

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: P179678

Luminaire Tested: **LDA6A45835D010TE LARH40FL 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179678
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26675)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A45835D010TE LARH40FL 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 40° Flood, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4738.0 lumens
Efficiency: N/A
Efficacy: 89.4 lumens/watt
Spacing Criteria (0/90/45): 2.52 / 0.5 / 1.32
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

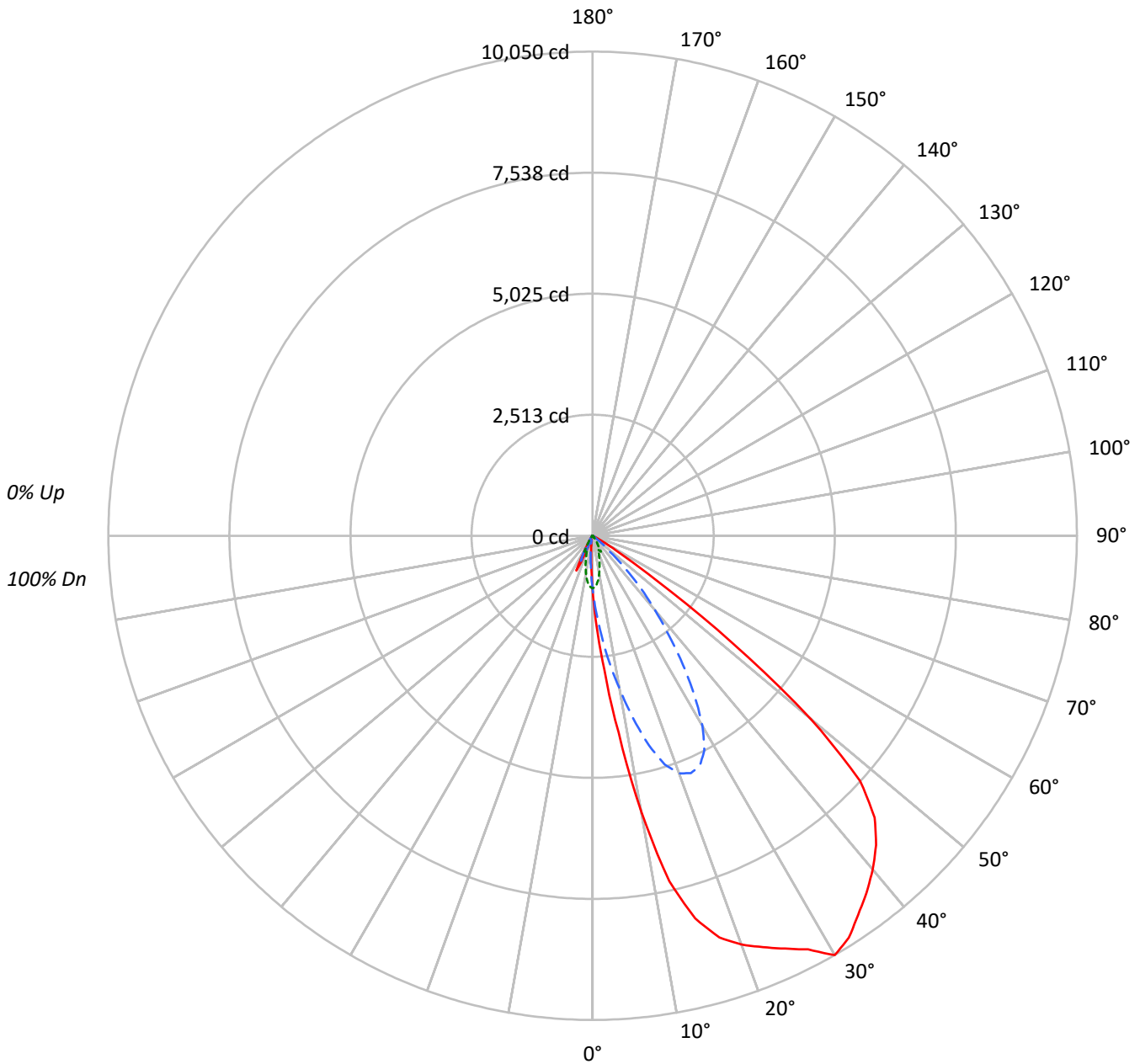
Input Watts (W): 53
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	101	99	99	97	96	95	94	93	91																			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	84	82																			
3	98	90	84	79	96	89	83	79	86	81	77	84	80	76	81	78	75	73																			
4	92	82	75	70	90	81	75	70	79	73	69	77	72	68	75	71	67	65																			
5	85	75	68	63	83	74	67	62	72	66	62	70	65	61	69	64	60	59																			
6	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53																			
7	74	63	55	50	73	62	55	50	61	54	50	59	54	50	58	53	49	48																			
8	69	58	50	45	68	57	50	45	56	50	45	55	49	45	54	48	45	43																			
9	65	53	46	41	64	53	46	41	52	45	41	51	45	41	50	44	41	39																			
10	61	49	42	37	60	49	42	37	48	42	37	47	41	37	46	41	37	35																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	59918	59918	59918
5°	153472	55250	20251
10°	323630	44087	5734
15°	466728	31271	4767
20°	526778	20768	6709
25°	571950	20929	48329
30°	636149	13800	16901
35°	642709	7830	6492
40°	646976	3220	2934
45°	641671	2016	1706
50°	503676	1365	1194
55°	151574	956	573
60°	32015	877	439
65°	3632	1038	389
70°	962	1282	641
75°	212	1694	847
80°	0	2841	1263
85°	0	5032	2516



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.3	2.9
10°-20°	660.5	13.9
20°-30°	1245.4	26.3
30°-40°	1381.4	29.2
40°-50°	1052.7	22.2
50°-60°	234.9	5.0
60°-70°	12.8	0.3
70°-80°	5.9	0.1
80°-90°	5.0	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°	2045.3	43.2
0°-40°	3426.7	72.3
0°-60°	4714.3	99.5
0°-90°	4738.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4738.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1093	1093	1093	1093	1093	
5°	2789	2066	1004	482	368	361
15°	8224	4502	551	98	84	2293
25°	9456	5264	346	578	799	4401
