



### CKT-TF1225 System



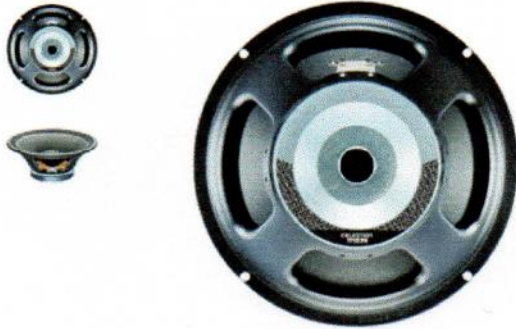
The CKT-TF1225 system is a medium sized 2-way speaker design suitable for stand or floor mounting. This system comprises the TF1225 12”(300mm) bass/midrange driver and CDX1-1745 compression driver fitted with the H1-9040 horn. It is a versatile and portable system that offers good performance when used either stand-alone or with a sub-woofer. The 90x40 horn ensures good coverage over a wide area.

Components				
System	Bass Driver	Compression Driver	Horn	Crossover
CKT-TF1225	TF1225	CDX1-1745	H1-9040	CX-TF1225

# CELESTION

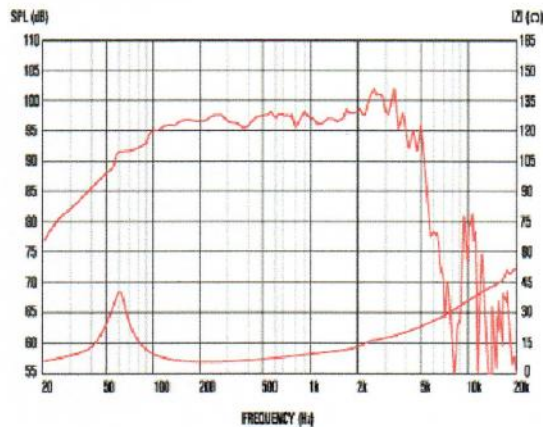
## LF Pressed Chassis / Ferrite

### TF1225



- 12" Bass and mid-range driver providing 97dB sensitivity and 250Wrms (AES standard) power handling
- 2.5" high temperature copper voice coil wound on polyimide for increased reliability
- Optimised ferrite magnet design reduces weight
- Double roll surround for greater excursion control
- For use in 2-way or compact 3-way systems

#### 8 Ω Frequency Response



1. Tested for two hours using a continuous, band-limited pink noise signal as per AES standard. Power calculated on minimum impedance. Loudspeaker tested in free air.
2. Continuous Power Handling is defined as 3dB greater than the AES rating.
3. Tested as per the EIA-426-A standard.
4. Measured on axis at 1W, 1m in 2 anechoic environment.
5. Xmax derived from: (voice coil winding width-gap depth)/2.
6. Small signal parameters measured after unit subjected to pre-conditioning signal.

#### General Specifications

Nominal diameter	305mm/12in
Power rating	250Wrms
Continuous power rating	500W
EIA power rating	400W
Nominal impedance	8 Ω
Sensitivity	97dB
Frequency range	50-4000Hz
Voice coil diameter	64mm/2.5in
Chassis type	Pressed steel
Magnet type	Ferrite
Magnet weight	1.2kg/42oz
Coil material	Round copper
Former material	Polyimide
Cone material	Kevlar loaded paper
Surround material	Cloth-sealed
Suspension	Single
Xmax	2.5mm/0.1in
Gap depth	8mm/0.31in
Voice coil winding width	13mm/0.51in

#### Small Signal Parameters

D	0.26m/10.24in
Fs	63Hz
Mms	46.51g/1.64oz
Qms	6.70
Qes	0.54
Mmd	39.60g/1.40oz
Qts	0.50
Re	5.13Ω
Vas	54.5lt/1.92ft <sup>3</sup>
Bl	13.20Tm
Cms	0.14mm/N
Rms	2.76kg/s
Le (at 1kHz)	0.84mH

#### Mounting Information

Overall diameter	309mm/12.17in
Overall depth	130mm/5.12in
Cut-out diameter	283mm/11.14in
Mounting slot dimensions	8#216; 7.9/0.31
Number of mounting slots	4
Mounting PCD range	297mm/11.69in
Unit weight	4.1kg/9.0lb

#### Packed Dimensions & Weight

Single pack size W x D x H	330mm x 330mm x 150mm /13.0in x 13.0in x 5.9in
Single pack weight	5kg/11lb
Multi pack size W x D x H	1080mmx980mmx880mm /42.5in x 38.6in x 34.6in
Multi pack weight	290kg/638lb

**CELESTION**

Celestion, Claydon Business Park, Great Blakenham, Ipswich, IP6 0NL United Kingdom

