



Table of Contents

Peerless High Frequency Legacy	2	Peerless NSM Woofers	27
X-Centric Tweeters	3	Peerless NCP	29
Ring Radiator Tweeters	5	GB Series	31
Definition Tweeters	7	High Definition Sound	33
Concept Tweeters	9	Superior Series	35
Peerless Micro Transducers	11	Superior Dynamic	36
Advanced Natural Communication	13	Superior Long Stroke	38
High Value Series	15	Superior Dynamic Ferrite	40
Total Concept Series	17	STW	42
Peerless LifeStyle	19	Amplifier Modules	44
Peerless FSL	21	LC Amplifier Modules	45
Definition Compression Drivers	23	LCPF Modules	46
Peerless FS Coaxial	25	Rack Amp Modules	48



Peerless High Frequency Legacy

TWEETERS

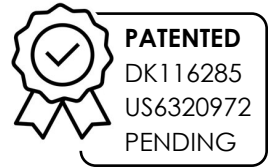
Peerless's high-frequency device roadmap is secured by a powerful, unified technology portfolio that delivers two critical outcomes: the refined, non-fatiguing performance expected of classic Danish audio heritage, and the acoustic mastery of proprietary, patent-protected technologies ensuring technical dominance in controlled directivity and dynamic performance.

The Definition series utilizes very low mass fabric dome with high internal damping, and vented low compression motor system, resulting in superior dynamic linearity.

The Ring Radiator series employs critical IP detailed in US6320972 ensuring acoustic coherence from the annular driven diaphragm beyond 40kHz.

The new X-Centric series with unique elliptical geometry providing improved sensitivity and asymmetric dispersion pattern as a solution for modern complex design challenges, such as advanced steerable arrays.

The Peerless brand is uniquely positioned to define the next generation of high-fidelity acoustic excellence.



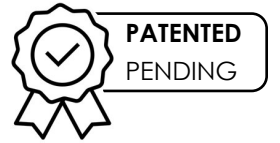
BC25SC08-8



XT25SC90-04



XC16SC41-08



X-Centric Tweeters

X-CENTRIC TWEETERS

The Peerless X-Centric Series marks our most radical tweeter innovation in 25 years, following the iconic ring radiator. Featuring an elliptical diaphragm, X-Centric delivers exceptional sensitivity from 1 kHz to 40 kHz with an asymmetric dispersion pattern that enhances clarity and coverage. Its unique geometry improves performance by 30% over conventional tweeters of equal coil size, while reducing rare-earth content. Designed with a rear chamber for extended low-frequency response and integrated JST connectivity for streamlined assembly, X-Centric enables breakthrough designs—from ultra-slim TVs to scalable compound arrays—while upholding Peerless' world-renowned consistency through state-of-the-art automated manufacturing.



SIZE RANGE
16mm - 25mm



CHASSIS
PLASTIC



MOTOR
NEODYMIUM



DIAPHRAGM
TETERON

XC16SC41-08



TECHNICAL HIGHLIGHTS

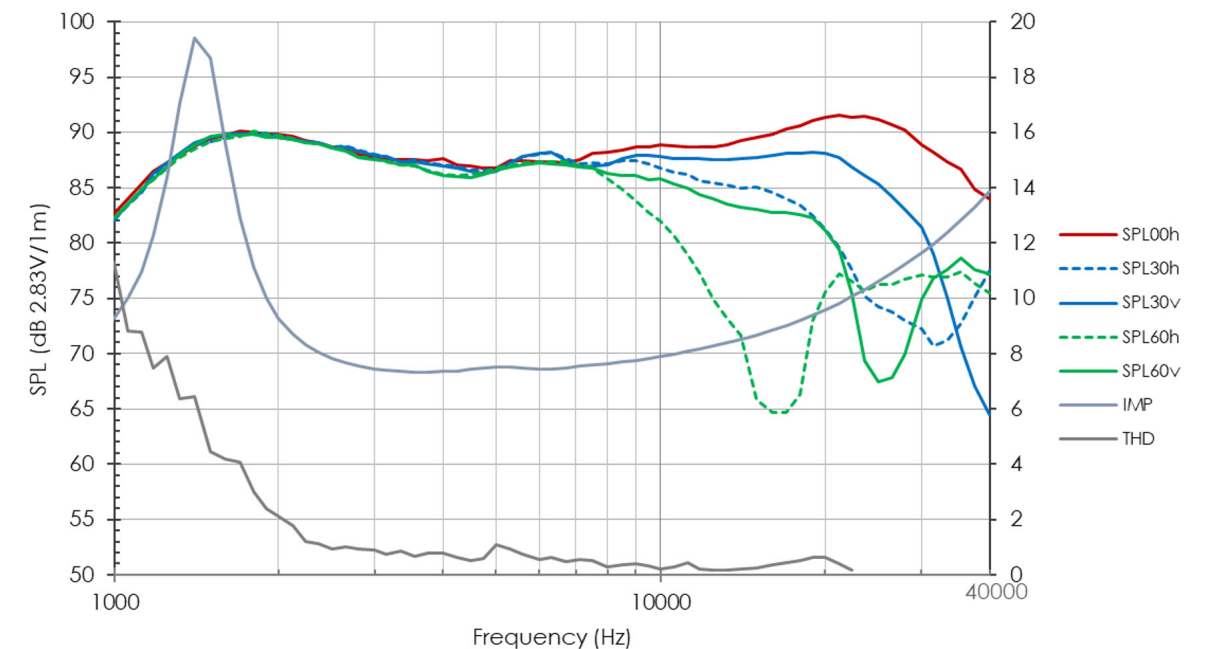
The X-Centric Series redefines tweeter performance—combining obround design and acoustics, compact form, and exceptional sensitivity to deliver extended high-frequency performance for modern audio systems designs ranging from conventional to arrayed and acoustic beam steering systems.

Optimized Acoustic & Mechanical Design

A radically enlarged radiating area—over 40% greater than conventional domes with the same voice coil diameter—produces higher sensitivity and greater acoustic output and lower distortion. The rectangular geometry enables tight center-to-center spacing for array or beam-steered applications with acoustic control up to 13 kHz. Each tweeter integrates a rear chamber that lowers system resonance by $\frac{1}{2}$ octave compared with similar voice coil diameter designs, extending bandwidth and flattening the response to beyond 40kHz. The mechanically rigid chassis and chamber maintain consistent on-axis and off-axis behavior while minimizing diffraction.

