



TANNOY PROFILE

ADVANCED NEW SPEAKERS FROM TANNOY

Powerful

Built on work that was pioneered with the extremely successful Sixes, Tannoy have produced a range which offers elegant, powerful, excellent sounding solutions which will appeal to those who want great performance at sensible prices.

These loudspeakers are the result of the efforts of one of the most talented in-house design teams in the Hi-Fi industry where all aspects of the Profile series were the responsibility of dedicated professionals.

The Profile series loudspeakers are ideal for Home Cinema use as well as normal stereo applications. Their discreet design allows them to blend in with traditional and modern decors.

The Profile range has benefited from Tannoy's long experience in producing loudspeakers for recording studios world-wide and unlike most other loudspeaker manufacturers, Tannoy manufacture all the drive units used in the Profile series in-house giving the engineers complete control of their design and build.

Tannoy has long understood a simple fact: technology cannot answer all the challenges of high quality music reproduction unless it is combined with the insights provided by informed listening. It is this combination of technology, listening and years of experience that makes the Profile series of loudspeakers special.

Loudspeaker Enclosures. Most loudspeakers are built into rectangular enclosures, not as you might suppose because rectangular boxes and high quality music reproduction have any special connection, but for a much more simple reason: they're easier and cheaper to build. In fact there is almost no worse shape acoustically than a sharp edged rectangular box. The parallel sides help promote internal 'standing wave' resonances, which inevitably colour and muddle the sound output through the bass and midrange. In addition, the sharp external edges encourage diffraction: output from the tweeter is re-radiated by sharp cabinet edges, producing interference with the direct sound which causes the overall sound to become harsh and muddled. Think of interfering ripples around rocks from stones dropped in a pond, the ripples representing the sound waves.

The shape of the enclosure in the Profile series addresses both problems. The angled sloping sides reduces the number of parallel internal surfaces, and those remaining are further broken up by other internal features: damping materials, internal shelves on the larger models, the cross-overs, and of course the drive units themselves. Meanwhile, diffraction is virtually eliminated thanks to the smoothly rounded sides.

TANNOY *PROFILE*





631

The entry level model of the Profile series is the 631, which includes much of the technology found elsewhere in the range. The highlight is the sophisticated trapezium cabinet design, which offers greatly improved control over internal standing waves and external diffraction. Lower frequencies are handled by a 125mm (5") bass driver with a newly developed lightweight cone, while the treble is produced by an alloy dome tweeter. This model can be used on bookshelves, but will give better results on tall, pedestal stands.

- Inverted configuration (bass unit above tweeter) gives a smoother middle and top, especially when used near walls.
- Variable thickness, injection moulded cone ensures accurate bass and midrange reproduction.
- New lightweight 125mm bass cone increases 'speed' and responsiveness.
- Gold anodised aluminium dome tweeter for clear treble.
- Low diffraction rounded baffle for purer treble and imaging.
- New, gold plated, sliding link Bi-Wire terminal panel with improved cable access.
- Minimalist cross-over has only one high quality capacitor to control tweeter roll-off providing pure, clear treble.
- Suitable for shelf/stand mounting – stands available as an optional extra.
- Black ash finish and 5 year warranty.



632

The 632 is a larger version of the 631, designed for those with slightly more ambitious requirements, but who still want a compact and affordable pair of loudspeakers. It is built into a similarly styled cabinet to the 631 and is also configured with a bass unit and a discrete dome tweeter in an inverted configuration. The main differences are in the bass/midrange unit, which features a larger 165mm (6.5") cone providing a more extended, fuller bass and higher volume levels and, a larger cabinet volume.

- Inverted configuration (bass unit above tweeter) gives a smoother middle and top, especially when used near walls.
- Variable thickness, injection moulded cone ensures accurate bass and midrange reproduction.
- 165mm bass cone unit improves bass depth and power handling.
- Gold anodised aluminium dome tweeter for clear treble.
- Low diffraction rounded baffle for purer treble and imaging.
- New, gold plated, sliding link Bi-Wire terminal panel with improved cable access.
- Minimalist cross-over and Tannoy OFC cable provide a pure signal path.
- Suitable for shelf/stand mounting – stands available as an optional extra.
- Black ash finish and 5 year warranty.



