The story begins when founding partners Arthur E. Falkus and Dennis A. Newbold established the FANE brand by combining the first two letters of their respective surnames (FA and NE) to create the name that would form the identity of their new company. FANE was established to manufacture commercial loudspeakers for radio and television sets as well as the new ‘hi-fi’ industry as the new technologies and economy of the post-war era saw a huge expansion in affordable consumer products.

Fane Acoustics Limited, Batley, West Yorkshire, England, was officially registered as a Company on 11th June 1958.

Drivers for household or reinforcement use were advertised in 1959. One unit was equipped with aluminium voice coil windings, a favourite technique of Arthur Falkus to extend high frequency response.

From its inception FANE demonstrated the pioneering spirit that has comprised a core element of its ethos through to the present day.

During the early years of FANE’s existence and rapid growth, the company supplied small round and elliptical speakers to manufacturers during the boom period of radio and television set production in the UK.

From the start, FANE had also produced large 12-inch bass drivers for OEMs in the specialist hi-fi industry in addition to producing its own hi-fi products such as the ‘Quartet’ complete loudspeaker system.

During this period production grew to exceed 50,000 units per week.

In 1965 Fane Acoustics developed the IonoFane, a revolutionary plasma tweeter capable of incredible high frequency response utilising patented technologies. The unit used a high frequency electrical discharge to produce sound waves by ionising the air in a small quartz tube coupled to a flared horn. IonoFane was used by the British Broadcasting Company (BBC) as a monitoring loudspeaker and Bower & Wilkins also made units under license to Sony in Japan.

This served to expand FANE’s reputation globally as a pioneering brand with a true passion for innovation in audio.

In 1966 a young man by the name of Arthur Barnes joined Fane Acoustics as the press-shop manager. Arthur would progress through the ranks to become Managing Director and become the driving force behind FANE’s most globally successful period of the 1980s.

It was in 1967 that FANE made the significant breakthrough that would seal its reputation as a market-leading innovator.

During the 1960s the electric guitar created the need for more powerful 12-inch loudspeakers. The real breakthrough for the industry, and from FANE specifically, came with Arthur Falkus’ development, presentation and use of the glass fibre voice coil. Overnight speaker power handling was doubled and the legendary Crescendo MI range was born.

FANE became the first manufacturer to produce a speaker capable of handling 100 W and generate sound pressure levels in excess of 100 dB.

The revolutionary and trail-blazing new speaker technology was highly successful. Almost all of the leading manufacturers of this time would come to load FANE components into their products during this and the following decades. World-renowned brands of the time such as Carlsbro, Hiwatt, Laney, Orange, Sound City and Vox were just a few of those FANE customers.

Iconic artists such as Pink Floyd, The Who, The Rolling Stones and many more used equipment loaded with FANE speaker components, making FANE an integral part of the British music scene revered throughout the world.

It is a tribute to FANE design expertise that other loudspeaker manufacturers, recognising the superiority of the glass fibre coil, replicated the use of this material for their own construction and making it an industry standard. Where FANE led the way, others followed.
1970s

During the 1970s FANE went from strength to strength, increasing production capabilities and carrying out further research in loudspeaker technology and advanced construction materials. As FANE continued to further develop speaker technologies for high-power professional audio sound reinforcement, the FANE product range and OEM capability significantly expanded to cover a catalogue range of fifty products.

OEM customers could select variations of cones, coils, dust domes and suspensions to modify product to suit their individual requirements, a service that FANE continues to offer today.

It was during this period of growth and development that iconic loudspeaker ranges such as the Classic Series and Crescendo first appeared (pictured below).

1980s

FANE “Towards Perfection”

By the mid-1980s FANE was probably the most significant professional audio component loudspeaker manufacturer in Europe.

Another decade of continuous success saw increased FANE presence in high-end theatres such as Carnegie Hall, New York, and the Royal Theatre, Copenhagen. Turbosound, who selected FANE for all their custom designed loudspeaker requirements, were the choice of the world’s leading venues and entertainers.

The new Studio series incorporating, amongst others, Colossus models, reflected the very latest developments in acoustic engineering. FANE “Towards Perfection” was a phrase used to reflect the pedigree and mission statement that the company was striving so successfully to achieve.

New landmarks, such as the first commercially available 24-inch loudspeaker and 4-inch voice coils, enabled FANE to strengthen during this period under the leadership of Arthur Barnes.

In 1986 respected English loudspeaker brand McKenzie was acquired as part of the audio group portfolio, another association that continues to the present day.

In 1989 following years of success, and despite a resolute attempt to orchestrate a management buyout, FANE was purchased by the Wharfedale Group. Arthur left the company he had dedicated himself to and the tenure of the Barnes family association with FANE was temporarily ended.

1990s

A period of changes of ownership and lack of direction combined to make the next few years challenging for FANE. Introductions such as NXT flat panel technology did not achieve the desired success and the brand suffered from a lack of focus on the core values upon which it had been so successfully founded and developed between the 1950s and 1980s.

2007

In January 2007 the Barnes family took the opportunity to purchase FANE with the objective of restoring the brand’s fortunes through refocusing upon core values and bringing a renewed expertise to the challenges of an audio market that had showed considerable change over the previous twenty years.

In 2007 FANE was relocated from its then manufacturing plant in Leeds to its current home at our headquarters in Castleford, West Yorkshire, England.

Main images (from top left):
1. A vintage Fane car radio speaker.
2. Arthur Barnes (centre) with David Biggs and Dennis Newbold.
3. Finishing and preparation of Fane speaker chassis.
5. Fane loaded 4x12 bass guitar cabinet.
6. Audio Fidelity Group Directors, including Simon Cowell, meet with Arthur Barnes (far right) in the late 1980s.
7. Fane’s present day headquarters and manufacturing plant in West Yorkshire, England.
8. The Fane team in the UK plant, April 2018.
In 2008 the FANE product line was officially re-launched under the ownership of the Barnes family with headquarters still located only ten miles from the original FANE factory in Batley, West Yorkshire. At the outset of the new ownership, key FANE staff who were employed during the 1970s and 1980s were recruited to give the team strength in expertise, commitment to continuous improvement and authenticity to the core FANE character. Not so much a brand purchase under new owners, it represented a ‘coming home’ for the management team after a period interrupted in 1989.

The FANE catalogue of components was carefully reviewed and analysed. A complete product overhaul was conducted to ensure the renowned FANE qualities of incredible performance without compromise are firmly adhered to, the result being a comprehensive range of components from 5-inch through to 18-inch loudspeakers.

The FANE Sovereign Series was created with both heavy duty pressed steel and cast aluminium frame options to provide a new range of product options optimised for the requirements of the current professional audio industry and subject to a programme of continuous improvement in which specifications undergo constant analysis to ensure that they represent the best they can be.

The opening of our offshore manufacturing plant enabled FANE greater competitiveness to meet the challenges of a market in which the number of rival brands had increased exponentially at the same time of vastly increasing production output. By bringing FANE closer to key growth regions, FANE has been able to develop market share in the great emerging world economies.

The launch of Colossus PRIME 18XS saw the arrival of another legendary FANE high power 18-inch drive unit to stand alongside the mighty Colossus 18XB. The PRIME 18XS displayed the hallmarks of FANE ingenuity to deliver an incredible peak-to-peak excursion in excess of 60 mm to ensure fast, accurate bass in the most testing of performance environments and engineered to provide significant advantages over competing European products.

Our objective is to deliver the world’s finest range of professional audio loudspeakers, engineered to offer superior sonic performance.
WHAT MAKES FANE LOUDSPEAKERS SO SPECIAL?

No compromises are made on design and component specifications to guarantee only the finest audio performance. Only the highest quality materials sourced from the world’s most respected suppliers are used in our quest to produce the perfect transducer solutions.

Designed at our headquarters in the UK, Fane produces a comprehensive range of matchless chassis loudspeakers in the standard diameters, with versatile mounting facilities designed for convenience and security.

In addition to chassis loudspeakers, our professional product range includes an outstanding series of compression drivers specialised to cover the high frequency bandwidths. Devices of innovative design, skilful engineering and superb performance.

Every product represents the cutting edge in acoustic design technology, engineering and material science, optimised performance and outstanding durability coupled with amazing value. Built to a high standard with systematic testing and strict quality controls that ensures performance excellence is retained indefinitely.

OEM & BESPOKE DRIVER DESIGN

Our manufacturing capabilities allow us to be ultra flexible to the needs of Original Equipment Manufacturers (OEMs). Not only are we able to provide modifications such as specialised coatings to branded solutions from our standard range, we can also implement bespoke solutions based on specific needs, design brief or price points. Our engineering team collaborates closely with our OEM partners to design and develop products that are optimised for their requirements, driving projects from concept through to final production.

Our highly skilled and experienced technical R&D team relies on state-of-the-art, industry standard tools and software for transducer design and evaluation. Combined with extensive listening tests in order to achieve optimum results.

We are able to manufacture custom units that are correct first time, on time, everytime and with the least variation from original specifications. Thanks to our commitment to total product quality, strict production control processes provide total customer confidence in product performance, consistency and value.

OUR TECHNOLOGIES

CHASSIS CONSTRUCTION
Optimised in the design process using Finite Element Analysis (FEA). The majority of Fane chassis are made of high grade die-cast aluminium. Our selected material has the specific advantages of high strength and tensile stress factors, high strength-to weight ratio, low thermal expansion factor, high thermal conductivity factor, non-magnetic, highly resistant to corrosion and finished in high quality black enamel with heat treatment for permanent durability in varying environments.

FORCED AIR AND ASSISTED COOLING
The active motion of the cone and suspension creates airflow within the motor structure. Optimised air channels and vents are designed into the motor structure and chassis designs. This allows heat to be extracted efficiently by allowing the air flow to be forced through the channels and vents, keeping the voice coil and motor structure temperature under control. This in turn enhances power handling capabilities and minimises power compression effects.

VOICE COILS AND FORMERS
We have access to many different former and coil materials, each coil is designed with the former characteristics in mind. Not all designs work well with a standard former materials. To optimise designs, in addition to standard copper, various other wire materials and application techniques are specified such as Aluminium, Copper Clad Aluminium Wire (CCAW), Silver, Square Wire, Multi-layer and Edge Winding.
INSIDE / OUTSIDE WINDINGS
VOICE COILS
Fane have used this technology for a number of years. Not all designs benefit from this method of winding, and again, each product is designed with an optimised voice coil geometry. Inside outside windings offer a balanced coil and increased heat dissipation resulting in lower power compression.

VENTED VOICE COILS
Used to minimise air turbulence within the motor and voice coil assembly. The correct spacing, size and position of the vents effect the efficiency and heat dissipation achieved when this technique is used. Each of our products has had special attention in this area during development, a vented coil is only specified if it benefits the optimised design.

MOTOR ASSEMBLY MATERIALS
Fully optimised, Finite Element Analysis (FEA) motor structure designs ensure the highest possible magnetic flux from minimum mass.

CONE, SURROUND AND DIAPHRAGM MATERIALS
We work in close collaboration with the worlds leading cone, surround and diaphragm manufacturers, from Germany, UK and USA. This ensures that our products are always designed using the latest and most trusted cone pulp formulas and developments in material technology. Our product designs are optimised with specific cone, surround or diaphragm materials and specifications in mind. If the right component doesn’t exist in our extensive arsenal then we will develop one suited to the design requirements.

SUSPENSION MATERIALS
Suspension systems are a highly important part of our design and development process. By taking the time to ensure the correct materials are used, optimises not only the drivers behaviour and TSP parameters, but also the tonal character of the driver. It is our objective to use materials that are ‘well behaved’ offering longevity and linearity under extreme pressure. For this reason we have in excess of 10 principle materials we use and trust.

DOUBLE SILICON SUSPENSION
Consisting of two spiders adhered together with a special silicon mixture. The result is enhanced linear piston action and improved ability to control the moving mass.

DUAL SUSPENSIONS
Two spiders separated by a spacer ring that provides exceptional mechanical stability and linearity for drivers with larger Xmax travel.

DEMODULATION RINGS
A single or dual, copper or aluminium ring is placed into the motor structure to better control transient response, reduce intermodulation distortion and extend frequency range.

SPECIALIST CONE COATINGS
Fane offer a range of cone treatments and coatings that are pre-applied during the cone manufacturing process, these are an integral part of the materials design specification. These coatings offer tonal character changes, dampening, weather proofing, water proofing and fire retardant properties. Coatings applied post-manufacture are also available within our production facility.

COMPRESSION DRIVER
PHASE PLUGS
Individually precision machined and hand assembled. Three slot, optimised geometry phase plug design enhances tonal performance while minimising sound wave cancellations throughout the working bandwidth.

FERROFLUID
Due to relatively high electrical currents and high cycle speeds, voice coils come under constant thermal and mechanical stress. Ferrofluid dissipates excess heat and also provides dampening properties, acting like a shock absorber, to eliminate excess energy and movement. The advantages are increased power handling with expanded frequency range while retaining smooth and linear operation at the highest output levels.