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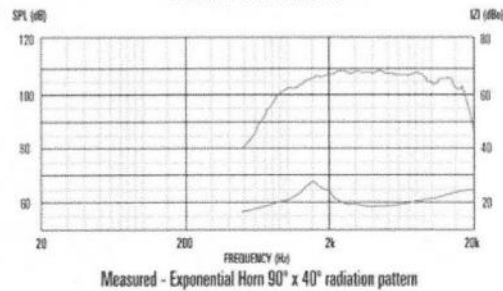
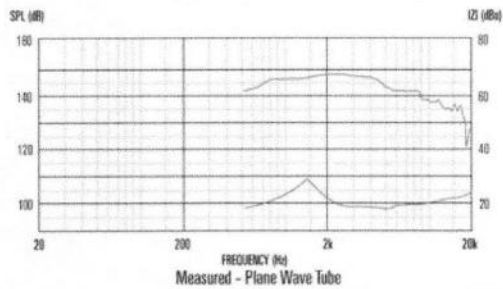
## Compression Drivers / Ferrite

### CDX1-1745



- 1" exit, ferrite magnet compression driver with 1.75" edgewound copper clad aluminium voice coil
- 40Wrms power handling (AES standard) and 110dB sensitivity
- Sound Castle™ clamping ensures even pressure on diaphragm assembly for reduced distortion
- One piece PETP diaphragm and surround
- Finite Element Analysis (FEA) used to optimise both magnet assembly and acoustic design

#### 8 Ω Frequency Response



1. Tested for two hours on plane wave tube using a continuous, band-limited pink noise signal as per AES standard. Power calculated on minimum impedance.
2. Continuous Power Handling is defined as 3dB greater than the AES rating.
3. Measured on axis at 1W, 1m, using typical horn, in 2 anechoic environment.

#### General Specifications

Power rating	40Wrms
Continuous power rating	80W
Nominal impedance	8/16Ω
Frequency range	1200-20000Hz
Sensitivity	110dB
Recommended min. crossover (12dB/oct)	2200Hz
Voice coil diameter	44mm/1.75in
Voice coil material	Edgewound copper clad aluminium
Magnet type	Ferrite
Diaphragm material	PETP film
Surround material	PETP film

#### Mounting Information

Width	120mm/4.7in
Depth	56mm/2.2in
Weight	2.3kg/5.1lb
Fitting	Flange (2 /3 M6 holes on 76/57mm, 3.0/2.24in PCD)
Throat exit	25.4mm/1in

#### Packed Dimensions & Weight

Single pack size W x D x H	140mm x 170mm x 70mm /5.5in x 6.7in x 2.8in
Single pack weight	3kg/6.6lb
Multi pack size W x D x H	430mm x 370mm x 90mm /16.9in x 14.6in x 3.5in
Multi pack weight	14kg/31lb

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# CELESTION

## Horns

### H1-9040P



- Lightweight horn flare with 1" throat exit• Compatible for use with bolt (flange) fitted compression drivers only• Exponential horn flare with 90 x 40 radiation pattern• 1.5kHz cut-off frequency• Hard-wearing reinforced polymer

### General Specifications

Horn type	Exponential
Radiation pattern	90° x 40°
Horn material	Plastic
Baffle cut-out	165mm/9in x 260mm/14.2in
Driver mounting detail	2/3 M6 holes on 76/57mm, 3/2.2in PCD
Throat exit	25.4mm/1in
Height	199mm/7.8in
Width	318mm/12.5in
Depth	208mm/8.2in
Weight	0.66kg/1.45lb