35°	9604	3275	117	103	97	6016
45°	8277	964	26	27	22	6163
55°	1586	42	10	9	6	1958
65°	28	7	8	7	3	66
75°	1	4	8	7	4	2
85°	0	4	8	6	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°	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0
2.5°	1875.9	1842.9	1838.9	1827.9	1741.9	1740.9	1739.9	1694.9	1653.9	1632.9	1543.9
5°	2788.9	2764.9	2734.9	2696.9	2554.9	2534.9	2517.9	2450.9	2306.9	2222.9	2065.9
7.5°	4119.9	4106.9	3955.9	3935.9	3674.9	3610.9	3547.9	3375.9	3097.9	2917.9	2639.9
10°	5813.8	5751.8	5636.8	5480.8	5140.8	5019.8	4902.8	4550.8	4076.9	3699.9	3226.9
12.5°	7344.7	7265.7	7125.7	6943.8	6515.8	6350.8	6165.8	5733.8	5154.8	4541.8	3872.9
15°	8223.7	8210.7	8048.7	7974.7	7629.7	7461.7	7308.7	6811.8	6088.8	5367.8	4501.8
17.5°	8743.7	8744.7	8625.7	8581.7	8260.7	8100.7	7971.7	7609.7	6852.8	5977.8	4978.8
20°	9029.7	9058.7	8947.7	8878.7	8654.7	8512.7	8392.7	8019.7	7360.7	6389.8	5248.8
22.5°	9242.7	9256.7	9121.7	9064.7	8813.7	8676.7	8600.7	8243.7	7599.7	6609.8	5330.8
25°	9455.7	9448.7	9296.7	9182.7	8935.7	8802.7	8709.7	8400.7	7699.7	6660.8	5263.8
27.5°	9680.7	9712.7	9430.7	9248.7	9027.7	8871.7	8767.7	8448.7	7692.7	6527.8	5020.8
30°	10049.6	9790.6	9508.7	9257.7	9003.7	8838.7	8719.7	8313.7	7499.7	6174.8	4558.8
32.5°	9894.6	9711.7	9434.7	9176.7	8904.7	8722.7	8577.7	8095.7	7094.7	5593.8	3938.9
35°	9603.7	9554.7	9280.7	9070.7	8761.7	8565.7	8396.7	7759.7	6466.8	4894.8	3274.9
37.5°	9341.7	9290.7	9127.7	8910.7	8559.7	8354.7	8044.7	7225.7	5649.8	4019.9	2575.9
40°	9040.7	9028.7	8846.7	8645.7	8223.7	7845.7	7524.7	6283.8	4676.8	3160.9	2003.9
42.5°	8707.7	8700.7	8552.7	8255.7	7635.7	7166.7	6629.8	5220.8	3595.9	2398.9	1488.9
45°	8276.7	8235.7	7980.7	7547.7	6657.8	5979.8	5343.8	3988.9	2636.9	1713.9	964.0
47.5°	7529.7	7457.7	7085.7	6344.8	5277.8	4584.8	3999.9	2742.9	1644.9	969.0	478.0
50°	5905.8	5714.8	5184.8	4405.8	3311.9	2709.9	2249.9	1361.0	730.0	481.0	306.0
52.5°	3647.9	3441.9	2940.9	2352.9	1510.9	1171.0	966.0	656.0	404.0	277.0	118.0
55°	1585.9	1488.9	1229.0	978.0	699.0	556.0	480.0	332.0	210.0	101.0	42.0
57.5°	619.0	600.0	523.0	441.0	331.0	270.0	239.0	150.0	58.0	36.0	24.0
60°	292.0	273.0	235.0	195.0	122.0	88.0	68.0	42.0	29.0	22.0	16.0
62.5°	80.0	69.0	56.0	48.0	37.0	33.0	29.0	23.0	18.0	14.0	11.0
65°	28.0	28.0	25.0	23.0	19.0	17.0	16.0	13.0	11.0	9.0	7.0
67.5°	13.0	13.0	12.0	11.0	9.0	9.0	8.0	7.0	6.0	5.0	5.0
70°	6.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0