POWER RATINGS AND TSP’S
Fane measure power ratings according to the AES standard protocols. Each speaker is tested for 2 hours at rated power over the working bandwidth of the driver, after which the driver should show no appreciable damage. Fane also takes into account the mechanical properties of the driver when classifying power ratings even though the electrical properties of the voice coil can often exceed the rated power of the driver.
## PRODUCT OVERVIEW

### THE SOVEREIGN SERIES

<table>
<thead>
<tr>
<th>Model</th>
<th>Size</th>
<th>Program Power</th>
<th>Magnet Material</th>
<th>Voice Coil Diameter</th>
<th>Frequency Range</th>
<th>SPL</th>
<th>FS</th>
<th>Xmax</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sovereign Pro 15-600</td>
<td>15” / 381 mm</td>
<td>1200 W</td>
<td>Ferrite</td>
<td>3.0” / 76.2 mm</td>
<td>38 Hz - 4 kHz</td>
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<td>37 Hz</td>
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<td>50 Hz</td>
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<td>97 dB</td>
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<tr>
<td>Studio 5FRK</td>
<td>5” / 127 mm</td>
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<td>2.41 mm</td>
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### THE PROFESSIONAL SERIES

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<th>Model</th>
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<th>Program Power</th>
<th>Magnet Material</th>
<th>Voice Coil Diameter</th>
<th>Frequency Range</th>
<th>SPL</th>
<th>FS</th>
<th>Xmax</th>
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<tbody>
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<td>Imperium 18XL</td>
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<td>2600 W</td>
<td>Y35 Ferrite</td>
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<td>97 dB</td>
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<tr>
<td>Studio 5FRK</td>
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<td>1.0” / 25.4 mm</td>
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### HIGH FREQUENCY DEVICES

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<th>Throat Size</th>
<th>Program Power</th>
<th>Magnet Material</th>
<th>Voice Coil Diameter</th>
<th>Frequency Range</th>
<th>SPL</th>
<th>Voice Coil Material</th>
<th>Diaphragm Material</th>
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<td>106 dB</td>
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<td>Titanium</td>
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</table>
THE PROFESSIONAL SERIES

IMPERIUM 18XL
SUB BASS DRIVER

18” / 457.2 mm CHASSIS DIAMETER
30 Hz - 2 kHz FREQUENCY RESPONSE
2600 W PROGRAM POWER
5” / 127 mm VOICE COIL DIAMETER
96 dB SENSITIVITY (1W/1m)
10.5 mm Xmax MAX. LINEAR EXCURSION

Specifications:
- Lightweight Y35 ferrite motor design. Only weighs 13 kg.
- New 18-Inch vented cast aluminium chassis design.
- Aluminium core heat sink and large motor venting provides reduced power compression and effective temperature regulation.
- Powerful and accurate low frequency sound reproduction.
- Peak to peak maximum excursion of 52 mm.
- Dual ‘spaced’ suspension system and advanced materials offers ultra-linearity, mechanical stability and superior acoustic performance at high levels of excursion.
- Suitable for bass reflex or horn loaded designs.
- 5-Inch Copper voice coil.

Technical & Thiele Small Parameters

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<tr>
<th>Parameter</th>
<th>Value</th>
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<td>Qms</td>
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<td>Qes</td>
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</tr>
<tr>
<td>Qts</td>
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</tr>
<tr>
<td>Vas</td>
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<td>Vd</td>
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<td>Xmax</td>
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<td>Sd</td>
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<td>1.65 %</td>
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<tr>
<td>Le (1kHz)</td>
<td>2.9 mH</td>
</tr>
<tr>
<td>EBP</td>
<td>64.29 OHms</td>
</tr>
<tr>
<td>Effective Piston Diameter</td>
<td>15.68” / 398.27 mm</td>
</tr>
<tr>
<td>Rec. Enclosure Volume</td>
<td>60 - 230 Litres</td>
</tr>
</tbody>
</table>

Gasket Supplied: Front
Connectors: Push-button Spring Terminals

MOUNTING / SHIPPING INFORMATION

Overall Diameter: 19.1” / 485 mm
Width Across Flats: 18” / 457.2 mm
Depth: 7.94” / 201.55 mm
Flange Height: 0.465” / 11.8 mm
Baffle Hole Diameter (F/M): 16.53” / 419.86 mm
Baffle Hole Diameter (R/M): 16.33” / 414.78 mm
Chassis Material: Die-cast Aluminium

Weight: 28.85 lb / 13.09 kg
Shipping Weight: 31 lb / 14.06 kg
Packing Carton Dimensions (mm): (W) 495 (D) 495 (H) 255

General Specifications

Nominal Chassis Diameter: 18” / 457.2 mm
Nominal Impedance (1): 8 Ohm
Minimum Impedance (Zmin): 6.5 Ω
A.E.S Power Handling (2): 1300 W (A.E.S.)
Program Power: 2600 W
Peak Power: 5200 W
Frequency Range (1kHz): 30 Hz - 2 kHz
Sensitivity: 96 dB
Magnet Material: Ferrite
Magnet Weight: 105.8 oz
Magnetic Gap Depth: 0.35” / 9 mm
Flux Density: 0.98 Tesla
Former Material: Glass Fibre
Voice Coil Material: Copper
Coil Winding Height: 0.98” / 25 mm
Voice Coil Diameter: 5” / 127 mm
Cone/ Dust Dome Material: Paper / Paper
Surround / Edge Termination: Polyvinyl Damped Multi Roll. Poly Cotton

FREQUENCY RESPONSE DATA (3)

(1) Please enquire about alternative impedances.
(2) A.E.S. power handling test. Pink noise bandpass filtered at 12 dB per octave with cut-off frequencies of 35 Hz and 350Hz. Driver mounted in free air, test signal applied at rated power for two hours.
(3) Half space response measured in a 975 Litre sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.
(4) Positive voltage at red terminal causes forward motion of cone.

IMPEDANCE

© 2018, Fane International Ltd. We operate a policy of continuous research and development and as such published specifications are subject to change without notice. www.fane-international.com
**NEW, VENTED CAST ALUMINIUM CHASSIS DESIGN.**

+ Lightweight and efficient neodymium motor system generates minimal flux modulation.
+ Aluminium core heat sink and large motor venting provides reduced power compression and effective temperature regulation.
+ Long driver excursion. Peak to peak travel of 52 mm.
+ High BL factor for controlled, fast and accurate low frequency sound reproduction.
+ Dual 'spaced' suspension system provides increased linearity and control at high levels of excursion.
+ Suitable for bass reflex or horn loaded enclosure designs.
+ 5-Inch Copper voice coil.

**TECHNICAL & THIELE SMALL PARAMETERS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>Fs</td>
<td>33 Hz</td>
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<tr>
<td>Re</td>
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<tr>
<td>Qms</td>
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<tr>
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<tr>
<td>Vd</td>
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<tr>
<td>Cms</td>
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<td>Bl</td>
<td>29.4 T/m</td>
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<tr>
<td>Mms</td>
<td>220 g</td>
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<tr>
<td>Xmax</td>
<td>12 mm</td>
</tr>
<tr>
<td>Sd</td>
<td>1164 cm²</td>
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<tr>
<td>Efficiency</td>
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<tr>
<td>Le (1kHz)</td>
<td>2.76 mH</td>
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<tr>
<td>Effective Piston Diameter</td>
<td>15.68&quot; / 398.27 mm</td>
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<tr>
<td>Rec. Enclosure Volume</td>
<td>60 - 230 Litres</td>
</tr>
</tbody>
</table>

**GENERAL SPECIFICATIONS**

- **Nominal Chassis Diameter:** 18” / 457.2 mm
- **Nominal Impedance:** 8 Ohm
- **Minimum Impedance Zmin:** 6.5 Ω
- **AES Power Handling:** 1200 W (A.E.S.)
- **Program Power:** 2400 W
- **Peak Power:** 4800 W
- **Frequency Range:** 30 Hz - 2 kHz
- **Sensitivity:** 98.5 dB
- **Magnet Material:** Neodymium
- **Magnet Weight:** 1 oz
- **Magnetic Gap Depth:** 0.47” / 12 mm
- **Flux Density:** 1.2 Tesla
- **Former Material:** Glass Fibre
- **Voice Coil Material:** Copper
- **Coil Winding Height:** 1.1” / 28 mm
- **Voice Coil Diameter:** 5” / 127 mm

**IMPEDANCE**

- **FREQUENCY RESPONSE DATA**

**MOUNTING / SHIPPING INFORMATION**

- **Overall Diameter:** 18” / 457.2 mm
- **Width Across Flats:** 18” / 457.2 mm
- **Depth:** 8.01” / 203.55 mm
- **Flange Height:** 0.465” / 11.8 mm
- **Baffle Hole Diameter F/M:** 16.53” / 419.86 mm
- **Baffle Hole Diameter R/M:** 16.33” / 414.78 mm
- **Chassis Material:** Die-cast Aluminium
- **Gasket Supplied:** Front
- **Outer Fixing Holes:** 8x ø 7 mm on 468 mm PCD
- **Inner Fixing Holes:** 8x ø 7 mm on 438.15 mm PCD
- **Connectors:** Push-button Spring Terminals
- **Weight:** 25.35 lb / 11.5 kg
- **Shipping Weight:** 25.5 lb / 11.57 kg
- **Packing Carton Dimensions:** (W) 485 (D) 485 (H) 230 mm
High grade Y35 ferrite magnet motor structure with Low interference flux path.

Vented chassis and motor design provides efficient thermal management and extremely low power compression.

Aluminium demodulation ring.

Dual silicone laminated suspension system combined with optimised software materials offers increased linearity for fast, accurate and undistorted bass reproduction at extreme SPL.

12 mm Xmax with 64 mm peak-to-peak travel.

Ideal for bass reflex and scoop enclosure designs from 125-400 Litres.

Also performs well in horn loaded systems.

4-Inch Inside / Outside windings copper voice coil.

---

**TECHNICAL & THEILE SMALL PARAMETERS**

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<th>Parameter</th>
<th>Specification</th>
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<td>Qms</td>
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<td>Qts</td>
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<td>Efficiency</td>
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<tr>
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<tr>
<td>EBP</td>
<td>81.68 Hz</td>
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<tr>
<td>Effective Piston Diameter</td>
<td>15.43” / 391.92 mm</td>
</tr>
<tr>
<td>Rec. Enclosure Volume</td>
<td>4.41 - 14.12 ft³ / 125 - 400 Litres</td>
</tr>
</tbody>
</table>

---

**FREQUENCY RESPONSE DATA**

(3) Half space response measured in a 975 Litre sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.

(4) Positive voltage at red terminal causes forward motion of cone.

---

**MOUNTING / SHIPPING INFORMATION**

- Overall Diameter: 19.1” / 485 mm
- Width Across Flats: 18” / 457 mm
- Depth: 8.50” / 216 mm
- Flange Height: 0.465” / 11.8 mm
- Baffle Hole Diameter F/M: 16.53” / 419.86 mm
- Baffle Hole Diameter R/M: 16.33” / 414.78 mm
- Chassis Material: Die-cast Aluminium
- Gasket Supplied: Front & Rear
- Outer Fixing Holes: 8x ø 0.275” on 18.425” PCD / 8x ø 7 mm on 468 mm PCD
- Inner Fixing Holes: 8x ø 0.275” on 17.25” PCD / 8x ø 7 mm on 438.15 mm PCD
- Connectors: Push-button Spring Terminals
- Weight: 33.75 lb / 15.3 kg
- Shipping Weight: 37.45 lb / 17 kg
- Packing Carton Dimensions (mm): (W) 495 (D) 495 (H) 255

---

**IMPEDANCE**

(3) AES power handling test. Pink noise bandpass filtered at 12 dB per octave with cutoff frequencies of 30 Hz and 300 Hz. Driver mounted in free air, test signal applied at rated power for two hours.

(4) Positive voltage at red terminal causes forward motion of cone.
Great replacement driver for most bass reflex applications.

- Vented chassis and motor design provides efficient thermal management and extremely low power compression.
- High BL factor, 25.9 T/m.
- Dual ‘spaced’ suspension system and advanced materials offers ultra-linearity, mechanical stability and superior acoustic performance at high levels of excursion.
- Ribbed, fibre loaded, UK manufactured cone offers increased strength, durability and resistance to deformation under extreme loads.
- Designed for optimum use in 100-250 Litre ported enclosure designs.
- 4-Inch Inside / Outside windings copper voice coil.

**GENERAL SPECIFICATIONS**

- Nominal Chassis Diameter: 18” / 457.2 mm
- Nominal Impedance (1): 8 Ohm
- Minimum Impedance Zmin: 6.5 Ω
- AES Power Handling (3): 1000 W (A.E.S.)
- Program Power: 2000 W
- Peak Power (6dB Crest Factor): 4000 W
- Frequency Range: 35 Hz - 1 kHz
- Sensitivity (1W/ 1m): 99 dB
- Magnet Material: Ferrite
- Magnet Weight: 12 oz
- Magnetic Gap Depth: 0.39” / 10 mm
- Flux Density: 1.2 Tesla
- Former Material: Glass Fibre
- Voice Coil Material: Copper - Inside / Outside
- Coil Winding Height: 0.90” / 23 mm
- Voice Coil Diameter: 4” / 101.6 mm
- Cone/ Dust Dome Material: Straight Poly-cellulose
- Surround / Edge: Polyvinyl Damped Multi
- Termination: Roll, Poly Cotton

**TECHNICAL & THEILE SMALL PARAMETERS**

- Fs: 33 Hz
- Re: 6.5 Ω
- Qms: 5.77
- Qts: 0.337
- Vas: 236 Litres
- Vd: 0.803 Litres
- Cms: 0.13 mm/N
- Bi: 25.9 T/m
- Mms: 173 g
- Xmax: 7.5 mm
- Sd: 1131 cm²
- Efficiency: 2.3 %
- Le (1kHz): 1.99 mH
- EBP: 92.18 Hz
- Effective Piston Diameter: 15.03” / 381.76 mm
- Rec. Enclosure Volume: 3.53 - 8.82 ft³ / 125 - 400 Litres

**MOUNTING / SHIPPING INFORMATION**

- Overall Diameter: 19.1” / 485 mm
- Width Across Flats: 18” / 457 mm
- Depth: 8.05” / 205 mm
- Flange Height: 0.465” / 11.8 mm
- Baffle Hole Diameter F/M: 16.53” / 419.86 mm
- Baffle Hole Diameter R/M: 16.33” / 414.78 mm
- Chassis Material: Die-cast Aluminium
- Gasket Supplied: Front & Rear
- Outer Fixing Holes: 8x ø 0.275” on 18.425” PCD /
- Inner Fixing Holes: 8x ø 7 mm on 438.15 mm PCD
- Connectors (4): Push-button Spring Terminals
- Weight: 31.29 lb / 14.2 kg
- Shipping Weight: 35.26 lb / 16 kg
- Packing Carton Dimensions (mm): (W) 512 (D) 512 (H) 244

**FREQUENCY RESPONSE DATA**

- Half space response measured in a 975 Litre sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.

**IMPEDANCE**

- Half space response measured in a 975 Litre sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.
Chassis and motor system venting provides efficient thermal management and extremely low power compression. Dual silicone laminated suspension system combined with optimised software materials offers increased linearity for light, punchy bass reproduction at extreme SPL. Fibre loaded, UK manufactured cone offering increased strength, durability and performance. Optimised for ported enclosures, delivering bass down to 35 Hz in a 200 Litre enclosure. 4-Inch Inside / Outside windings copper voice coil.