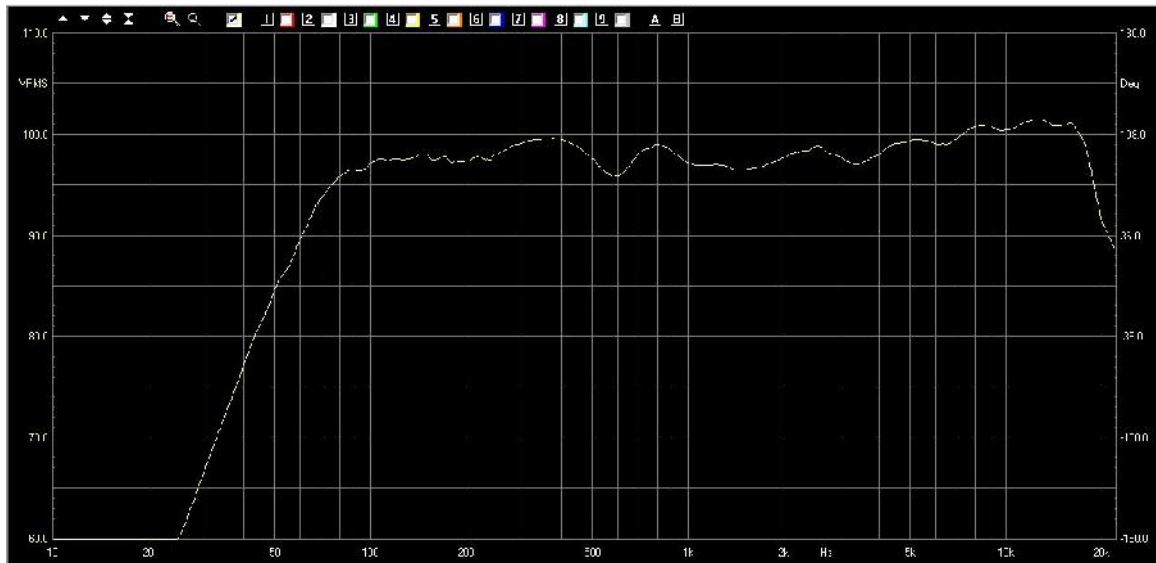
### Packed Dimensions & Weight

Single pack size W x D x H	350mm x 220mm x 230mm /13.7in x 4.7in x 4.7in
Single pack weight	1.0kg/3.3lb
Multi pack size W x D x H	650mm x 500mm x 240mm /25.6in x 20in x 9.4in
Multi pack weight	10kg/22lb

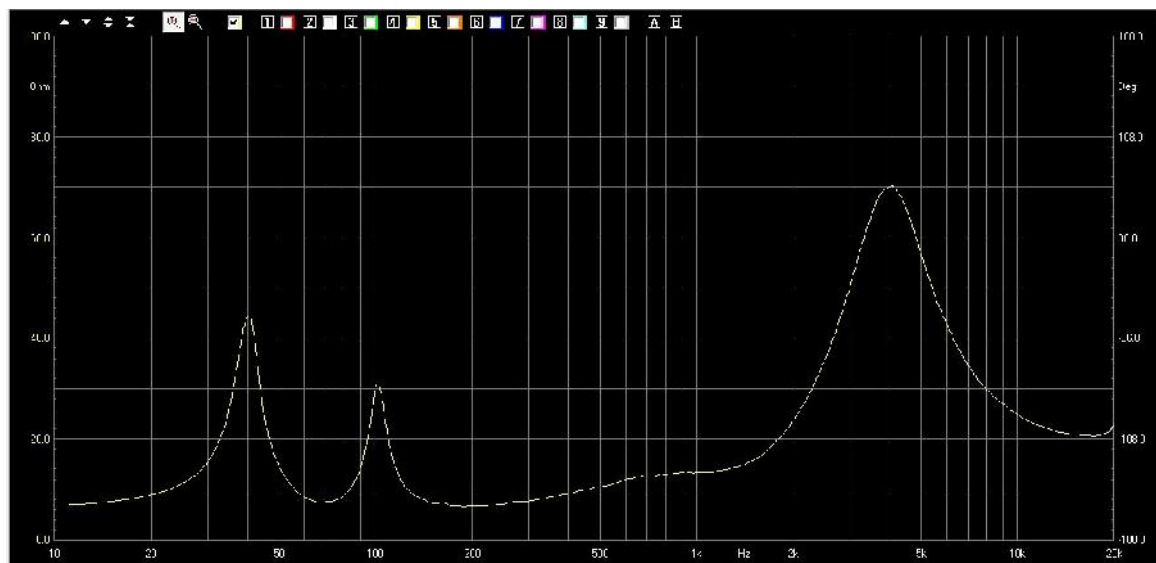
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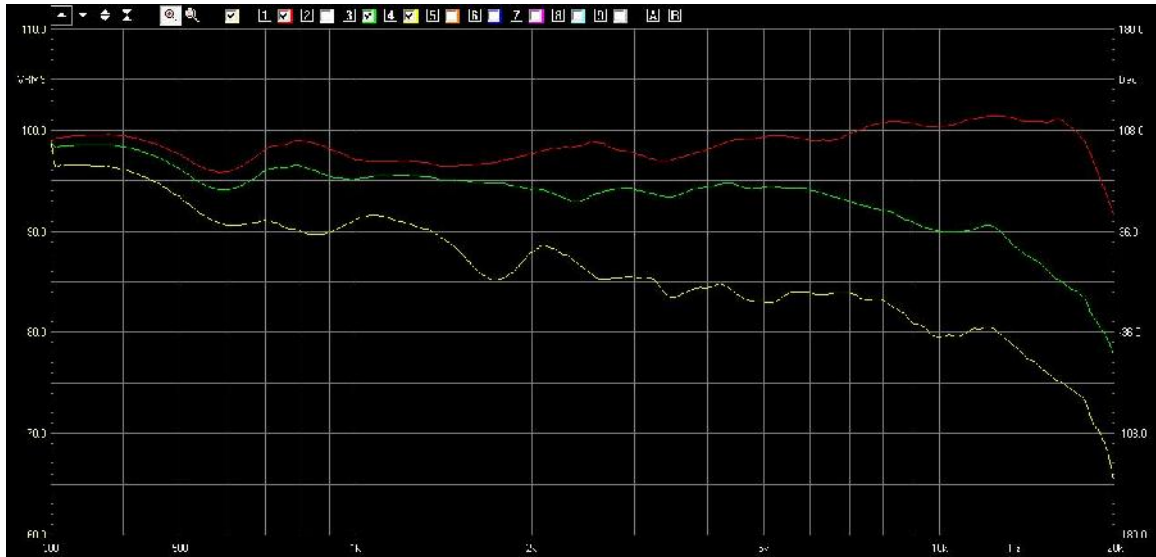
## Measured Data