72.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	4.0	4.0	4.0
75°	1.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	4.0	4.0
77.5°	0.0	1.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	4.0	4.0
80°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	4.0	4.0
82.5°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	4.0	4.0
85°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.0	4.0	4.0	4.0
87.5°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	3.0	3.0	4.0	4.0
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°	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0
2.5°	1505.9	1467.9	1417.9	1335.0	1298.0	1290.0	1222.0	1160.0	1105.0	1065.0	1002.0
5°	1963.9	1853.9	1719.9	1558.9	1497.9	1454.9	1325.0	1201.0	1095.0	1004.0	908.0
7.5°	2417.9	2199.9	1998.9	1763.9	1649.9	1563.9	1371.0	1195.0	1035.0	911.0	784.0
10°	2854.9	2544.9	2204.9	1895.9	1742.9	1612.9	1360.0	1137.0	937.0	792.0	658.0
12.5°	3269.9	2824.9	2372.9	1961.9	1778.9	1615.9	1306.0	1044.0	829.0	673.0	533.0
15°	3681.9	3027.9	2470.9	1975.9	1754.9	1558.9	1208.0	920.0	708.0	551.0	428.0
17.5°	3938.9	3140.9	2471.9	1913.9	1664.9	1450.9	1074.0	791.0	585.0	444.0	336.0
20°	4065.9	3126.9	2377.9	1770.9	1511.9	1296.0	916.0	659.0	473.0	356.0	265.0
22.5°	4028.9	3002.9	2212.9	1581.9	1342.0	1137.0	780.0	553.0	408.0	309.0	240.0
25°	3854.9	2801.9	2017.9	1403.9	1174.0	980.0	685.0	509.0	402.0	346.0	298.0
27.5°	3553.9	2537.9	1778.9	1217.0	1010.0	855.0	621.0	494.0	416.0	373.0	377.0
30°	3109.9	2187.9	1469.9	967.0	791.0	665.0	466.0	344.0	254.0	218.0	218.0
32.5°	2612.9	1788.9	1136.0	715.0	572.0	483.0	328.0	235.0	188.0	171.0	163.0
35°	2146.9	1399.9	843.0	518.0	413.0	344.0	215.0	132.0	121.0	117.0	115.0
37.5°	1688.9	1051.0	611.0	376.0	287.0	228.0	110.0	85.0	74.0	69.0	65.0
40°	1266.0	738.0	423.0	230.0	159.0	105.0	64.0	52.0	46.0	45.0	43.0
42.5°	886.0	495.0	262.0	101.0	74.0	59.0	44.0	37.0	34.0	33.0	32.0
45°	519.0	309.0	107.0	56.0	46.0	41.0	32.0	28.0	26.0	26.0	25.0
47.5°	326.0	125.0	57.0	36.0	31.0	29.0	24.0	21.0	20.0	20.0	20.0
50°	134.0	55.0	34.0	25.0	22.0	21.0	18.0	16.0	16.0	16.0	16.0
52.5°	49.0	31.0	23.0	18.0	16.0	15.0	13.0	12.0	12.0	13.0	12.0
55°	28.0	21.0	16.0	13.0	11.0	11.0	10.0	10.0	10.0	10.0	10.0
57.5°	18.0	14.0	11.0	9.0	8.0	8.0	8.0	8.0	8.0	9.0	8.0
60°	12.0	10.0	8.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0
62.5°	9.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0
