TANNOY®

The Name for Loudspeakers

CAERNARVON

Time Compensated Dual Concentric Loudspeaker System

Superb stereo sound has always been a feature of the Tannoy Dual Concentric Loudspeaker. Now the latest Time Compensated Dual Concentric Systems take another step closer to the real thing.

Designed to bring the advantages of the new Dual Concentric System to smaller living areas, the Caernarvon uses a 254mm (10") version of the Dual Concentric in a compact, floor standing enclosure. The 'Two-Speakers-in-One' Dual Concentric unit provides a single axis for the generation of both high and low frequency sounds. The complementary Time Compensated crossover produces a single sound source at one point on that axis.

The Caernarvon Dual Concentric, therefore, eliminates time delay distortions created by more conventional loudspeakers. A much improved stereo image results, which — due to the wider dispersion of the Dual Concentric — is more accurate over a wider area.

Careful design and tuning of the Caernarvon cabinet ensures accurate reproduction of lower frequencies to give realistic generation of bass fundamentals. The overall dimensions, however, are small enough to obtain the best acoustic match with even quite compact rooms.

The Caernarvon is rigidly constructed from lock-mitred high density particle board, with cross-bracing and bitumen damping of internal panels to increase strength and reduce resonance.

All outer surfaces are veneered in real walnut, and the front baffle has an original cork finish, so that the Caernarvon looks as good with the grille removed. A specially woven Oatmeal cloth is used on the grille, which is removable in three parts.

Removing the centre section of the grille gives access to the high frequency response controls, which can shape the acoustic output of the Caernarvon to suit your particular room characteristics.

The Tannoy Caernarvon — The bigger sound for smaller rooms

Why Dual Concentric?

The theoretically 'ideal' loudspeaker would have just one single drive unit producing both high and low frequencies.

This is, however, impossible as the reproduction of different frequencies requires drive units of quite different physical and electrical characteristics. High frequency reproduction requires a light, fast moving diaphragm; while a much larger unit is required to move the greater volume of air needed for mid and low frequencies.

In a conventional loudspeaker, therefore, two (or more) drivers are used, mounted separately on the front baffle behind the grille. This separation means that the soundwaves from each driver have to travel unequal distances to the listener, causing unnatural time delays in the arrival of high and low frequencies. That delay confuses our hearing mechanism, which is less able to reconstruct a convincing stereo image of the original performance.

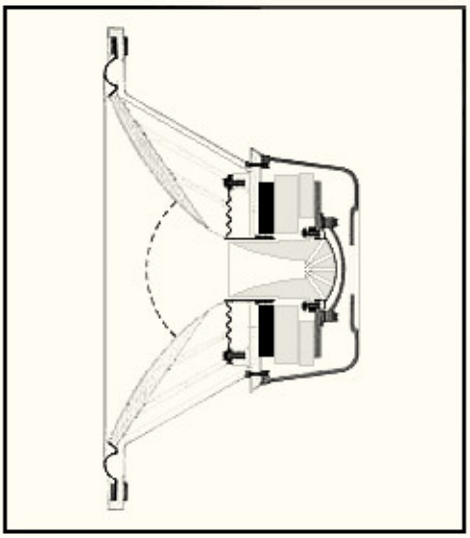
The Tannoy Dual Concentric takes a major step towards the theoretical ideal by actually combining two quite separate and physically different drive units within the same chassis.

High frequencies are reproduced by a compression driver, which is mounted behind the centre of the cone of the mid/low frequency driver. Both drivers are engineered to accept wide ranging power levels, using high temperature coil winding techniques, and are capable of very wide dynamic range reproduction.

The Tannoy Dual Concentric looks, at first glance, like one speaker. A closer look will reveal the throat of the compression driver behind the dust dome in the centre of the bass cone.

The result is that the source of sound at high frequencies and the source of sound at low frequencies are on the same axis. Complementary crossover design, using unique circuitry, aligns the high frequency and low frequency sources at one point on that axis.

