

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: P179950

Luminaire Tested: **LDA6A65835D010TE LARH40FL 6LAL1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179950  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26691)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA6A65835D010TE 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: 6413.0 lumens  
Efficiency: N/A  
Efficacy: 82.2 lumens/watt  
Spacing Criteria (0/90/45): 2.62 / 0.52 / 1.36  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

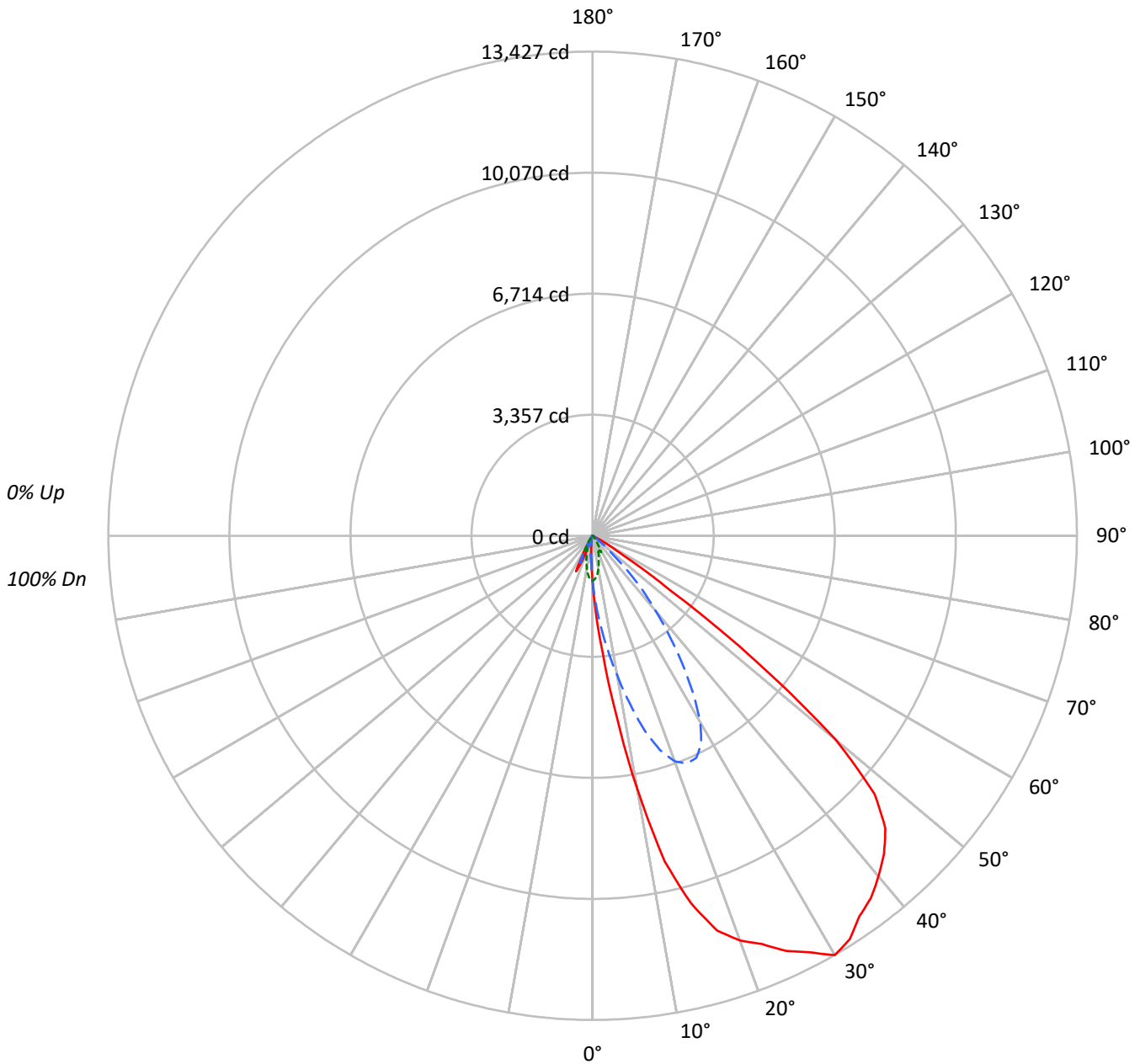
Input Watts (W): 78  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	88	83	78	86	81	77	83	79	76	81	77	74	73																			
4	91	82	75	70	89	80	74	69	78	73	68	76	71	67	74	70	67	65																			
5	85	74	67	62	83	73	67	61	71	65	61	70	64	60	68	63	60	58																			
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	54	52																			
7	74	62	55	49	72	61	54	49	60	54	49	59	53	49	57	52	48	47																			
8	69	57	50	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	44	40	38																			
10	60	48	41	37	59	48	41	36	47	41	36	46	40	36	45	40	36	34																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	68487	68487	68487
5°	181746	63493	24296
10°	396725	51341	7242
15°	598834	37514	6300
20°	696572	25756	9883
25°	768208	27788	65822
30°	849941	20921	20472
35°	862558	10701	7663
40°	882396	4358	3671
45°	889806	2682	2217
50°	749570	1834	1424
55°	247580	1252	803
60°	48669	1173	526
65°	5720	1544	623
70°	1523	1715	769
75°	254	2266	1271
80°	0	3757	1894
85°	0	7485	3019



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	166.2	2.6
10°-20°	839.5	13.1
20°-30°	1657.0	25.8
30°-40°	1869.1	29.1
40°-50°	1483.8	23.1
50°-60°	362.8	5.7
60°-70°	19.4	0.3
70°-80°	8.3	0.1
80°-90°	6.8	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°	2662.8	41.5
0°-40°	4531.9	70.7
0°-60°	6378.5	99.5
0°-90°	6413.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6413.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1249	1249	1249	1249	1249	
5°	3303	2475	1154	580	442	436
15°	10551	5608	661	130	111	2960
25°	12700	6798	459	832	1088	5882
35°	12889	4326	160	126	114	8106
45°	11477	1348	35	36	29	8602
55°	2590	58	13	13	8	3039
65°	44	11	12	10	5	108
75°	1	6	11	10	6	3
