

# D500

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*"The goal of musical excellence has never changed."*

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## **UNDERSTANDING LOUSPEAKERS**

The Definition D500 is designed to satisfy music lovers who demand the quality of sound more associated with our high quality recording studio monitors whilst being a handsome addition to any home.

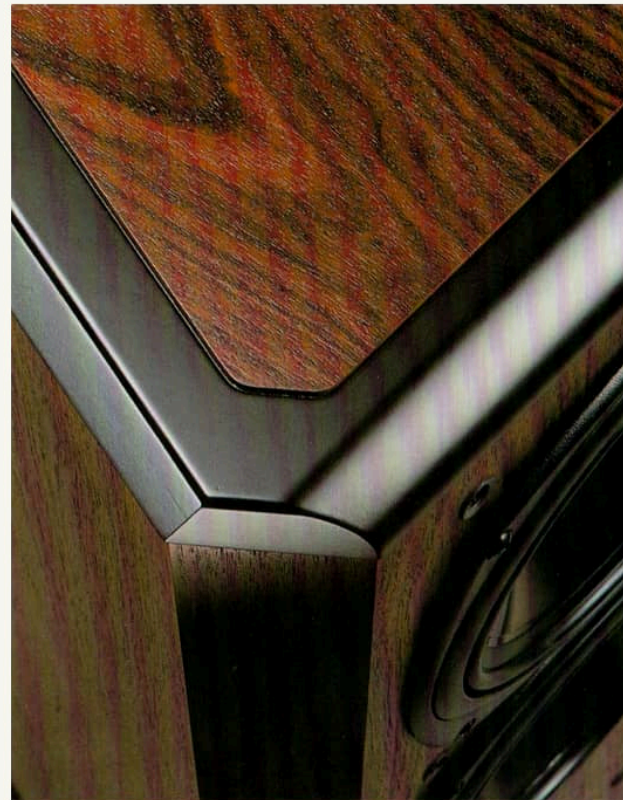
Tannoy builds loudspeakers for high power music P.A. through to quality domestic Hi-Fi loudspeakers and Recording Studio Monitors.

At each stage of an audio recording or reproduction, it is likely that the music you listen to will have been played through a Tannoy speaker, as a reference tool for the recording engineer or purely for enjoyment at a concert or in the home. Tannoy is one of the very few loudspeaker manufacturers able to claim this depth of loudspeaker experience, knowledge and understanding in this way. Loudspeaker design can no longer be thought of as a black art. Today it is possible to use computers to model designs and predict results. Comprehensive test equipment is used to pinpoint problems with cabinets or drive units, anechoic chambers assist in producing accurate measurements. Computer aided design (CAD) and sophisticated test equipment are used extensively at Tannoy, but we always remember that listening tests must be the final judge.

High power handling, reliable products with outstanding accuracy and wide dynamics are the Tannoy hallmark. Quality is assured by our investment in up-to-date design, testing and production facilities. Throughout the company's history we have made many breakthroughs in our engineering departments, but the goal of musical excellence has never changed.

## **APPROACHING THE IDEAL DRIVE UNIT**

The ideal drive unit is one that can reproduce accurately the entire audio spectrum. Unfortunately such a device does not exist. Multiple drive unit designs are adopted as a compromise. The problem with this is that the treble and bass portions of a signal (the main note and harmonics) are reproduced from different places. With the Tannoy Dual Concentric the high frequency driver



and bass driver are mounted concentrically within the same chassis, and the treble unit slightly behind and at the acoustic source of the bass unit. The Dual Concentric is then able to reproduce all the frequency range from one point in space, accurately mimicking the ideal drive unit.

The additional bass unit of the D500 produces frequencies only below 400Hz, where the brain can no longer easily perceive the origin of the sound.

## **POINT SOURCE SOUND REPRODUCTION**

The benefit of having the high frequency driver sharing the same chassis as the bass driver is that the whole audio range is coming from the same point in space – just like the ideal drive unit, ensuring that the brain is not confused by notes coming from one point in space and their harmonics from another displaced and often time delayed source. The 8" Dual Concentric in the D500 is built into a high rigidity cast chassis. A stiff, lightweight Duralumin tweeter diaphragm and a precision injection-moulded mid/bass cone are driven by high performance voice coils. The cone profile and precision computer designed Tulip Waveguide integrate the output of these diaphragms to produce an ideal spherical wavefront ensuring constant symmetrical directivity for crisp and accurate stereo imaging. Magnetic gap voice coil cooling and high temperature materials in the drive unit motors guarantee superb dynamic range with low distortion ensuring that the enormous variance between loud and soft notes of your favourite singer's voice is reproduced uncompressed.