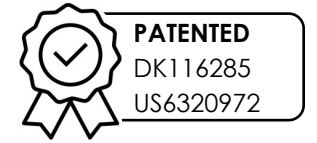


XC16SC41-08



High Efficiency Motor

A precision-optimized motor and high-temperature voice coil yield >3 dB greater sensitivity and maximum low frequency output than traditional dome tweeters of similar diameter. Thermal conduction paths through the motor and chamber reduce compression under sustained power, while the compact rectangular chassis with integrated JST connector maximizes acoustic density in clustered layouts. The result—high output, extended response, and exceptional reliability in the smallest possible footprint.



Ring Radiator Tweeters

RING RADIATING TWEETERS

The Peerless Ring Radiator series is an innovative tweeter technology that originated in 1985 as detailed in patent DK116285, with further enhancement to the technology detailed in patent US6320972. This design replaces the traditional dome with a unique annular diaphragm and a central phase waveguide. This patented configuration delivers exceptional sound quality by significantly improving on- and off-axis response and wide high-frequency dispersion, often extending to and beyond 40 kHz. The design minimizes distortion and resonances, resulting in exceptionally clear, detailed, and natural treble reproduction and a flat frequency response. This makes it a popular choice for high-fidelity audio systems and professional monitors.



SIZE RANGE
19mm – 25mm



CHASSIS
PLASTIC



MOTOR
NEODYMIUM / FERRITE



DIAPHRAGM
TETERON



XT25SC90-04



XT25TG30-4

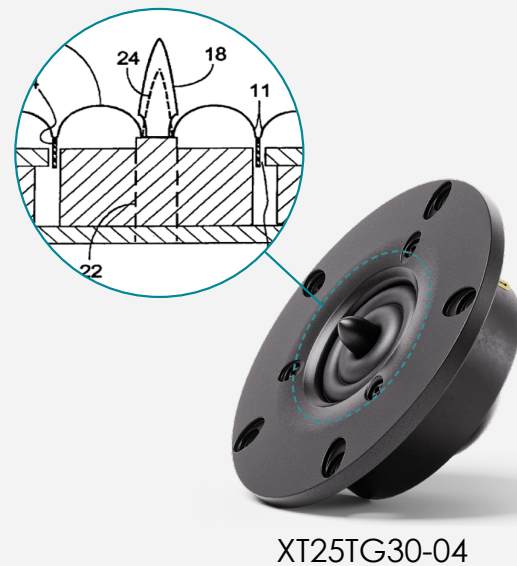


TECHNICAL HIGHLIGHTS

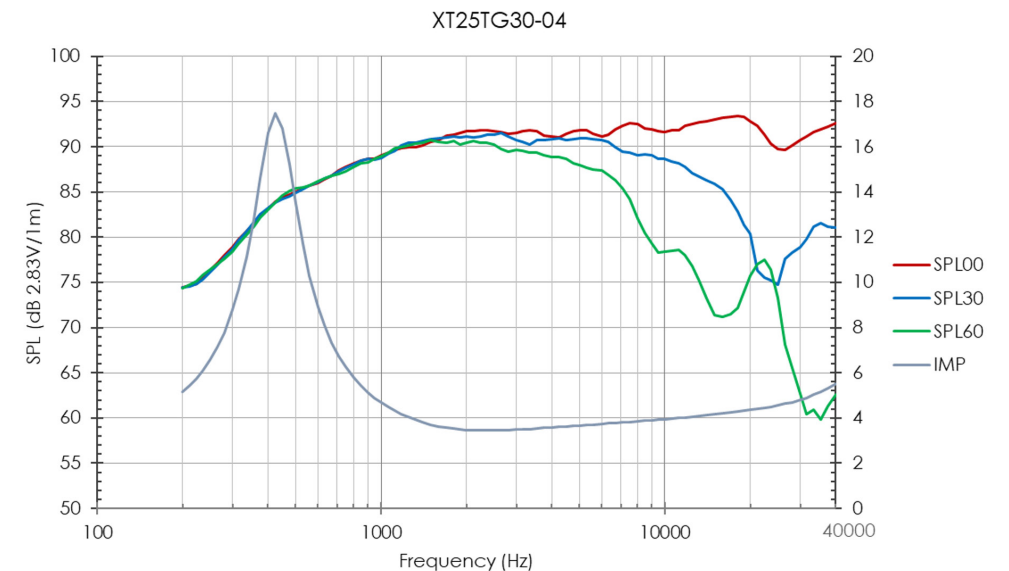
Originally developed by Vifa in the mid-1980s and further refined with a patented phase plug design, the Peerless XT Ring Radiator revolutionized tweeter architecture design in 1999. By breaking from the traditional dome format, the Ring Radiator design achieves smoother and extended high-frequency response, lower distortion, and wide dispersion that set a new benchmark for high-end audio reproduction, offering audio system creators with definitive performance and visual advantage.

Diaphragm and Phase Plug Design

The core of the XT design is the patented dual concentric diaphragm with a fixed, stationary center and an integrated phase plug. By preventing the central portion from moving, the voice coil forces the diaphragm into a non-pistonic mode across its entire operating range. This eliminates the resonant transition zone—the severe breakup and “snapping” effect seen when conventional domes shift from pistonic to non-pistonic behavior—resulting in fundamentally smoother, less resonant sound, especially at high power levels. The central phasing plug prevents acoustic cancellation on the axis, ensuring excellent on- and off-axis response.



XT25TG30-04



Exception Wide Bandwidth

The Ring Radiator architecture paired with a damped rear chamber, achieves ultra-low resonant frequencies ranging from approximately 425 Hz (XT25TG30-04) up to around 700 Hz (XT19TD00-04). This outstanding low fs allows audio system creators to utilize lower crossover points, simplifying system integration and improving acoustic power response.

Crucially, the design's inherent linearity and optimized waveguide extend its performance well beyond the limit of human hearing, reliably reproducing frequencies exceeding 40 kHz. This capacity ensures the Peerless XT series provides the essential bandwidth and minimal distortion required for high-resolution audio (Hi-Res Audio) reproduction.