**General Specifications**

- Nominal Chassis Diameter: 18” / 457.2 mm
- Nominal Impedance: 8 Ohm
- Minimum Impedance: 6.5 Ω
- AES Power Handling: 1000 W (A.E.S.)
- Program Power: 2000 W
- Peak Power: 4000 W
- Frequency Range: 35 Hz - 2.5 kHz
- Sensitivity: 100 dB
- Magnet Material: Ferrite
- Magnet Weight: 120 oz
- Magnetic Gap Depth: 0.43” / 11 mm
- Flux Density: 1.1 Tesla
- Former Material: Glass Fibre
- Voice Coil Material: Copper - Inside / Outside
- Cone/Winding Height: 0.87” / 22 mm
- Voice Coil Diameter: 4” / 101.6 mm
- Cone/Dust Dome Material: Curvilinear Poly-cellulose / Solid Paper
- Surround/Edge Termination: Polyvinyl Damped Multi Roll, Poly Cotton

**Technical & Thiele Small Parameters**

- Fs: 36 Hz
- Re: 5.2 Ω
- Qms: 6.583
- Qes: 0.366
- Qts: 0.346
- Vas: 199 Litres
- Vd: 0.893 Litres
- Cms: 0.109 mm/N
- Bm: 24 T/m
- Mms: 177.2 g
- Xmax: 8.25 mm
- Sl: 1134 cm²
- Efficiency: 2.49 %
- Le (1K Hz): 2.23 mH
- EBP: 98.36 Hz
- Effective Piston Diameter: 14.84” / 376.93 mm
- Rec. Enclosure Volume: 4.41 - 14.12 ft³ / 125 - 400 Litres

**Mounting / Shipping Information**

- Overall Diameter: 19.1” / 485 mm
- Width Across Flats: 18” / 457 mm
- Depth: 7.91” / 201 mm
- Flange Height: 0.465” / 11.8 mm
- Baffle Hole Diameter F/M: 16.53” / 419.86 mm
- Baffle Hole Diameter R/M: 16.33” / 414.78 mm
- Chassis Material: Die-cast Aluminium
- Gasket Supplied: Front & Rear
- Outer Fixing Holes: 8 x ø 0.275” on 18.425” PCD / 8 x ø 7 mm on 468 mm PCD
- Inner Fixing Holes: 8 x ø 0.275” on 17.25” PCD / 8 x ø 7 mm on 438.15 mm PCD
- Connectors: Push-button Spring Terminals
- Weight: 27.6 lb / 12.51 kg
- Shipping Weight: 28.9 lb / 13.1 kg
- Packing Carton Dimensions: (W) 485 (D) 485 (H) 230 mm

**FREQUENCY RESPONSE DATA**

Please enquire about alternative impedances.

(1) A.E.S. power handling test. Pink noise bandpass filtered at 12 dB per octave with cutoff frequencies of 30 Hz and 300 Hz. Driver mounted in free air; test signal applied at rated power for two hours.

(2) Half space response measured in a 975 Litre sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.

(3) Positive voltage at red terminal causes forward motion of cone.
COLOSSUS 15SB
BASS DRIVER

15” / 381 mm
CHASSIS DIAMETER
1600 W
PROGRAM POWER
40 Hz - 3 kHz
FREQUENCY RESPONSE
4” / 101.6 mm
VOICE COIL DIAMETER
99 dB
SENSITIVITY (1W/1m)
6.5 mm Xmax
MAX. LINEAR EXCURSION

+ Offers high SPL and attack in two-way ported enclosures.
+ Optimised non-inductive motor system efficiently controls magnetic flux and reduces third-harmonic and intermodulation distortion.
+ Dynamic, smooth and detailed low frequency reproduction.
+ Best suited for use in bass reflex enclosures, delivering bass down to 30Hz (-6dB) in a 125 Litre enclosure.
+ Can also be used well in horn loaded enclosure designs.
+ 4-inch Inside / Outside windings CCAW voice coil.
+ Waterproof cone.

<table>
<thead>
<tr>
<th>GENERAL SPECIFICATIONS</th>
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<tr>
<td>Nominal Chassis Diameter 15” / 381 mm</td>
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<tr>
<td>Minimum Impedance Zmin 7.3 Ω</td>
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<td>AES Power Handling (2) 800 W (A.E.S.)</td>
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<td>Program Power 1600 W</td>
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<td>Peak Power (6dB Crest Factor) 3200 W</td>
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<td>Frequency Range (4dB) 40 Hz - 3 kHz</td>
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<td>Sensitivity (1W/1m) 99 dB</td>
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<td>Magnet Material Ferrite</td>
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<td>Magnet Weight 120 oz</td>
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<td>Magnetic Gap Depth 0.43” / 11 mm</td>
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<tr>
<td>Flux Density 1.1 Tesla</td>
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<tr>
<td>Former Material Glass Fibre</td>
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<td>Voice Coil Material CCAW - Inside / Outside</td>
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<tr>
<td>Coil Winding Height 0.75” / 19 mm</td>
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<tr>
<td>Voice Coil Diameter 4” / 101.6 mm</td>
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<tr>
<td>Cone/ Dust Dome Material Curvilinear Poly-cellulose / Paper</td>
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<td>Surround / Edge Polyvinyl Damped Half Roll Linen</td>
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<tr>
<td>TERMINAL DETAILS</td>
</tr>
<tr>
<td>Connectors (4) Push-button Spring Terminals</td>
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<tr>
<td>Weight 22.48 lb / 10.2 kg</td>
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<tr>
<td>Shipping Weight 25.5 lb / 11.5 kg</td>
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<tr>
<td>Packing Carton Dimensions (mm) (W) 440 (D) 440 (H) 220</td>
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TECHNICAL & THEILE SMALL PARAMETERS

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<td>Qts</td>
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<tr>
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<tr>
<td>Le (1k Hz)</td>
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<td>EBP</td>
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<td>Rec. Enclosure Volume</td>
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MOUNTING / SHIPPING INFORMATION

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<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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<tr>
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<tr>
<td>Width Across Flats</td>
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<tr>
<td>Depth</td>
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<td>Flange Height</td>
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<td>Baffle Hole Diameter F/M</td>
<td>13.85” / 351.79 mm</td>
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<td>Baffle Hole Diameter R/M</td>
<td>14” / 355.6 mm</td>
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<td>Chassis Material</td>
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<td>Gasket Supplied</td>
<td>Front &amp; Rear</td>
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<td>Outer Fixing Holes</td>
<td>4 x ø 7.1 mm on 393.7 mm PCD</td>
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<td>Inner Fixing Holes</td>
<td>8 x ø 7.1 mm on 370 mm PCD</td>
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<td>Connectors (4)</td>
<td>Push-button Spring Terminals</td>
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<td>Packing Carton Dimensions (mm) (W) 440 (D) 440 (H) 220</td>
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FREQUENCY RESPONSE DATA (3)

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<td>100</td>
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<tr>
<td>10 kHz</td>
<td>+40</td>
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<tr>
<td>20 kHz</td>
<td>+30</td>
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IMPEDANCE

<table>
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<th>Impedance (Ohms)</th>
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<tr>
<td>5 kHz</td>
<td>+30</td>
</tr>
<tr>
<td>10 kHz</td>
<td>+20</td>
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(1) Please enquire about alternative impedances.
(2) A.E.S. power handling test. Pink noise bandpass filtered at -12 dB per octave with cutoff frequencies of 45 Hz and 450 Hz. Driver mounted in free air, test signal applied at rated power for two hours.
(3) Half space response measured in a 975 Litre sealed box. Blue line = fundamental 45° off-axes. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.
(4) Positive voltage at red terminal causes forward motion of cone.
SOVEREIGN PRO 15-600
SUB BASS DRIVER

15” / 381 mm
CHASSIS DIAMETER
1200 W
PROGRAM POWER
38 Hz - 3.5 kHz
FREQUENCY RESPONSE
3” / 76.2 mm
VOICE COIL DIAMETER
98 dB
SENSITIVITY (1W/ 1m)
17.5 t/m
BL FORCE FACTOR

+ Highly versatile solution for two and three-way systems where high BL and maximum punch are required.
+ Excellent linear response with well controlled bass reproduction and smooth mid-range performance.
+ Especially suited to horn loaded, band pass and compact bass reflex applications.
+ UK manufactured cone with optimised pulp offering increased strength, durability and performance.
+ 3-Inch Copper voice coil.

GENERAL SPECIFICATIONS
Nominal Chassis Diameter 15” / 381 mm
Nominal Impedance (1) 8 Ohm
Minimum Impedance Zmin 6.5 Ω
AES Power Handling (2) 600 W (A.E.S.)
Program Power 1200 W
Peak Power (8dB Crest Factor) 2400 W
Frequency Range (4dB) 38 Hz - 3.5 kHz
Sensitivity (1W/ 1m) 98 dB
Magnet Material Ferrite
Magnet Weight 85 oz
Magnetic Gap Depth 0.39” / 10 mm
Flux Density 1 Tesla
Former Material Glass Fibre
Voice Coil Material Copper
Coil Winding Height 0.70” / 18 mm
Voice Coil Diameter 3” / 76.2 mm
Cone/ Dust Dome Material Curvilinear Poly-cellulose / Solid Paper
Surround / Edge Polyvinyl Damped Dbl.
Termination Half Roll Poly Cotton

TECHNICAL & THIELE SMALL PARAMETERS
Fs 38 Hz
Re 5.4 Ω
Qms 3.52
Qts 0.39
Qts 0.351
Vas 201 Litres
Vd 0.513 Litres
Cms 0.196 mm/N
Bl 17.5 T/m
Mms 89.5 g
Xmax 6 mm
Sd 850 cm²
Efficiency 2.76 %
Le (1k Hz) 1.95 mH
EBP 97.44 Hz
Effective Piston Diameter 13.03” / 330.96 mm
Rec. Enclosure Volume 2.64 - 5.29 ft³ / 75 - 150 Litres

MOUNTING / SHIPPING INFORMATION
Overall Diameter 16” / 406.4 mm
Width Across Flats 15.25” / 387.35 mm
Depth 6.69” / 169.92 mm
Flange Height 0.30” / 7.62 mm
Baffle Hole Diameter F/M 13.85” / 351.79 mm
Baffle Hole Diameter R/M 14” / 355.6 mm
Chassis Material Die-cast Aluminium
Gasket Supplied Front & Rear
Outer Fixing Holes 4 x ø 0.281” on 15.5” PCD / 4 x ø 7.1 mm on 393.7 mm PCD
Inner Fixing Holes 8 x ø 0.281” on 14.56” PCD / 8 x ø 7.1 mm on 370 mm PCD
Connectors (4) Push-button Spring Terminals
Weight 17.52 lb / 7.95 kg
Shipping Weight 20.05 lb / 9.1 kg
Packing Carton Dimensions (mm) (W) 410 (D) 410 (H) 210

FREQUENCY RESPONSE DATA (3)

IMPEDEANCE

(1) Please enquire about alternative impedances.
(2) A.E.S. power handling test. Pink noise bandpass filtered at 12 dB per octave with cutoff frequencies of 40 Hz and 400 Hz. Driver mounted in free air; test signal applied at rated power for two hours.
(3) Half space response measured in a 975 Litr e sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.
(4) Positive voltage at red terminal causes forward motion of cone.
SOVEREIGN PRO 15-600LF
BASS DRIVER

15” / 381 mm
CHASSIS DIAMETER
1200 W
PROGRAM POWER
35 Hz - 3.5 kHz
FREQUENCY RESPONSE

3” / 76.2 mm
VOICE COIL DIAMETER
98 dB
SENSITIVITY (1W/ 1m)
7 mm Xmax
MAX. LINEAR EXCURSION

+ Highly versatile in two-way ported enclosures.
+ Smooth frequency response and balanced tonal character.
+ Long throw motor system and surround for solid bass reproduction at high power levels.
+ Delivers tight accurate bass down to 35 Hz in 75-150 Litre enclosures.
+ UK manufactured cone with optimised pulp offering increased strength, durability and performance.
+ 3-Inch Copper voice coil.

Highly versatile in two-way ported enclosures.
Smooth frequency response and balanced tonal character.
Long throw motor system and surround for solid bass reproduction at high power levels.
Delivers tight accurate bass down to 35 Hz in 75-150 Litre enclosures.
UK manufactured cone with optimised pulp offering increased strength, durability and performance.
3-Inch Copper voice coil.

† Please enquire about alternative impedances.
†† A.E.S. power handling test. Pink noise bandpass filtered at 12 dB per octave with cutoff frequencies of 40 Hz and 400 Hz. Driver mounted in free air, test signal applied at rated power for two hours.
††† Half space response measured in a 975 Litre sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.
†(4) Positive voltage at red terminal causes forward motion of cone.