633

The most affordable of the Tannoy floor standing models, the 633 employs a near-symmetrical drive unit configuration, with a central 25mm (1") dome tweeter flanked by two 165mm (6.5") cone drive units. The lower one reproduces bass and mid frequencies only. The upper one is a dedicated low frequency unit reinforcing the bass output. The 633 enclosure is designed for low resonance behaviour and reduced diffraction, providing benefits in colouration levels, stereo imagery and distortion.

- 3-drive unit system uses two 165mm units to improve bass reproduction, depth and power.
- Variable thickness, injection moulded cones ensure accurate bass and midrange reproduction.
- Gold anodised aluminium dome tweeter for clear treble.
- Low diffraction rounded baffle for purer treble and imaging.
- Sealed (IB) enclosure gives smoothly extended bass.
- New, gold plated, sliding link Bi-Wire terminal panel with improved cable access.
- Spikes and floor couplers are provided for stability and improved bass.
- Black ash finish and 5 year warranty.



636

This sophisticated model is built into the same enclosure as the 633, but features a 165mm (6.5") version of the Dual Concentric driver, which covers a wide frequency range in a seamless, coherent manner. A separate bass only driver (where longer sound wavelengths render the need for coincident sources redundant) supplements the Dual Concentric driver, helping to produce a deep, extended bass output.

- 165mm extended bandwidth Dual Concentric provides correct phase, amplitude and optimised dispersion over a wide listening area, and helps promote a uniform, consistent and accurate sound for several listeners, not just at a single 'sweet spot'.
- Supplementary 165mm bass only drive unit.
- Variable thickness, injection moulded cones ensure accurate bass and midrange reproduction.
- Non-resonant waveguide and gold anodised aluminium tweeter dome provide pure, natural and dynamic treble.
- Low diffraction rounded baffle for purer treble and imaging.
- Sealed (IB) enclosure gives smoothly extended bass.
- New, gold plated, sliding link Bi-Wire terminal panel with improved cable access.
- Spikes and floor couplers are provided for stability and improved bass.
- Black ash finish and 5 year warranty.



637

The Tannoy 637 is a floor standing twin-drive unit model, based on the Tannoy trapezium cross-section enclosure and the Dual Concentric full range drive unit. In this model a 200mm (8") version has been specified. This version offers extended low frequency bandwidth. The bass is supplemented by a second 200mm (8") dedicated bass unit for tremendous drive and power.

- 200mm extended bandwidth Dual Concentric provides correct phase, amplitude and optimised dispersion over a wide listening area, and helps promote a uniform, consistent and accurate sound for several listeners, not just at a single 'sweet spot'.
- Supplementary 200mm bass only drive unit for depth and power.
- Variable thickness, injection moulded cones ensure accurate bass and midrange reproduction.
- Non-resonant waveguide and gold anodised aluminium tweeter dome provide pure, natural and dynamic treble.
- Low diffraction rounded baffle for purer treble and imaging.
- Sealed (IB) enclosure gives smoothly extended bass.
- New, gold plated, sliding link Bi-Wire terminal panel with improved cable access.
- Spikes and floor couplers are provided for stability and improved bass.
- Black ash finish and 5 year warranty.



638

The flagship of the Profile series, the 638 is a tall, slender, floor standing enclosure. This helps to provide the maximum bass extension and musical authority in the least intrusive packaging: the 638 uses no more floor space than the basic 631 used on stands. This model is based on a 200mm (8") Dual Concentric single point source drive unit. Supplemented by a 200mm (8") bass driver, with bass alignment determined by a carefully tuned double chamber reflex system.

- 200mm extended bandwidth Dual Concentric provides correct phase, amplitude and optimised dispersion over a wide listening area, and helps promote a uniform, consistent and accurate sound for several listeners, not just at a single 'sweet spot'.
- Supplementary 200mm bass only drive unit for drive and power.
- New, moulded cone surrounds control cone resonances, improving clarity and reducing distortion
- Variable thickness, injection moulded cones ensure accurate bass and midrange reproduction.
- Non-resonant waveguide and gold anodised aluminium tweeter dome provide pure, natural and dynamic treble.
- Low diffraction rounded baffle for purer treble and imaging.
- Double chamber reflex system, large volume enclosure provides a well extended bass and excellent transient response with minimum overhang.
- New, gold plated, sliding link Bi-Wire terminal panel with improved cable access.
- Spikes and floor couplers are provided for stability and improved bass.
- Black ash finish and 5 year warranty.