Definition Tweeters

HIGH DEFINITION TWEETERS

The Peerless Definition tweeters carry on the classic Danish engineering excellence, utilizing precision-manufactured components and optimized motor systems for refined high-frequency performance. A key technical differentiator is the wide roll surround and fully vented motor system. This design minimizes acoustic compression of air behind the dome, ensuring superior dynamic linearity and non-compressed sound reproduction across the entire frequency range. This capability is critical for acoustic designers, allowing Definition tweeters to be utilized effectively at significantly lower crossover points than typically recommended for most standard tweeters in demanding hi-fi and studio monitoring applications.

 SIZE RANGE 20mm – 32mm	 CHASSIS PLASTIC	 MOTOR NEODYMIUM / FERRITE	 DIAPHRAGM TETERON / ALUMINUM
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DA32SC00-08



DX25TG59-4



TECHNICAL HIGHLIGHTS

Originating from Peerless' original Definition Series tweeters of the 1980s, the "D" series continues a legacy of precision high-frequency reproduction. Designed to deliver true high-resolution sound, these tweeters have earned a reputation among loudspeaker designers for their smooth response, extended bandwidth, and consistency born from Danish engineering and manufacturing rigor.

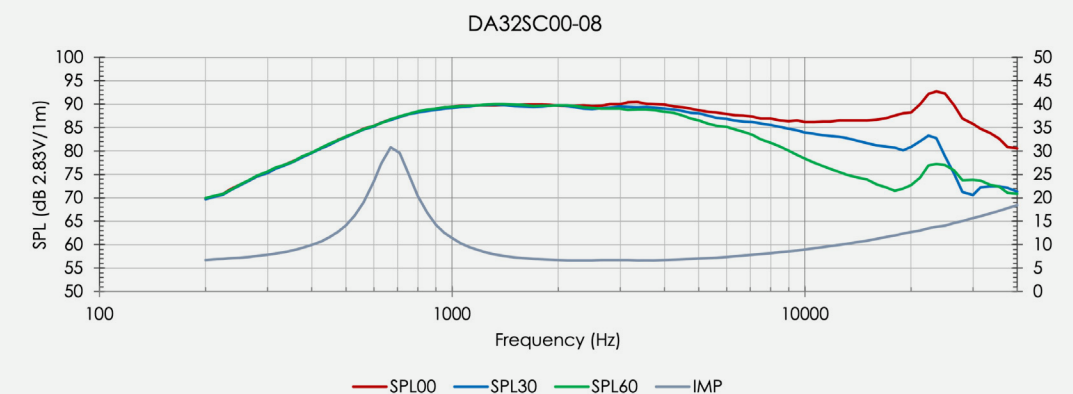
Diaphragm Design and Optimization

Each Definition tweeter features a dome and surround system finely tuned through Finite Element Analysis (FEA) for linear frequency response performance and low distortion. Dome height, with wide roll surround geometry, the compliance are optimized to balance stiffness and damping. Material options — including hand-coated silk for natural warmth, Teteron for neutrality and consistency, and aluminum, corundum or titanium for precision and dynamics — enable system designers to tailor tonality without compromise. The diaphragm system – dome and surround - is meticulously optimized using Finite Element Analysis (FEA), which precisely tunes the dome height and the surround roll geometry. This analytical approach is used to match the suspension excursion limits to the motor limits and “fine-tune the flatness of the compliance curve” of the suspension system, minimizing non-linear distortion. The hallmark “wide roll surround” technology maximizes linear excursion and helps maintain consistent off-axis acoustic performance. The D Series provides exceptional material versatility to meet diverse acoustic needs, offering damped fabric diaphragms (D) for smooth response, alongside highly rigid materials like aluminum (DA) and titanium (DQ) for enhanced high frequency extension and maximum output before transitioning out of pistonic performance.



Extended Bandwidth and Low Resonance Design

Definition tweeters are engineered for both low resonance and extreme bandwidth, with fundamental resonance (F_s) as low as 600 Hz and smooth extension beyond 40 kHz. This combination enables seamless integration in multi-way systems and genuine Hi-Res Audio capability, ensuring ultra-low coloration and precise transient response — hallmarks of Peerless' decades-long pursuit of acoustic truth. Definition tweeters employ advanced motor architecture to achieve class leading extended frequency response with low resonance. Typically large volume rear chambers result in exceptionally low resonant frequencies with designs reaching as low as 570 Hz. This allows audio system creators flexibility to implement crossover frequencies as low as 1000 Hz. Furthermore, the motor system incorporates a thick copper cap on the pole piece to lower voice coil inductance, which minimizes distortion and extends the high-frequency performance. This results in great high frequency performance up to and beyond 40,000 Hz, ultimately providing true Hi-Res Audio reproduction capability to audio system creators.





Concept Tweeters

PERFORMANCE | COST OPTIMIZED TWEETERS

Forged in the same engineering lineage as our respected Definition series, the Peerless Concept tweeters are defined by their uncompromising use of ultra-light, highly-damped soft domes.



SIZE RANGE
14mm - 25mm



CHASSIS
PLASTIC



MOTOR
NEODYMIUM



DIAPHRAGM
TETERON



OC20SC33-04

Proven Acoustic Heritage – Evolved from the Peerless designs introduced in the 1980s, trusted by leading audio brands for their stability, reliability, and tonal consistency.

Optimized Dome Geometry – Finite Element Analysis (FEA) optimized dome height and surround roll geometry deliver smooth response and controlled diaphragm motion.

Material Selection – Available in fabric dome materials, providing designers options for the ideal balance between clarity and damping.

Applications – Ideal for cost-optimized consumer, conferencing and professional systems demanding extended bandwidth, low distortion, and consistent quality.

Compact, Efficient Architecture – Shallow-profile design supports easy integration in multi-way and space-limited and cost-conscious systems.

High-Precision Manufacturing – Refined through advanced production processes ensuring tight parameter tolerances and repeatable acoustic performance at scale.