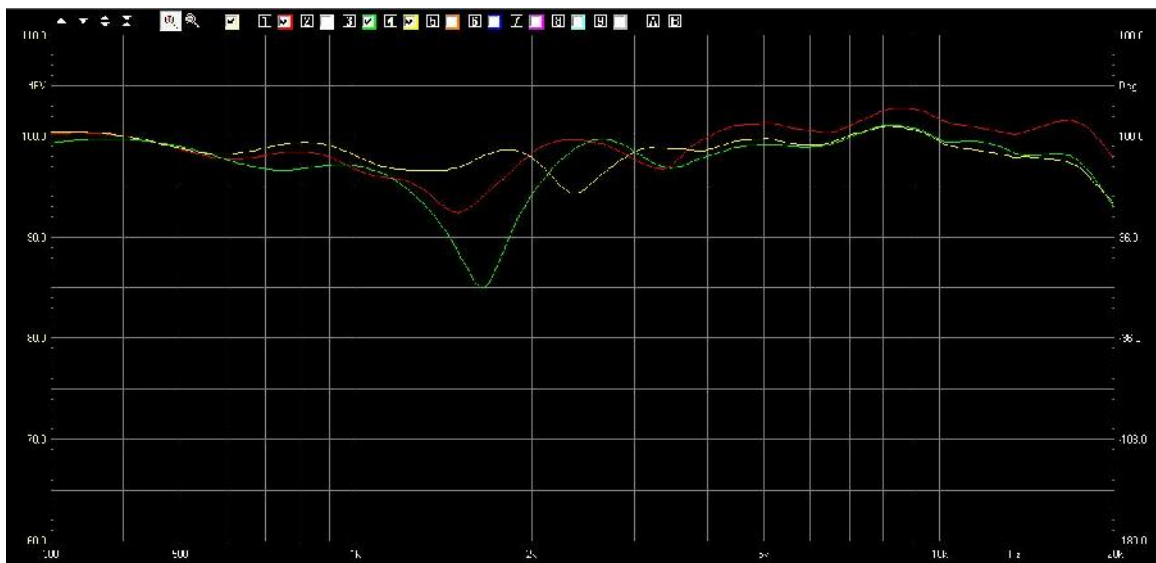
On-Axis Frequency Response (2m measurement normalized to 2.83V/1m)



Input Impedance



Horizontal Dispersion: on-axis(red), 30deg(green), 60deg(yellow)  
(2m measurements normalized to 2.83V/1m)



Vertical Dispersion: on-axis(red), +10deg(green), -10deg(yellow)  
(1m measurements normalized to 2.83V)

Directivity: -6dB beamwidth

Frequency/Hz	500	800	1k	2k	5k	8k	10k	15k
Beamwidth (deg)	150	90	120	90	66	50	40	30

## Specifications:

Format: 2-way system

Drivers: TF1225, CDX1-1745 (H1-9040)

Sensitivity: 97.5dB (2.83V/1m)

Input Impedance: 8ohms (nominal), 6.5 ohms (minimum)

Rated System Power: 400W (EIA), 1200W (peak)

LF Extension: 74Hz (-3dB), 56Hz(-10dB)

Crossover Frequency: 1.9kHz

Maximum Output Level: 123dB (Continuous), 129dB (Peak)

LF Unit Power Rating: 250W (AES)

Horn Directivity: 90deg H x 40deg V

High Pass Filter: 65-75Hz

Internal Volume: 48L

Port Tuning Frequency: 70Hz

Port Dimensions: 2 x (Diameter 100mm x Length 60mm)

Port Options: smaller port: 2 x (95Dx49L) / larger port: 2 x (105Dx72L)

Dimensions: 654 x 388 x 320mm (H x W x D)

