

T+A CRITERION TCD 610 W SE Active Sub-woofer

The TCD 610 W SE is a further development of the TCD 610 W, and is now equipped with very special and completely new deep bass drive units. The integral amplifier has also been revised and modified to suit these drivers, offering unprecedented dynamism and fleetness, combined with huge power reserves and superb sound quality. It generates more than 1000 Watt, and is coupled directly to the two 26 cm special drivers with their very low resonant frequency, permitting even greater cone excursions. The net result is low bass reproduction with a level of stability under load which would be impossible in any other way. We set very high audiophile standards even in the case of sub-woofers, and refuse to accept the high levels of total harmonic distortion in the low bass range which are widely accepted by other manufacturers because - they claim - such distortion is inaudible. And that is why we equip the active unit with a modern signal processor which is responsible for controlling the whole system, implementing a subtle soft clipping function in order to prevent any trace of overloading of the drive units; the processor also makes it possible to calibrate the speaker automatically and accurately to match the listening room, using a microphone supplied in the set. This software, which is a T+A development, also provides a means of carrying out the room calibration and frequency response correction process with the help of a PC, to suit to the owner's individual preferences.

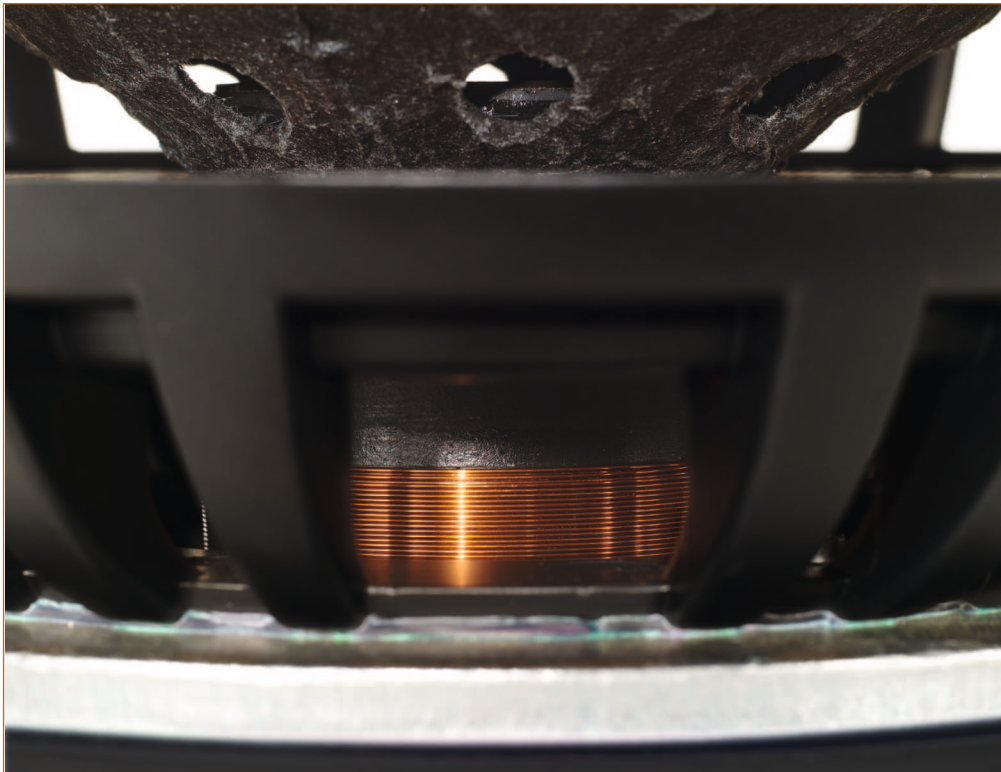
The remote control handset also supplied provides facilities for many useful adjustments from the listening position, such as variable limit frequencies and continuous level and phase control. Naturally the TCD 610 W SE also features comprehensive protective circuitry and an automatic power-on function.