TANNOY PROFILE

The Dual Concentric Drive Unit

It is not possible to design two separately spaced drive units so that they perform seamlessly together, from a range of different listening positions in a single room. If their output meshes correctly from one listening position, it will inevitably be wrong for an adjacent listener, or from above or below the normal listening position. Typically, the sound output of the tweeter will arrive slightly earlier than the bass sounds, causing sharp ripples in the frequency response in the cross-over region, where one drive unit hands over to the next. There will also be matching phase (time related) errors to match, and these effects translate into a coloured, unnatural sound.

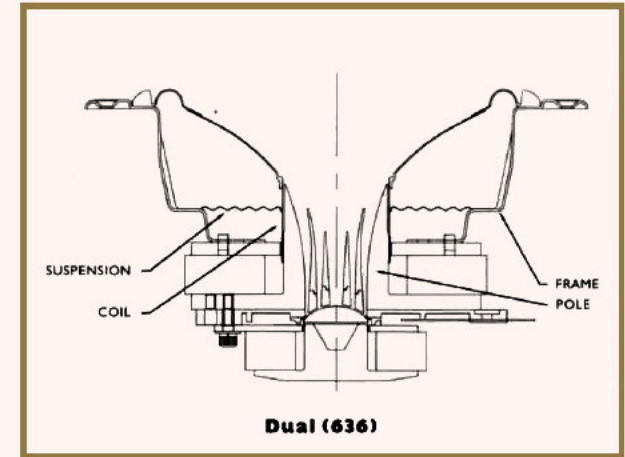
The ideal solution is for all frequencies to be reproduced from a single location, mirroring the way sounds are produced in real life. In practice however this means placing the tweeter at the apex of the bass unit, which presents tremendous design difficulties if the performance of the bass unit, the tweeter or both are not to be compromised.

This so-called coincident source drive unit technology is regarded as too exotic and complex by most designers. To this day Tannoy is one of the only producers specialising in the field, with design techniques developed and refined through successive generations of

loudspeakers for over half a century, when the first coincident-source Dual Concentric drive unit was introduced. The Dual Concentric looks like a bass driver, but incorporates a tweeter, which is positioned just behind the centre of the bass cone. The units are constructed on high-rigidity chassis and have independent magnets for the bass and treble.

The Dual Concentric principle has developed into a highly refined, specialised range of units, far removed from the early models. The versions used in the Profile loudspeaker range are the most sophisticated yet, offering reduced colouration and a more coherent sound.

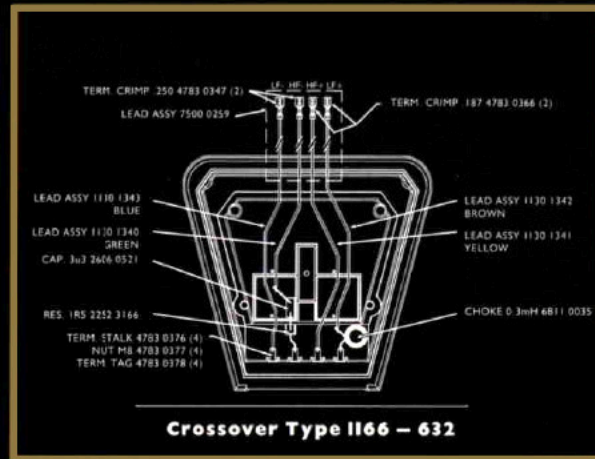
The benefits attributable to the Dual Concentric drive unit extend much further than simply eliminating the listening 'sweet spot' and lessening the dependency on particular listening positions for good stereo soundstaging. The consistent spherical wavefront helps preserve the harmonic structure of voices and instruments which consist of a fundamental (the original note) and a train of higher frequencies which paint in the special character of the note, especially for listeners towards the sides of the room. The near ideal phase behaviour also improves the perception of stereo imagery and of ambience. In addition, the Dual Concentrics have been specifically



designed to operate at high volume levels without compression or loss of impact, to respond quickly to musical transients.

The Cross-over Network

Cross-over designs for the Profile range are built the hard way. Components used are of the highest quality, with special care taken over the choice of capacitors, which are notorious for their ability to colour the sound. The drive units are designed to minimise the number of components in the crossover network because all components colour the sound. Instead of printed circuit boards, all networks are hard wired. Components are well spread out to avoid electrical coupling and housed inside the base of each enclosure, where they are less susceptible to interference by the magnetic field surrounding the bass unit magnet. Naturally, all cross-over designs are subject to extensive listening tests, and are capable of being Bi-Wired (see Terminal Panel).