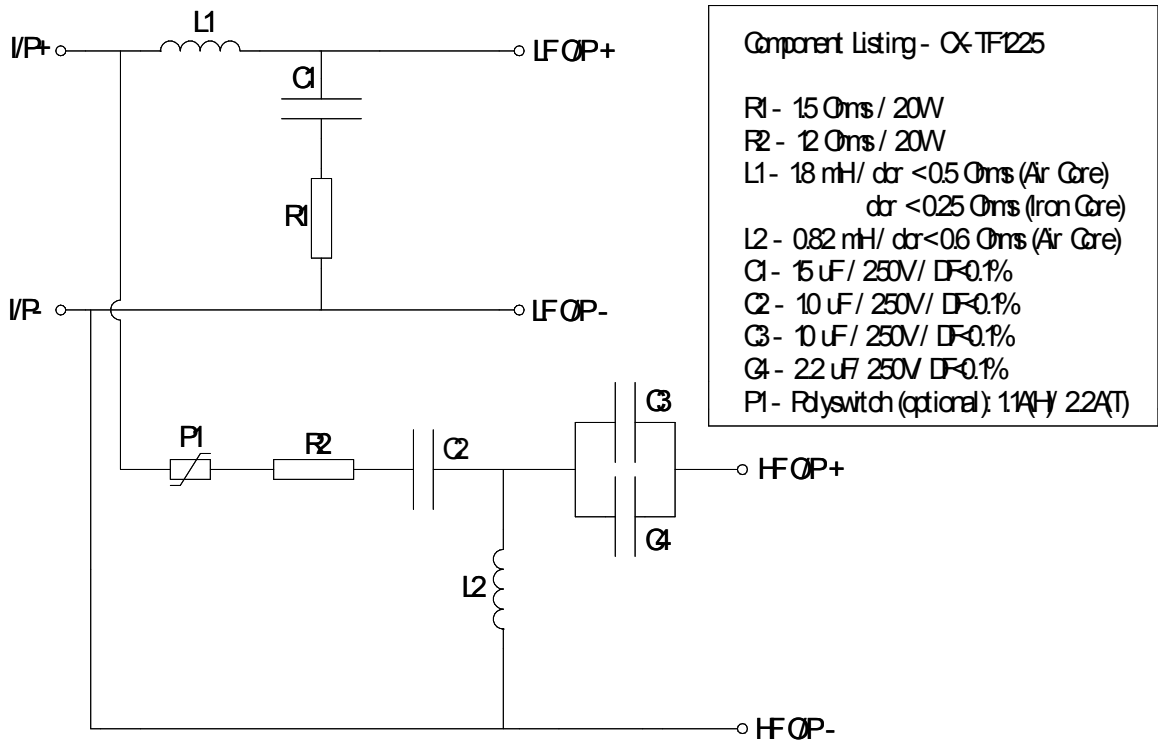
## Crossover Network

The crossover schematic and component listing is shown below, along with a suggested component layout. The network provides a second order roll off for the bass unit and third order for the compression driver. This results in a fourth order acoustic crossover between the units.

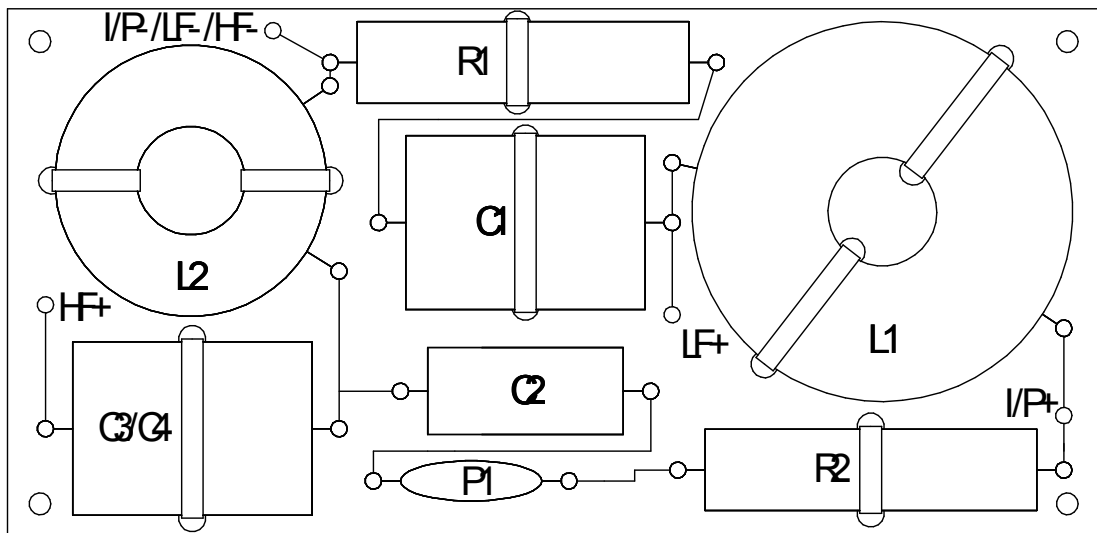
L1 can be either an air core or iron(solid) cored inductor. For an iron core the saturation current needs to be at least 8A and/or it should have a power rating of at least 250W. The capacitors should be polypropylene types for best performance. If the poly-switch is included it should be situated at least 30mm or so away from R1 and L1 to avoid its local ambient temperature being raised by those components if and when they get warm.

Inductors should, in general, be positioned with their core axes at right angles and with at least 20mm of physical space between them to avoid magnetic interactions. However, they can be positioned with their axes parallel provided they are at the same height and there is sufficient separation between them. This separation will depend on the inductor size, core type and winding geometry but an axis separation of 125mm should prevent any significant interactions between typical inductors.

The crossover components can be mounted onto a 6mm wooden board, hard-wired and secured with hot-melt and then with cable ties fitted through holes drilled through the board. The board can be screwed onto the inner surface of the cabinet, ideally with 6mm spacers to prevent rattling. Cables should be connected in a way that does not stress the component lead-out wires, tag panels or terminal strips can be used to connect the lead-wires to the circuit. The cable conductor cross-sectional areas should be at least 1.5 square mm.