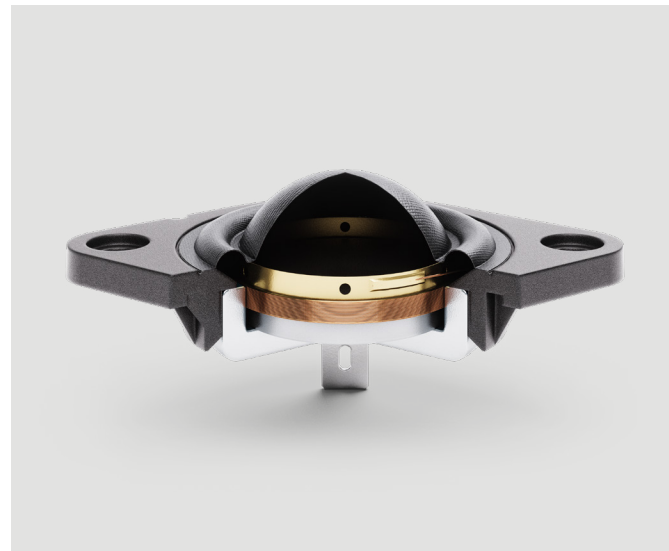


TECHNICAL HIGHLIGHTS

Born of the pioneering developments of soft dome tweeters in the 1980s, Peerless Concept tweeters have delivered exceptional performance and manufacturing efficiency. Evolved through decades of engineering collaboration and improvements, the Concept series represents the culmination of proven soft dome tweeter technology—refined for consistent quality, competitive cost, and sonic accuracy trusted across global loudspeaker designs.

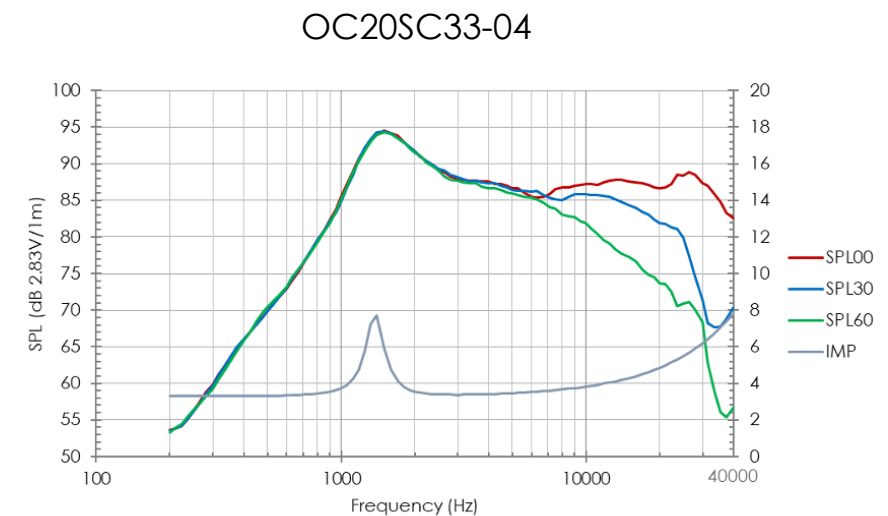
Diaphragm Design and Optimization

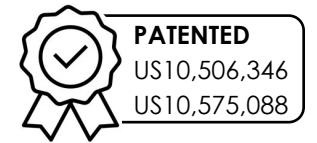
Every Concept tweeter benefits from extensive FEA-driven diaphragm and surround geometry optimization. The dome height, surround roll width, and contour are carefully tuned to control breakup and maintain uniform pistonic motion throughout the passband. Available with precision-formed fabric domes, each variant balances damping and stiffness for smooth frequency response, low distortion, and stable performance under power.



Extended Bandwidth Straightforward Design

Compact and efficient, Concept tweeters achieve remarkable bandwidth—with resonance frequencies ranging below 1000 Hz to 2500 Hz - and extended output to beyond 40 kHz. This wide operating range ensures clear, detailed treble reproduction and true high-resolution performance—offering system designers a versatile, cost-conscious solution that excels in both consumer and professional applications.





Peerless Micro Transducers

FULL RANGE MICRO TRANSDUCER

Peerless PMT full range micro transducers deliver remarkably full sound from ultra-compact mechanical package. Engineered with spiderless suspensions, along with ferrofluid centering and long-excursion design, PMT drivers achieve class-leading output, low distortion, and exceptional clarity—enabling breakthrough designs in portable and embedded acoustic systems.



Spiderless Suspension: Reduces mechanical depth and provides outstanding linear excursion in this class

Ferrofluid: Provides voice coil centering, damping and cooling to improve output.

Extended Bandwidth: Aluminum diaphragm provides exceptional high-resolution bandwidth with response up to 40kHz enabling ultrasonic use cases – ie presence detection.

Ultra-Compact Form Factor: Designed for constrained spaces where performance cannot be compromised

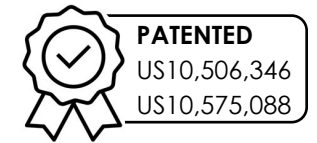
Applications: Portable music systems, conferencing, AR/VR devices, notebooks, smart assistants, and mini line arrays.



PMT2040N2516AL01-04



PMT40N25AL17-07



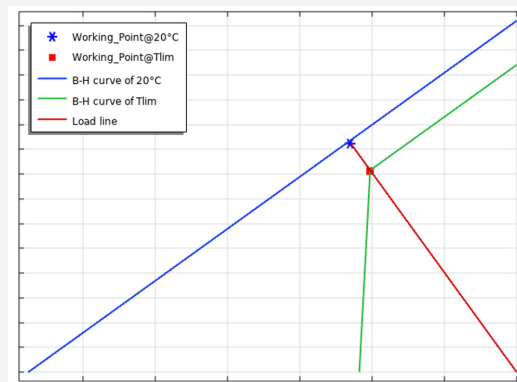
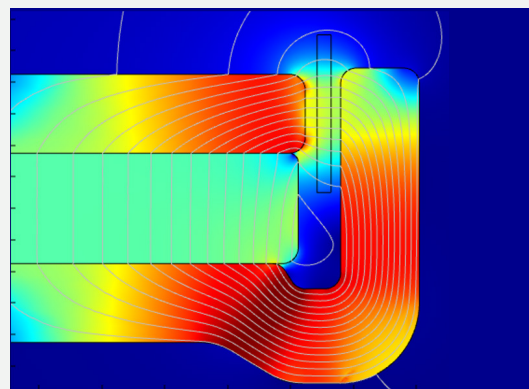
TECHNICAL HIGHLIGHTS

Optimized for applications where mounting depth is scarce – PMT is our series of micro full-range drivers. Applications include communications devices, high-performance AR/VR, notebooks, and connected devices.