Tweeter Design

The domes in the discrete tweeters and the Dual Concentric models alike are made from gold anodised aluminium, a material that is desirably stiff, yet offers better damping than other commonly used metal dome materials such as titanium. The supporting surrounds are made from precision tooled nitrile rubber, which further improves damping and the domes are attached to high temperature rated Kapton coil formers. Caps between the coils and magnets are filled with a fluid which helps cool and damp the system. The result is an immensely well controlled, non-resonant tweeter design, which is capable of sustaining high volume levels without compression or stress.

Tulip Waveguide

One of the most difficult problems that the engineers had to resolve with the Dual Concentric drive unit was integrating the output of the tweeter and woofer, so that they sounded in effect like a single, homogenous drive unit. One of the keys to this lay in an innocuous looking double ring at the centre of the bass cone called the Tulip Waveguide. Developed following extensive computer based mathematical modelling. This device consists of two carefully shaped

deep, annular guides in front of the tweeter which transforms the planar sound radiation from the tweeter, into a divergent, spherical wavefront, matching the output of the bass section. In the Profile range, a new softer material has been employed for the waveguide construction, which results in a smoother sound. This ensures treble reproduction free from colouration, whilst still retaining the natural dynamic range of the Dual Concentric.

Moulded Cone Piston Technology

All Profile speakers are equipped with bass drivers fitted with precision injection moulded mineral loaded co-polymer cones. Injection moulding allows the cone thickness to be varied across the surface, allowing the engineers to design cones whose sound radiating area shrinks smoothly with increasing frequency, a key requirement for a seamless transition to the treble. The more usual vacuum forming process is suitable only for producing cones of nominally uniform thickness, and even then it is not usually possible to accurately control cone thickness.

Terminal Panel

The most convenient way of wiring any loudspeaker is to use a single pair of wires, but with a suitably designed loudspeaker, superior results can be obtained by wiring the tweeter and bass unit(s) independently back to the amplifier. This method of wiring, known as Bi-Wiring, enhances clarity by improving the perceived independence of individual instruments and voices. All Profile models are fitted with high quality cable terminal panels, which have a simple, captive sliding terminal shorting design which facilitates both single or Bi-Wire connections. The new gold plated terminal panel design offers more room for finger and cable access to help make the connections which can be made using bare wires or 4mm plugs and securely tightened easily using a suitable coin in the slot provided.

