

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: P179932

Luminaire Tested: **LDA6A65827D010TE LARH30NF 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179932
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: LDA6A65827D010TE LARH30NF 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 30° Narrow Flood, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5736.4 lumens
Efficiency: N/A
Efficacy: 73.5 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

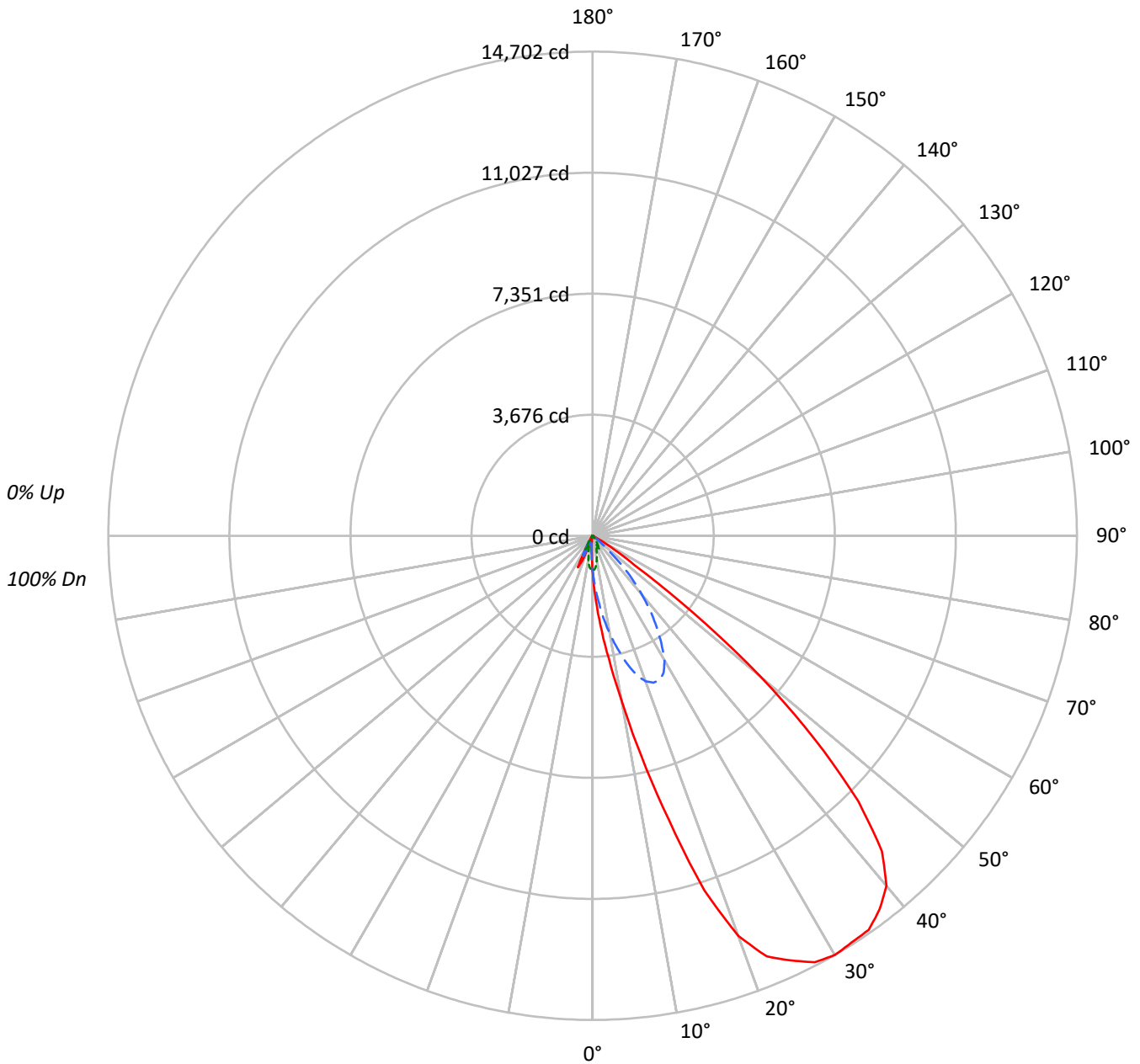
Input Watts (W): 78
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	57797	57797	57797
5°	149218	53571	16745
10°	283078	40875	5628
15°	506172	26572	5607
20°	754216	18079	10221
25°	860578	22550	64183
30°	930675	18838	19193
35°	977619	9168	6010
40°	993082	3292	3056
45°	884782	2179	1830
50°	568246	1535	1245
55°	149596	1070	640
60°	33364	1107	493
65°	3204	1310	584
70°	1074	1619	721
75°	233	2139	1186
80°	0	3536	1768
85°	0	6353	2830



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.0	2.2
10°-20°	668.2	11.6
20°-30°	1567.9	27.3
30°-40°	1803.4	31.4
40°-50°	1281.1	22.3
50°-60°	260.5	4.5
60°-70°	13.0	0.2
70°-80°	7.8	0.1
80°-90°	6.4	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°	2364.2	41.2
0°-40°	4167.6	72.7
0°-60°	5709.1	99.5
0°-90°	5736.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5736.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1054	1054	1054	1054	1054	
5°	2712	1962	974	390	304	330
15°	8919	4010	468	106	99	2675
25°	14227	4829	373	814	1061	6557
35°	14608	3391	137	101	90	9075
45°	11412	1206	28	30	24	8410
55°	1565	31	11	11	7	2111
65°	25	9	10	9	4	60
75°	1	6	10	9	6	3
85°	0	6	10	8	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°	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3
2.5°	1816.7	1761.7	1734.8	1733.7	1655.1	1680.9	1655.1	1634.8	1561.9	1531.5	1481.0
5°	2711.6	2644.3	2590.4	2566.8	2432.1	2402.9	2389.4	2320.9	2168.2	2079.5	1961.6
7.5°	3767.1	3696.4	3607.7	3536.9	3341.6	3286.5	3250.6	3132.7	2907.0	2728.5	2508.4
10°	5085.3	5043.8	4900.0	4769.8	4473.4	4358.8	4251.1	3976.0	3680.7	3322.5	3038.4
12.5°	6860.5	6762.8	6506.8	6246.3	5781.5	5610.8	5432.3	4992.1	4540.7	3979.3	3510.0