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## BY DEFINITION

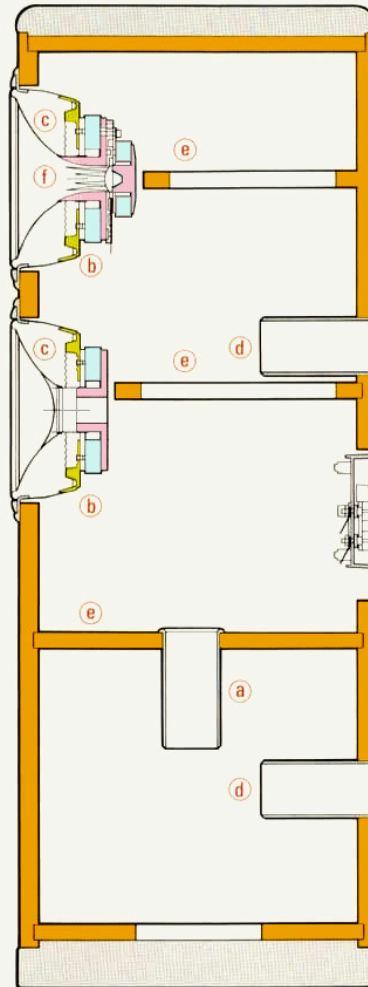
Definition is a re-assertion of all that makes Tannoy loudspeakers great. In the English language 'Definition' means either '*... to outline the boundaries of ...*' or '*... to give meaning to ...*'. Tannoy engineers these exact qualities into the Definition D500 loudspeaker.

This loudspeaker redefines the currently accepted limits of frequency and dynamic range, of stereo precision and detail resolution. It brings true meaning to the musical experience by adding nothing of its own character.

The D500 is a system designed for free-space use and is based on a phase coherent point source Dual Concentric drive unit. The D500 can offer very high power handling without acoustic compression effects. This gives the loudspeaker a natural ease in generating the scale, the excitement and impact of live music and the full drama of movie soundtracks, when used as the main stereo pair in a home theatre.

The multi-faceted cabinet design reduces panel sizes over conventional loudspeaker box cabinets. This breaks up the regular internal volume that would otherwise encourage 'boominess', colouration from internal standing waves and panel resonance. The D500 cabinet employs Double-Chamber Reflex Technology, using two separate reflex coupled chambers, one behind the drive units and one in the base of the cabinet, both resistively ported to the rear. To the drive units the cabinet volume

- a. Double-Chamber reflex port allows the drive units access to the complete cabinet volume when producing low frequencies, ensuring natural bass and midrange reproduction.
- b. High rigidity cast chassis eliminates resonance and permits a large open area behind the cone preventing unwanted sound reflections.
- c. The cones are injection moulded from a mineral filled engineering polymer and its thickness graded from the thin edge to the thick apex for high rigidity without a weight penalty.
- d. Resistively damped reflex ports provide the best drive unit loading solution for tight but extended bass.
- e. Cabinet shape and rigid internal bracing prevent signal colouration from internal standing waves and panel resonance.
- f. The injection moulded Tulip Waveguide forms the HF into a perfectly spherical wavefront, blending the HF with the output from the LF cone for ideal sound dispersion.



then appears to change from one small chamber to the full cabinet volume depending on the note being reproduced. This means the drive units have the ideal volume cabinet loading at all times ensuring tight but extended bass. The D500 cabinet has smooth edges to ensure that they do not interfere with the output from the Dual Concentric by behaving as secondary diffraction sources, dramatically improving stereo imaging.

A selection of real wood cabinet finishes are available. Definition D500 can be normally wired or Bi-Wired for improved fidelity through Tannoy's gold-plated captive link terminals. Advanced drive unit design permits the use of a simple crossover network, hard-wired with top quality components to ensure that the musical message reaches the drive units unhindered. Low loss air-cored inductors and selected high quality polypropylene capacitors are used.

You won't find Tannoy Definition loudspeakers at all Hi-Fi dealers. Only the best have the necessary ancillary equipment and demonstration facilities to be able to show how the Definition D500 can enrich your enjoyment of music.

In creating the Definition D500 Tannoy has taken the fundamental ideals of the audiophile approach and married them to a reliability and robustness built on long experience in the professional recording studio market. The D500 is truly 'Excellence by Definition'.

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## SPECIFICATIONS

Recommended amplifier power	30 to 175 watt/channel
Power rating	110 watt RMS 265 watt peak
Sensitivity for 2.83 volt at 1 metre	91 dB
Maximum SPL	111 dB at 1m for 110 watt RMS 115 dB at 1m for 265 watt peak
Nominal impedance	6 ohm
Minimum impedance	4 ohm
Frequency response $\pm 3$ dB	40 Hz – 30 kHz
Phase response	System behaves substantially as a frequency independent time delay
Dispersion	90 degrees conical at 10 kHz
Crossover frequencies	1.7 kHz, 400Hz
Crossover type	1st order LF, 1st order HF, Bi-Wired, Hard-Wired, low-loss
Driver types	(200mm) 8-inch Dual Concentric (200mm) 8-inch Bass unit
Enclosure type	Resistively ported double-chamber coupled reflex
Enclosure volume	50 litre
Enclosure (H x W x D)	934 x 314 x 344 mm (36.8 x 12.4 x 13.5")
Enclosure weight	28 kg (62 lbs)
Packed dimensions (H x W x D)	1035 x 400 x 445 (40.8 x 15.8 x 17.5")
Packed weight	30kg each (66.1 lbs)
Enclosure material	18mm MDF, internally braced Sustainably harvested real wood veneers



Remember to take care with any amplifier, irrespective of power output, to avoid abnormal conditions such as switch-on surges or output overload (clipping) which may result in power peaks greatly in excess of rated output. The high power handling of Tannoy Loudspeakers will allow responsible use with large amplifiers on wide dynamic range material. Due to our policy of continuous improvement, all the specifications are subject to change without notice. © 1994 Tannoy Ltd. Part No. 6483 0376

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