TANNOY PROFILE

Technical Information

| | 631 | 632 | 633 | 636 | 637 | 638 |
|------------------------------|---|---|---|--|--|--|
| Peak Power/ Channel | 120 watt | 150 watt | 175 watt | 200 watt | 250 watt | 300 watt |
| Rec. Amp Power/ Channel | 10-70 watt | 10-90 watt | 10-100 watt | 10-120 watt | 10-150 watt | 10-175 watt |
| Frequency Response (+/-3 dB) | 60Hz-30kHz | 55Hz-30kHz | 48Hz-30kHz | 44Hz-30kHz | 40Hz-30kHz | 35Hz-30kHz |
| Nominal Impedance | 6 ohm | 8 ohm | 8 ohm | 6 ohm | 6 ohm | 6 ohm |
| Minimum Impedance | 4 ohm | 6 ohm | 5 ohm | 4 ohm | 4 ohm | 4 ohm |
| Sensitivity (2.83V @ 1m) | 87dB | 88dB | 89dB | 90dB | 91dB | 91dB |
| Cross-over Frequencies | 4.5kHz | 4kHz | 400Hz, 4kHz | 400Hz, 2kHz | 400Hz, 2.5kHz | 400Hz, 2.5kHz |
| Cross-Over Type | Direct Driven LP, First Order HP | First Order LP, First Order HP | First Order LP, First Order HP | | Second Order Low Pass, First Order High Pass | |
| Terminals | Gold plated, Bi-Wired | Gold plated, Bi-Wired | Gold plated, Bi-Wired | Gold plated, Bi-Wired | Gold plated, Bi-Wired | Gold plated, Bi-Wired |
| System Type | Ducted Port | Ducted Port | Closed Box | Closed Box | Closed Box | Twin Cavity Coupled Reflex |
| Internal Volume | 5.3L | 10.9L | 20.2L | 20.2L | 32.9L | 36.9L |
| System Drive Unit Complement | 25mm Gold Anodised Aluminium Dome Tweeter, 125mm Bass Unit | 25mm Gold Anodised Aluminium Dome Tweeter, 165mm Bass Unit | 25mm Gold Anodised Aluminium Dome Tweeter, 2 x 165mm Bass/midrange | 1 x 165mm Dual Concentric 1 x 165mm Bass Unit | 1 x 200mm Dual Concentric 1 x 200mm Bass Unit | 1 x 200mm Dual Concentric 1 x 200mm Bass Unit |
| Dimensions (HxWxD) | 343mm x 194mm x 157mm 13.5" x 7.6" x 6.2" | 409mm x 237mm x 219mm 16.1" x 9.3" x 8.6" | 717mm x 237mm x 219mm 28.2" x 9.3" x 8.6" | 717mm x 237mm x 219mm 28.2" x 9.3" x 8.6" | 820mm x 286mm x 263.5mm 32.3" x 11.3" x 10.4" | 920mm x 286mm x 263.5mm 36.2" x 11.3" x 10.4" |
| Weight Each | 3kg, 6.6lbs | 5.5kg, 12.1lbs | 9.5kg, 20.9lbs | 11kg, 24.2lbs | 16kg, 35.2lbs | 17kg, 37.4lbs |
| Packed Dimensions (HxWxD) | 410mm x 400mm x 240mm 16.1" x 15.7" x 9.4" | 520mm x 530mm x 292mm 20.4" x 20.8" x 11.4" | 885mm x 300mm x 300mm 34.8" x 11.8" x 11.8" | 885mm x 300mm x 300mm 34.8" x 11.8" x 11.8" | 1000mm x 345mm x 345mm 39.3" x 13.5" x 13.5" | 1090mm x 345mm x 345mm 42.9" x 13.5" x 13.5" |
| Packed Weight | 7kg, 15.4lbs (pair) | 13kg, 28.7lbs (pair) | 11.5kg, 25.4lbs | 13kg, 28.6lbs | 18kg, 39.6lbs | 20kg, 44lbs |

Tannoy Ltd., Rosehall Industrial Estate, Coatbridge, Strathclyde ML5 4TF, Scotland.
Telephone: (01236) 420199. Facsimile: (01236) 428230.
TGI North America Inc., 300 Gage Avenue, Unit 1, Kitchener, Ontario, N2M 2C8, Canada.
Telephone: (519) 745 1158. Facsimile: (519) 745 2364.
Tannoy Nederland B.V., Ezelsveldlaan 52, 2611 RV Delft, The Netherlands.
Telephone: (015) 124034. Facsimile: (015) 125213.

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 specifications are subject to change without notice.

© Tannoy 1995 Part No 6482 0387 (Issue Two)

Home cinema

Tannoy's Profile home cinema loudspeakers – the 621 and 622 centre channel speakers, and the 628 surround speaker – have been designed to deliver the highest quality home cinema sound, and to complement the exciting new Tannoy Profile range of high fidelity loudspeakers.

Using the latest in loudspeaker technology and the sophisticated cabinet design pioneered in the Six series, all the Profile home cinema speakers use point source, full range drive units manufactured by Tannoy. This allows them to produce a wide, even soundfield – essential for accurate and exciting home cinema sound.



Profile 621

The Profile 621 is designed for use as a centre channel, or 'dialogue' speaker. This speaker is positioned above or below the TV screen and is used to 'tie-in' film dialogue to the pictures on the screen. The 621 is therefore fully magnetically shielded to avoid interference. Using a single five inch point source full range drive unit incorporating inductive coupling technology (ICT), this speaker is able to deliver high volumes without stress or strain. The 621 offers high quality sound at an affordable price and in a compact, stylish package.

Profile 622

The Profile 622 is a centre channel speaker designed for use in the most demanding home cinema systems. Using a six and a half inch full range point source cast frame Dual Concentric driver, the 622 is at home with everything from an explosion to a whisper. Like the 621, it is fully magnetically shielded and can be used above or below the television. The 622 delivers wide dynamic range, high volume levels and a fast transient response, all essential characteristics of a fine home cinema loudspeaker.

Profile 628

The Profile 628 is a surround sound loudspeaker, designed to be used as the rear pair in a Dolby Pro-Logic home cinema system. The 628 uses a single point source full range drive ICT unit – particularly important in surround sound applications because it helps to create an even, and accurate, soundfield throughout the room.

