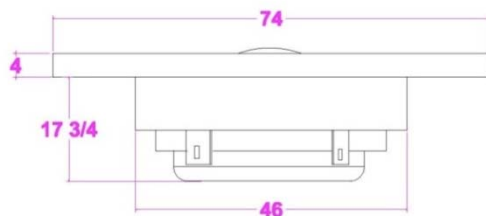


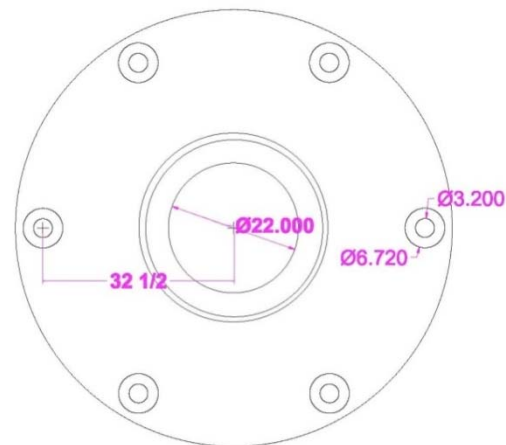
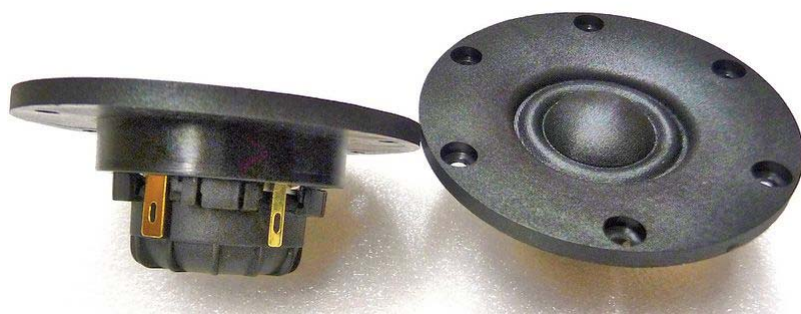


## LD22 Series Low Distortion 22mm Tweeter

F Series



C Series



The LD22 series of 22mm high performance tweeters fits a unique position between 19mm (3/4") and more conventional 25/26mm (1") units. The 2 face plates were developed after a series of prototypes were designed and measured. This Canadian effort, along with local face plate production, assembly and packaging, results in a proud "Made in Canada" achievement.

The 22mm vented copper-clad aluminum voice coil and extra wide surround result in a low  $F_s$  and support a 2kHz lower crossover capability. They have a rear chamber for very low distortion performance and the outside ring neodymium magnet affords greater internal volume than that of more traditional neodymium tweeters. The carefully chosen material and the shape of the coated fabric dome enable response with full output to 40 kHz.

We offer two versions with different off axis responses. The C series has a carefully designed faceplate with a compound curve giving better than average off axis response out to 45 degrees for a wider so-called "sweet spot" listening experience.

The F series has a flatter faceplate for a more traditional off axis response. Both are packaged in pairs including mounting gaskets and screws.