15°	8918.7	8835.6	8441.5	8017.0	7355.7	7075.0	6795.4	6102.6	5408.7	4685.6	4009.6
17.5°	11287.9	11130.7	10738.8	10021.3	9096.1	8654.8	8133.8	7251.3	6249.7	5267.2	4427.3
20°	12928.3	12835.1	12503.9	11815.6	10762.4	10179.6	9532.9	8321.3	6951.5	5733.2	4701.3
22.5°	13825.5	13732.3	13484.1	12876.7	12013.2	11428.2	10677.0	9187.0	7481.4	6046.5	4830.4
25°	14227.4	14166.8	14030.9	13535.8	12736.3	12209.7	11498.9	9785.5	7812.7	6189.1	4829.3
27.5°	14599.1	14614.8	14279.1	13871.5	13134.9	12606.1	11932.4	10055.0	7877.8	6117.2	4674.4
30°	14702.4	14663.1	14516.0	13942.2	13256.2	12680.2	11958.2	9912.4	7624.0	5799.4	4366.7
32.5°	14638.4	14639.5	14501.4	13891.7	13085.5	12441.0	11629.2	9401.5	7130.0	5300.9	3888.4
35°	14608.1	14598.0	14239.8	13704.2	12680.2	11922.3	10899.4	8581.8	6445.1	4664.3	3391.0
37.5°	14307.2	14246.5	13988.3	13261.8	11922.3	10953.2	9851.7	7579.1	5601.8	4001.8	2881.2
40°	13877.1	13800.8	13380.8	12338.8	10626.5	9545.2	8450.5	6443.9	4719.3	3342.7	2313.0
42.5°	12995.7	12869.9	12233.3	10851.1	8958.0	7951.9	7044.7	5307.6	3858.1	2713.9	1776.3
45°	11412.5	11207.0	10325.6	8881.6	7231.1	6441.7	5674.8	4254.4	3088.9	2021.1	1205.9
47.5°	9163.5	8938.9	8139.4	6979.5	5661.3	5021.3	4370.1	3132.7	2089.6	1177.9	605.2
50°	6662.9	6507.9	5801.7	4823.7	3743.5	3206.8	2707.2	1747.1	1002.7	569.3	248.1
52.5°	3839.0	3727.8	3236.0	2538.7	1841.4	1541.7	1239.6	762.4	510.9	225.7	79.7
55°	1565.2	1501.2	1285.6	1089.1	817.4	706.3	589.5	380.6	171.8	53.9	31.4
57.5°	765.8	757.9	632.2	506.4	372.8	300.9	226.8	76.4	41.5	26.9	20.2
60°	304.3	293.1	201.0	116.8	65.1	52.8	44.9	31.4	23.6	18.0	14.6
62.5°	52.8	51.7	43.8	37.1	30.3	26.9	24.7	19.1	15.7	12.4	11.2
65°	24.7	24.7	22.5	20.2	16.8	15.7	14.6	12.4	10.1	9.0	9.0
67.5°	12.4	12.4	11.2	10.1	9.0	9.0	7.9	7.9	6.7	6.7	6.7
70°	6.7	6.7	6.7	5.6	5.6	5.6	5.6	5.6	4.5	5.6	5.6
72.5°	4.5	4.5	4.5	3.4	2.2	3.4	3.4	3.4	4.5	5.6	5.6
75°	1.1	1.1	1.1	2.2	2.2	2.2	3.4	3.4	4.5	5.6	5.6
77.5°	1.1	1.1	1.1	1.1	2.2	2.2	2.2	3.4	4.5	5.6	5.6
80°	0.0	1.1	1.1	1.1	2.2	2.2	2.2	3.4	4.5	5.6	5.6
82.5°	0.0	0.0	1.1	1.1	2.2	2.2	2.2	3.4	4.5	5.6	5.6
85°	0.0	0.0	1.1	1.1	2.2	2.2	2.2	3.4	4.5	5.6	5.6
87.5°	0.0	0.0	1.1	1.1	2.2	2.2	2.2	3.4	4.5	5.6	5.6