TECHNICAL & THIELE SMALL PARAMETERS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Fs</td>
<td>40 Hz</td>
</tr>
<tr>
<td>Re</td>
<td>6.5 Ω</td>
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<td>Qms</td>
<td>8.8</td>
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<td>Qes</td>
<td>0.38</td>
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<tr>
<td>Qts</td>
<td>0.37</td>
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<tr>
<td>Vas</td>
<td>188 Litres</td>
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<tr>
<td>Vd</td>
<td>0.59 Litres</td>
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<td>Cms</td>
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<tr>
<td>Bl</td>
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<td>Mms</td>
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<td>Xmax</td>
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<tr>
<td>Sd</td>
<td>856 cm²</td>
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<tr>
<td>Efficiency</td>
<td>3.05 %</td>
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<tr>
<td>Le (1k Hz)</td>
<td>1.85 mH</td>
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<tr>
<td>EBP</td>
<td>105.26 Hz</td>
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<td>Effective Piston Diameter</td>
<td>13.03” / 330.96 mm</td>
</tr>
<tr>
<td>Rec. Enclosure Volume</td>
<td>2.64 - 5.29 ft³ / 75 - 150 Litres</td>
</tr>
</tbody>
</table>

GENERAL SPECIFICATIONS

Nominal Chassis Diameter 15” / 381 mm
Nominal Impedance (1) 8 Ohm
Minimum Impedance Zmin 6.5 Ω
AES Power Handling (2) 600 W (A.E.S.)
Program Power 1200 W
Peak Power (6dB Crest Factor) 2400 W
Frequency Range (±1dB) 35 Hz - 3.5 kHz
Sensitivity (1W/ 1m) 98 dB
Magnet Material Ferrite
Magnet Weight 100 oz
Magnetic Gap Depth 0.39” / 10 mm
Flux Density 1.1 Tesla
Former Material Glass Fibre
Voice Coil Material Copper
Coil Winding Height 0.75” / 19 mm
Voice Coil Diameter 3” / 76.2 mm
Cone/ Dust Dome Material Curvilinear Paper / Paper
Surround / Edge Termination Polyvinyl Damped Multi Roll, Poly Cotton

MOUNTING / SHIPPING INFORMATION

Overall Diameter 16” / 406.4 mm
Width Across Flats 15.25” / 387.35 mm
Depth 6.85” / 174 mm
Flange Height 0.30” / 7.62 mm
Baffle Hole Diameter F/M 13.85” / 351.79 mm
Baffle Hole Diameter R/M 14” / 355.6 mm
Chassis Material Die-cast Aluminium
Gasket Supplied Front & Rear
Outer Fixing Holes 4x ø 0.281” on 15.5” PCD / 4x ø 7.1 mm on 393.7 mm PCD
Inner Fixing Holes 8x ø 0.281” on 14.56” PCD / 8x ø 7.1 mm on 370 mm PCD
Connectors (4) Push-button Spring Terminals
Weight 20.49 lb / 9.3 kg
Shipping Weight 23.03 lb / 10.45 kg
Packing Carton Dimensions (mm) (W) 410 (D) 410 (H) 225

FREQUENCY RESPONSE DATA (3)

IMPEDANCE
**CHASSIS DIAMETER PROGRAM POWER FREQUENCY RESPONSE SENSITIVITY (1W/ 1m) MAX. LINEAR EXCURSION**

**VOICE COIL DIAMETER IMPEDANCE FREQUENCY RESPONSE DATA**

- High SPL output, 98 dB (1W / 1m).
- Optimised non-inductive motor system efficiently controls magnetic flux and reduces third-harmonic and intermodulation distortion.
- Undistorted low frequencies at high output levels.
- Fast and dynamic driver producing punchy bass.
- Extended frequency range up to 3.5 kHz.
- Aluminium demodulation and Copper shorting rings.
- UK manufactured cone with optimised pulp offering increased strength, durability and performance.
- Performs best in ported enclosures of 25-80 Litres.
- 3-Inch Inside / Outside windings aluminium voice coil.

**GENERAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Chassis Diameter</td>
<td>12&quot; / 304.8 mm</td>
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<tr>
<td>Nominal Impedance (1)</td>
<td>8 Ohm</td>
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<tr>
<td>Minimum Impedance Zmin</td>
<td>7.5 Ω</td>
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<tr>
<td>AES Power Handling (2)</td>
<td>500 W (A.E.S.)</td>
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<tr>
<td>Program Power</td>
<td>1000 W</td>
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<tr>
<td>Peak Power (RMS Crest Factor)</td>
<td>2000 W</td>
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<tr>
<td>Frequency Range (4dB)</td>
<td>40 Hz - 3.5 kHz</td>
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<td>Sensitivity (1W/1m)</td>
<td>98 dB</td>
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<tr>
<td>Magnet Material</td>
<td>Ferrite</td>
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<tr>
<td>Magnet Weight</td>
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<tr>
<td>Magnetic Gap Depth</td>
<td>0.35&quot; / 9 mm</td>
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<tr>
<td>Flux Density</td>
<td>1.16 Tesla</td>
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<tr>
<td>Former Material</td>
<td>Glass Fibre</td>
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<tr>
<td>Voice Coil Material</td>
<td>Aluminium - Inside / Outside</td>
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<tr>
<td>Voice Coiling Height</td>
<td>0.70&quot; / 18 mm</td>
</tr>
<tr>
<td>Voice Coil Diameter</td>
<td>3&quot; / 76.2 mm</td>
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<tr>
<td>Cone/Dust Dome Material</td>
<td>Curvilinear Poly-cellulose / Solid Paper</td>
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<tr>
<td>Surround / Edge Termination</td>
<td>Polyvinyl Damped Multi Roll, Poly Cotton</td>
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<tr>
<td>Efficiency</td>
<td>2.71 %</td>
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<tr>
<td>Le (1kHz)</td>
<td>1.56 mH</td>
</tr>
<tr>
<td>EBP (1kHz)</td>
<td>165.17 Hz</td>
</tr>
<tr>
<td>Effective Piston Diameter</td>
<td>10.24&quot; / 260.09 mm</td>
</tr>
<tr>
<td>Rec. Enclosure Volume</td>
<td>0.88 - 2.83 ft³ / 25 - 80 Litres</td>
</tr>
</tbody>
</table>

**TECHNICAL & THIELE SMALL PARAMETERS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>Fs</td>
<td>55 Hz</td>
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<tr>
<td>Re</td>
<td>5.5 Ω</td>
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<tr>
<td>Qms</td>
<td>2.05</td>
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<tr>
<td>Qes</td>
<td>0.333</td>
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<tr>
<td>Qts</td>
<td>0.286</td>
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<tr>
<td>Vd</td>
<td>0.29 litres</td>
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<tr>
<td>Vs</td>
<td>56 litres</td>
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<tr>
<td>Bl</td>
<td>18.3 T/m</td>
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<tr>
<td>Mms</td>
<td>59 g</td>
</tr>
<tr>
<td>Xmax</td>
<td>5.5 mm</td>
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<tr>
<td>Sd</td>
<td>530 cm²</td>
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<tr>
<td>Efficiency</td>
<td>2.71 %</td>
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<tr>
<td>Le (1kHz)</td>
<td>1.56 mH</td>
</tr>
<tr>
<td>EBP (1kHz)</td>
<td>165.17 Hz</td>
</tr>
<tr>
<td>Effective Piston Diameter</td>
<td>10.24&quot; / 260.09 mm</td>
</tr>
<tr>
<td>Rec. Enclosure Volume</td>
<td>0.88 - 2.83 ft³ / 25 - 80 Litres</td>
</tr>
</tbody>
</table>

**MOUNTING / SHIPPING INFORMATION**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Diameter</td>
<td>13&quot; / 330.2 mm</td>
</tr>
<tr>
<td>Width Across Flats</td>
<td>12.19&quot; / 309.52 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>5.17&quot; / 131.3 mm</td>
</tr>
<tr>
<td>Flange Height</td>
<td>0.305&quot; / 7.8 mm</td>
</tr>
<tr>
<td>Baffle Hole Diameter F/M</td>
<td>11.03&quot; / 280.16 mm</td>
</tr>
<tr>
<td>Baffle Hole Diameter R/M</td>
<td>10.13&quot; / 257.30 mm</td>
</tr>
<tr>
<td>Chassis Material</td>
<td>Die-cast Aluminium</td>
</tr>
<tr>
<td>Gasket Supplied</td>
<td>Front &amp; Rear</td>
</tr>
<tr>
<td>Outer Fixing Holes</td>
<td>4x ø 0.218&quot; on 12.5&quot; PCD / 4x ø 5.5 mm on 317.5 mm PCD</td>
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<tr>
<td>Inner Fixing Holes</td>
<td>N/A</td>
</tr>
<tr>
<td>Connectors (3)</td>
<td>Push-button Spring Terminals</td>
</tr>
<tr>
<td>Weight</td>
<td>17.1 lb / 7.8 kg</td>
</tr>
<tr>
<td>Shipping Weight</td>
<td>20.2 lb / 9.2 kg</td>
</tr>
<tr>
<td>Packing Carton Dimensions (mm)</td>
<td>(W) 330 (D) 330 (H) 178</td>
</tr>
</tbody>
</table>

(1) Please enquire about alternative impedances.
(2) A.E.S. power handling test. Pink noise bands-limited at 12 dB per octave with cutoff frequencies of 50 Hz and 500 Hz. Driver mounted in free air, test signal applied at rated power for two hours.
(3) Half space response measured in a 975 Ltr sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.
(4) Positive voltage at red terminal causes forward motion of cone.
**COLOSSUS 12MBN**  
**BASS / MID-RANGE DRIVER**

<table>
<thead>
<tr>
<th>CHASSIS DIAMETER</th>
<th>12&quot; / 304.8 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROGRAM POWER</td>
<td>1000 W</td>
</tr>
<tr>
<td>FREQUENCY RESPONSE</td>
<td>40 Hz - 4 kHz</td>
</tr>
<tr>
<td>MAX. LINEAR EXCURSION</td>
<td>5.5 mm Xmax</td>
</tr>
</tbody>
</table>

- Weighs only 4.3 kg thanks to a lightweight neodymium magnet motor assembly.
- Optimised non-inductive motor system efficiently controls magnetic flux and reduces third-harmonic and intermodulation distortion.
- Excels when deployed in line array applications for fast, dynamic and punchy bass.
- Extended frequency range working up to 4 kHz.
- Aluminium demodulation and copper shorting Rings.
- Intended as a high-output mid-bass driver in two-way ported enclosures of 25-80 Litres.
- Also performs well as a bass driver in multi-way systems.
- 3-Inch Inside / Outside windings aluminium voice coil.

**GENERAL SPECIFICATIONS**

- Nominal Chassis Diameter: 12" / 304.8 mm
- Nominal Impedance: 8 Ohm
- Minimum Impedance: 7.5 Ω
- AES Power Handling: 500 W (A.E.S.)
- Program Power: 1000 W
- Peak Power (90% Crest Factor): 2000 W
- Frequency Range: 40 Hz - 4 kHz
- Sensitivity: 98.5 dB
- Magnet Material: Neodymium
- Magnet Weight: oz
- Magnetic Gap Depth: 0.39" / 10 mm
- Flux Density: 1.1 Tesla
- Former Material: Glass Fibre
- Voice Coil Material: Aluminium - Inside / Outside
- Coil Winding Height: 0.70" / 18 mm
- Voice Coil Diameter: 3" / 76.2 mm

**TECHNICAL & THIELE SMALL PARAMETERS**

- Fs: 55 Hz
- Re: 5.5 Ω
- Qms: 4.13
- Qts: 0.396
- Vas: 56 Litres
- Vd: 0.296 Litres
- Cms: 0.142 mm/N
- Bl: 16.6 T/m
- Mms: 59 g
- Xmax: 5.5 mm
- Le (1k Hz): 1.39 mH
- EB: 125.57 Hz
- Effective Piston Diameter: 10.24" / 260.09 mm
- Rec. Enclosure Volume: 0.88 - 2.83 ft³ / 25 - 80 Litres

**MOUNTING / SHIPPING INFORMATION**

- Overall Diameter: 13" / 330.2 mm
- Width Across Flats: 12.19" / 309.62 mm
- Depth: 5.53" / 140.6 mm
- Flange Height: 0.305" / 7.8 mm
- Baffle Hole Diameter F/M: 11.03" / 280.16 mm
- Baffle Hole Diameter R/M: 10.13" / 257.30 mm
- Chassis Material: Die-cast Aluminium
- Gasket Supplied: Front & Rear
- Outer Fixing Holes: 4 x ø 0.218" on 12.5" PCD / 4 x ø 5.5 mm on 317.5 mm PCD
- Inner Fixing Holes: N/A
- Connectors: Push-button Spring Terminals
- Weight: 9.47 lb / 4.3 kg
- Shipping Weight: 11.68 lb / 5.3 kg
- Packing Carton Dimensions: (W) 330 (D) 330 (H) 170 mm

**FREQUENCY RESPONSE DATA**

(1) Please enquire about alternative impedances.
(2) A.E.S. power handling test. Pink noise bandpass filtered at 12 dB per octave with cutoff frequencies of 50 Hz and 500 Hz. Driver mounted in free air; test signal applied at rated power for two hours.
(3) Half space response measured in a 975 Litr e sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.
(4) Positive voltage at red terminal causes forward motion of cone.

© 2018, Fane International Ltd. We operate a policy of continuous research and development and as such published specifications are subject to change without notice. www.fane-international.com
Deep bass and well balanced tonal character with extended frequency output.

- High linearity suspension and long-throw motor system.
- UK manufactured cone with optimised pulp offering increased strength, durability and performance.
- 3-Inch Inside / Outside windings CCAW voice coil.

**GENERAL SPECIFICATIONS**

- Nominal Chassis Diameter: 12” / 304.8 mm
- Nominal Impedance: 8 Ohm
- Minimum Impedance: 6.84 Ω
- AES Power Handling: 500 W (A.E.S.)
- Program Power: 1000 W
- Peak Power (10% Crest Factor): 2000 W
- Frequency Range: 45 Hz - 4.5 kHz
- Sensitivity: 97.5 dB
- Magnet Material: Ferrite
- Magnet Weight: 80 oz
- Magnetic Gap Depth: 0.39” / 10 mm
- Flux Density: 1.1 Tesla
- Former Material: Glass Fibre
- Voice Coil Material: CCAW - Inside / Outside
- Cone / Dust Dome Material: Curvilinear Paper / Solid Paper
- Surround / Edge: Polyvinyl Damped Multi Roll, Poly Cotton

**TECHNICAL & THIELE SMALL PARAMETERS**

- Fs: 43 Hz
- Re: 5.6 Ω
- Qms: 3.04
- Qes: 0.35
- Qts: 0.314
- Vas: 107 Litres
- Vd: 0.339 Litres
- Cms: 0.236 mm/N
- Bi: 16 T/m
- Mms: 58 g
- Xmax: 6 mm
- Sd: 565 cm²
- Efficiency: 2.34%
- Le (1k Hz): 1.6 mH
- EBp: 122.86 Hz
- Effective Piston Diameter: 10.31” / 261.87 mm
- Rec. Enclosure Volume: 1.23 ft³ / 35 Litres

**MOUNTING / SHIPPING INFORMATION**

- Overall Diameter: 12.37” / 314 mm
- Width Across Flats: N/A
- Depth: 5.7” / 145 mm
- Flange Height: 0.339” / 8.61 mm
- Baffle Hole Diameter F/M: 11.13” / 282.70 mm
- Baffle Hole Diameter R/M: N/A
- Chassis Material: Die-cast Aluminium
- Gasket Supplied: Front & Rear
- Outer Fixing Holes: 8 x ø 7.0 mm on 11.5” / 294 mm PCD
- Inner Fixing Holes: N/A
- Connectors: Push-button Spring Terminals
- Weight: 16.5 lb / 7.5 kg
- Shipping Weight: 17.63 lb / 8.0 kg
- Packing Carton Dimensions (mm): (W) 330, (D) 330, (H) 178

**FREQUENCY RESPONSE DATA**

- Half space response measured in a 975 Litr e sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.