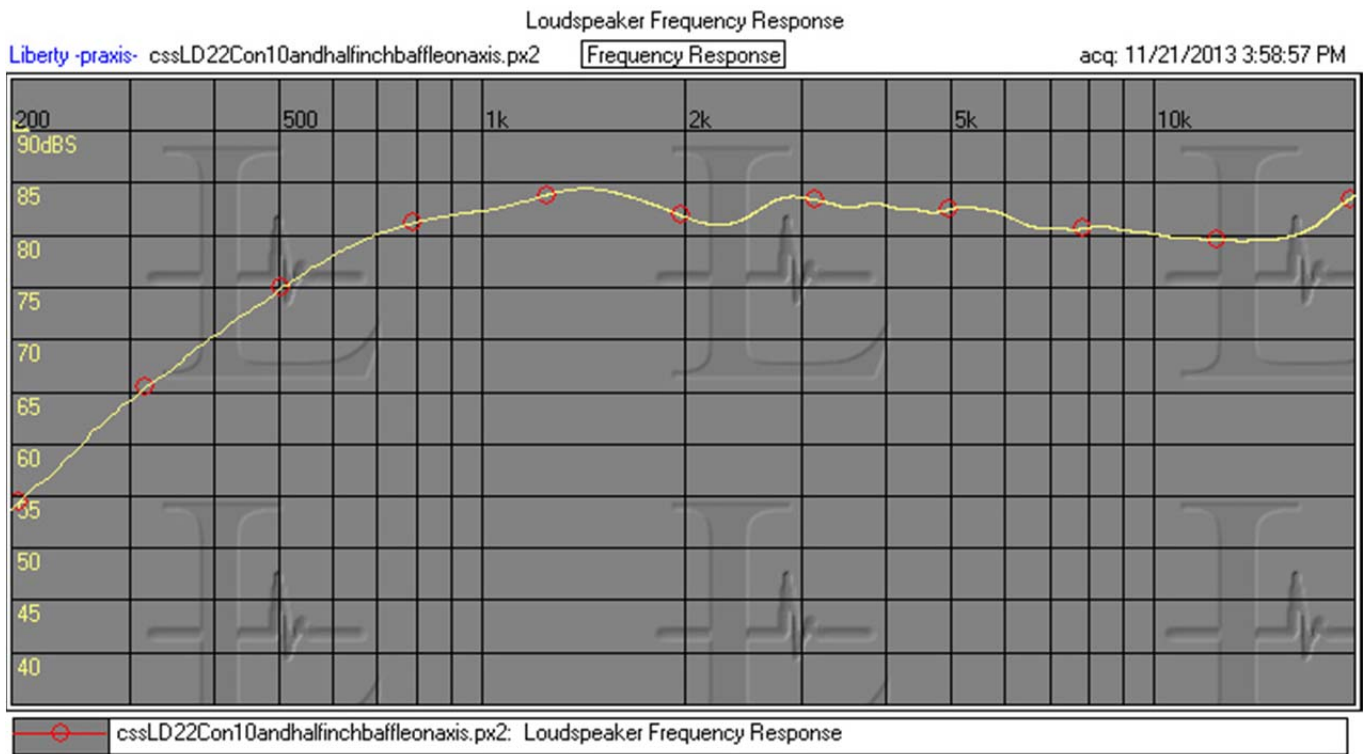
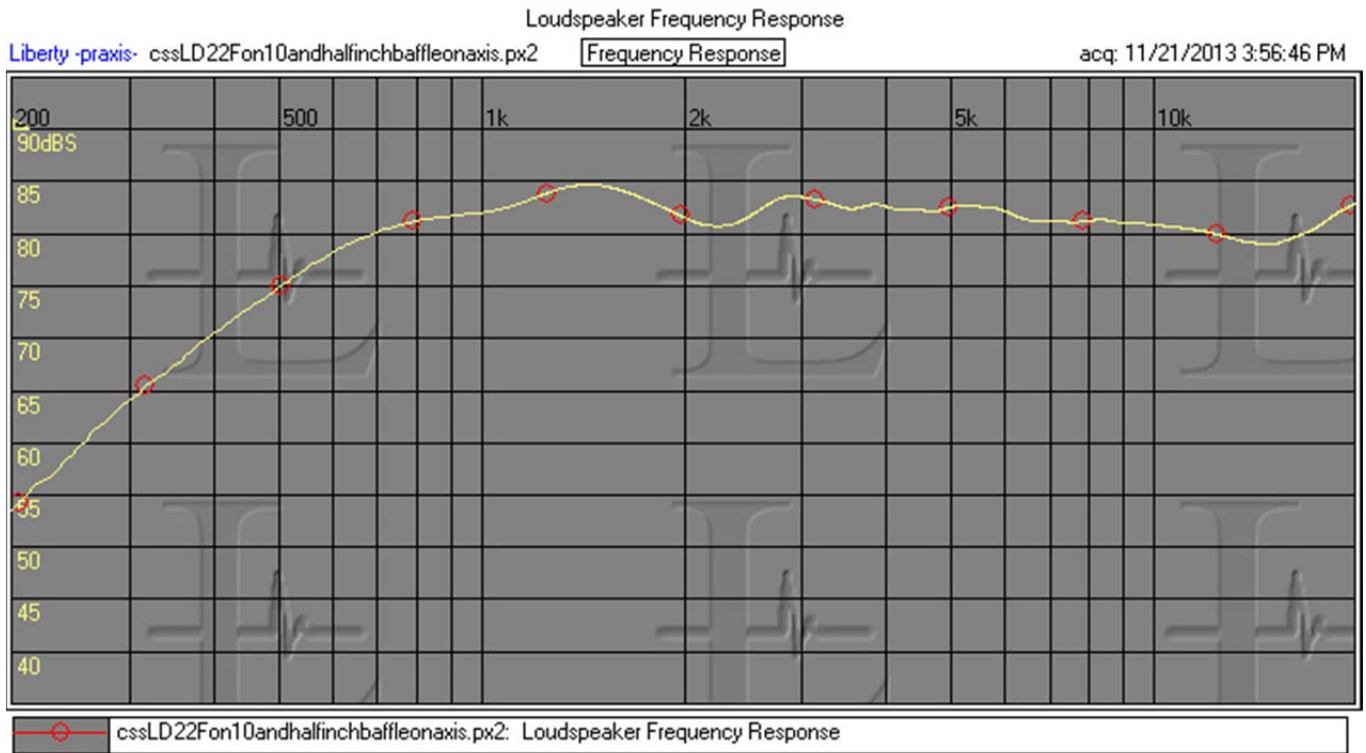
Parameter	Value	Unit
Nominal size	22	[mm]
Nominal impedance	4	[ohm]
Recommended frequency range	2-30	[kHz]
Sensitivity, 2.83V/1m (average SPL in range 2 - 20 kHz)	89	[dB]
Effective radiating area, Sd	6.1	[sq.cm]
Resonance frequency, Fs	870	[Hz]
Moving mass, incl. air (free air, no baffle), Mms	0.27	[g]
Force factor, Bxl	1.7	[N/A]
Suspension compliance, Cms	0.15	[mm/N]
Equivalent air volume, Vas	7.7	[ml]
Mechanical resistance, Rms	0.97	[Ns/m]
Mechanical Q, Qms	1.4	[-]
Electrical Q, Qes	1.69	[-]
Total Q, Qts	0.77	[-]
Voice coil resistance, RDC	3.6	[ohm]
Voice coil inductance, Le (measured at 20 kHz)	40	[μH]
Voice coil inside diameter	22	[mm]
Voice coil winding height	1.6	[mm]
Air gap height	2.5	[mm]
Theoretical linear motor stroke, Xmax	±0.45	[mm]