85°	0	6	12	8	5	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°	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3
2.5°	2168.0	2126.3	2145.4	2115.5	2030.8	2004.6	2026.0	1993.8	1897.2	1860.2	1822.0
5°	3302.7	3265.8	3277.7	3209.7	3051.0	2996.1	2992.5	2894.7	2699.0	2589.2	2474.7
7.5°	5007.8	4956.5	4942.2	4778.7	4473.3	4358.7	4302.6	4061.6	3692.9	3431.6	3175.1
10°	7126.9	7177.0	7125.7	6860.8	6381.2	6166.4	6030.4	5574.6	4910.0	4412.4	3932.8
12.5°	9252.0	9283.0	9186.4	8857.0	8247.3	7989.6	7789.1	7205.7	6329.9	5485.1	4769.2
15°	10551.4	10698.1	10607.5	10377.2	9904.7	9592.1	9411.9	8691.2	7588.7	6660.4	5608.0
17.5°	11477.3	11613.3	11538.1	11349.6	10816.3	10564.5	10447.6	9854.6	8654.2	7474.1	6235.6
20°	11940.2	12106.1	12038.1	11824.5	11433.1	11223.1	11081.2	10502.5	9420.2	8079.1	6654.4
22.5°	12254.1	12437.8	12363.8	12169.3	11770.8	11526.2	11459.4	10911.7	9821.1	8441.8	6832.2
25°	12700.3	12854.2	12645.4	12405.6	12011.8	11754.1	11713.5	11153.9	10013.2	8579.0	6797.6
27.5°	13020.1	13202.6	12848.3	12604.9	12155.0	11884.2	11831.7	11305.5	10031.1	8470.5	6517.2
30°	13427.0	13308.8	12997.4	12644.2	12164.6	11875.8	11809.0	11217.2	9852.2	8070.7	5968.3
32.5°	13265.9	13237.2	12925.8	12510.6	12063.1	11772.0	11682.5	10945.1	9360.6	7381.1	5191.6
35°	12888.8	12979.5	12719.4	12461.7	11905.6	11602.6	11478.5	10544.2	8619.6	6493.3	4326.5
37.5°	12668.1	12725.4	12560.7	12245.7	11694.5	11295.9	11060.9	9870.1	7649.5	5374.1	3492.5
40°	12330.4	12476.0	12317.3	11955.8	11319.8	10773.3	10364.0	8651.8	6371.6	4237.0	2731.2
42.5°	11960.5	12090.6	11939.1	11505.9	10607.5	9874.8	9194.7	7220.0	4988.7	3237.1	2048.7
45°	11477.3	11594.2	11322.2	10648.0	9376.1	8365.5	7686.5	5670.0	3762.1	2378.0	1348.3
47.5°	10606.3	10575.2	10189.8	9142.2	7575.6	6669.9	5880.0	4061.6	2500.9	1347.1	670.6
50°	8789.0	8499.1	7932.3	6716.5	5084.2	4105.8	3566.4	2096.4	1134.7	652.7	421.2
52.5°	5692.7	5369.4	4850.3	3727.5	2441.3	1959.2	1571.4	947.4	591.8	368.7	165.9
55°	2590.4	2361.3	2029.6	1505.8	1047.6	871.0	737.4	479.7	317.4	137.2	58.5
57.5°	986.8	910.4	809.0	645.5	484.4	418.8	347.2	230.3	99.0	51.3	34.6
60°	443.9	411.7	378.2	295.9	207.6	149.1	113.4	62.0	41.8	29.8	22.7
62.5°	151.5	126.5	105.0	75.2	56.1	48.9	43.0	34.6	25.1	20.3	15.5
65°	44.1	43.0	40.6	35.8	28.6	26.3	25.1	20.3	15.5	13.1	10.7
67.5°	21.5	20.3	19.1	17.9	14.3	13.1	13.1	11.9	9.5	8.4	7.2