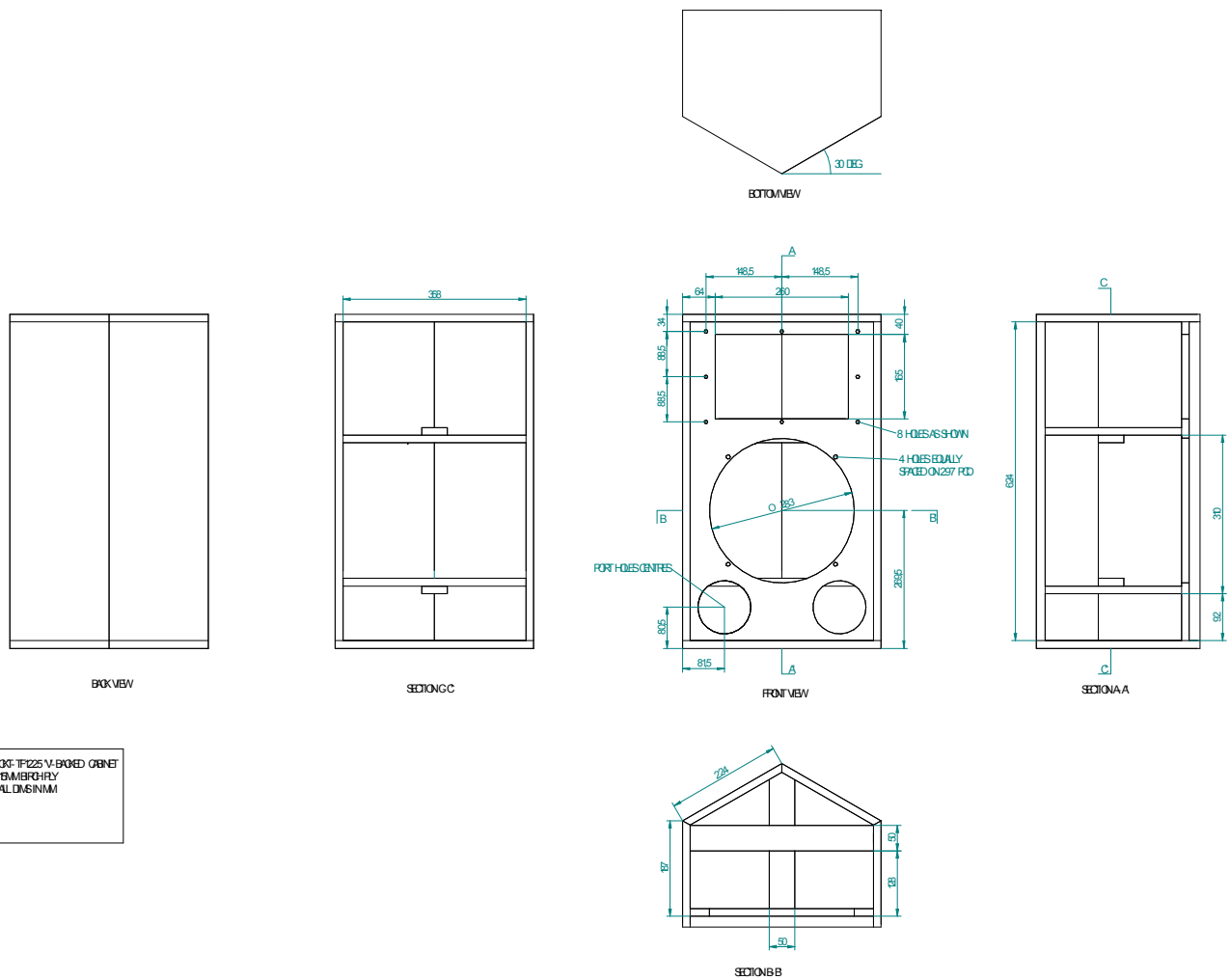
Crossover Schematic: CX-TF1225



Suggested crossover component layout (Air core L1)



# Cabinet Design – ‘V’-backed



Q3C-TF1225 'V'-BACKED CABINET  
 DIMENSIONS IN MM

## Construction Notes:

All joints should be glued and screwed.