Inductive Coupling Technology

The ICT drivers used in the Profile 621 and 628 speakers are a new solution to the problem of creating point source loudspeaker drive units. ICT drivers consist of a bass/mid range driver with a metal skirted tweeter dome positioned in the centre of the magnetic gap. This tweeter is not connected electrically to the amplifier, but collects the treble energy from the bass driver's coil through inductive coupling – a process rather similar to the way a transformer works. The driver needs no crossover and can handle very high power levels without risk of distortion or damage.

Advanced cabinet design

The cabinets of all three Profile home cinema speakers feature Tannoy's latest design developments. The angled sloping sides reduce the number of parallel internal surfaces. This reduces the effects of internal 'standing waves' that can muddy the sound. The smoothly rounded corners of the cabinets help to reduce diffraction at the cabinet edges, which has adverse effects on sound quality.

The 625ALF active low frequency sub-woofer uses a unique current drive system which delivers a dynamic sound at all volume levels. A separate brochure describes this product in detail.

TANNOY PROFILE

The single point sound source

The ideal loudspeaker for stereo and home cinema use is one that can produce the full range of audible sounds from one point in space. This makes it easy for the brain to build up an acoustic image of where particular sounds are in the soundfield created by the home cinema system. Tannoy's Dual Concentric and ICT drive units both mount a treble unit at the acoustic centre of a larger bass/mid-range driver, perfectly integrating bass and treble frequencies and making it easy for listeners to pick up every nuance of the surround soundtrack.

Point source loudspeakers also have a major advantage over conventional multi-drive unit speakers. In surround sound applications they create a much more even soundfield throughout the listening room – helping to ensure that the full surround sound effect isn't just limited to one 'hot seat'. With conventional speakers, as you move away from them, the different dispersion patterns of the drive units interact to create frequency aberrations. As the sound reflects off walls and ceilings, aberrations get worse, muddling the sound and confusing the acoustic image. Point source loudspeakers in the Profile home cinema range avoid all these problems, helping to create the ultimate home cinema experience.

The Dual Concentric drive unit

Tannoy pioneered the design of loudspeaker drive units with treble units mounted at the acoustic centre of a bass/mid driver, introducing their first Dual Concentric models over fifty years ago. The Dual Concentric principle has developed into a highly refined, specialised range of units and the version used in the 622 is one of the most sophisticated yet.



Technical Specifications

Peak Power/ Channel
 Rec. Amp Power/ Channel
 Frequency response (+/-3 dB)
 Nominal Impedance
 Minimum Impedance
 Sensitivity (2.83V @ 1m)
 Cross-over Frequencies
 Cross-over Type
 Internal Volume
 System Drive Unit Complement
 Dimensions (HxWxD)

Weight Each
 Mounting Bracket

Magnetic Field*
 Bottom Face (Adjacent to TV)
 Top Face
 *0.1mT = 1 Gauss

621

100 watt
 10-60 watt
 75Hz-20kHz
 6 ohm
 4 ohm
 89dB
 5kHz
 Inductively coupled
 5L
 1 x 125mm ICT
 194mm x 322mm x 157mm
 7.6" x 12.7" x 6.2"
 3.25kg, 7.2lbs
 Omni-mount 50 series
 Fixing centres 63.5mm
 (2 holes)
 Thread size M6 x 1.0 pitch

0.1mT
 1.6mT

622

200 watt
 10-120 watt
 62Hz-30kHz
 8 ohm
 5 ohm
 89dB
 2.4kHz
 Second Order LF, First Order HF
 10.9L
 1 x 165mm Dual Concentric
 237mm x 384mm x 224mm
 9.3" x 11.1" x 8.8"
 7.5kg, 16.5lbs
 Omni-mount 75 series
 Fixing centres 107.9mm x 50.8mm
 (4 holes)
 Thread size M6 x 1.0 pitch

0.2mT
 0.9mT

628

100 watt
 10-60 watt
 100Hz-20kHz
 6 ohm
 4 ohm
 89dB
 5kHz
 Inductively coupled
 2.5L
 1 x 125 mm ICT
 315mm x 194mm x 103mm
 12.4" x 7.6" x 4.1"
 3.0kg, 6.6lbs
 Included with product
 Fixing centres 70.0mm
 (2 holes)
 Thread size M5 wood screw

Unshielded
 Unshielded