**IMPEDANCE**

- Positive voltage at red terminal causes forward motion of cone.

---

(1) Please enquire about alternative impedances.

(2) A.E.S. power handling test. Pink noise bandpass filtered at 12 dB per octave with cutoff frequencies of 45 Hz and 450 Hz. Driver mounted in free air, test signal applied at rated power for two hours.

(3) Half space response measured in a 975 Litr e sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.

(4) Positive voltage at red terminal causes forward motion of cone.
SOVEREIGN PRO 10-300SC
BASS DRIVER

<table>
<thead>
<tr>
<th>Nominal Chassis Diameter</th>
<th>10&quot; / 254 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Impedance</td>
<td>8 Ohm</td>
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<tr>
<td>Minimum Impedance Zmin</td>
<td>6.24 Ω</td>
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<tr>
<td>AES Power Handling</td>
<td>300 W (A.E.S.)</td>
</tr>
<tr>
<td>Program Power</td>
<td>600 W</td>
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<tr>
<td>Peak Power (1k Hz)</td>
<td>1200 W</td>
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<tr>
<td>Frequency Range (1kHz)</td>
<td>45 Hz - 4 kHz</td>
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<td>Sensitivity (1W/1m)</td>
<td>98 dB</td>
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<td>Magnet Material</td>
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<td>Magnet Weight</td>
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<td>Magnetic Gap Depth</td>
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<td>Flux Density</td>
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<td>Former Material</td>
<td>Kapton</td>
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<td>Voice Coil Material</td>
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<td>Coil Winding Height</td>
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<td>Voice Coil Diameter</td>
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<td>Cone/ Dust Dome Material</td>
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<td>Surround / Edge</td>
<td>Polyvinyl Damped Dbl.</td>
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<td>Termination</td>
<td>Half Roll Linen</td>
</tr>
</tbody>
</table>

**TECHNICAL & THEILE SMALL PARAMETERS**

- **Fs** 47 Hz
- **Re** 5.5 Ω
- **Qms** 10.13
- **Qes** 0.34
- **Qts** 0.33
- **Vas** 45.43 Litres
- **Vd** 0.172 Litres
- **Cms** 0.245 mm/N
- **Bl** 14.8 T/m
- **Mms** 46.8 g
- **Xmax** 4.75 mm
- **Sd** 361 cm²
- **Efficiency** 1.7 %
- **Le (1kHz)** 1.27 mH
- **EBP** 138.24 Hz
- **Effective Piston Diameter** 8.19" / 208.02 mm
- **Rec. Enclosure Volume** 0.88 - 1.76 ft³ / 25 - 50 Litres

**MOUNTING / SHIPPING INFORMATION**

- **Overall Diameter** 11.16" / 283.4 mm
- **Width Across Flats** 10.343" / 262.7 mm
- **Depth** 4.37" / 111 mm
- **Flange Height** 0.305" / 7.8 mm
- **Baffle Hole Diameter F/M** 8.97" / 227.83 mm
- **Baffle Hole Diameter R/M** N/A
- **Chassis Material** Die-cast Aluminium
- **Gasket Supplied** Rear
- **Outer Fixing Holes** 4x ø 0.218" on 10.625" PCD / 4x ø 5.5 mm on 270 mm PCD
- **Inner Fixing Holes** N/A
- **Connectors** Push-button Spring Terminals
- **Weight** 10.14 lb / 4.6 kg
- **Shipping Weight** 11.35 lb / 5.15 kg
- **Packing Carton Dimensions (mm)** (W) 275 (D) 275 (H) 150

**FREQUENCY RESPONSE DATA**

- Highly versatile in two-way ported enclosures.
- Warm and smooth response throughout the bass frequency range.
- Specially formulated cone coating provides HF vocal clarity.
- Optimised cone pulp offering increased strength, durability and performance.
- Long throw motor and high-linearity suspension system allow solid bass reproduction.
- Perfect for full range KTV systems.
- 2.5-Inch Copper clad aluminium voice coil.

**IMPEDANCE**

(1) Please enquire about alternative impedances.
(2) A.E.S. power handling test. Pink noise bandpass filtered at 12 dB per octave with cutoff frequencies of 50 Hz and 500 Hz. Driver mounted in free air, test signal applied at rated power for two hours.
(3) Half space response measured in a 975 Litr e sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.
(4) Positive voltage at red terminal causes forward motion of cone.
**Sovereign Pro 10-300**

**Bass Driver**

**Nominal Chassis Diameter**: 10" / 254 mm

**Program Power**: 600 W

**Frequency Response**: 45 Hz - 4 kHz

**Voice Coil Diameter**: 2.5" / 63.5 mm

**Sensitivity (1W/1m)**: 98 dB

**Max. Linear Excursion**: 5.5 mm Xmax

- Smooth and balanced frequency response.
- High linearity suspension system.
- Long throw motor structure 5.5 mm Xmax.
- Intended for use in two-way ported enclosures such as the classic bass driver plus horn tweeter or compression driver.
- 2.5-Inch Inside / Outside windings copper voice coil.

**Technical & Thiele Small Parameters**

- **Fs**: 58 Hz
- **Re**: 5.7 Ω
- **Qms**: 6.08
- **Qts**: 0.32
- **Qes**: 0.34
- **Vas**: 41 Litres
- **Vd**: 0.208 Litres
- **Cms**: 0.211 mm/N
- **Bl**: 15.3 T/m
- **Mms**: 37 g
- **Sd**: 378 cm²
- **Efficiency**: 2.36 %
- **Le (1kHz)**: 1.88 mH
- **EBF**: 170.59 Hz
- **Effective Piston Diameter**: 8.46" / 214.88 mm
- **Rec. Enclosure Volume**: 0.49 - 14.40 Litres

**Mounting / Shipping Information**

- **Overall Diameter**: 11.16" / 283.4 mm
- **Width Across Flats**: 10.34" / 262.7 mm
- **Depth**: 4.37" / 111 mm
- **Flange Height F/M**: 0.305" / 7.8 mm
- **Baffle Hole Diameter F/M**: 8.97" / 227.83 mm
- **Baffle Hole Diameter R/M**: N/A
- **Chassis Material**: Die-cast Aluminium
- **Gasket Supplied Rear**: N/A
- **Outer Fixing Holes**: 4x ø 0.218" on 10.625" PCD / 4x ø 6.14 mm on 10 mm PCD
- **Inner Fixing Holes**: N/A
- **Connectors**: Push-button Spring terminals
- **Weight**: 11.02 lb / 5 kg
- **Shipping Weight**: 12.56 lb / 5.7 kg

**General Specifications**

- **Nominal Chassis Diameter**: 10" / 254 mm
- **Nominal Impedance**: 8 Ohm
- **Minimum Impedance Zmin**: 6.8 Ω
- **AES Power Handling (A.E.S.)**: 300 W
- **Program Power**: 600 W
- **Peak Power**: 1200 W
- **Frequency Range**: 45 Hz - 4 kHz
- **Sensitivity**: 98 dB
- **Magnet Material**: Ferrite
- **Magnet Weight**: 56 oz
- **Magnetic Gap Depth**: 0.39" / 10 mm
- **Flux Density**: 1.1 Tesla
- **Former Material**: Glass Fibre
- **Voice Coil Material**: Copper - Inside / Outside
- **Cone Winding Height**: 0.70" / 18 mm
- **Voice Coil Diameter**: 2.5" / 63.5 mm
- **Cone/ Dust Dome Material**: Curvilinear Paper / Solid Paper
- **Surround / Edge**: Polyviny Damped Dbl.
- **Termination**: Half Roll Linen

**Frequencies Response Data**

- **Ap**: dB
- **Hz**: Hz

**(1)** Please enquire about alternative impedances.

**(2)** A.E.S. power handling test. Pink noise bandpass filtered at 12 dB per octave with cutoff frequencies of 50 Hz and 500 Hz. Driver mounted in free air, test signal applied at rated power for two hours.

**(3)** Half space response measured in a 975 Litre sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.

**(4)** Positive voltage at red terminal causes forward motion of cone.
SOVEREIGN PRO 8-225
BASS / MID-RANGE DRIVER

- Excellent for compact two-way PA cabinets.
- Superb vocal coverage and coherence when deployed in small format line array.
- High output and low distortion.
- Exceptional efficiency, power handling and frequency coverage from compact design.
- Smooth and refined tone with extended usable frequency up to 5 kHz.
- Can be used well as mid-range unit in small sealed enclosures as part of a larger system.
- 2-Inch Copper voice coil.

**TECHNICAL & THIELE SMALL PARAMETERS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fs</td>
<td>62 Hz</td>
</tr>
<tr>
<td>Re</td>
<td>6.1 Ω</td>
</tr>
<tr>
<td>Qms</td>
<td>4.3</td>
</tr>
<tr>
<td>Qes</td>
<td>0.42</td>
</tr>
<tr>
<td>Qts</td>
<td>0.38</td>
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<tr>
<td>Vas</td>
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<tr>
<td>Vd</td>
<td>0.118 Litres</td>
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<tr>
<td>Cms</td>
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<tr>
<td>Bl</td>
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<tr>
<td>Mms</td>
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<tr>
<td>Xmax</td>
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<tr>
<td>Sd</td>
<td>220 cm²</td>
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<tr>
<td>Efficiency</td>
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</tr>
<tr>
<td>Le (1kHz)</td>
<td>1.2 mH</td>
</tr>
<tr>
<td>Effective Piston Diameter</td>
<td>6.5&quot; / 165 mm</td>
</tr>
<tr>
<td>Rec. Enclosure Volume</td>
<td>20 - 35 Litres</td>
</tr>
</tbody>
</table>

**GENERAL SPECIFICATIONS**

- **Nominal Chassis Diameter**: 8" / 203.2 mm
- **Nominal Impedance** (1) 8 Ohm
- **Minimum Impedance Zmin**: 7.8 Ω
- **A.E.S Power Handling** (2) 225 W (A.E.S.)
- **Program Power**: 450 W
- **Peak Power** (6dB Crest Factor) 900 W
- **Frequency Range** (+1dB) 55 Hz - 5 kHz
- **Sensitivity** (1W/1m) 97 dB
- **Magnet Material**: Ferrite
- **Magnet Weight**: 34 oz
- **Magnetic Gap Depth**: 0.31" / 8 mm
- **Flux Density**: 1 Tesla
- **Former Material**: Glass Fibre
- **Voice Coil Material**: Copper
- **Cone Winding Height**: 0.59" / 15 mm
- **Voice Coil Diameter**: 2" / 50.8 mm
- **Cone/ Dust Dome Material**: Paper / Paper
- **Surround / Dome Material**: Polyvinyl Damped Multi Roll. Poly Cotton

**MOUNTING / SHIPPING INFORMATION**

- **Overall Diameter**: 8.9" / 226 mm
- **Width Across Flats**: 8.25" / 209.5 mm
- **Depth**: 3.6" / 91.44 mm
- **Flange Height**: 0.28" / 7 mm
- **Baffle Hole Diameter F/M**: 7.33" / 186 mm
- **Baffle Hole Diameter R/M**: N/A
- **Chassis Material**: Die-cast Aluminium
- **Gasket Supplied**: Front & Rear
- **Outer Fixing Holes**: 4x ø 5.5 mm on 214 mm PCD
- **Inner Fixing Holes**: N/A
- **Connectors** (4): Push-button Spring Terminals
- **Weight**: 6.9 lb / 3.13 kg
- **Shipping Weight**: 8.5 lb / 3.86 kg
- **Packing Carton Dimensions**: (W) 235 (D) 235 (H) 130 mm

**FREQUENCY RESPONSE DATA** (3)

(1) Please enquire about alternative impedances.
(2) A.E.S. power handling test. Pink noise bandpass filtered at 12 dB per octave with cutoff frequencies of 55 Hz and 550 Hz. Driver mounted in free air, test signal applied at rated power for two hours.
(3) Half space response measured in a 965 Litr e sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.
(4) Positive voltage at red terminal causes forward motion of cone.
CHASSIS DIAMETER 5" / 127 mm

PROGRAM POWER 100 W

FREQUENCY RESPONSE 65 Hz - 7 kHz

MAX. LINEAR EXCURSION 2.41 mm Xmax

+ Exceptional efficiency, power handling and extended frequency response.
+ Kevlar cone for increased strength and rigidity.
+ Ideal for compact two-way and multi-way systems.
+ Works well in line array and studio monitor enclosure designs.
+ 1-Inch Polyamid-imide coated, copper voice coil.

GENERAL SPECIFICATIONS

Nominal Chassis Diameter 5" / 127 mm

Nominal Impedance (1) 8 Ohm

Minimum Impedance Zmin 7.7 Ω

AES Power Handling (2) 50 W (A.E.S.)

