

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: P179682

Luminaire Tested: **LDA6A45935D010TE LARH40FL 6LAL1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179682  
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: LDA6A45935D010TE LARH40FL 6LAL1LI 30°  
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 40° Flood, 30° Tilt  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4014.9 lumens  
Efficiency: N/A  
Efficacy: 75.8 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

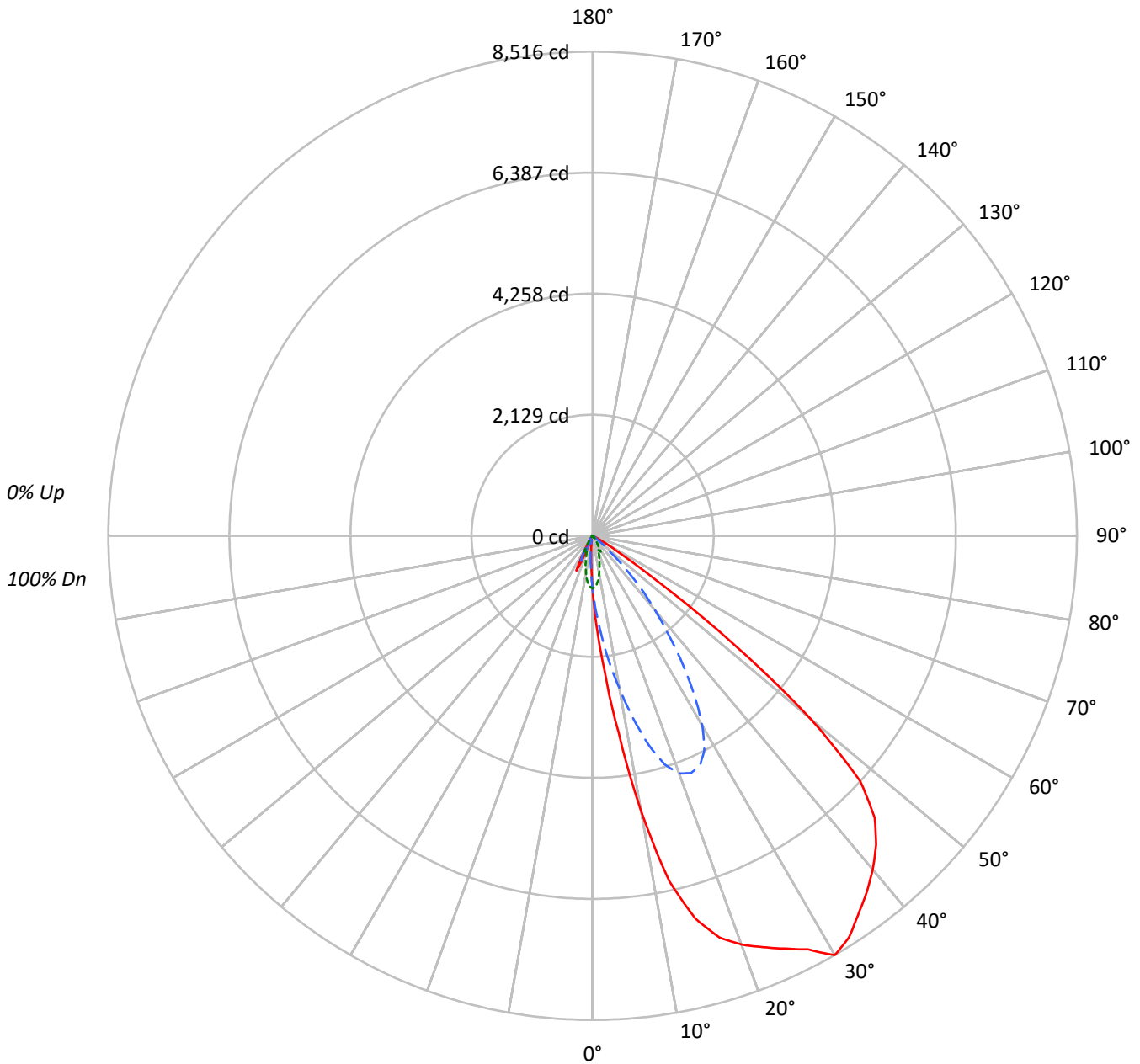
Input Watts (W): 53  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	50774	50774	50774
5°	130051	46814	17158
10°	274238	37357	4860
15°	395496	26498	4041
20°	446382	17601	5682
25°	484655	17735	40950
30°	539064	11692	14319
35°	544613	6632	5501
40°	548234	2727	2483
45°	543739	1706	1442
50°	426800	1160	1015
55°	128445	812	487
60°	27125	746	373
65°	3074	882	324
70°	817	1090	545
75°	169	1440	720
80°	0	2399	1073
85°	0	4277	2139



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	118.1	2.9
10°-20°	559.7	13.9
20°-30°	1055.3	26.3
30°-40°	1170.6	29.2
40°-50°	892.1	22.2
50°-60°	199.1	5.0
60°-70°	10.9	0.3
70°-80°	5.0	0.1
80°-90°	4.2	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°	1733.1	43.2
0°-40°	2903.7	72.3
0°-60°	3994.8	99.5
0°-90°	4014.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4014.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	926	926	926	926	926	
5°	2363	1751	851	408	312	306
15°	6969	3815	467	83	71	1943
25°	8012	4460	293	490	677	3729
35°	8138	2775	99	87	82	5097
45°	7014	817	22	23	19	5223
55°	1344	36	8	8	5	1659
65°	24	6	7	6	2	56
75°	1	3	7	6	3	1
85°	0	3	7	5	3	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°	926.2	926.2	926.2	926.2	926.2	926.2	926.2	926.2	926.2	926.2	926.2
2.5°	1589.6	1561.7	1558.3	1549.0	1476.1	1475.2	1474.4	1436.3	1401.5	1383.7	1308.3
5°	2363.3	2342.9	2317.5	2285.3	2165.0	2148.0	2133.6	2076.9	1954.8	1883.7	1750.6
7.5°	3491.1	3480.1	3352.1	3335.2	3114.0	3059.8	3006.4	2860.7	2625.1	2472.6	2237.0
10°	4926.5	4874.0	4776.5	4644.3	4356.2	4253.7	4154.6	3856.3	3454.6	3135.2	2734.4
12.5°	6223.8	6156.8	6038.2	5884.0	5521.3	5381.5	5224.8	4858.7	4368.1	3848.7	3281.8