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°	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3
2.5°	1458.6	1400.2	1362.0	1294.6	1266.6	1254.2	1192.4	1132.9	1075.7	1034.1	970.1
5°	1871.8	1778.6	1636.0	1502.4	1444.0	1406.9	1285.6	1173.4	1066.7	973.5	862.3
7.5°	2316.4	2124.4	1901.0	1686.5	1585.4	1518.1	1330.6	1166.6	1013.9	872.4	720.9
10°	2743.1	2441.0	2115.4	1808.9	1671.9	1570.8	1326.1	1116.1	917.4	734.3	571.5
12.5°	3106.9	2716.1	2283.8	1886.4	1707.8	1578.7	1284.5	1028.5	787.1	590.6	449.1
15°	3413.4	2927.2	2395.0	1912.2	1697.7	1545.0	1203.7	908.4	644.5	468.2	362.7
17.5°	3629.0	3029.4	2420.8	1868.4	1627.0	1450.7	1081.3	754.5	506.4	378.4	286.3
20°	3754.8	3042.9	2358.0	1761.7	1503.5	1317.1	927.5	592.9	411.0	309.9	222.3
22.5°	3773.8	2976.6	2234.4	1618.0	1360.9	1181.2	772.5	496.3	373.9	289.7	217.8
25°	3681.8	2845.3	2073.9	1477.6	1231.7	1047.6	668.1	501.9	419.9	372.8	387.4
27.5°	3503.2	2628.6	1889.7	1333.9	1097.0	910.6	631.0	525.5	458.1	466.0	492.9
30°	3229.3	2323.1	1624.7	1090.3	839.9	693.9	501.9	378.4	314.4	297.6	298.7
32.5°	2826.2	1940.3	1275.5	756.8	564.8	468.2	317.8	211.1	212.2	196.5	195.4
35°	2365.8	1561.9	954.4	507.5	390.7	325.6	187.5	148.2	142.6	137.0	129.1
37.5°	1909.9	1207.0	635.5	347.0	249.3	180.8	94.3	77.5	71.9	67.4	67.4
40°	1454.1	844.4	393.0	181.9	101.1	74.1	56.1	47.2	46.0	46.0	44.9
42.5°	1055.5	498.5	213.3	71.9	56.1	49.4	39.3	34.8	34.8	34.8	34.8
45°	561.4	253.8	82.0	44.9	37.1	34.8	29.2	26.9	26.9	28.1	28.1
47.5°	259.4	95.4	41.5	30.3	25.8	25.8	22.5	21.3	21.3	22.5	22.5
50°	93.2	39.3	26.9	21.3	19.1	20.2	18.0	16.8	18.0	18.0	18.0
52.5°	35.9	24.7	19.1	16.8	14.6	15.7	13.5	13.5	14.6	14.6	14.6
55°	22.5	18.0	14.6	12.4	11.2	12.4	11.2	11.2	11.2	11.2	11.2
57.5°	15.7	13.5	11.2	10.1	9.0	10.1	10.1	10.1	10.1	10.1	10.1
60°	12.4	10.1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	10.1	10.1
62.5°	10.1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	10.1	10.1	10.1
65°	9.0	7.9	9.0	9.0	7.9	9.0	9.0	9.0	10.1	10.1	11.2
67.5°	6.7	6.7	6.7	7.9	7.9	7.9	9.0	9.0	10.1	10.1	10.1
70°	6.7	6.7	7.9	7.9	7.9	7.9	9.0	9.0	10.1	10.1	10.1
72.5°	6.7	6.7	7.9	7.9	7.9	9.0	9.0	9.0	10.1	10.1	10.1
75°	6.7	6.7	7.9	7.9	7.9	9.0	9.0	9.0	10.1	10.1	10.1
77.5°	6.7	6.7	7.9	7.9	7.9	9.0	9.0	10.1	10.1	10.1	10.1