65°	7.0	6.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0	9.0
67.5°	5.0	5.0	6.0	6.0	6.0	6.0	7.0	7.0	8.0	8.0	9.0
70°	5.0	5.0	6.0	6.0	6.0	6.0	7.0	7.0	8.0	8.0	9.0
72.5°	5.0	5.0	6.0	6.0	6.0	6.0	7.0	7.0	8.0	8.0	9.0
75°	5.0	5.0	6.0	6.0	6.0	7.0	7.0	7.0	8.0	8.0	9.0
77.5°	5.0	5.0	6.0	6.0	6.0	7.0	7.0	8.0	8.0	8.0	9.0
80°	5.0	5.0	6.0	6.0	6.0	7.0	7.0	8.0	8.0	9.0	9.0
82.5°	5.0	5.0	6.0	6.0	6.0	7.0	7.0	8.0	8.0	9.0	9.0
85°	5.0	6.0	6.0	6.0	6.0	7.0	7.0	8.0	8.0	8.0	9.0
87.5°	5.0	5.0	6.0	6.0	6.0	7.0	7.0	8.0	8.0	8.0	8.0
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°	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0
2.5°	959.0	915.0	879.0	860.0	839.0	803.0	769.0	738.0	725.0	683.0	691.0
5°	833.0	758.0	698.0	671.0	640.0	590.0	546.0	504.0	482.0	446.0	433.0
7.5°	693.0	605.0	533.0	502.0	475.0	428.0	387.0	348.0	320.0	283.0	268.0
10°	555.0	471.0	405.0	378.0	348.0	301.0	260.0	226.0	203.0	175.0	161.0
12.5°	439.0	364.0	297.0	270.0	245.0	206.0	174.0	143.0	118.0	103.0	99.0
15°	342.0	270.0	215.0	193.0	172.0	134.0	110.0	102.0	98.0	94.0	93.0
17.5°	257.0	199.0	150.0	128.0	116.0	106.0	102.0	98.0	96.0	93.0	94.0
20°	198.0	142.0	122.0	119.0	117.0	112.0	111.0	110.0	109.0	110.0	112.0
22.5°	188.0	177.0	183.0	187.0	196.0	197.0	213.0	226.0	238.0	271.0	287.0
25°	317.0	336.0	366.0	385.0	411.0	438.0	488.0	532.0	578.0	620.0	657.0
27.5°	397.0	406.0	406.0	416.0	405.0	403.0	397.0	392.0	413.0	406.0	428.0
30°	220.0	230.0	247.0	256.0	267.0	275.0	272.0	262.0	268.0	260.0	268.0
32.5°	157.0	157.0	161.0	162.0	164.0	165.0	166.0	167.0	168.0	163.0	166.0
35°	112.0	108.0	106.0	106.0	105.0	103.0	102.0	102.0	103.0	98.0	100.0
37.5°	63.0	61.0	61.0	61.0	61.0	61.0	62.0	63.0	63.0	63.0	65.0
40°	42.0	42.0	42.0	43.0	43.0	43.0	44.0	44.0	45.0	45.0	46.0
42.5°	32.0	31.0	32.0	32.0	32.0	33.0	33.0	34.0	34.0	34.0	35.0
45°	25.0	25.0	25.0	25.0	26.0	26.0	26.0	26.0	27.0	26.0	27.0
47.5°	20.0	20.0	20.0	21.0	21.0	20.0	21.0	21.0	21.0	21.0	21.0
50°	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	17.0	16.0	17.0
52.5°	13.0	12.0	12.0	12.0	12.0	11.0	11.0	12.0	12.0	11.0	11.0
55°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
57.5°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.0
60°	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	7.0	7.0	6.0
62.5°	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	7.0	6.0	6.0
65°	9.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	6.0	6.0
67.5°	9.0	9.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0	6.0	6.0