15°	6968.6	6957.6	6820.3	6757.6	6465.3	6322.9	6193.3	5772.1	5159.5	4548.6	3814.8
17.5°	7409.2	7410.1	7309.2	7271.9	7000.0	6864.4	6755.1	6448.3	5806.9	5065.5	4219.0
20°	7651.6	7676.1	7582.1	7523.6	7333.8	7213.5	7111.8	6795.7	6237.3	5414.6	4447.7
22.5°	7832.0	7843.9	7729.5	7681.2	7468.5	7352.4	7288.0	6985.5	6439.9	5601.0	4517.2
25°	8012.5	8006.6	7877.8	7781.2	7571.9	7459.2	7380.4	7118.6	6524.6	5644.2	4460.4
27.5°	8203.2	8230.3	7991.3	7837.1	7649.9	7517.7	7429.6	7159.3	6518.7	5531.5	4254.5
30°	8515.9	8296.4	8057.4	7844.8	7629.5	7489.7	7388.9	7044.9	6355.1	5232.4	3863.1
32.5°	8384.5	8229.5	7994.7	7776.1	7545.6	7391.4	7268.6	6860.1	6011.9	4740.1	3337.7
35°	8137.9	8096.4	7864.2	7686.3	7424.5	7258.4	7115.2	6575.4	5479.8	4147.8	2775.1
37.5°	7915.9	7872.7	7734.6	7550.7	7253.3	7079.6	6816.9	6122.9	4787.5	3406.3	2182.8
40°	7660.9	7650.7	7496.5	7326.2	6968.6	6648.3	6376.3	5324.7	3963.1	2678.5	1698.1
42.5°	7378.7	7372.8	7247.4	6995.7	6470.4	6073.0	5617.9	4424.0	3047.1	2032.8	1261.7
45°	7013.5	6978.8	6762.7	6395.8	5641.6	5067.1	4528.2	3380.1	2234.5	1452.4	816.8
47.5°	6380.5	6319.5	6004.3	5376.4	4472.3	3885.1	3389.4	2324.3	1393.9	821.1	405.0
50°	5004.4	4842.6	4393.5	3733.4	2806.4	2296.3	1906.5	1153.2	618.6	407.6	259.3
52.5°	3091.1	2916.6	2492.1	1993.8	1280.3	992.2	818.5	555.9	342.3	234.7	100.0
55°	1343.9	1261.7	1041.4	828.7	592.3	471.1	406.7	281.3	177.9	85.6	35.6
57.5°	524.5	508.4	443.2	373.7	280.5	228.8	202.5	127.1	49.1	30.5	20.3
60°	247.4	231.3	199.1	165.2	103.4	74.6	57.6	35.6	24.6	18.6	13.6
62.5°	67.8	58.5	47.5	40.7	31.4	28.0	24.6	19.5	15.3	11.9	9.3
65°	23.7	23.7	21.2	19.5	16.1	14.4	13.6	11.0	9.3	7.6	5.9
67.5°	11.0	11.0	10.2	9.3	7.6	7.6	6.8	5.9	5.1	4.2	4.2
70°	5.1	4.2	4.2	4.2	4.2	3.4	3.4	3.4	3.4	3.4	3.4
72.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.5	3.4	3.4	3.4
75°	0.8	0.8	0.8	0.8	1.7	1.7	1.7	2.5	3.4	3.4	3.4
77.5°	0.0	0.8	0.8	0.8	1.7	1.7	1.7	2.5	3.4	3.4	3.4
80°	0.0	0.0	0.8	0.8	1.7	1.7	1.7	2.5	3.4	3.4	3.4
82.5°	0.0	0.0	0.8	0.8	1.7	1.7	1.7	2.5	2.5	3.4	3.4
85°	0.0	0.0	0.8	0.8	1.7	1.7	1.7	2.5	3.4	3.4	3.4
87.5°	0.0	0.0	0.8	0.8	1.7	1.7	1.7	2.5	2.5	3.4	3.4
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°	926.2	926.2	926.2	926.2	926.2	926.2	926.2	926.2	926.2	926.2	926.2