70°	9.5	9.5	8.4	8.4	7.2	7.2	7.2	6.0	6.0	6.0	6.0
72.5°	4.8	4.8	4.8	3.6	3.6	3.6	3.6	4.8	4.8	6.0	6.0
75°	1.2	2.4	2.4	2.4	2.4	3.6	3.6	4.8	4.8	6.0	6.0
77.5°	1.2	1.2	1.2	2.4	2.4	2.4	3.6	4.8	4.8	6.0	6.0
80°	0.0	1.2	1.2	2.4	2.4	2.4	3.6	3.6	4.8	6.0	6.0
82.5°	0.0	1.2	1.2	2.4	2.4	2.4	3.6	3.6	4.8	6.0	6.0
85°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.8	6.0	6.0
87.5°	0.0	0.0	1.2	1.2	2.4	2.4	3.6	3.6	4.8	6.0	6.0
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°	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3
2.5°	1728.9	1703.9	1604.8	1528.5	1492.7	1490.3	1410.4	1361.4	1275.5	1208.7	1145.5
5°	2273.0	2162.1	1961.6	1802.9	1726.5	1687.2	1529.7	1416.3	1268.4	1153.8	1040.5
7.5°	2826.7	2615.5	2333.9	2032.0	1907.9	1831.5	1588.1	1406.8	1209.9	1050.0	909.2
10°	3393.4	3021.2	2601.2	2202.6	2023.6	1894.8	1582.2	1336.4	1109.7	922.3	768.4
12.5°	3984.1	3397.0	2812.3	2313.6	2077.3	1907.9	1528.5	1233.8	986.8	787.5	640.7
15°	4481.6	3688.1	2946.0	2339.8	2060.6	1855.4	1413.9	1103.7	855.5	661.0	527.4
17.5°	4865.8	3851.6	2971.0	2275.4	1967.6	1738.5	1266.0	960.5	717.1	545.3	412.8
20°	5059.1	3876.7	2892.3	2122.7	1799.3	1563.1	1097.7	814.9	601.4	441.5	328.1
22.5°	5073.4	3759.7	2720.5	1925.8	1614.4	1374.6	959.3	702.8	527.4	396.1	311.4
25°	4887.3	3534.2	2490.2	1724.2	1424.7	1208.7	860.3	674.2	531.0	459.4	422.4
27.5°	4534.1	3221.6	2237.2	1522.5	1261.2	1094.2	819.7	674.2	575.1	519.0	532.2
30°	4044.9	2823.1	1885.2	1248.1	1026.1	880.6	644.3	504.7	396.1	330.5	318.6
32.5°	3410.1	2310.0	1461.7	922.3	748.1	634.8	435.5	316.2	255.3	249.4	242.2
35°	2806.4	1824.4	1109.7	681.3	551.3	448.6	278.0	186.1	169.4	159.9	152.7
37.5°	2216.9	1365.0	797.1	495.2	378.2	285.2	143.2	120.5	105.0	95.5	87.1
40°	1666.9	980.8	562.0	299.5	198.1	122.9	85.9	74.0	65.6	60.9	58.5
42.5°	1178.9	652.7	348.4	126.5	94.3	77.6	59.7	52.5	47.7	45.3	43.0
45°	684.9	405.7	140.8	74.0	59.7	53.7	44.1	39.4	37.0	34.6	33.4
47.5°	428.4	163.5	72.8	47.7	41.8	38.2	32.2	31.0	28.6	27.4	27.4
50°	173.0	72.8	45.3	33.4	29.8	28.6	25.1	23.9	21.5	21.5	21.5
52.5°	65.6	43.0	31.0	23.9	21.5	20.3	17.9	17.9	16.7	16.7	16.7
55°	38.2	28.6	21.5	16.7	15.5	15.5	14.3	14.3	13.1	13.1	13.1
57.5°	25.1	19.1	15.5	11.9	11.9	11.9	10.7	10.7	10.7	10.7	10.7
60°	16.7	13.1	10.7	9.5	9.5	9.5	9.5	10.7	10.7	10.7	10.7
62.5°	11.9	10.7	9.5	9.5	9.5	9.5	9.5	10.7	10.7	10.7	11.9
65°	9.5	8.4	8.4	8.4	8.4	9.5	9.5	10.7	10.7	11.9	11.9