Below are several acoustic measurements for the LD22 tweeters. The measurements were taken with Praxis plus the WT2 from Smith and Larson.

The frequency responses are for 2 different cabinet widths (7.5" plus 10.5") for each LD series tweeter. Doing these measurements shows the real world acoustic measurements for the tweeters on 2 different baffle widths as these widths are popular for many DIY usages.

The near field distortion measurement shows a very clean response.

LD22F LD22C Frequency responses on axis measured on a 10.5" baffle (Below)

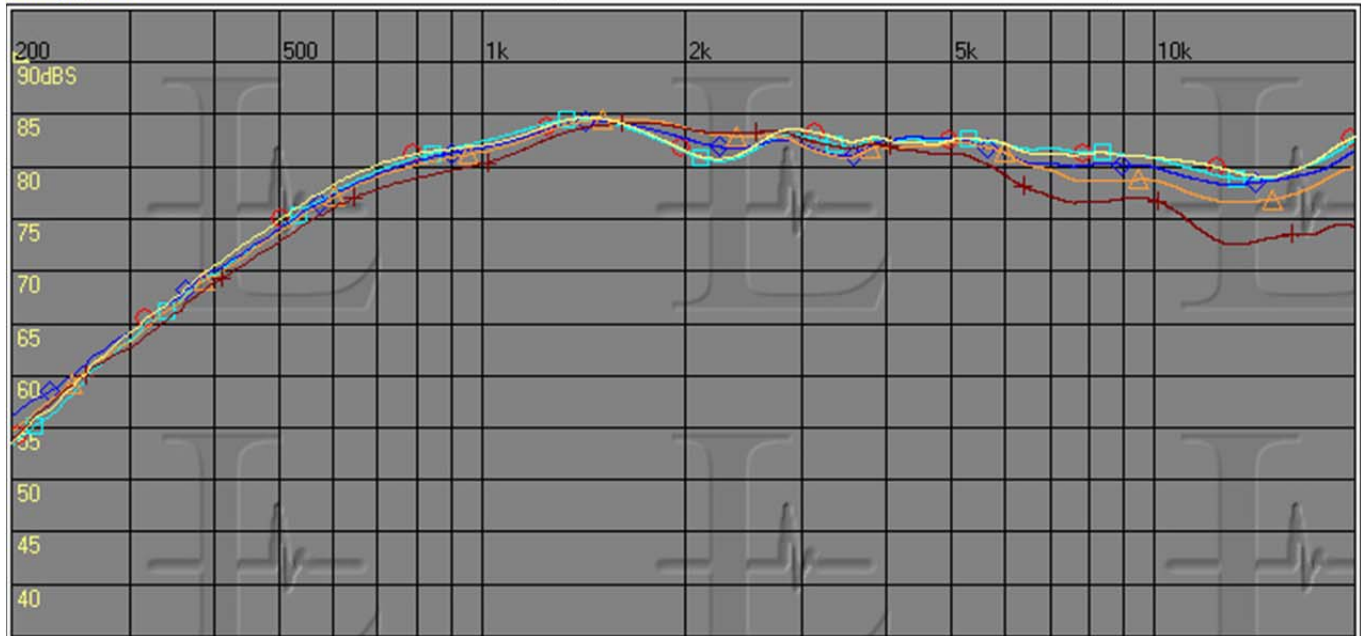


LD22F LD22C frequency response 0 to 40 off axis measured on a 10.5" wide cabinet (Below)