Program Power 100 W

Peak Power (6dB Crest Factor) 200 W

Frequency Range (3+4dB) 65 Hz - 7 kHz

Sensitivity (1W / 1m) 90.5 dB

MOUNTING / SHIPPING INFORMATION

Overall Diameter 6" / 152.4 mm

Width Across Flats 5.25" / 133.35 mm

Depth 2.63" / 66.80 mm

Flange Height 0.27" / 6.9 mm

Baffle Hole Diameter F/M 4.63" / 117.60 mm

Baffle Hole Diameter R/M 4.50" / 114.3 mm

Chassis Material Die-cast Aluminium

Gasket Supplied Front & Rear

Outer Fixing Holes 4 x ø 0.218" on 5.468" PCD / 4 x ø 5.5 mm on 138.8 mm PCD

Inner Fixing Holes N/A

Connectors (4) 0.125" Tab / Solder

Weight 3.1 lb / 1.37 kg

Shipping Weight 3.1 lb / 1.37 kg

Packing Carton

Dimensions (mm) (W) 160 (D) 160 (H) 110

TECHNICAL & THIELE SMALL PARAMETERS

Fs 58 Hz

Re 6.2 Ω

Qms 7.5

Qts 0.38

Qes 0.36

Vas 10.9 Litres

Vd 0.022 Litres

Cms 0.953 mm/N

Bi 6.85 T/m

Mms 7.9 g

Xmax 2.41 mm

Efficiency 0.6 %

Le (1k Hz) 0.882 mH

EBP 152.63 Hz

Effective Piston Diameter 4.2" / 106.68 mm

Rec. Enclosure Volume 0.07 - 0.35 ft³ / 2 - 10 Litres

FREQUENCY RESPONSE DATA (3)

IMPEDANCE

(1) Please enquire about alternative impedances.

(2) A.E.S. power handling test. Pink noise bandpass filtered at 12 dB per octave with cutoff frequencies of 50 Hz and 500 Hz. Driver mounted in free air; test signal applied at rated power for two hours.

(3) Half space response measured in a 975 L litre sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.

(4) Positive voltage at red terminal causes forward motion of cone.
THE SOVEREIGN SERIES

SOVEREIGN 15-600LF

BASS DRIVER

15” / 381 mm  
CHASSIS DIAMETER  
1200 W  
PROGRAM POWER  
38 Hz - 3.5 kHz  
FREQUENCY RESPONSE  
98.5 dB  
SENSITIVITY (1W/ 1m)  
6.5 mm Xmax  
MAX. LINEAR EXCURSION

+ For use in pro-sound applications.  
+ Outstanding 98.5 dB SPL output.  
+ Ideally suited for medium to large vented enclosures.  
+ Great for ported bass enclosure designs.  
+ Optimised cone pulp offering increased strength, durability and performance.  
+ 3-Inch Copper voice coil.

GENERAL SPECIFICATIONS

Nominal Chassis Diameter  15” / 381 mm  
Nominal Impedance (1)  8 Ohm  
Minimum Impedance Zmin  7 Ω  
AES Power Handling (2)  600 W (A.E.S.)  
Program Power  1200 W  
Peak Power (S.I.R. Crest Factor)  2400 W  
Frequency Range (3)  38 Hz - 3.5 kHz  
Sensitivity (1W/ 1m)  98.5 dB  
Magnet Material  Ferrite  
Magnet Weight  95 oz  
Magnetic Gap Depth  0.39” / 10 mm  
Flux Density  0.97 Tesla  
Former Material  Glass Fibre  
Voice Coil Material  Copper  
Coil Winding Height  0.74” / 19 mm  
Voice Coil Diameter  3” / 76.2 mm  
Cone/ Dust Dome Material  Curvilinear Paper / Paper  
Surround / Edge Material  Polyvinyl / Damped Dbl.  
Termination  Half Roll Poly Cotton

TECHNICAL & THIELE SMALL PARAMETERS

Fs  37 Hz  
Re  5.4 Ω  
Qms  6.28  
Qes  0.414  
Qts  0.389  
Vas  226 Litres  
Vd  0.556 Litres  
Cms  0.228 mm/N  
Bi  15.9 T/m  
Mms  81 g  
Xmax  6.5 mm  
Sd  855 cm²  
Efficiency  2.83 %  
Le (1k Hz)  1.52 mH  
EBP  89.37 Hz  
Effective Piston Diameter  15.03” / 381.76 mm  
Rec. Enclosure Volume  1.76 - 4.41 ft³ / 50 - 125 Litres

MOUNTING / SHIPPING INFORMATION

Overall Diameter  15” / 381 mm  
Width Across Flats  N/A  
Depth  6.65” / 168.91 mm  
Flange Height  0.35” / 8.89 mm  
Baffle Hole Diameter F/M  13.85” / 351.79 mm  
Baffle Hole Diameter R/M  13.85” / 351.79 mm  
Chassis Material  Pressed Steel  
Gasket Supplied  Front & Rear  
Outer Fixing Holes  8x ø 6.35 mm on 14.56” / 369.2 mm PCD  
Inner Fixing Holes  N/A  
Connectors (4)  Solder Tag  
Weight  17.96 lb / 8.15 kg  
Shipping Weight  20.17 lb / 9.4 kg  
Packing Carton Dimensions (mm)  (W) 410 (D) 410 (H) 210

FREQUENCY RESPONSE DATA (3)

(1) Please enquire about alternative impedances.  
(2) A.E.S. power handling test. Pink noise bandspass filtered at 12 dB per octave with cutoff frequencies of 40 Hz and 400 Hz. Driver mounted in free air, test signal applied at rated power for two hours.  
(3) Half space response measured in a 975 Ltr sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.  
(4) Positive voltage at red terminal causes forward motion of cone.

IMPEDANCE

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**THE SOVEREIGN SERIES**

**SOVEREIGN 15-400LF**

**BASS DRIVER**

---

**15” / 381 mm**

**CHASSIS DIAMETER**

**800 W**

**PROGRAM POWER**

**40 Hz - 4 kHz**

**FREQUENCY RESPONSE**

**2.5” / 63.5 mm**

**VOICE COIL DIAMETER**

**97 dB**

**SENSITIVITY (1W/1m)**

**4.6 mm**

**MAX. LINEAR EXCURSION**

- Designed for use in two-way pro-sound applications.
- Also works well in monitor or bass guitar applications.
- Ideally suited for small, sealed floor wedges or medium sized vented enclosures.
- Optimised cone pulp offering increased strength, durability and performance.
- 2.5-Inch Copper voice coil.

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**GENERAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Nominal Chassis Diameter</th>
<th>15” / 381 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Impedance</td>
<td>8 Ohm</td>
</tr>
<tr>
<td>Minimum Impedance Zmin</td>
<td>7.2 Ω</td>
</tr>
<tr>
<td>AES Power Handling</td>
<td>400 W (A.E.S.)</td>
</tr>
<tr>
<td>Program Power</td>
<td>800 W</td>
</tr>
</tbody>
</table>

**Peak Power (6dB Crest Factor)**

1600 W

**Frequency Range**

40 Hz - 4 kHz

**Sensitivity (1W/1m)**

97 dB

**TECHNICAL & THIELE SMALL PARAMETERS**

- **Fs**
  - 41 Hz

- **Re**
  - 5.8 Ω

- **Qms**
  - 7.6

- **Qes**
  - 0.62

- **Qts**
  - 0.57

- **Vas**
  - 210 Litres

- **Vd**
  - 0.516 Litres

- **Cms**
  - 0.202 mm/N

- **Bl**
  - 13.52 T/m

- **Mms**
  - 74.6 g

- **Xmax**
  - 4.6 mm

- **Sd**
  - 855.3 cm²

- **Efficiency**
  - 1.98 %

- **Le (1k Hz)**
  - 2.08 mH

- **EBP**
  - 66.13 Hz

- **Effective Piston Diameter**
  - 15.03” / 381.76 mm

- **Rec. Enclosure Volume**
  - 2.11 - 4.41 ft³ / 60 - 125 Litres

---

**MOUNTING / SHIPPING INFORMATION**

- **Overall Diameter**
  - 15” / 381 mm

- **Width Across Flats**
  - N/A

- **Depth**
  - 6.61” / 167.89 mm

- **Flange Height**
  - 0.35” / 8.89 mm

- **Baffle Hole Diameter F/M**
  - 13.85” / 351.79 mm

- **Baffle Hole Diameter R/M**
  - 13.85” / 351.79 mm

- **Chassis Material**
  - Pressed Steel

- **Gasket Supplied**
  - Front & Rear

- **Outer Fixing Holes**
  - 8x ø 6.35 mm on 14.56” / 369.2 mm PCD

- **Inner Fixing Holes**
  - N/A

- **Connectors**
  - Solder Tag

- **Weight**
  - 12.34 lb / 5.6 kg

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**FREQUENCY RESPONSE DATA (3)**

- **(1)** Please enquire about alternative impedances.
- **(2)** A.E.S. power handling test. Pink noise bandpass filtered at 12 dB per octave with cutoff frequencies of 45 Hz and 450 Hz. Driver mounted in free air, test signal applied at rated power for two hours.

---

**IMPEDANCE**

- **(3)** Half space response measured in a 975 Litre sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency/response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.

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THE SOVEREIGN SERIES

SOVEREIGN 15-300TC
FULL RANGE DRIVER

+ Triple cone configuration and geometry provides genuine, unrivalled extended frequency up to 17 kHz.
+ The finest option for full-range output in compact PA systems.
+ Superb when deployed for house of worship applications offering well defined vocal presence and clarity.
+ Optimised cone pulp offers increased strength, durability and performance.
+ 2-Inch Copper clad aluminium voice coil.

General Specifications

- Nominal Chassis Diameter: 15” / 381 mm
- Nominal Impedance: 8 Ohm
- Minimum Impedance Zmin: 7.2 Ω
- AES Power Handling: 300 W (A.E.S.)
- Program Power: 600 W
- Peak Power (50% Crest Factor): 1200 W
- Frequency Range (FLAT): 50 Hz - 15 kHz
- Sensitivity (W/m²): 99 dB
- Magnet Material: Ferrite
- Magnet Weight: 56 oz
- Magnetic Gap Depth: 0.32” / 8 mm
- Flux Density: 1.1 Tesla
- Former Material: Kapton
- Voice Coil Material: CCAW
- Coil Winding Height: 0.37” / 9.4 mm
- Voice Coil Diameter: 2” / 50.8 mm
- Cone/ Dust Dome Material: Curvilinear Ribbed Paper / Paper
- Surround / Edge: Polyvinyl Damped Multi Roll. Poly Cotton
- Cone Diameter: 15” / 381 mm
- Nominal Impedance: 8 Ohm
- Minimum Impedance Zmin: 7.2 Ω
- AES Power Handling: 300 W (A.E.S.)
- Program Power: 600 W
- Peak Power (50% Crest Factor): 1200 W
- Frequency Range (FLAT): 50 Hz - 15 kHz
- Sensitivity (W/m²): 99 dB
- Magnet Material: Ferrite
- Magnet Weight: 56 oz
- Magnetic Gap Depth: 0.32” / 8 mm
- Flux Density: 1.1 Tesla
- Former Material: Kapton
- Voice Coil Material: CCAW
- Coil Winding Height: 0.37” / 9.4 mm
- Voice Coil Diameter: 2” / 50.8 mm
- Cone/ Dust Dome Material: Curvilinear Ribbed Paper / Paper
- Surround / Edge: Polyvinyl Damped Multi Roll. Poly Cotton

Technical & Thiele Small Parameters

- Fs: 48 Hz
- Re: 5.2 Ω
- Qms: 9.892
- Qes: 0.753
- Qts: 0.7
- Vas: 203 Litres
- Vd: 0.29 Litres
- Cms: 0.196 mm/N
- Bl: 11 T/m
- Mms: 56 g
- Xmax: 3.5 mm
- Sd: 855 cm²
- Efficiency: 2.9 %
- Le (1k Hz): 0.165 mH
- EBP: 63.75 Hz
- Effective Piston Diameter: 15.03” / 381.76 mm
- Rec. Enclosure Volume: 75 Ltr Closed box / 80 Ltr Vented tuned to 55 Hz

Mounting / Shipping Information

- Overall Diameter: 15” / 381 mm
- Width Across Flats: N/A
- Depth: 6.37” / 161.8 mm
- Flange Height: 0.35” / 8.89 mm
- Baffle Hole Diameter F/M: 13.85” / 351.79 mm
- Baffle Hole Diameter R/M: 13.85” / 351.79 mm
- Chassis Material: Pressed Steel
- Gasket Supplied: Front & Rear
- Outer Fixing Holes: 8x ø 6.35 mm on 369.2 mm PCD
- Inner Fixing Holes: N/A
- Connectors: Solder Tag
- Weight: 11.03 lb / 5 kg
- Shipping Weight: 13.6 lb / 6.17 kg
- Packing Carton Dimensions (mm): (W) 420 (D) 420 (H) 220

Frequency Response Data

(1) Please enquire about alternative impedances.
(2) A.E.S. power handling test. Pink noise bandpass filtered at 12 dB per octave with cutoff frequencies of 55 Hz and 550 Hz. Driver mounted in free air, test signal applied at rated power for two hours.
(3) Half space response measured in a 975 Litr e sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.
(4) Positive voltage at red terminal causes forward motion of cone.
THE SOVEREIGN SERIES

SOVEREIGN 12-500LF
BASS DRIVER

12” / 304.8 mm
1000 W
38 Hz - 5 kHz

2.5” / 63.5 mm
95 dB
5.5 mm Xmax

+$^
High-power bass driver ideally suited for use in two-way ported enclosures.
+$^
Optimised cone pulp offers increased strength, durability and performance.
+$^
Also works well in monitor or bass guitar applications.
+$
2.5-inch Copper voice coil.