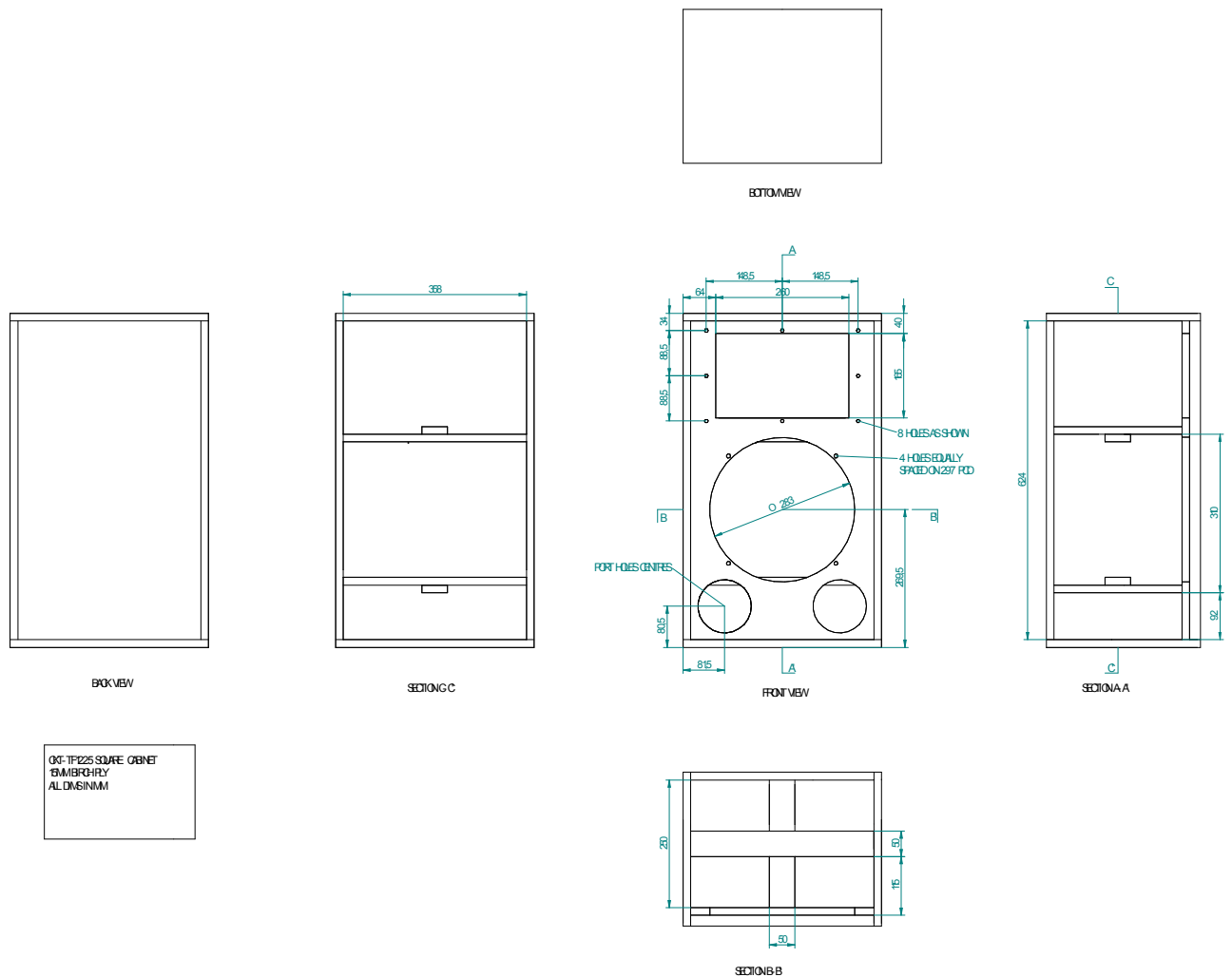
T-Nuts and fixing bolts are recommended as a means of fixing the units.

Ensure that there are no air leaks in the cabinet apart from the ports – foam gasket strip to be used in the mounting of drivers, stand attachment (top-hat) and terminal panel.

Internal cables should be carefully positioned to avoid any rattling.

18mm MDF can be used instead of 15mm Birch plywood provided the internal volume is maintained.

## Cabinet Design – Square box (56L)



CKT-TF1225 SQUARE CABINET  
 EMERALD  
 ALUMINIUM

### Construction Notes:

All joints should be glued and screwed.

T-Nuts and fixing bolts are recommended as a means of fixing the units.

Internally mounted battens can be used as a means of securing the front and back panels.