80°	6.7	7.9	7.9	9.0	9.0	9.0	9.0	10.1	10.1	11.2	11.2
82.5°	6.7	7.9	7.9	9.0	9.0	9.0	9.0	10.1	10.1	11.2	11.2
85°	6.7	7.9	7.9	9.0	9.0	9.0	9.0	10.1	10.1	10.1	10.1
87.5°	6.7	7.9	7.9	9.0	9.0	9.0	9.0	9.0	10.1	10.1	10.1
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°	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3
2.5°	927.5	872.4	817.4	790.5	766.9	733.2	690.5	655.7	618.7	599.6	555.8
5°	774.8	680.4	600.7	562.5	533.3	492.9	449.1	417.7	389.6	373.9	345.8
7.5°	599.6	509.8	440.2	411.0	389.6	349.2	316.6	284.1	254.9	233.5	205.5
10°	463.7	394.1	336.9	308.8	285.2	242.5	203.2	172.9	141.5	120.1	111.2
12.5°	368.3	303.2	244.8	216.7	192.0	148.2	119.0	113.4	107.8	105.5	102.2
15°	283.0	223.4	161.7	133.6	123.5	117.9	111.2	110.0	105.5	105.5	102.2
17.5°	212.2	146.0	123.5	121.3	120.1	117.9	114.5	113.4	112.3	112.3	111.2
20°	152.7	141.5	138.1	140.4	141.5	143.7	142.6	142.6	147.1	157.2	155.0
22.5°	214.5	232.4	251.5	258.3	283.0	307.7	330.1	358.2	424.4	500.8	518.7
25°	424.4	478.3	527.7	554.7	595.1	650.1	702.9	768.0	814.1	852.2	896.0
27.5°	527.7	547.9	540.1	543.5	539.0	531.1	533.3	546.8	540.1	519.9	527.7
30°	312.1	327.9	318.9	323.4	311.0	311.0	307.7	314.4	309.9	302.0	299.8
32.5°	203.2	212.2	211.1	211.1	206.6	204.4	196.5	194.3	186.4	171.8	168.4
35°	122.4	116.8	111.2	107.8	105.5	105.5	104.4	104.4	101.1	97.7	96.6
37.5°	66.2	67.4	67.4	67.4	67.4	69.6	68.5	68.5	68.5	66.2	66.2
40°	46.0	48.3	48.3	48.3	49.4	49.4	49.4	50.5	49.4	49.4	49.4
42.5°	35.9	37.1	35.9	35.9	37.1	37.1	37.1	38.2	38.2	38.2	37.1
45°	29.2	29.2	28.1	29.2	29.2	30.3	30.3	30.3	30.3	29.2	29.2
47.5°	23.6	23.6	23.6	23.6	24.7	24.7	24.7	24.7	24.7	24.7	24.7
50°	19.1	19.1	19.1	20.2	20.2	20.2	19.1	20.2	20.2	20.2	19.1
52.5°	14.6	14.6	14.6	14.6	14.6	13.5	13.5	13.5	13.5	13.5	12.4
55°	11.2	11.2	11.2	11.2	11.2	12.4	11.2	12.4	11.2	11.2	10.1
57.5°	10.1	10.1	10.1	10.1	11.2	11.2	10.1	10.1	10.1	9.0	9.0
60°	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	9.0	7.9	7.9
62.5°	11.2	11.2	10.1	10.1	10.1	10.1	9.0	9.0	9.0	7.9	7.9
65°	11.2	11.2	10.1	11.2	11.2	10.1	10.1	9.0	9.0	7.9	7.9
67.5°	11.2	11.2	11.2	11.2	11.2	11.2	10.1	10.1	9.0	9.0	7.9
70°	11.2	11.2	11.2	11.2	11.2	11.2	10.1	10.1	9.0	9.0	7.9