67.5°	7.2	7.2	7.2	7.2	8.4	8.4	9.5	10.7	10.7	10.7	11.9
70°	6.0	7.2	7.2	8.4	8.4	8.4	9.5	9.5	10.7	10.7	11.9
72.5°	6.0	7.2	7.2	8.4	8.4	8.4	9.5	10.7	10.7	10.7	11.9
75°	6.0	7.2	7.2	8.4	8.4	8.4	9.5	10.7	10.7	10.7	11.9
77.5°	7.2	7.2	8.4	8.4	8.4	9.5	9.5	10.7	10.7	11.9	11.9
80°	7.2	7.2	8.4	8.4	8.4	9.5	9.5	10.7	10.7	11.9	11.9
82.5°	7.2	7.2	8.4	8.4	8.4	9.5	9.5	10.7	10.7	11.9	11.9
85°	7.2	7.2	8.4	8.4	8.4	9.5	9.5	10.7	10.7	11.9	11.9
87.5°	7.2	7.2	8.4	8.4	8.4	9.5	9.5	10.7	10.7	10.7	11.9
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°	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3
2.5°	1114.4	1059.6	999.9	980.8	961.7	924.7	902.1	861.5	831.7	801.8	778.0
5°	965.3	878.2	805.4	774.4	744.6	693.2	657.4	614.5	579.9	550.1	522.6
7.5°	810.2	709.9	637.2	606.1	576.3	520.2	474.9	421.2	380.6	347.2	319.8
10°	667.0	571.5	492.8	455.8	421.2	362.7	319.8	276.8	242.2	213.6	188.5
12.5°	542.9	440.3	360.3	332.9	299.5	251.8	211.2	164.7	144.4	136.0	130.1
15°	421.2	329.3	262.5	237.4	207.6	162.3	144.4	136.0	130.1	126.5	121.7
17.5°	321.0	244.6	179.0	162.3	152.7	143.2	138.4	132.4	128.9	127.7	124.1
20°	251.8	184.9	168.2	163.5	163.5	161.1	157.5	157.5	156.3	159.9	159.9
22.5°	258.9	258.9	273.2	272.0	291.1	310.2	324.5	371.1	397.3	453.4	491.6
25°	452.2	495.2	545.3	560.8	597.8	652.7	709.9	781.5	831.7	885.3	906.8
27.5°	564.4	571.5	564.4	582.3	558.4	544.1	548.9	557.2	557.2	560.8	575.1
30°	334.1	350.8	366.3	378.2	372.3	366.3	363.9	346.0	346.0	338.9	332.9
32.5°	226.7	224.3	221.9	226.7	221.9	221.9	218.4	219.5	212.4	207.6	205.2
35°	155.1	148.0	139.6	140.8	136.0	134.8	131.3	131.3	126.5	124.1	122.9
37.5°	85.9	85.9	82.3	83.5	82.3	82.3	82.3	83.5	82.3	82.3	83.5
40°	58.5	58.5	57.3	58.5	57.3	58.5	59.7	59.7	59.7	59.7	58.5
42.5°	44.1	44.1	43.0	44.1	43.0	44.1	45.3	45.3	45.3	45.3	45.3
45°	34.6	34.6	34.6	34.6	34.6	34.6	34.6	35.8	35.8	34.6	34.6
47.5°	27.4	28.6	27.4	27.4	27.4	27.4	28.6	28.6	27.4	27.4	27.4
50°	22.7	22.7	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5
52.5°	17.9	16.7	16.7	15.5	15.5	15.5	15.5	15.5	15.5	15.5	14.3
55°	13.1	13.1	11.9	11.9	11.9	13.1	13.1	13.1	13.1	11.9	11.9
57.5°	11.9	11.9	11.9	10.7	10.7	11.9	11.9	10.7	10.7	10.7	9.5
60°	10.7	11.9	10.7	10.7	10.7	10.7	10.7	9.5	9.5	9.5	8.4
62.5°	11.9	11.9	10.7	10.7	10.7	10.7	9.5	9.5	9.5	8.4	8.4
65°	11.9	11.9	11.9	10.7	10.7	10.7	10.7	9.5	9.5	8.4	8.4