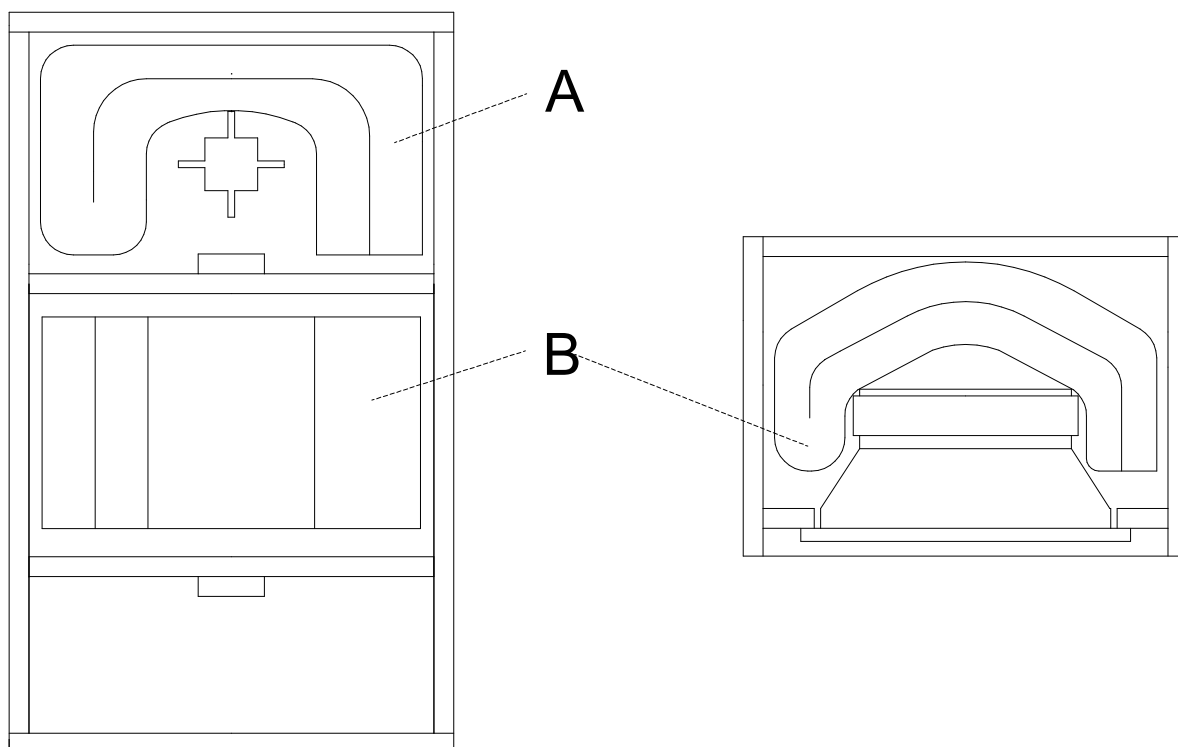
Ensure that there are no air leaks in the cabinet apart from the ports – foam gasket strip to be used in the mounting of drivers, stand attachment (top-hat) and terminal panel.

Internal cables should be carefully positioned to avoid any rattling.

18mm MDF can be used instead of 15mm Birch plywood provided the internal volume is maintained.

## Arrangement of acoustic damping material within the cabinet

The damping material should be 50mm thick acoustic wadding. Piece A is folded double and looped over the compression driver horn. Piece B is folded double and placed behind the bass unit. Care should be taken that the material is not allowed to touch the cone of the bass unit or obstruct the ports. A=160x800mm, B=200x1000mm

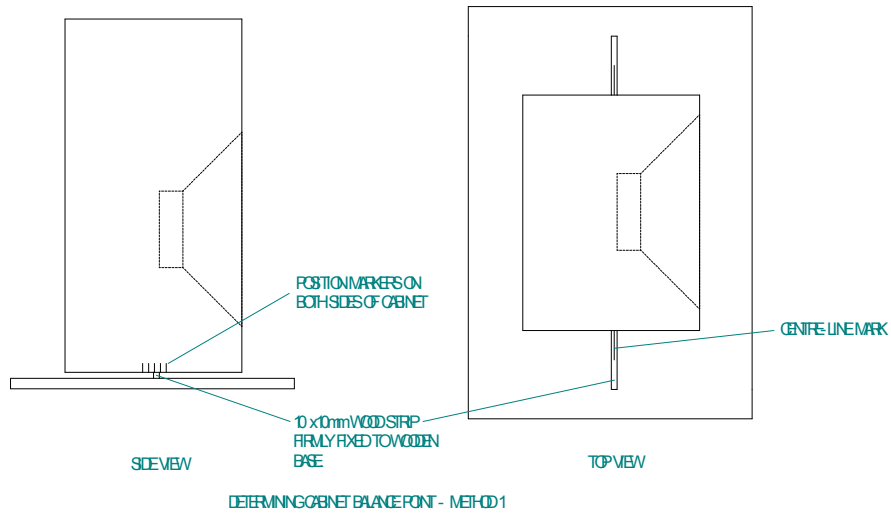


## Methods for determining the balance point of the cabinet

Before deciding on the exact position of the top hat stand attachment, it is first necessary to determine the balance point of the cabinet. Below are two methods that can be used for this purpose. It is important that this process is performed on the assembled cabinet. If it is desired that the cabinet should have a controlled forward lean then the top hat should be positioned 30mm towards the rear of the cabinet from the balance point (assuming a 35mm stand pole diameter).

### Method 1:

In this method the cabinet is balanced on a wooden strip of 10x10mm cross-section which runs in the side to side direction. Position markers should be drawn on both sides of the cabinet to ensure the cabinet is always precisely aligned in the forward direction. Carefully move the cabinet forwards and backwards to determine the front-to-back balance point. If the cabinet is asymmetrical along its width then this process should be repeated at 90 degrees to determine the left to right balance point.



Method 2:

Safety note – this method requires two people, one to support the cabinet and the other to mark the balance point.

The cabinet is carefully placed on top of an inverted top-hat attachment. Move the cabinet relative to the top-hat until the optimum balance point is found. The position of the top hat on the bottom of the cabinet can then be marked.