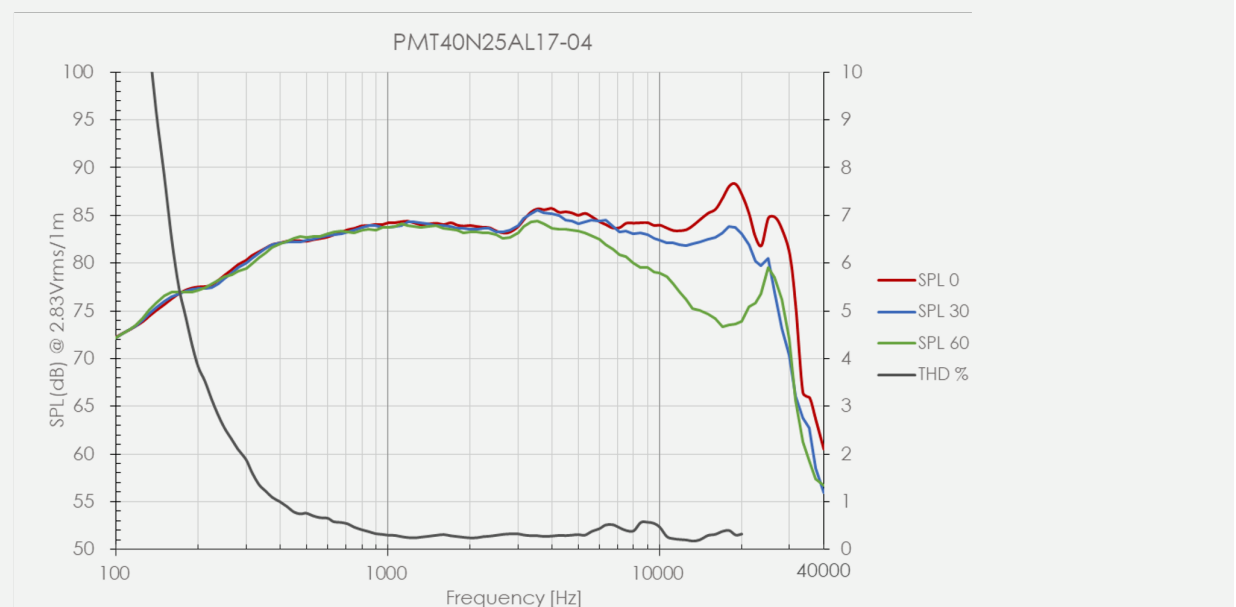
Fully Optimized Micro Full-Range Drivers

Like all Peerless by Tymphany drivers, each PMT model is fully optimized for the best performance-to-price ratio on the market. PMT series drivers are built with an aluminum cone, which provides extended frequency response and heat dissipation for better power handling. Aside from industry-leading excursion, these micro drivers have extremely low distortion, resulting in optimal speech intelligibility.

Motor Simulation



Frequency & Impedance Response



Big Sound from a Small Footprint

Each driver integrates high BI neodymium motors, ferrofluid centering, and low-mass aluminum diaphragms to deliver extraordinary dynamic range and clarity. Perfect for voice-driven systems and miniaturized high-output arrays.

High-volume displacement capability of our PMT drivers enables high-maximum, low frequency output, while the utilization of ferrofluid in the gap provides centering capability for the voice coil. The ferrofluid is retained between the top plate inside the voice coil, creating a sleeve where the coil will ride and be centered. Additionally, this fluid prevents the voice coil from rubbing and buzzing and improves power handling.



Advanced Natural Communication

UNIFIED COMMUNICATIONS

The Peerless Advanced Natural Communications (ANC) series sets a new standard for voice reproduction in unified communications systems. Each compact full-range transducer is optimized for ultra-low distortion, smooth power response and wide dispersion - delivering exceptional echo-cancellation performance and crystal-clear intelligibility. Built on Peerless' heritage of acoustic innovation, the ANC series features a unibody aluminum diaphragm for rigid, extended pistonic performance to beyond 40kHz. The result: conferencing experiences that feel effortless, authentic, and naturally connected.

 **SIZE RANGE**
40mm – 50mm

 **CHASSIS**
PLASTIC

 **MOTOR**
NEODYMIUM

 **DIAPHRAGM**
ALUMINUM



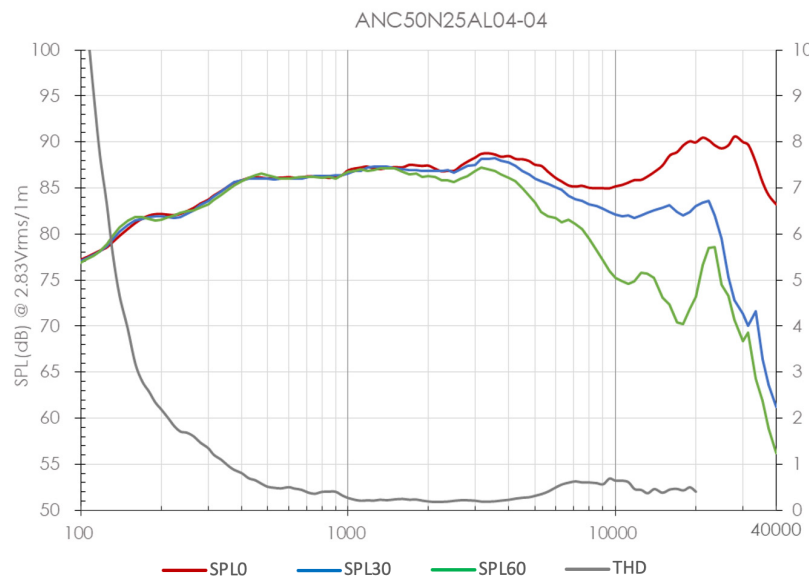
ANC-50N25AL04-04

- Ultra-low distortion and wide 130° dispersion for lifelike clarity
- Compact form factor ideal for conferencing bars, and collaboration systems
- Optimized motor and suspension linearity for superior echo-cancellation performance



TECHNICAL HIGHLIGHTS

ANC drivers are designed specifically for conferencing applications. Voice is reproduced clearly to stand out, and distortion is minimized to work well with acoustic echo cancellation algorithms. The power response is smooth for easy EQ and extends into the ultrasonic range for potential pairing applications. Plus, their shallow and compact size integrates easily into small form factors.