The Tannoy Dual Concentric is, therefore, a true single point sound source loudspeaker system which eliminates unnatural time delays, and provides the smooth consistent intensity of sound necessary to create a precise stereo image.



The separate components of the Dual Concentric have been developed to be the best of their type available.

Our compression driver is a massive device in comparison with conventional tweeters, capable of accepting very high power inputs and converting significantly more of that power into pure sound. The horn throat and phase compensating array is machined from solid steel to eliminate resonance. The flare of the horn throat is continued by the bass cone, ensuring a smooth, distortion free sound at the crossover point.

Our special Barium Ferrite magnet has a much greater mass than most speaker magnets, and utilises a unique magnetic shunt to ensure the best acoustic balance of high and low frequencies.

The bass driver uses an individually treated cone with specially damped suspension to give controlled bass response without colouration.

The Complementary Crossover
Our crossover networks are individually designed to complement each model of loudspeaker and provide a fully 'phase coherent' system, using our unique circuitry. This gives a single point sound source, particularly at frequencies where the human ear derives the information necessary to create a precise stereo image.

All of our crossover components are the finest available and each is mechanically and thermally stable, enabling full advantage to be taken of the Dual Concentric's high power handling without the need for signal degrading 'protection' devices.

To enable you to adjust the high frequency response of the system to suit your listening environment, we have included two controls in the crossover. An energy control to increase or decrease the output of the compression driver over the frequencies from 1kHz to 20kHz, and a roll-off control which alters the output of frequencies above 5kHz.

The Tannoy Dual Concentric System is not the cheapest way to make a loudspeaker; but we do it because we know it is the best way to give you superior stereo sound. The elimination of unnatural time delay distortion provides superb stereo imagery. Wide sound dispersion enables you to appreciate that image over a wider area than with conventional loudspeakers. Wide dynamic range gives you the highs and lows of a musical performance, and is essential to realise the full benefit of today's high quality analogue and digital recordings as well as tomorrow's laser technology.

CAERNARVON — Technical specification

Recommended amplifier power (RMS per channel into 8Ω)*		50–180W
Peak power handling		350W
Impedance		8Ω nominal 5.5Ω minimum
Sensitivity (1W @ 1m)		90dB (anechoic) 93dB (domestic)
Frequency response (±3dB)		40Hz–20kHz
Phase response		100Hz–8kHz ±20°
Time compensation		Better than ±18μsec. 100Hz–8kHz
Dispersion (including angle @ –6dB points @ 10kHz)		90° horizontal & vertical
Crossover type		Passive, low loss, time compensated type 1022
Crossover frequency		1.2kHz
Crossover controls	Energy Roll-off	Shelving, ±6dB over 1kHz–20kHz Slope, +3dB to –6dB per octave 5kHz–20kHz
Driver type		Dual Concentric, high compliance type 2558 Diameter 254mm (10")

Distortion		Less than 10% 3rd harmonic at half power 100Hz–20kHz Less than 0.5% 3rd harmonic for 85dB 70Hz–20kHz Less than 3% 3rd harmonic for 100dB 70Hz–20kHz
Bass loading		Single ducted port
Cabinet construction		18mm high density particle board with rigid cross-bracing and bitumen damping
	Finish	Real walnut veneers Baffle finished in hand laid cork
	Grille	3-piece detachable. Oatmeal cloth on wood frames.
Cabinet internal volume		73 litres
Cabinet dimensions (h × w × d)		775 × 366 × 365mm (Packed: 925 × 430 × 430mm)
Cabinet weight		27.5kg (Packed: 33kg)

* The peak power capability of all Tannoy Loudspeakers will allow higher amplifier powers to be used with wide dynamic range material. Care must be taken, however, to avoid conditions such as switch-on surges and amplifier overloading or 'clipping' which may result in momentary peaks of power greatly in excess of the specified ratings.

Due to our policy of continuous improvement, we reserve the right to change specifications without notice.

All Tannoy products are designed and manufactured in Great Britain by:

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