**GENERAL SPECIFICATIONS**

- Nominal Chassis Diameter: 12” / 304.8 mm
- Nominal Impedance: 8 Ohm
- Minimum Impedance: Zmin 7.4 Ω
- AES Power Handling: 500 W (A.E.S.)
- Program Power: 1000 W
- Peak Power: 2000 W
- Frequency Range: 38 Hz - 5 kHz
- Sensitivity (1W/ 1m): 95 dB
- Magnet Material: Ferrite
- Magnet Weight: 56 oz
- Magnetic Gap Depth: 0.39” / 10 mm
- Flux Density: 0.97 Tesla
- Former Material: Glass Fibre
- Voice Coil Material: Copper
- Coil Winding Height: 0.74” / 19 mm
- Voice Coil Diameter: 2.5” / 63.5 mm
- Cone/ Dust Dome Material: Straight Poly-cellulose Ribbed / Paper
- Surround / Edge: Polyvinyl Damped Multi Roll. Poly Cotton
-终止

**TECHNICAL & THIELE SMALL PARAMETERS**

- Fs: 50 Hz
- Re: 5.9 Ω
- Qms: 7.5
- Qes: 0.53
- Qts: 0.51
- Vas: 66 Litres
- Vd: 0.298 Litres
- Cms: 0.14 mm/N
- Bl: 16.37 T/m
- Mms: 75 g
- Xmax: 5.5 mm
- Sd: 576.1 cm²
- Efficiency: 1.5 %
- Le (1kHz): 2.36 mH
- EB (1kHz): 94.34 Hz
- Effective Piston Diameter: 10.67” / 271.01 mm
- Rec. Enclosure Volume: 1.05 - 2.64 ft³ / 30 - 75 Litres

**MOUNTING / SHIPPING INFORMATION**

- Overall Diameter: 12” / 304.8 mm
- Width Across Flats: N/A
- Depth: 5.69” / 144.52 mm
- Flange Height: 0.27” / 6.9 mm
- Baffle Hole Diameter F/M: 11.25” / 285.75 mm
- Baffle Hole Diameter R/M: 11.25” / 285.75 mm
- Chassis Material: Pressed Steel
- Gasket Supplied: Front & Rear
- Outer Fixing Holes: 8x ø 7.0 mm on 11.75” / 298 mm PCD
- Inner Fixing Holes: N/A
- Connectors(4): Solder Tag
- Weight: 11.02 lb / 5.0 kg
- Shipping Weight: 12.89 lb / 5.85 kg
- Packing Carton Dimensions (mm): (W) 330 (D) 330 (H) 170

**FREQUENCY RESPONSE DATA**

- Half space response measured in a 975 Litr e sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.

- Positive voltage at red terminal causes forward motion of cone.

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### General Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Chassis Diameter</td>
<td>12” / 304.8 mm</td>
</tr>
<tr>
<td>Nominal Impedance (1)</td>
<td>8 Ohm</td>
</tr>
<tr>
<td>Minimum Impedance Zmin</td>
<td>6.84 Ω</td>
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<tr>
<td>AES Power Handling (2)</td>
<td>300 W (A.E.S.)</td>
</tr>
<tr>
<td>Program Power</td>
<td>600 W</td>
</tr>
<tr>
<td>Peak Power (6dB Crest Factor)</td>
<td>1200 W</td>
</tr>
<tr>
<td>Frequency Range (1/2 Octave)</td>
<td>45 Hz - 4.5 kHz</td>
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<tr>
<td>Sensitivity (1W/1m)</td>
<td>97.5 dB</td>
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<tr>
<td>Magnet Material</td>
<td>Ferrite</td>
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<tr>
<td>Magnet Weight</td>
<td>56 oz</td>
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<tr>
<td>Magnetic Gap Depth</td>
<td>0.39” / 10 mm</td>
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<tr>
<td>Flux Density</td>
<td>1.1 Tesla</td>
</tr>
<tr>
<td>Former Material</td>
<td>Glass Fibre</td>
</tr>
<tr>
<td>Voice Coil Material</td>
<td>Copper</td>
</tr>
<tr>
<td>Coil Winding Height</td>
<td>0.70” / 18 mm</td>
</tr>
<tr>
<td>Voice Coil Diameter</td>
<td>2.5” / 63.5 mm</td>
</tr>
<tr>
<td>Cone/Dust Dome Material</td>
<td>Curvilinear Paper / Paper</td>
</tr>
<tr>
<td>Surround / Edge Termination</td>
<td>Polyvinyl / Damped Multi Roll. Poly Cotton</td>
</tr>
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### Technical & Thiele Small Parameters

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fs</td>
<td>46 Hz</td>
</tr>
<tr>
<td>Re</td>
<td>5.75 Ω</td>
</tr>
<tr>
<td>Qms</td>
<td>5.2</td>
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<tr>
<td>Qes</td>
<td>0.375</td>
</tr>
<tr>
<td>Qts</td>
<td>0.35</td>
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<tr>
<td>Vas</td>
<td>110 Litres</td>
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<td>Vd</td>
<td>0.24 Litres</td>
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<td>Cms</td>
<td>0.278 mm/N</td>
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<tr>
<td>Bl</td>
<td>14 T/m</td>
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<tr>
<td>Mms</td>
<td>43 g</td>
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<tr>
<td>Xmax</td>
<td>4.5 mm</td>
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<tr>
<td>Sd</td>
<td>530 cm²</td>
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<tr>
<td>Efficiency</td>
<td>2.75 %</td>
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<tr>
<td>Le (1 kHz)</td>
<td>1.64 mH</td>
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<tr>
<td>EBP</td>
<td>122.67 Hz</td>
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<tr>
<td>Effective Piston Diameter</td>
<td>10.31” / 261.87 mm</td>
</tr>
<tr>
<td>Rec. Enclosure Volume</td>
<td>1.05 - 2.64 ft³ / 30 - 75 Litres</td>
</tr>
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</table>

### Mounting / Shipping Information

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Diameter</td>
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</tr>
<tr>
<td>Width Across Flats</td>
<td>N/A</td>
</tr>
<tr>
<td>Depth</td>
<td>5.43” / 137.92 mm</td>
</tr>
<tr>
<td>Flange Height</td>
<td>0.27” / 6.9 mm</td>
</tr>
<tr>
<td>Baffle Hole Diameter F/M</td>
<td>11.25” / 285.75 mm</td>
</tr>
<tr>
<td>Baffle Hole Diameter R/M</td>
<td>11.25” / 285.75 mm</td>
</tr>
<tr>
<td>Chassis Material</td>
<td>Pressed Steel</td>
</tr>
<tr>
<td>Gasket Supplied</td>
<td>Front &amp; Rear</td>
</tr>
<tr>
<td>Outer Fixing Holes</td>
<td>8x ø 7.0 mm on 11.75” / 298 mm PCD</td>
</tr>
<tr>
<td>Inner Fixing Holes</td>
<td>N/A</td>
</tr>
<tr>
<td>Connectors (4)</td>
<td>Solder Tag</td>
</tr>
<tr>
<td>Weight</td>
<td>11.02 lb / 5.0 kg</td>
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<tr>
<td>Shipping Weight</td>
<td>12.89 lb / 5.85 kg</td>
</tr>
<tr>
<td>Packing Carton Dimensions (mm)</td>
<td>(W) 330 (D) 330 (H) 170</td>
</tr>
</tbody>
</table>

### Frequency Response Data (3)

![Frequency Response Graph](image)

(1) Please enquire about alternative impedances.
(2) A.E.S. power handling test. Pink noise bandpass filtered at 12 dB per octave with cutoff frequencies of 50 Hz and 500 Hz. Driver mounted in free air, test signal applied at rated power for two hours.
(3) Half space response measured in a 975 Litre sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.
(4) Positive voltage at red terminal causes forward motion of cone.

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**THE SOVEREIGN SERIES**

**SOVEREIGN 12-250TC**  
FULL RANGE DRIVER

### GENERAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Nominal Chassis Diameter</td>
<td>12” / 304.8 mm</td>
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<tr>
<td>Nominal Impedance</td>
<td>8 Ohm</td>
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<tr>
<td>Minimum Impedance Zmin</td>
<td>7.4 Ω</td>
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<tr>
<td>AES Power Handling</td>
<td>250 W (A.E.S.)</td>
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<tr>
<td>Program Power</td>
<td>500 W</td>
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<tr>
<td>Peak Power (6dB Crest Factor)</td>
<td>1000 W</td>
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<tr>
<td>Frequency Range</td>
<td>45 Hz - 17 kHz</td>
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<tr>
<td>Sensitivity</td>
<td>100 dB</td>
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<tr>
<td>Magnet Material</td>
<td>Ferrite</td>
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<td>Magnet Weight</td>
<td>56 oz</td>
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<tr>
<td>Magnetic Gap Depth</td>
<td>0.31” / 7.87 mm</td>
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<tr>
<td>Flux Density</td>
<td>1.1 Tesla</td>
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<tr>
<td>Former Material</td>
<td>Glass Fibre</td>
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<td>Voice Coil Material</td>
<td>Copper Clad Aluminium Wire</td>
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<tr>
<td>Voice Coiling Height</td>
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<td>Voice Coil Diameter</td>
<td>2” / 50.8 mm</td>
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<td>Cone/ Dust Dome Material</td>
<td>Paper / Paper</td>
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<td>Surround / Edge</td>
<td>Polyvinyl Damped Dbl.</td>
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<tr>
<td>Termination</td>
<td>Half Roll Linen</td>
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### TECHNICAL & THIELE SMALL PARAMETERS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Fs</td>
<td>50 Hz</td>
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<tr>
<td>Re</td>
<td>7.2 Ω</td>
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<tr>
<td>Qms</td>
<td>7.6</td>
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<tr>
<td>Qes</td>
<td>0.72</td>
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<tr>
<td>Qts</td>
<td>0.64</td>
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<tr>
<td>Vas</td>
<td>78.06 Litres</td>
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<tr>
<td>Vd</td>
<td>0.165 Litres</td>
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<tr>
<td>Cms</td>
<td>0.195 mm/N</td>
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<td>Bl</td>
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<td>Mms</td>
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<tr>
<td>Xmax</td>
<td>3.5 mm</td>
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<td>Sd</td>
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<td>Efficiency</td>
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<td>Le (1k Hz)</td>
<td>1.56 mH</td>
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<tr>
<td>EBP</td>
<td>69.44 Hz</td>
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<td>Effective Piston Diameter</td>
<td>10.31” / 261.87 mm</td>
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<tr>
<td>Rec. Enclosure Volume</td>
<td>1.05 - 2.64 ft³ / 30 - 75 Litres</td>
</tr>
</tbody>
</table>

### MOUNTING / SHIPPING INFORMATION

<table>
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<tbody>
<tr>
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<td>Baffle Hole Diameter R/M</td>
<td>11.25” / 285.75 mm</td>
</tr>
<tr>
<td>Chassis Material</td>
<td>Pressed Steel</td>
</tr>
<tr>
<td>Gasket Supplied</td>
<td>Front &amp; Rear</td>
</tr>
<tr>
<td>Outer Fixing Holes</td>
<td>8x ø 7.0 mm on 11.75” / 298 mm PCD</td>
</tr>
<tr>
<td>Inner Fixing Holes</td>
<td>N/A</td>
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<tr>
<td>Connectors</td>
<td>Solder Tag</td>
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<td>Weight</td>
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<td>Shipping Weight</td>
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<tr>
<td>Packing Carton Dimensions</td>
<td>(W) 330 (D) 330 (H) 170</td>
</tr>
</tbody>
</table>

### FREQUENCY RESPONSE DATA (3)

(1) Please enquire about alternative impedances.
(2) A.E.S. power handling test. Pink noise bandpass filtered at 12 dB per octave with cutoff frequencies of 50 Hz and 500 Hz. Driver mounted in free air, test signal applied at rated power for two hours.

### IMPEDANCE

(3) Half space response measured in a 975 Litr e sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.

(4) Positive voltage at red terminal causes forward motion of cone.
THE SOVEREIGN SERIES

SOVEREIGN 10-300
BASS / MID-RANGE DRIVER

10” / 254 mm

Nominal Chassis Diameter 10” / 254 mm
Nominal Impedance \(^{(1)}\) 8 Ohm
Minimum Impedance Zmin 6.8 \(\Omega\)
AES Power Handling \(^{(2)}\) 300 W (A.E.S.)
Program Power 600 W
Peak Power (6dB Crest Factor) 1200 W
Frequency Range \(^{(4)}\) 45 Hz - 5 kHz
Sensitivity \(^{(1W/1m)}\) 97.5 dB

2.5” / 63.5 mm

Magnet Material Ferrite
Magnet Weight 56 oz
Magnetic Gap Depth 0.39” / 10 mm
Flux Density 1 Tesla
Former Material Glass Fibre
Voice Coil Material Copper - Inside / Outside
Coil Winding Height 0.70” / 18 mm
Voice Coil Diameter 2.5” / 63.5 mm

<table>
<thead>
<tr>
<th>Cone/ Dust Dome Material</th>
<th>Curvilinear Paper / Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surround / Edge Termination</td>
<td>Polyvinyl / Damped Multi Roll. Poly Cotton</td>
</tr>
</tbody>
</table>

4.44” / 112.77 mm

FREQUENCY RESPONSE DATA \(^{(3)}\)

THE SOVEREIGN SERIES

TECHNICAL & THIELE SMALL PARAMETERS

- Fs 58 Hz
- Re 5.7 \(\Omega\)
- Qms 6.08
- Qts 0.33
- Qts 0.313
- Vas 41 Litres
- Vd 0.208 Litres
- Cms 0.211 mm/N
- Bl 15.3 T/m
- Mms 37 g
- Xmax 5.5 mm
- Sd 378 cm²
- Efficiency 2.36 %
- Le (1k Hz) 1.68 mH
- EB 175.76 Hz
- Effective Piston Diameter 8.46” / 214.88 mm
- Rec. Enclosure Volume 0.88 - 1.76 ft³ / 25 - 50 Litres

IMPEDEANCE

MOUNTING / SHIPPING INFORMATION

- Overall Diameter 10.15” / 257.81 mm
- Depth 4.44” / 112.77 mm
- Flange Height 0.27” / 6.9 mm
- Baffle Hole Diameter F/M 9.21” / 233.93 mm
- Baffle Hole Diameter R/M 9.21” / 233.93 mm
- Chassis Material Pressed Steel
- Gasket Supplied Front & Rear
- Outer Fixing Holes 4x ø 6.5 mm on 9.72” / 246.88 mm PCD
- Inner Fixing Holes N/A
- Connectors Solder Tag
- Weight 10.57 lb / 4.8 kg
- Shipping Weight 10.57 lb / 4.8 kg
- Packing Carton Dimensions (mm) (W) 275 (D) 275 (H) 150

VERSATILE in 2 way ported enclosures such as the classic bass driver plus horn tweeter or compression driver format.

- Can be used effectively for bass guitar applications.
- Exhibits smooth frequency response that gives a balanced tonal character when properly matched to appropriate high-frequency drivers.
- Best suited for 15-40 Litre ported enclosure designs.
- 2.5-Inch Inside / Outside windings copper voice coil.

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\(^{(1)}\) Please enquire about alternative impedances.

\(^{(2)}\) A.E.S. power handling test. Pink noise bandpass filtered at 12 dB per octave with cutoff frequencies of 45 Hz and 450 Hz. Driver mounted in free air, test signal applied at rated power for two hours.