67.5°	11.9	11.9	11.9	11.9	10.7	10.7	10.7	9.5	9.5	9.5	8.4
70°	11.9	11.9	11.9	11.9	11.9	10.7	10.7	10.7	9.5	9.5	8.4
72.5°	11.9	11.9	11.9	10.7	10.7	10.7	10.7	10.7	9.5	9.5	8.4
75°	11.9	11.9	11.9	10.7	10.7	10.7	10.7	9.5	9.5	9.5	8.4
77.5°	11.9	11.9	11.9	10.7	10.7	10.7	10.7	9.5	9.5	9.5	8.4
80°	11.9	11.9	11.9	10.7	10.7	10.7	10.7	9.5	9.5	9.5	8.4
82.5°	11.9	11.9	11.9	10.7	10.7	10.7	10.7	9.5	9.5	8.4	8.4
85°	11.9	11.9	10.7	10.7	10.7	10.7	9.5	9.5	8.4	8.4	7.2
87.5°	10.7	10.7	10.7	10.7	9.5	9.5	9.5	8.4	7.2	7.2	6.0
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: P179950

CATALOG NUMBER: LDA6A65835D010TE LARH40FL 6LAL1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3	1249.3
2.5°	749.3	744.6	741.0	748.1	745.7	715.9	719.5	718.3
5°	491.6	480.9	472.5	476.1	466.5	453.4	443.9	441.5
7.5°	292.3	280.4	273.2	266.1	263.7	247.0	239.8	244.6
10°	161.1	144.4	143.2	139.6	134.8	131.3	128.9	130.1
12.5°	124.1	122.9	120.5	119.3	116.9	115.7	114.5	113.4
15°	118.1	116.9	115.7	114.5	113.4	112.2	111.0	111.0
17.5°	121.7	121.7	120.5	119.3	119.3	120.5	119.3	118.1
20°	158.7	158.7	161.1	164.7	164.7	168.2	173.0	169.4
22.5°	515.5	541.7	573.9	583.5	639.5	684.9	768.4	731.4
25°	942.6	1002.3	1016.6	1036.9	1067.9	1083.4	1067.9	1088.2
27.5°	572.7	593.0	595.4	596.6	603.8	602.6	587.0	596.6
30°	332.9	340.1	337.7	336.5	334.1	321.0	318.6	323.4
32.5°	208.8	206.4	205.2	204.0	204.0	196.9	200.5	198.1
35°	119.3	122.9	121.7	120.5	116.9	115.7	115.7	114.5
37.5°	79.9	81.1	79.9	78.8	76.4	75.2	74.0	72.8
40°	57.3	58.5	57.3	56.1	54.9	53.7	52.5	51.3
42.5°	43.0	44.1	43.0	43.0	40.6	39.4	38.2	37.0
45°	33.4	32.2	32.2	32.2	31.0	29.8	28.6	28.6
47.5°	27.4	27.4	27.4	26.3	25.1	25.1	25.1	23.9
50°	20.3	21.5	20.3	20.3	19.1	17.9	17.9	16.7
52.5°	14.3	14.3	13.1	13.1	11.9	10.7	10.7	10.7
55°	10.7	10.7	10.7	9.5	9.5	8.4	8.4	8.4
57.5°	9.5	8.4	8.4	8.4	7.2	7.2	6.0	6.0
60°	8.4	7.2	7.2	6.0	6.0	4.8	4.8	4.8
62.5°	7.2	6.0	6.0	6.0	4.8	4.8	4.8	4.8
65°	7.2	6.0	6.0	6.0	4.8	4.8	4.8	4.8
67.5°	7.2	7.2	6.0	6.0	6.0	4.8	4.8	4.8
70°	7.2	7.2	7.2	6.0	6.0	6.0	4.8	4.8
72.5°	8.4	7.2	7.2	7.2	6.0	6.0	6.0	6.0
75°	8.4	7.2	7.2	7.2	6.0	6.0	6.0	6.0
77.5°	8.4	7.2	7.2	7.2	6.0	6.0	6.0	6.0
80°	7.2	7.2	7.2	6.0	6.0	6.0	6.0	6.0
82.5°	7.2	7.2	7.2	7.2	6.0	6.0	6.0	6.0
85°	7.2	6.0	6.0	6.0	4.8	4.8	4.8	4.8
87.5°	6.0	4.8	4.8	3.6	3.6	3.6	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)