72.5°	11.2	11.2	11.2	11.2	11.2	11.2	10.1	10.1	10.1	9.0	7.9
75°	11.2	11.2	11.2	11.2	11.2	10.1	10.1	10.1	9.0	9.0	7.9
77.5°	11.2	11.2	11.2	11.2	11.2	10.1	10.1	10.1	9.0	9.0	7.9
80°	11.2	11.2	11.2	11.2	11.2	11.2	10.1	10.1	9.0	9.0	7.9
82.5°	11.2	11.2	11.2	11.2	11.2	10.1	10.1	10.1	9.0	9.0	7.9
85°	11.2	10.1	10.1	10.1	10.1	10.1	9.0	9.0	7.9	7.9	6.7
87.5°	10.1	10.1	10.1	10.1	10.1	9.0	9.0	7.9	6.7	5.6	5.6
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: P179932

CATALOG NUMBER: LDA6A65827D010TE LARH30NF 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3	1054.3
2.5°	555.8	545.7	541.2	533.3	526.6	523.2	510.9	525.5
5°	340.2	327.9	324.5	317.8	309.9	305.4	296.4	304.3
7.5°	194.3	179.7	172.9	167.3	159.4	152.7	144.8	149.3
10°	108.9	104.4	105.5	102.2	101.1	99.9	98.8	101.1
12.5°	101.1	97.7	98.8	96.6	95.4	95.4	94.3	95.4
15°	102.2	98.8	101.1	98.8	97.7	97.7	96.6	98.8
17.5°	111.2	108.9	111.2	108.9	110.0	108.9	110.0	111.2
20°	156.1	159.4	166.2	161.7	165.1	169.5	175.2	175.2
22.5°	549.1	620.9	629.9	665.8	757.9	754.5	816.3	818.5
25°	958.9	963.4	1003.8	990.3	991.5	1038.6	1034.1	1061.1
27.5°	551.3	550.2	558.0	543.5	547.9	551.3	539.0	553.6
30°	307.7	302.0	305.4	297.6	297.6	299.8	296.4	303.2
32.5°	170.7	166.2	166.2	160.6	159.4	158.3	155.0	158.3
35°	97.7	94.3	95.4	93.2	90.9	89.8	88.7	89.8
37.5°	67.4	65.1	66.2	64.0	61.8	60.6	59.5	60.6
40°	49.4	48.3	48.3	46.0	44.9	43.8	42.7	42.7
42.5°	37.1	35.9	35.9	33.7	32.6	31.4	30.3	31.4
45°	28.1	26.9	26.9	25.8	24.7	23.6	23.6	23.6
47.5°	24.7	23.6	24.7	23.6	22.5	22.5	22.5	22.5
50°	19.1	19.1	19.1	18.0	16.8	16.8	15.7	14.6
52.5°	12.4	11.2	11.2	10.1	10.1	9.0	9.0	9.0
55°	10.1	9.0	9.0	7.9	7.9	6.7	6.7	6.7
57.5°	7.9	7.9	6.7	6.7	5.6	5.6	5.6	5.6
60°	6.7	6.7	6.7	5.6	5.6	4.5	4.5	4.5
62.5°	6.7	5.6	5.6	5.6	4.5	4.5	4.5	4.5
65°	6.7	5.6	5.6	5.6	4.5	4.5	4.5	4.5
67.5°	6.7	5.6	5.6	5.6	4.5	4.5	4.5	4.5
70°	7.9	6.7	6.7	5.6	5.6	5.6	4.5	4.5
72.5°	7.9	6.7	6.7	6.7	5.6	5.6	5.6	5.6
75°	7.9	6.7	6.7	6.7	5.6	5.6	5.6	5.6
77.5°	7.9	6.7	6.7	6.7	5.6	5.6	5.6	5.6
80°	7.9	6.7	6.7	6.7	5.6	5.6	5.6	5.6
82.5°	6.7	6.7	6.7	5.6	5.6	5.6	5.6	5.6
85°	6.7	5.6	5.6	5.6	4.5	4.5	4.5	4.5
87.5°	4.5	4.5	3.4	3.4	3.4	2.2	2.2	2.2
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)