Loudspeaker Frequency Response

Liberty -praxis- cssLD22Fon10andhalfinchbaffle0to40offaxis.px2

acq: 11/21/2013 3:56:46 PM

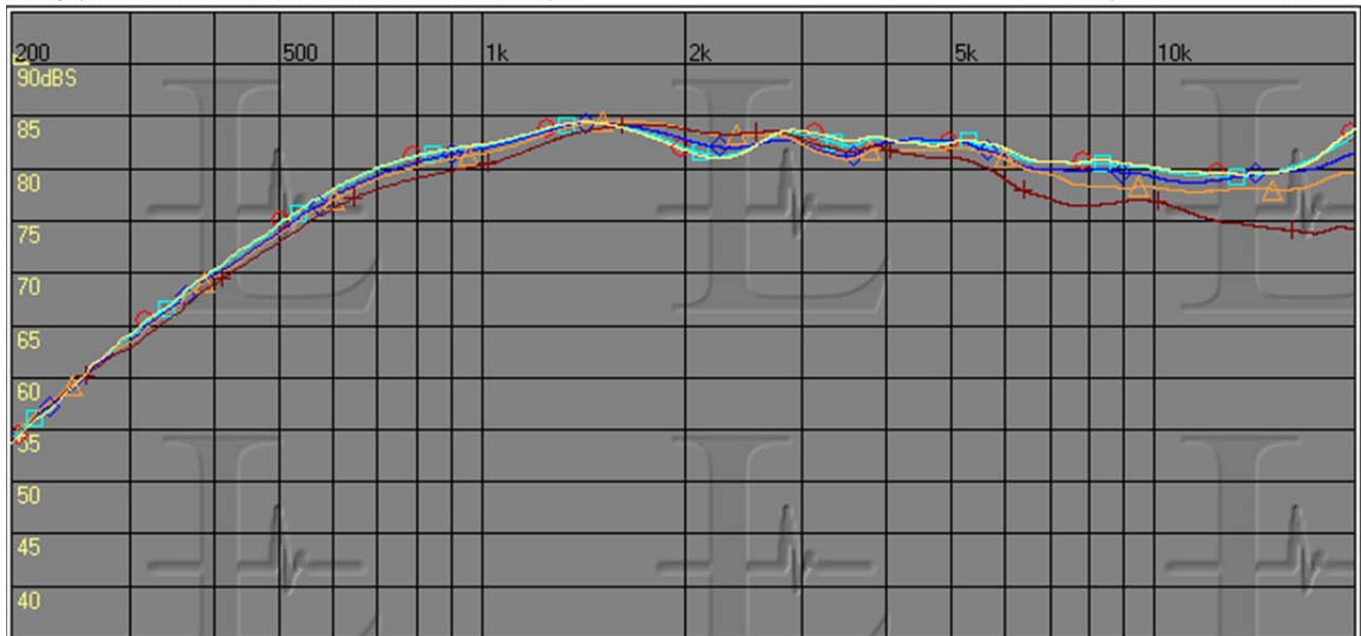


- cssLD22Fon10andhalfinchbaffleonaxis.px2: Loudspeaker Frequency Response
- cssLD22Fon10andhalfinchbaffle10offaxis.px2: Loudspeaker Frequency Response
- ◇ cssLD22Fon10andhalfinchbaffle20offaxis.px2: Loudspeaker Frequency Response
- △ cssLD22Fon10andhalfinchbaffle30offaxis.px2: Loudspeaker Frequency Response
- ⊕ cssLD22Fon10andhalfinchbaffle40offaxis.px2: Loudspeaker Frequency Response

Loudspeaker Frequency Response

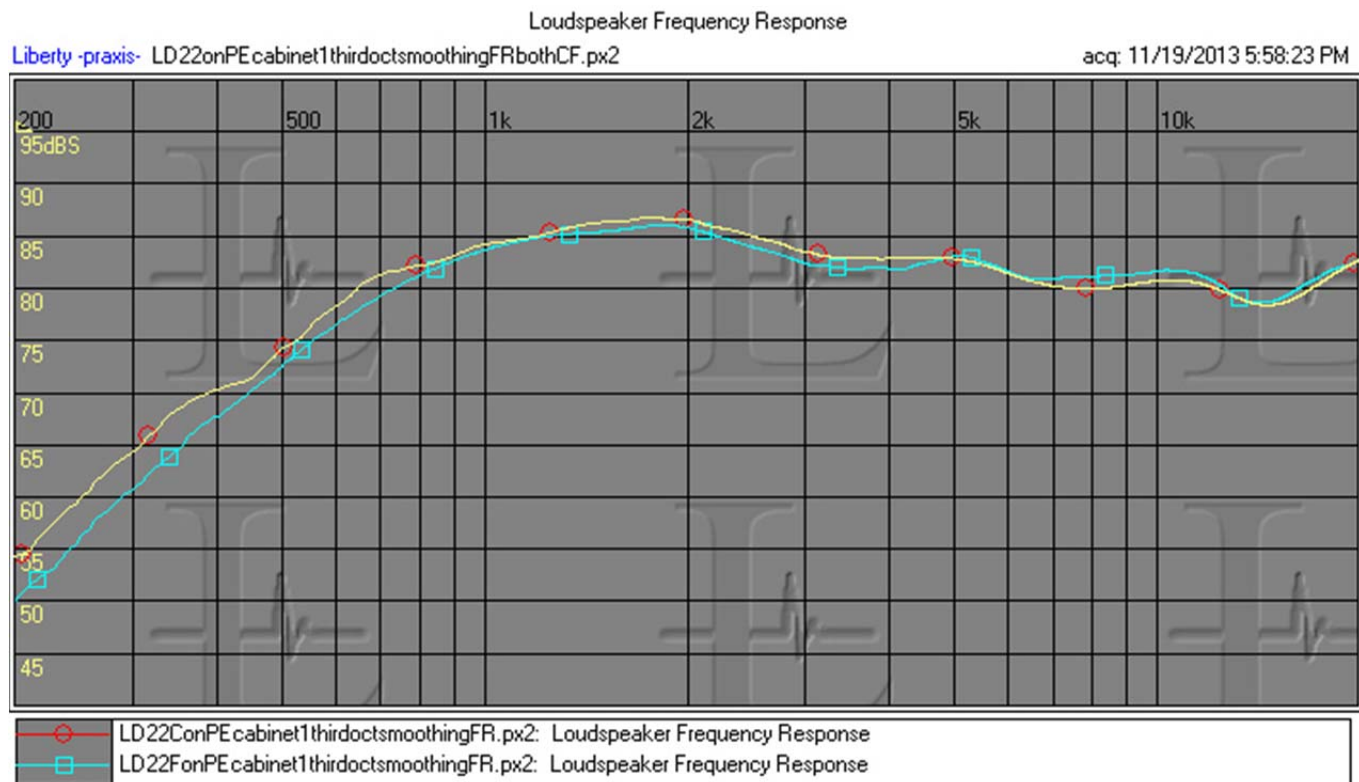
Liberty -praxis- cssLD22Con10andhalfinchbaffle0to40offaxis.px2