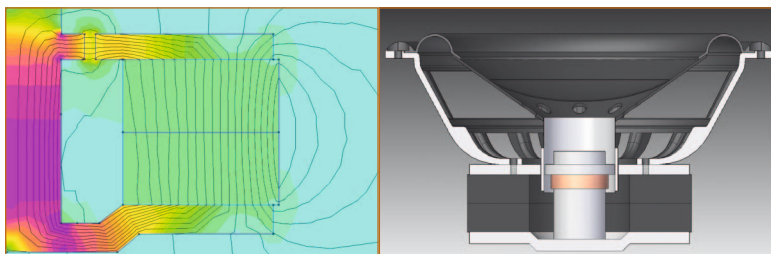
CRITERION TCD 610 W SE Active Sub-woofer



The TCD 610 W SE features even greater power reserves in the deep bass range than the standard version. The mechanical stress acting upon the bass drivers of a sub-woofer are gigantic, and rise rapidly as the frequency diminishes. At high volume levels the drive units can easily approach their mechanical performance limits - especially if driven by high-power output stages. Although many sub-woofers are capable of producing high volume, they also generate very high levels of harmonic distortion and thereby lose their clarity. It is true that the human ear is relatively insensitive in this frequency range, but a trained and demanding listener very quickly detects poor bass quality. For this reason we have developed a completely new and very special "State of the Art" drive unit for the SE version. This unit has outstandingly good mechanical characteristics, and does not reach its limits even at extreme levels and cone excursions! The cast aluminium basket is completely immune to torsional stress. It is constructed with many narrow struts in order to avoid air turbulence, and is designed to allow the use of special long-throw cone surrounds and centring spider. The large, flat centring spider is made of specially impregnated woven material, and accurately centres the voice coil in the air gap, while the long-throw synthetic rubber suspension guides the cone completely straight, without wavering, even at very high travels. The four-layer voice coil is made of high-purity copper, wound on a black-anodised aluminium carrier, and finished with a baked, heat-resistant, high-temperature lacquer. The cone is produced from a mixture of air-dried cellulose and carbon, and is extremely hard and torsionally rigid.



To obtain reproduction with minimum possible distortion, it is essential that the driving magnetic field should be constant. However, the current through the voice coil generates a dynamic magnetic field which modulates the static element of the permanent magnet, and this results in distortion. The special new sub-woofer employed in the SE version solves this problem by utilising a pole core which is highly saturated magnetically (shown in violet img. 1). This means that the core is no longer able to absorb any more magnetic flux, and the static field therefore does not suffer modulation. We deliberately decided against a hollow pole core; on the one hand to maintain high flux density in the air gap, on the other to ensure that the air displaced by the cone is forced



Img. 1

through the air gap; this ensures that the voice coil is effectively cooled, helped by the solid, black anodised aluminium carrier. The pole core is extended upwards, promoting an extremely linear and sym-

metrical drive curve. To exploit this linearity the entire mechanical suspension has been re-developed: it now permits 28 mm of travel in every direction, without any danger of the drive units striking their stops!

Specifications

	TCD 610 W SE active sub-woofer
Output power Watts	1000
Peak power rating Watts	1500
Frequency range Hz	15 - 150
Drive units bass mm	2 x 260
Crossover frequencies Hz	variabel
Dimensions H x W x D cm	70 x 36 x 49
Dimensions H x W x D inch	27.6 x 14.2 x 19.3
Weight	48 kg / 105.8 lb

Views from the press - short and sweet

AUDIOGRAMM



Audio 11/ 2013

...Extremely precise, taut sound, enormous dynamic range combined with delicacy, very convenient method of room calibration. The TCD 610 W SE has succeeded very well in differentiating individual bass lines, and the unit's comprehensive functions make it particularly easy to fine-tune accurately. As soon as the calibration procedure was complete, it was impossible to pick the speaker out as an independent sound source, and this is surely the greatest compliment which the audiophile listener could pay to a sub-woofer...

Sound, music:	94
Sound, film:	92
Features:	superb
Operation:	superb
Workmanship:	superb
Price / performance:	very good