2.5°	1276.1	1243.9	1201.5	1131.2	1099.9	1093.1	1035.5	982.9	936.3	902.4	849.0
5°	1664.2	1571.0	1457.4	1321.0	1269.3	1232.9	1122.7	1017.7	927.8	850.7	769.4
7.5°	2048.9	1864.2	1693.9	1494.7	1398.1	1325.3	1161.7	1012.6	877.0	771.9	664.3
10°	2419.2	2156.5	1868.4	1606.6	1476.9	1366.8	1152.4	963.4	794.0	671.1	557.6
12.5°	2770.8	2393.8	2010.8	1662.5	1507.4	1369.3	1106.6	884.6	702.5	570.3	451.6
15°	3119.9	2565.8	2093.8	1674.4	1487.1	1321.0	1023.6	779.6	599.9	466.9	362.7
17.5°	3337.7	2661.5	2094.6	1621.8	1410.8	1229.5	910.1	670.3	495.7	376.2	284.7
20°	3445.3	2649.7	2015.0	1500.7	1281.2	1098.2	776.2	558.4	400.8	301.7	224.5
22.5°	3414.0	2544.6	1875.2	1340.5	1137.1	963.4	660.9	468.6	345.7	261.8	203.4
25°	3266.5	2374.3	1710.0	1189.7	994.8	830.4	580.4	431.3	340.6	293.2	252.5
27.5°	3011.5	2150.6	1507.4	1031.2	855.8	724.5	526.2	418.6	352.5	316.1	319.5
30°	2635.3	1854.0	1245.6	819.4	670.3	563.5	394.9	291.5	215.2	184.7	184.7
32.5°	2214.1	1515.9	962.6	605.9	484.7	409.3	277.9	199.1	159.3	144.9	138.1
35°	1819.3	1186.3	714.3	438.9	350.0	291.5	182.2	111.9	102.5	99.1	97.4
37.5°	1431.2	890.6	517.7	318.6	243.2	193.2	93.2	72.0	62.7	58.5	55.1
40°	1072.7	625.3	358.4	194.9	134.7	89.0	54.2	44.1	39.0	38.1	36.4
42.5°	750.8	419.4	222.0	85.6	62.7	50.0	37.3	31.4	28.8	28.0	27.1
45°	439.8	261.8	90.7	47.5	39.0	34.7	27.1	23.7	22.0	22.0	21.2
47.5°	276.2	105.9	48.3	30.5	26.3	24.6	20.3	17.8	16.9	16.9	16.9
50°	113.5	46.6	28.8	21.2	18.6	17.8	15.3	13.6	13.6	13.6	13.6
52.5°	41.5	26.3	19.5	15.3	13.6	12.7	11.0	10.2	10.2	11.0	10.2
55°	23.7	17.8	13.6	11.0	9.3	9.3	8.5	8.5	8.5	8.5	8.5
57.5°	15.3	11.9	9.3	7.6	6.8	6.8	6.8	6.8	6.8	7.6	6.8
60°	10.2	8.5	6.8	5.9	5.9	5.9	5.9	5.9	5.9	6.8	6.8
62.5°	7.6	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.8	6.8
65°	5.9	5.1	5.9	5.9	5.9	5.9	5.9	6.8	6.8	6.8	7.6
67.5°	4.2	4.2	5.1	5.1	5.1	5.1	5.9	5.9	6.8	6.8	7.6
70°	4.2	4.2	5.1	5.1	5.1	5.1	5.9	5.9	6.8	6.8	7.6
72.5°	4.2	4.2	5.1	5.1	5.1	5.1	5.9	5.9	6.8	6.8	7.6
75°	4.2	4.2	5.1	5.1	5.1	5.9	5.9	5.9	6.8	6.8	7.6
77.5°	4.2	4.2	5.1	5.1	5.1	5.9	5.9	5.9	6.8	6.8	7.6
80°	4.2	4.2	5.1	5.1	5.1	5.9	5.9	5.9	6.8	6.8	7.6
82.5°	4.2	4.2	5.1	5.1	5.1	5.9	5.9	5.9	6.8	6.8	7.6
