0	105.0	99.0	98.0	94.0	94.0	91.0
17.5°	189.0	130.0	110.0	108.0	107.0	105.0	102.0	101.0	100.0	100.0	99.0
20°	136.0	126.0	123.0	125.0	126.0	128.0	127.0	127.0	131.0	140.0	138.0
22.5°	191.0	207.0	224.0	230.0	252.0	274.0	294.0	319.0	378.0	446.0	462.0
25°	378.0	426.0	470.0	494.0	530.0	579.0	626.0	684.0	725.0	759.0	798.0
27.5°	470.0	488.0	481.0	484.0	480.0	473.0	475.0	487.0	481.0	463.0	470.0
30°	278.0	292.0	284.0	288.0	277.0	277.0	274.0	280.0	276.0	269.0	267.0
32.5°	181.0	189.0	188.0	188.0	184.0	182.0	175.0	173.0	166.0	153.0	150.0
35°	109.0	104.0	99.0	96.0	94.0	94.0	93.0	93.0	90.0	87.0	86.0
37.5°	59.0	60.0	60.0	60.0	60.0	62.0	61.0	61.0	61.0	59.0	59.0
40°	41.0	43.0	43.0	43.0	44.0	44.0	44.0	45.0	44.0	44.0	44.0
42.5°	32.0	33.0	32.0	32.0	33.0	33.0	33.0	34.0	34.0	34.0	33.0
45°	26.0	26.0	25.0	26.0	26.0	27.0	27.0	27.0	27.0	26.0	26.0
47.5°	21.0	21.0	21.0	21.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
50°	17.0	17.0	17.0	18.0	18.0	18.0	17.0	18.0	18.0	18.0	17.0
52.5°	13.0	13.0	13.0	13.0	13.0	12.0	12.0	12.0	12.0	12.0	11.0
55°	10.0	10.0	10.0	10.0	10.0	11.0	10.0	11.0	10.0	10.0	9.0
57.5°	9.0	9.0	9.0	9.0	10.0	10.0	9.0	9.0	9.0	8.0	8.0
60°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	8.0	7.0	7.0
62.5°	10.0	10.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0	7.0	7.0
65°	10.0	10.0	9.0	10.0	10.0	9.0	9.0	8.0	8.0	7.0	7.0
67.5°	10.0	10.0	10.0	10.0	10.0	10.0	9.0	9.0	8.0	8.0	7.0
70°	10.0	10.0	10.0	10.0	10.0	10.0	9.0	9.0	8.0	8.0	7.0
72.5°	10.0	10.0	10.0	10.0	10.0	10.0	9.0	9.0	9.0	8.0	7.0
75°	10.0	10.0	10.0	10.0	10.0	9.0	9.0	9.0	8.0	8.0	7.0
77.5°	10.0	10.0	10.0	10.0	10.0	9.0	9.0	9.0	8.0	8.0	7.0
80°	10.0	10.0	10.0	10.0	10.0	10.0	9.0	9.0	8.0	8.0	7.0
82.5°	10.0	10.0	10.0	10.0	10.0	9.0	9.0	9.0	8.0	8.0	7.0
85°	10.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	7.0	7.0	6.0
87.5°	9.0	9.0	9.0	9.0	9.0	8.0	8.0	7.0	6.0	5.0	5.0
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: P179926

CATALOG NUMBER: LDA6A55835D010TE LARH30NF 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	939.0	939.0	939.0	939.0	939.0	939.0	939.0	939.0
2.5°	495.0	486.0	482.0	475.0	469.0	466.0	455.0	468.0
5°	303.0	292.0	289.0	283.0	276.0	272.0	264.0	271.0
7.5°	173.0	160.0	154.0	149.0	142.0	136.0	129.0	133.0
10°	97.0	93.0	94.0	91.0	90.0	89.0	88.0	90.0
12.5°	90.0	87.0	88.0	86.0	85.0	85.0	84.0	85.0
15°	91.0	88.0	90.0	88.0	87.0	87.0	86.0	88.0
17.5°	99.0	97.0	99.0	97.0	98.0	97.0	98.0	99.0
20°	139.0	142.0	148.0	144.0	147.0	151.0	156.0	156.0
22.5°	489.0	553.0	561.0	593.0	675.0	672.0	727.0	729.0
25°	854.0	858.0	894.0	882.0	883.0	925.0	921.0	945.0
27.5°	491.0	490.0	497.0	484.0	488.0	491.0	480.0	493.0
30°	274.0	269.0	272.0	265.0	265.0	267.0	264.0	270.0
32.5°	152.0	148.0	148.0	143.0	142.0	141.0	138.0	141.0
35°	87.0	84.0	85.0	83.0	81.0	80.0	79.0	80.0
37.5°	60.0	58.0	59.0	57.0	55.0	54.0	53.0	54.0
40°	44.0	43.0	43.0	41.0	40.0	39.0	38.0	38.0
42.5°	33.0	32.0	32.0	30.0	29.0	28.0	27.0	28.0
45°	25.0	24.0	24.0	23.0	22.0	21.0	21.0	21.0
47.5°	22.0	21.0	22.0	21.0	20.0	20.0	20.0	20.0
50°	17.0	17.0	17.0	16.0	15.0	15.0	14.0	13.0
52.5°	11.0	10.0	10.0	9.0	9.0	8.0	8.0	8.0
55°	9.0	8.0	8.0	7.0	7.0	6.0	6.0	6.0
57.5°	7.0	7.0	6.0	6.0	5.0	5.0	5.0	5.0
60°	6.0	6.0	6.0	5.0	5.0	4.0	4.0	4.0
62.5°	6.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0
65°	6.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0
67.5°	6.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0
70°	7.0	6.0	6.0	5.0	5.0	5.0	4.0	4.0
72.5°	7.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0
75°	7.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0
77.5°	7.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0
80°	7.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0
82.5°	6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0
85°	6.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0
87.5°	4.0	4.0	3.0	3.0	3.0	2.0	2.0	2.0
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)