acq: 11/21/2013 3:58:57 PM

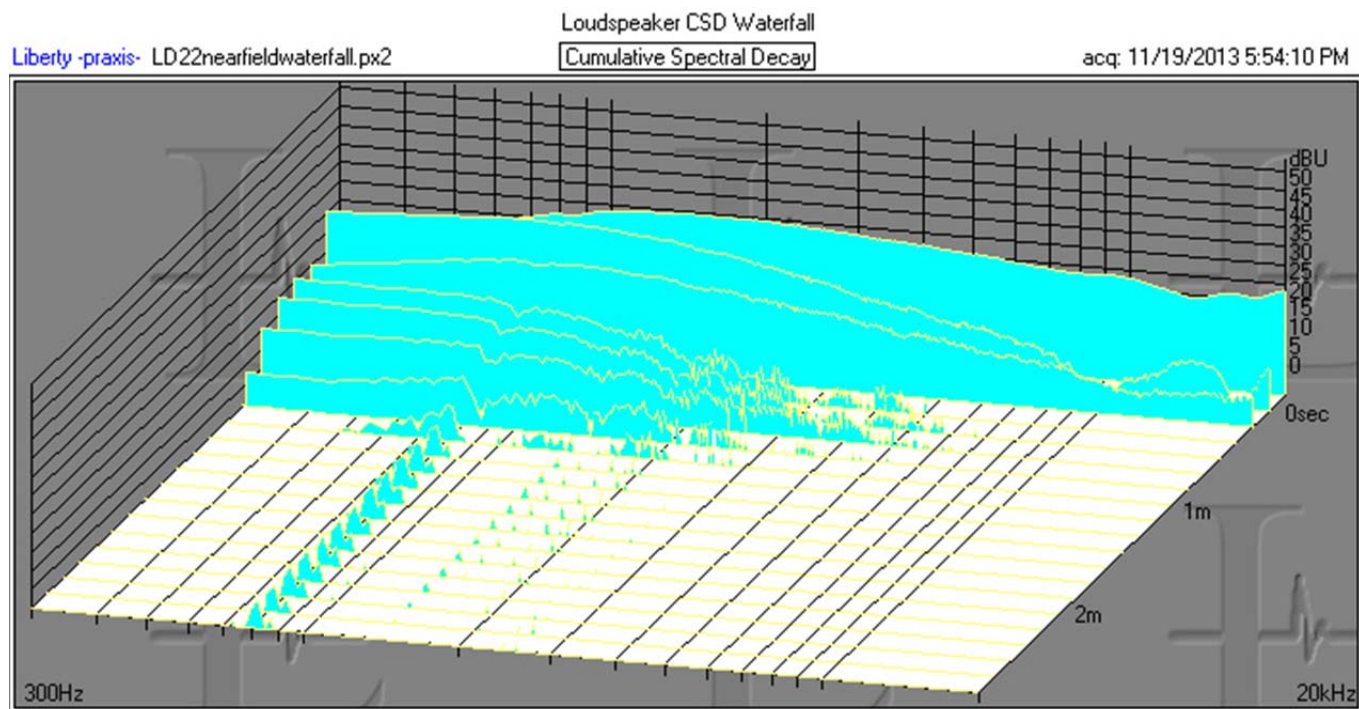


- cssLD22Con10andhalfinchbaffleonaxis.px2: Loudspeaker Frequency Response
- cssLD22Con10andhalfinchbaffle10offaxis.px2: Loudspeaker Frequency Response
- ◇ cssLD22Con10andhalfinchbaffle20offaxis.px2: Loudspeaker Frequency Response
- △ cssLD22Con10andhalfinchbaffle30offaxis.px2: Loudspeaker Frequency Response
- ⊕ cssLD22Con10andhalfinchbaffle40offaxis.px2: Loudspeaker Frequency Response