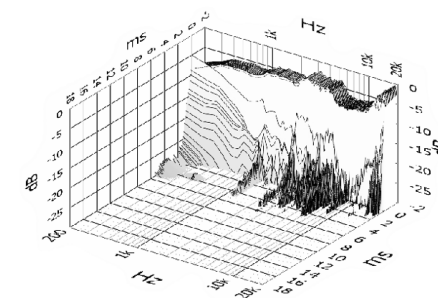
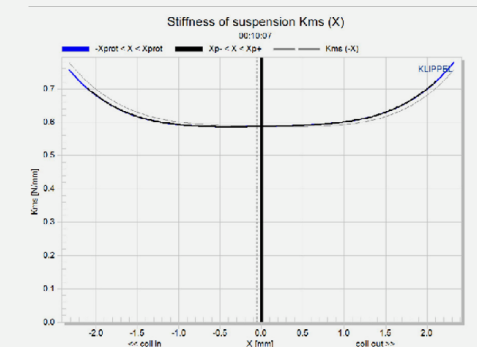
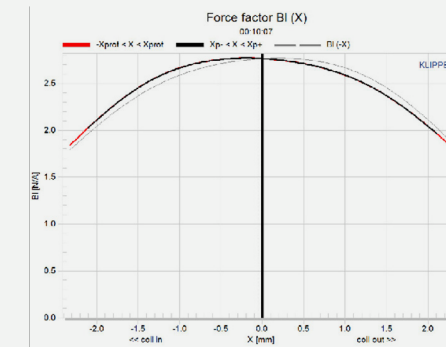
A smooth power response guarantees an evenly distributed sound in the room where multiple people might be listening.

Response Optimized for Communications

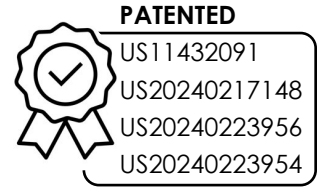
The ANC family of drivers is best suited to voice reproduction while also adeptly handling music. A smooth frequency response allows easy equalization for the designer. An aluminum cone increases sensitivity, brings the break-up mode above the vocal range, and extends high frequency output beyond 40kHz into the ultrasonic region to enable discovery, occupancy detection and pairing capabilities.

Low Distortion by Design Helps Your Algorithms

For telecommunications and conferencing applications, low distortion in driver design is critical. Acoustic echo cancellation algorithms work best when the transducer is completely linear so that all sounds are predictable. The large signal measurements shown below demonstrate the extra care taken to design a symmetrical driver while also extending the linear working range to that not typically seen in drivers of similar size and depth. Together, they allow lower-than-average harmonic distortion.



No strong resonances in the waterfall plot indicate a tight time domain behavior, ensuring that the driver provides clean, predictable output.



High Value Series

COMPACT FULL RANGES

The Peerless HVS series redefines transducer design through a disruptive and sustainable engineering approach – created with the planet, precision and performance in mind.

Featuring a patented overmolded suspension on a composite diaphragm, the HVS reduces waste-water pollution, eliminating adhesives bonds in the diaphragm suspension assembly. Incorporating recycled neodymium and plastics, HVS achieves a TUV certified >50% TUV carbon footprint reduction.

Advanced robotic manufacturing delivers exceptional part-to-part and batch-to-batch consistency across globally deployed production cells. HVS represents the next generation of sustainable transducer design where responsible innovations meet uncompromised acoustic excellence.



SIZE RANGE
1.5" – 3.0"

CHASSIS
PLASTIC

MOTOR
NEODYMIUM

DIAPHRAGM
GLASS FIBER ALUMINUM

HVS50N18PG02-04



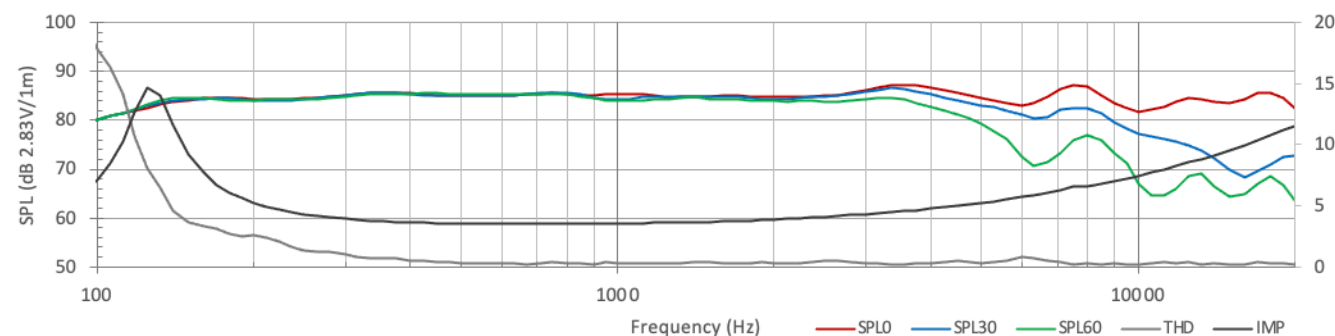
TECHNICAL HIGHLIGHTS

The Peerless HVS Series introduces patented, sustainability-driven transducer architecture designed for precision robotic assembly and scalable global manufacturing.

Overmolded Thin Ply Technology

Featuring an overmolded suspension integrated directly into a thin-ply composite diaphragm, HVS eliminates adhesive bonding between cone and surround—cutting adhesive use per transducer by 75%. Proprietary polymer composite replaces paper pulp cones, reducing wastewater pollution, ensuring exceptional acoustic consistency and long-term stability. Each unit leverages Robotic Peerless Manufacturing (RPM), a four-zone automated process that achieves zero direct labor, <15 min changeovers, and >330 UPH throughput. By dematerializing magnetic and structural components, HVS reduces rare-earth usage by 35% for equivalent performance and achieves a TÜV-certified >50% carbon footprint reduction with recycled neodymium magnet—all while matching or exceeding the frequency response, bandwidth and low frequency performance of conventional designs.

Frequency & Impedance Response HVS60N18PA01-04



Get to know the HVS series

Ranging from shallow design with low displacement to high displacement high bandwidth designs, the HVS is one of the most flexible, modular, compact full-range platforms on the market.

The result is a new paradigm: precision through automation, sustainability without compromise.





Total Concept Series

COMPACT FULL RANGES

Peerless T-Series full-range drivers are one of the industry's most versatile compact transducer platforms, spanning 1.5" to 4.0" sizes and available in multiple aspect ratios, cone materials, and magnet topologies (ferrite and neodymium).