85°	4.2	5.1	5.1	5.1	5.1	5.9	5.9	5.9	6.8	6.8	7.6
87.5°	4.2	4.2	5.1	5.1	5.1	5.9	5.9	5.9	6.8	6.8	6.8
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°	926.2	926.2	926.2	926.2	926.2	926.2	926.2	926.2	926.2	926.2	926.2
2.5°	812.6	775.3	744.8	728.7	710.9	680.4	651.6	625.3	614.3	578.7	585.5
5°	705.8	642.3	591.4	568.6	542.3	499.9	462.7	427.1	408.4	377.9	366.9
7.5°	587.2	512.6	451.6	425.4	402.5	362.7	327.9	294.9	271.2	239.8	227.1
10°	470.3	399.1	343.2	320.3	294.9	255.1	220.3	191.5	172.0	148.3	136.4
12.5°	372.0	308.4	251.7	228.8	207.6	174.6	147.4	121.2	100.0	87.3	83.9
15°	289.8	228.8	182.2	163.5	145.7	113.5	93.2	86.4	83.0	79.7	78.8
17.5°	217.8	168.6	127.1	108.5	98.3	89.8	86.4	83.0	81.3	78.8	79.7
20°	167.8	120.3	103.4	100.8	99.1	94.9	94.1	93.2	92.4	93.2	94.9
22.5°	159.3	150.0	155.1	158.5	166.1	166.9	180.5	191.5	201.7	229.6	243.2
25°	268.6	284.7	310.1	326.2	348.3	371.1	413.5	450.8	489.8	525.4	556.7
27.5°	336.4	344.0	344.0	352.5	343.2	341.5	336.4	332.2	350.0	344.0	362.7
30°	186.4	194.9	209.3	216.9	226.2	233.0	230.5	222.0	227.1	220.3	227.1
32.5°	133.0	133.0	136.4	137.3	139.0	139.8	140.7	141.5	142.4	138.1	140.7
35°	94.9	91.5	89.8	89.8	89.0	87.3	86.4	86.4	87.3	83.0	84.7
37.5°	53.4	51.7	51.7	51.7	51.7	51.7	52.5	53.4	53.4	53.4	55.1
40°	35.6	35.6	35.6	36.4	36.4	36.4	37.3	37.3	38.1	38.1	39.0
42.5°	27.1	26.3	27.1	27.1	27.1	28.0	28.0	28.8	28.8	28.8	29.7
45°	21.2	21.2	21.2	21.2	22.0	22.0	22.0	22.0	22.9	22.0	22.9
47.5°	16.9	16.9	16.9	17.8	17.8	16.9	17.8	17.8	17.8	17.8	17.8
50°	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	14.4	13.6	14.4
52.5°	11.0	10.2	10.2	10.2	10.2	9.3	9.3	10.2	10.2	9.3	9.3
55°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
57.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	5.9
60°	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.9	5.9	5.9	5.1
62.5°	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.9	5.9	5.1	5.1
65°	7.6	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.9	5.1	5.1
67.5°	7.6	7.6	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.1	5.1
70°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.9	5.1
72.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.9	5.9