70°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	6.0
72.5°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	7.0
75°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	7.0
77.5°	8.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	7.0	6.0
80°	9.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	7.0	6.0
82.5°	8.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	6.0	6.0
85°	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	6.0	6.0	6.0
87.5°	8.0	8.0	8.0	7.0	7.0	7.0	7.0	6.0	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: P179678

CATALOG NUMBER: LDA6A45835D010TE LARH40FL 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0	1093.0
2.5°	649.0	635.0	647.0	632.0	627.0	616.0	611.0	616.0
5°	409.0	394.0	397.0	387.0	371.0	371.0	366.0	368.0
7.5°	247.0	232.0	233.0	224.0	212.0	210.0	205.0	207.0
10°	143.0	127.0	127.0	117.0	107.0	106.0	103.0	103.0
12.5°	95.0	93.0	91.0	90.0	88.0	88.0	88.0	86.0
15°	89.0	88.0	87.0	87.0	85.0	85.0	86.0	84.0
17.5°	91.0	90.0	89.0	89.0	89.0	89.0	90.0	88.0
20°	109.0	110.0	110.0	113.0	115.0	116.0	119.0	115.0
22.5°	286.0	295.0	302.0	339.0	371.0	359.0	381.0	344.0
25°	684.0	709.0	730.0	734.0	754.0	782.0	800.0	799.0
27.5°	428.0	429.0	441.0	441.0	437.0	453.0	464.0	462.0
30°	264.0	263.0	267.0	257.0	256.0	263.0	267.0	267.0
32.5°	163.0	162.0	165.0	163.0	158.0	166.0	164.0	164.0
35°	98.0	99.0	97.0	97.0	93.0	97.0	96.0	97.0
37.5°	64.0	63.0	62.0	62.0	60.0	61.0	60.0	58.0
40°	45.0	45.0	44.0	44.0	43.0	42.0	42.0	41.0
42.5°	34.0	34.0	33.0	33.0	32.0	31.0	31.0	30.0
45°	26.0	25.0	24.0	24.0	24.0	23.0	23.0	22.0
47.5°	20.0	20.0	20.0	19.0	19.0	18.0	18.0	17.0
50°	16.0	16.0	16.0	16.0	15.0	15.0	15.0	14.0
52.5°	11.0	11.0	10.0	10.0	9.0	9.0	9.0	8.0
55°	8.0	8.0	8.0	7.0	7.0	7.0	6.0	6.0
57.5°	7.0	7.0	6.0	6.0	6.0	5.0	5.0	5.0
60°	6.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0
62.5°	5.0	5.0	5.0	4.0	4.0	4.0	4.0	3.0
65°	5.0	5.0	4.0	4.0	4.0	3.0	3.0	3.0
67.5°	5.0	5.0	5.0	4.0	4.0	4.0	4.0	3.0
70°	6.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0
72.5°	6.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
75°	6.0	6.0	5.0	5.0	5.0	5.0	5.0	4.0
77.5°	6.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0
80°	6.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
82.5°	6.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0
85°	5.0	5.0	4.0	4.0	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)