 **SIZE RANGE**
1.5" – 4.0"  **CHASSIS**
STEEL  **MOTOR**
FERRITE, NEODYMIUM  **DIAPHRAGM**
PAPER | ALUMINUM | GLASS FIBER

TC8FC13-04

Patented PentaCut Cone Geometry – Controls breakup modes for smoother frequency response and reduced harmonic distortion.

Multiple Material Options – Coated paper, aluminum, or glass fiber diaphragms to fine-tune tonal balance and durability.

Scalable Magnet Platforms – Ferrite or neodymium motors deliver the ideal balance of cost, weight, and efficiency.

Validated Performance – Every design is FEA-modeled and Klippel-verified for consistent production and low variance.

Applications: Ideal for compact consumer speakers, soundbars, teleconferencing systems, column arrays, and installed professional sound products.



TECHNICAL HIGHLIGHTS

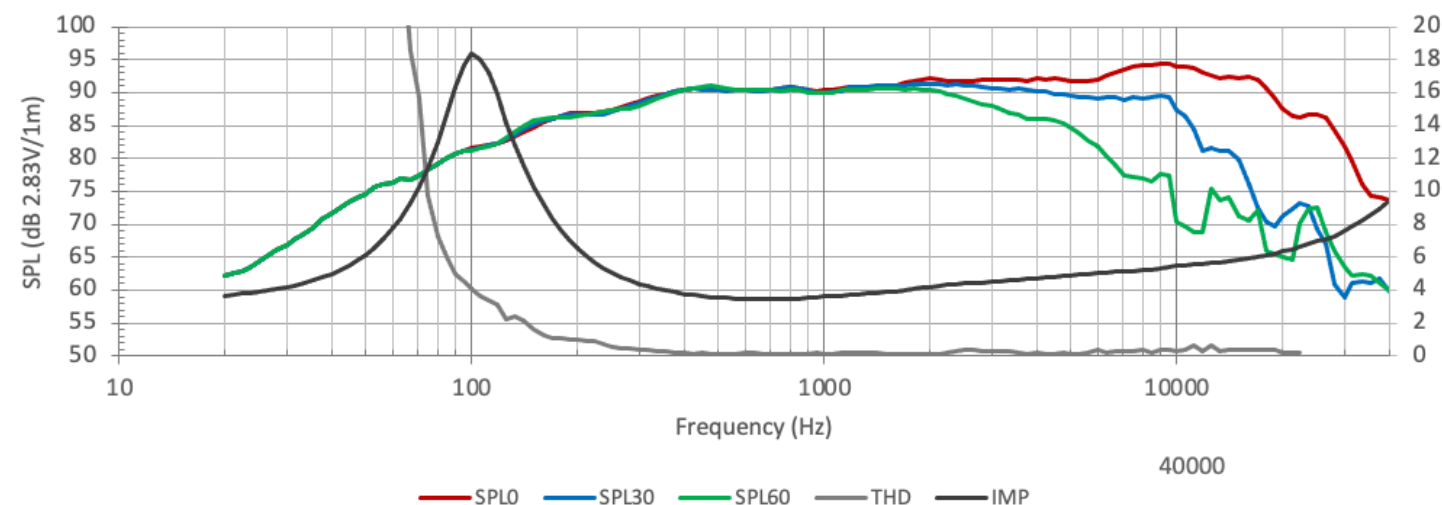
T-series drivers were designed to give you the flexibility to find the right performance level and price point for your application. Each driver is fully optimized to get the most out of carefully chosen, cost-effective materials.

Get to know the TC Series

Ranging from ultra-low-cost to ultra-high-sensitivity, the TC series is one of the most versatile compact full-range transducer family on the market. Its finely balanced design offers remarkably flat frequency response and extension. Unique to the TG9 is high sensitivity, low QTS and outstanding frequency response extension to 30kHz, making this an ideal driver for line array or column speakers.

Frequency & Impedance Response

TG9FC01-04



PentaCut NRSC Cone Technology

Our patented PentaCut technology is a five-sided cut around the cone that prevents severe cone breakup and distributes cone breakup modes. By adding cuts to the cone, we are able to distribute the bell breakup modes that introduce distortion, which helps us gain more control of the smoothness of the frequency response while also achieving reduced distortion.



Peerless LifeStyle

PREMIUM COMPACT FULL RANGE SOLUTIONS FOR LIFESTYLE PRODUCTS

The Peerless LifeStyle (PLS) Series embodies refined acoustic engineering—delivering full-range performance from a compact footprint. Originally introduced in 2005 with a neodymium motor and evolved with ferrite variants, PLS has earned its place in award-winning products worldwide. Through COMSOL-optimized cone geometry and an extended copper cap design, PLS drivers achieve exceptionally low distortion, extended high-frequency response, and remarkable control over compliance and excursion. An unusually large diameter voice coil along with vented under-spider architecture ensures advanced motor cooling, providing high linearity even in high-output conditions. Whether integrated into home entertainment systems, premium soundbars, conferencing systems, or high-density professional line arrays, PLS delivers clarity, bandwidth, and reliability that transcend its size.

↗ **SIZE RANGE**
50mm – 75mm

⚙️ **CHASSIS**
PLASTIC | STEEL

🔋 **MOTOR**
NEODYMIUM | FERRITE

🔊 **DIAPHRAGM**
ALUMINUM



PLS-P830986

Compact High-Output Architecture – Optimized for high excursion and low distortion, enabling deep bass and extended treble in space-limited enclosures.

Advanced Motor Design – Large diameter voice coil, with vented under-spider thermal path minimizes power compression and ensures consistent performance at high SPL.

Optimized Aluminum Diaphragm – Integrated cone and dust cap geometry deliver smooth, extended bandwidth up to 18 kHz with superior off-axis response.

Extended Copper Cap and Linear Suspension – Improves inductance symmetry reducing distortion, and dynamic detail while maintaining low-frequency control.

Proven Heritage and Scalability – Trusted in global consumer, conferencing and pro audio systems since 2005, adaptable for compact lifestyle, conferencing, and line-array applications.



TECHNICAL HIGHLIGHTS

We designed PLS drivers with unique design and material enhancements that make these full-range drivers perfect for consumer, conferencing and professional audio applications. From the 25mm voice coil to the advanced motor cooling system, every component is fully optimized for high-performance at competitive costs.

Design Enhancements

25mm Voice Coil – Signature of the PLS family, the relatively large diameter voice coil as well as large winding width allow a highly efficient motor design extracting the highest flux density from the magnet possible – enabling higher BL, and higher excursion and higher power handling than the competition.