\(^{(3)}\) Half space response measured in a 975 litre sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the low frequency performance which may be achieved in a fully optimised system.

\(^{(4)}\) Positive voltage at red terminal causes forward motion of cone.
SOVEREIGN 8-225
BASS / MID-RANGE DRIVER

- High-power driver ideal for use in pro-sound and bass-guitar applications.
- Superb vocal coverage and coherence when deployed in small format line array.
- Exceptional efficiency, power handling and frequency coverage from compact design.
- Smooth and refined tone with extended usable frequency up to 5 kHz.
- Excellent for compact two-way PA cabinets.
- Performs best as a mid-range unit in small sealed enclosures as part of a larger system.
- Works well as a mid/bass driver in vented enclosures.
- 2-Inch Copper voice coil.

MOUNTING / SHIPPING INFORMATION

- Overall Diameter 8.18” / 207.77 mm
- Width Across Flats N/A
- Depth 3.74” / 94.99 mm
- Flange Height 0.27” / 6.9 mm
- Baffle Hole Diameter F/M 7.24” / 183.89 mm
- Baffle Hole Diameter R/M 7.24” / 183.89 mm
- Chassis Material Pressed Steel
- Gasket Supplied Front & Rear
- Outer Fixing Holes 8x ø 5.5 mm on 7.79” / 197.8 mm PCD
- Inner Fixing Holes N/A
- Connectors (4) Solder Tag
- Weight 6.06 lb / 2.75 kg
- Shipping Weight 6.94 lb / 3.15 kg
- Packing Carton Dimensions (mm) (W) 235 (D) 235 (H) 130

TECHNICAL & THIELE SMALL PARAMETERS

- Fs 62 Hz
- Re 6.1 Ω
- Qms 4.3
- Qes 0.42
- Qts 0.38
- Vas 22 Litres
- Vd 0.085 Litres
- Cms 0.34 mm/N
- Bl 11 T/m
- Mms 20.69 g
- Xmax 5.5 mm
- Sd 213 cm²
- Efficiency 1.25 %
- Le (1k Hz) 1.47 mH
- EBP 147.62 Hz
- Effective Piston Diameter 6.496” / 164.99 mm
- Rec. Enclosure Volume 0.70 - 1.23 ft³ / 20 - 35 Litres

GENERAL SPECIFICATIONS

- Nominal Chassis Diameter 8” / 203.2 mm
- Nominal Impedance (1) 8 Ohm
- Minimum Impedance Zmin 7.6 Ω
- AES Power Handling (2) 225 W (A.E.S.)
- Program Power 450 W
- Peak Power (6dB Crest Factor) 900 W
- Frequency Range (4dB) 55 Hz - 5 kHz
- Sensitivity (1W/ 1m) 97 dB
- Magnet Material Ferrite
- Magnet Weight 34 oz
- Magnetic Gap Depth 0.31” / 7.87 mm
- Flux Density 1 Tesla
- Former Material Glass Fibre
- Voice Coil Material Copper
- Coil Winding Height 0.59” / 14.98 mm
- Voice Coil Diameter 2” / 50.8 mm
- Cone/ Dust Dome Material Paper / Paper
- Surround / Edge Termination Polyvinyl Damped Dbl. Half Roll Linen

FREQUENCY RESPONSE DATA (3)

(1) Please enquire about alternative impedances.
(2) A.E.S. power handling test. Pink noise bandpass filtered at 12 dB per octave with cutoff frequencies of 60 Hz and 600 Hz. Driver mounted in free air; test signal applied at rated power for two hours.
(3) Half space response measured in a 975 Litr e sealed box. Blue line = fundamental 45° off-axis. Please note that the frequency response measurements are supplied for comparison only and are not a measure of the true frequency performance which may be achieved in a fully optimised system.
(4) Positive voltage at red terminal causes forward motion of cone.
SOVEREIGN 6-100
BASS / MID-RANGE DRIVER

6" / 152.4 mm
200 W
60 Hz - 7 kHz

1.5" / 38.1 mm
93 dB
2.5 mm Xmax

- Versatile driver for use in pro-sound applications.
- Best suited as a mid-range driver in a small sealed enclosure designs.
- Works well as a mid/ bass driver in vented enclosures.
- Optimised cone pulp offers increased strength, durability and performance.
- 1.5-Inch Copper voice coil.

VERSATILE DRIVER FOR USE IN PRO-SOUND APPLICATIONS.

+ Best suited as a mid-range driver in a small sealed enclosure designs.
+ Works well as a mid/ bass driver in vented enclosures.
+ Optimised cone pulp offers increased strength, durability and performance.
+ 1.5-Inch Copper voice coil.

VERSATILE DRIVER FOR USE IN PRO-SOUND APPLICATIONS.

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VERSATILE DRIVER FOR USE IN PRO-SOUND APPLICATIONS.

+ Best suited as a mid-range driver in a small sealed enclosure designs.
+ Works well as a mid/ bass driver in vented enclosures.
+ Optimised cone pulp offers increased strength, durability and performance.
+ 1.5-Inch Copper voice coil.

VERSATILE DRIVER FOR USE IN PRO-SOUND APPLICATIONS.
**ELECTRO ACOUSTIC SPECIFICATIONS**

**COMPRESSION DRIVER**

- **1” Exit ferrite magnet compression driver.**
- **1.75” / 43 mm Copper clad aluminium voice coil.**
- **Titanium diaphragm with double sinusoidal roll surround (titanium).**
- **40 Wrms (AES standard).**
- **Copper inductance ring for extended response.**
- **Ferrofluid cooled.**
- **Self aligning diaphragm for easy field replacement.**

**MOUNTING / SHIPPING INFO**

Overall Diameter 4” / 102 mm

Depth 1.97” / 51 mm

Weight 3.4 lb / 1.54 kg

Shipping Weight 3.6 lb / 1.64 kg

Packing Carton Dimensions [W] 95 [D] 95 [H] 71 mm

Bolt Fixing Hole Dimensions and Qty. 3x M6 or 57.15 mm PCD / 2x M6 or 76.2 mm PCD

**MATERIALS OF CONSTRUCTION**

Former Material Polyamide

Voice Coil Material Aluminium

Diaphragm Material Titanium

Surround / Edge Double Sinusoidal Roll Titanium

Magnet Material Ferrite

Connectors 6.3 mm Spade

Polarity Positive voltage at red/ positive terminal causes positive pressure at throat exit.

**FREQUENCY RESPONSE DATA**

<table>
<thead>
<tr>
<th>Hz</th>
<th>20</th>
<th>50</th>
<th>100</th>
<th>200</th>
<th>500</th>
<th>1k</th>
<th>2k</th>
<th>5k</th>
<th>10k</th>
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</tr>
</thead>
<tbody>
<tr>
<td>dBr</td>
<td>+120</td>
<td>+110</td>
<td>+100</td>
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<td>+80</td>
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<td>+60</td>
<td>+50</td>
<td>+40</td>
<td>+30</td>
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**IMPEDANCE**

<table>
<thead>
<tr>
<th>Ohms</th>
<th>200</th>
<th>100</th>
<th>50</th>
<th>20</th>
<th>10</th>
<th>5</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hz</td>
<td>20</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>500</td>
<td>1k</td>
<td>2k</td>
</tr>
<tr>
<td>dBr</td>
<td>+120</td>
<td>+110</td>
<td>+100</td>
<td>+90</td>
<td>+80</td>
<td>+70</td>
<td>+60</td>
</tr>
</tbody>
</table>

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* Please enquire about alternative impedances.

† Frequency response measurement taken on axis with 1w signal at distance of 1m using custom horn with 80° x 60° coverage.
CD-140P
COMPRESSION DRIVER

- 1” Exit ferrite magnet compression driver.
- 1.75” / 43 mm Copper clad aluminium voice coil.
- Polymer diaphragm and surround.
- 40 Wrms (AES standard).
- Copper inductance ring for extended response.
- Ferrofluid cooled.
- Self aligning diaphragm for easy field replacement.

The CD-131 is a 1 inch (25.4 mm) small format diaphragm compression driver.

The 1 inch (25.4 mm) exit is an industry standard. The CD-131 combines high BL and a very lightweight diaphragm assembly, producing high output that offers extended bandwidth and a well defined frequency response to 18 kHz.

The driver has a rated low frequency response limit of 2 kHz and has a smooth response throughout its bandwidth.

The CD-131 features an industry standard bolt on mounting system that is ideally matched to commercially available bolt on horns.

1. Exit ferrite magnet compression driver.
2. 1.75” / 43 mm Copper clad aluminium voice coil.
3. Polymer diaphragm and surround.
4. 40 Wrms (AES standard).
5. Copper inductance ring for extended response.
6. Ferrofluid cooled.
7. Self aligning diaphragm for easy field replacement.

FREQUENCY RESPONSE DATA

IMPEDEANCE

ELECTRO ACOUSTIC SPECIFICATIONS

Sound Channel / Throat Size
1” / 25.4 mm

Impedance
8 Ohm / 16 Ohm

Power Handling
40 W (A.E.S.)

Sensitivity (1 W - 1 m)
105 dB

Usable Frequency Range
2 kHz - 18 kHz

Rec. X-over Frequency Filtered at 18dB/Octave
3.5 kHz

Effective Diaphragm Diameter
1.75” / 44 mm

Voice Coil Diameter
1.75” / 44 mm

Voice Coil DC Resistance
6.2 / 10.5 Ω

Max Diaphragm Displacement
0.032” / 0.8 mm

Flux Density
1.35 Tesla

Magnet Weight
16 oz / 0.45 kg

MOUNTING / SHIPPING INFO

Overall Diameter
4” / 102 mm

Depth
1.97” / 49 mm

Weight
3.4 lb / 1.54 kg

Shipping Weight
3.6 lb / 1.64 kg

Dimensions
(96 x 71 mm)

Bolt Fixing Hole Dimensions and Qty.
Screw Fit

MATERIALS OF CONSTRUCTION

Former Material
Polyamide

Voice Coil Material
Aluminium

Diaphragm Material
Polymer

Surround / Edge Terminations
Titanium

Magnet Material
Ferrite

Connectors
6.3 mm Spade

Polarity
Positive voltage at red/ positive terminal causes positive pressure at throat exit.

FREQUENCY RESPONSE DATA

IMPEDEANCE

ELECTRO ACOUSTIC SPECIFICATIONS

Sound Channel / Throat Size
1” / 25.4 mm

Impedance
8 Ohm

Power Handling
30 W (A.E.S.)

Sensitivity (1 W - 1 m)
106 dB

Usable Frequency Range
2 kHz - 18 kHz

Rec. X-over Frequency Filtered at 18dB/Octave
3.5 kHz

Effective Diaphragm Diameter
1.33” / 34 mm

Voice Coil Diameter
1.375” / 34.4 mm

Voice Coil DC Resistance
6.43 Ω

Max Diaphragm Displacement
0.011” / 0.3 mm

Flux Density
1.25 Tesla

MOUNTING / SHIPPING INFO

Overall Diameter
3.54” / 90 mm

Depth
1.75” / 44 mm

Weight
2 lb / 0.91 kg

Shipping Weight
2.16 lb / 0.98 kg

Dimensions
(96 x 71 mm)

Bolt Fixing Hole Dimensions and Qty.
3” PCD

MATERIALS OF CONSTRUCTION

Former Material
Polyamide

Voice Coil Material
Aluminium

Diaphragm Material
Titanium

Surround / Edge Terminations
Double Sinusoidal Roll

Magnet Material
Ferrite

Connectors
Push Button Spring Terminals

Polarity
Positive voltage at red/ positive terminal causes positive pressure at throat exit.
The CD-130 is a 1 inch (25.4 mm) small format diaphragm compression driver.

The 1 inch (25.4 mm) exit is an industry standard. The CD-130 combines high BL and a very lightweight diaphragm assembly, producing high output that offers extended bandwidth and well defined frequency response to 18 kHz.

The driver has a rated low frequency response limit of 2 kHz and has a smooth response throughout its bandwidth.

The CD-130 features an industry standard screw fit mounting system that is ideally matched to commercially available female screw thread horns.

**MOUNTING / SHIPPING INFO**

- **Overall Diameter**: 3.54” / 90 mm
- **Depth**: 1.73” / 44 mm
- **Weight**: 2 lb / 0.91 kg
- **Shipping Weight**: 2.16 lb / 0.98 kg
- **Packing Carton Dimensions**: (W) 95 (D) 95 (H) 71 mm
- **Bolt Fixing Hole Dimensions and Qty.**: Screw Fit

**ELECTRO ACOUSTIC SPECIFICATIONS**

- **Sound Channel / Throat Size**: 1” / 25.4 mm
- **Impedance**: 8 Ohm
- **Power Handling**: 30 W (A.E.S.)
- **Sensitivity (1 W - 1 m)**: 106 dB
- **Usable Frequency Range**: 2 kHz - 18 kHz
- **Rec. X-over Frequency Filtered at 16dB/ Octave above 2 kHz**:
  - **Effective Diaphragm Diameter**: 1.33” / 34 mm
  - **Voice Coil Diameter**: 1.375” / 34.4 mm
  - **Voice Coil DC Resistance**: 6.43 Ω
  - **Max Diaphragm Displacement**: 0.011” / 0.3 mm
  - **Flux Density**: 1.25 Tesla

**FREQUENCY RESPONSE DATA**

- Please enquire about alternative impedances.
- Frequency response measurement taken on axis with 1w signal at distance of 1m using custom horn with 90° x 40° coverage.

**IMPEDANCE**

**MATERIALS OF CONSTRUCTION**

- **Former Material**: Polyamide
- **Voice Coil Material**: Aluminium
- **Diaphragm Material**: Titanium
- **Surround / Edge Termination**: Double Sinusoidal Roll Titanium
- **Magnet Material**: Ferrite
- **Connectors**: Push Button Spring Terminals
- **Polarity**: Positive voltage at red/ positive terminal causes positive pressure at throat exit

**IMPEDANCE FREQUENCY RESPONSE DATA**

<table>
<thead>
<tr>
<th>Ohms</th>
<th>CD-130</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
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<td>+110dBr</td>
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<tr>
<td>50</td>
<td>+100dBr</td>
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<td>1</td>
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