75°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.9	5.9
77.5°	6.8	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.9	5.9	5.1
80°	7.6	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.9	5.9	5.1
82.5°	6.8	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.9	5.1	5.1
85°	6.8	6.8	6.8	6.8	6.8	5.9	5.9	5.9	5.1	5.1	5.1
87.5°	6.8	6.8	6.8	5.9	5.9	5.9	5.9	5.1	5.1	4.2	4.2
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: P179682

CATALOG NUMBER: LDA6A45935D010TE LARH40FL 6LAL1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	926.2	926.2	926.2	926.2	926.2	926.2	926.2	926.2
2.5°	549.9	538.1	548.2	535.5	531.3	522.0	517.7	522.0
5°	346.6	333.9	336.4	327.9	314.4	314.4	310.1	311.8
7.5°	209.3	196.6	197.4	189.8	179.6	177.9	173.7	175.4
10°	121.2	107.6	107.6	99.1	90.7	89.8	87.3	87.3
12.5°	80.5	78.8	77.1	76.3	74.6	74.6	74.6	72.9
15°	75.4	74.6	73.7	73.7	72.0	72.0	72.9	71.2
17.5°	77.1	76.3	75.4	75.4	75.4	75.4	76.3	74.6
20°	92.4	93.2	93.2	95.8	97.4	98.3	100.8	97.4
22.5°	242.3	250.0	255.9	287.3	314.4	304.2	322.8	291.5
25°	579.6	600.8	618.6	622.0	638.9	662.6	677.9	677.0
27.5°	362.7	363.5	373.7	373.7	370.3	383.8	393.2	391.5
30°	223.7	222.9	226.2	217.8	216.9	222.9	226.2	226.2
32.5°	138.1	137.3	139.8	138.1	133.9	140.7	139.0	139.0
35°	83.0	83.9	82.2	82.2	78.8	82.2	81.3	82.2
37.5°	54.2	53.4	52.5	52.5	50.8	51.7	50.8	49.1
40°	38.1	38.1	37.3	37.3	36.4	35.6	35.6	34.7
42.5°	28.8	28.8	28.0	28.0	27.1	26.3	26.3	25.4
45°	22.0	21.2	20.3	20.3	20.3	19.5	19.5	18.6
47.5°	16.9	16.9	16.9	16.1	16.1	15.3	15.3	14.4
50°	13.6	13.6	13.6	13.6	12.7	12.7	12.7	11.9
52.5°	9.3	9.3	8.5	8.5	7.6	7.6	7.6	6.8
55°	6.8	6.8	6.8	5.9	5.9	5.9	5.1	5.1
57.5°	5.9	5.9	5.1	5.1	5.1	4.2	4.2	4.2
60°	5.1	4.2	4.2	4.2	3.4	3.4	3.4	3.4
62.5°	4.2	4.2	4.2	3.4	3.4	3.4	3.4	2.5
65°	4.2	4.2	3.4	3.4	3.4	2.5	2.5	2.5
67.5°	4.2	4.2	4.2	3.4	3.4	3.4	3.4	2.5
70°	5.1	4.2	4.2	4.2	3.4	3.4	3.4	3.4
72.5°	5.1	4.2	4.2	4.2	4.2	3.4	3.4	3.4
75°	5.1	5.1	4.2	4.2	4.2	4.2	4.2	3.4
77.5°	5.1	4.2	4.2	4.2	4.2	4.2	3.4	3.4
80°	5.1	4.2	4.2	4.2	4.2	3.4	3.4	3.4
82.5°	5.1	4.2	4.2	4.2	3.4	3.4	3.4	3.4
85°	4.2	4.2	3.4	3.4	3.4	3.4	3.4	3.4
87.5°	3.4	3.4	2.5	2.5	2.5	1.7	1.7	1.7
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)