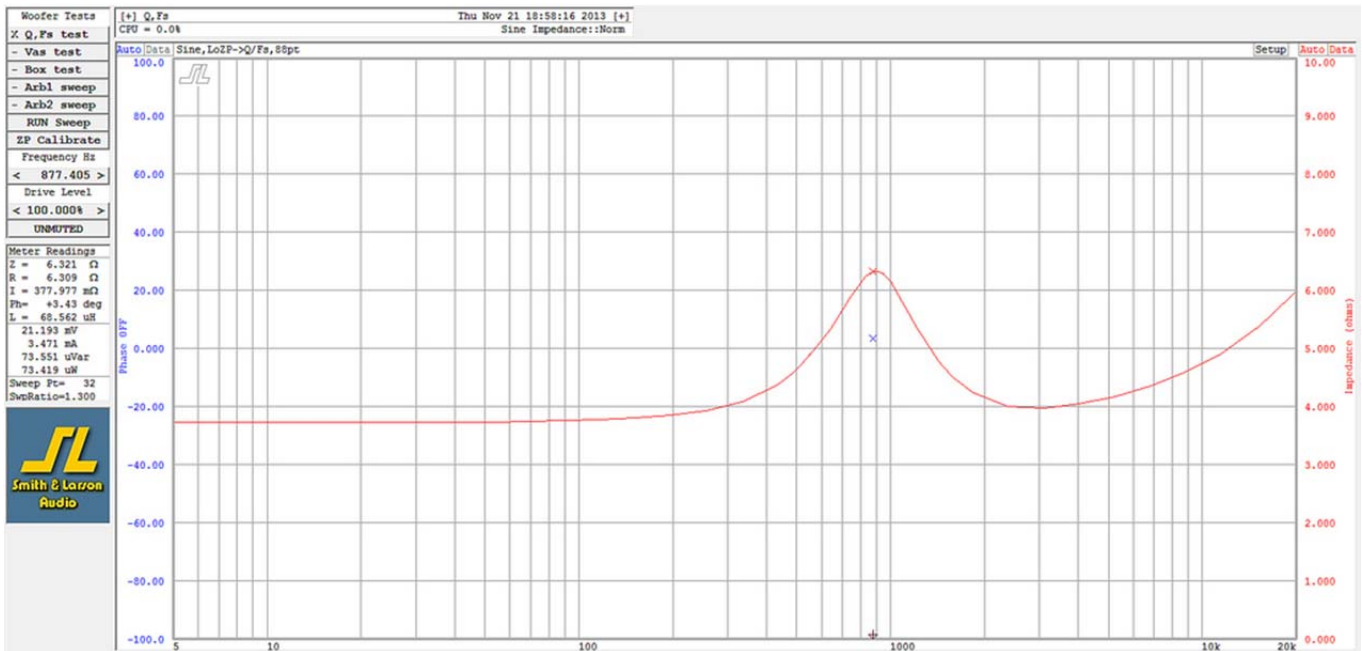
LD22C LD22F tweeters frequency responses measured on a 7.5" wide baffle mounted on a Parts Express .25cft cabinet (Below)



Near field Waterfall distortion measurement (Below)



# LD22 Impedance measurements



Load	Buffer[0] Q, Fs
Save As	Completed: Thu Nov 21 19:04:25 2013
Copy	Drive level 100.000% [3.471 mA]
Paste	Sine, LoZP(LV/LA)->Q/Fs, 81 pts
Cut	;
SelAll	Re = 3.7327 ohm
Help	Fs = 876.6439 Hz
	Zmax = 6.3793 ohm
	Ro = 4.8588 ohm
	F0 = 532.4427 Hz
	F1 = 1.3912 kHz
	Fmin = 3.4056 kHz
	Qes = 1.8822
	Qms = 1.3346
	Qts = 0.7809
	Le = 0.0000 H @1k
	XLe = 6.1970 ohm @1k
	PLe = -5.1886 Deg @1k
	;
	; Approximate Impedance Fitting Constants ;
	; (Improved with Completion of Vas Test) ;
	;
	Krm = 873.922E-09 ohms Freq dependent resistance
	Erm = 1.211E+00 Rem=Krm*(2*pi*f)^Erm
	Kxm = 472.795E-06 Henries Freq dependent reactance
	Exm = 754.847E-03 Xem=Kxm*(2*pi*f)^Exm