Advanced Motor Cooling – PLS utilizes a thermal path with a vented basket under the spider for better airflow through the motor system – this further enables better power handling.

Suspension System Design – The spider and surround are designed such that the excursion limits are matched. The subtle elliptical surround helps us achieve better control over the shape of the compliance curve. vBy matching the height of the surround to elliptical shape, we can fine-tune the flatness of the compliance curve.

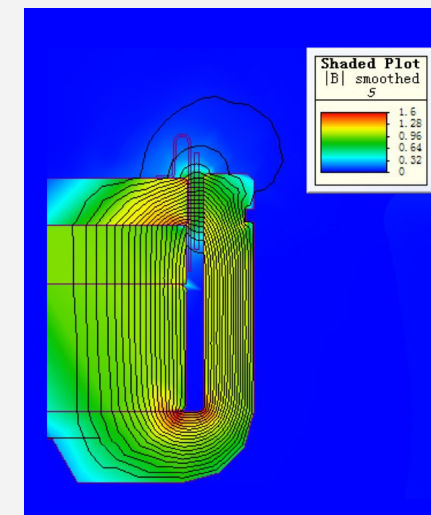


Material Enhancements

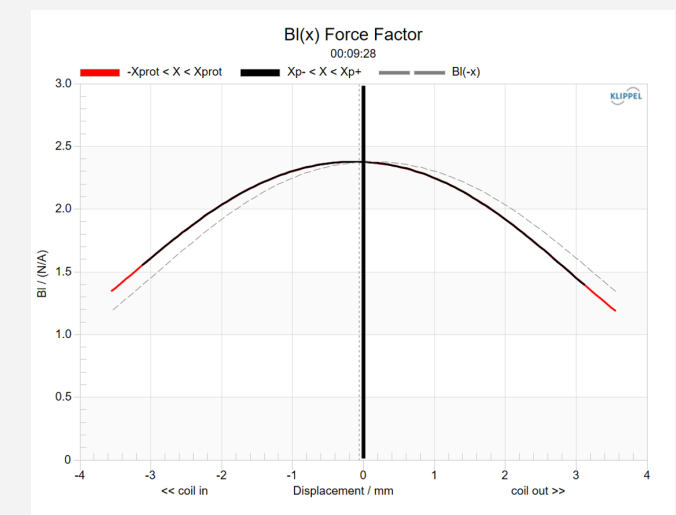
Copper Cap – The copper cap is extended further than a conventional full-range driver, which provides better inductance symmetry and reduces the distortion by changing inductance. It also extends the high frequency response of the driver due to the lower inductance.

Packing Density – The frame is designed such that the surround goes almost to the edge of the frame. This makes the driver mechanically ideal for a line array.

Motor Simulation



Motor BL(x) Performance



PLS-75N25AL02-08



Peerless FSL

PROFESSIONAL STAMPED STEEL WOOFERS

Peerless FSL woofers redefine value in professional acoustic components. With a range spanning 5" to 18" models, the line scales so that audio product creators can hit performance-cost targets. A lightweight, weather-sealed, fiber reinforced paper cone and double-roll cloth surround along with high performance spiders for highly symmetrical excursion resulting in low distortion. The vented ferrite motor—precision-optimized for flux symmetry—keeps the voice-coil cool, unlocking class-leading power handling with minimal thermal compression.



SIZE RANGE
5" – 18"



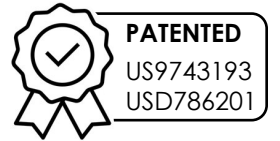
CHASSIS
STEEL



MOTOR
FERRITE



DIAPHRAGM
FIBER REINFORCED PAPER



FSL-1225R02-08

Optimization at a Value Price – Each FSL woofer undergoes full FEA, Klippel, SoundCheck and reliability validation normally reserved for premium-class transducers.

Engineered Symmetry – Optimized BL(x), Le(x), and Kms(x) curves deliver low distortion, extended linearity, and predictable system behavior.

Thermally Stable Design – Vented ferrite motor and airflow geometry minimize power compression for consistent performance.

Rugged and Reliable Construction – Pressed steel chassis, high-strength paper cone, and double-roll fabric surround, and nomex spider ensure durability under continuous rated power use.

Broad Portfolio Coverage – Complete size range from 5" to 18" supports portable PA, install, cinema, and point-source loudspeaker needs.

Best-in-Class Cost/Performance Ratio – Delivers acoustic and mechanical performance competitively priced. Reliability—at a price that lets your product line leapfrog the competition.

Applications: Portable PA, install, point & shoot, and cinema loudspeaker categories where audio system creators seek maximum output and reliability per dollar

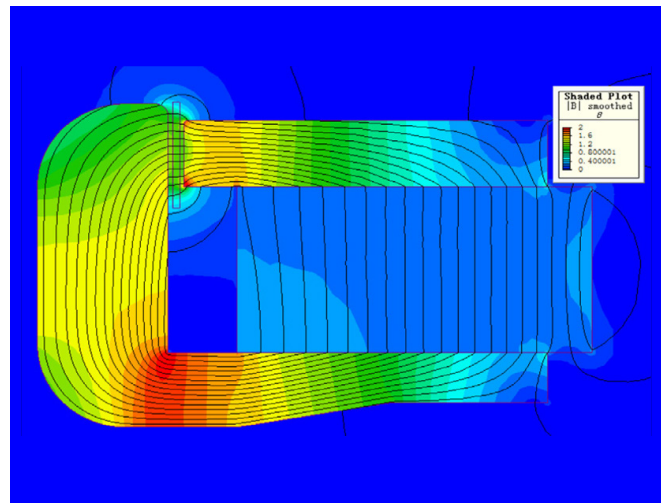


TECHNICAL HIGHLIGHTS

FSL loudspeakers are designed for high performance at a lower price point. Unlike many drivers in this category, these drivers go through the complete optimization process – cone profile, Suspension, BL, Klippel Analysis, Thermal Behavior – and full validation testing, ensuring the best performance and reliability.

Wide Selection of Designs

The FSL woofer features a ferrite magnet, pressed steel basket, paper diaphragm, and fabric surround. A wide selection of chassis sizes from 5"-18" and motors with voice coil diameters from 1.5" to 3.0" will meet your specific design needs.



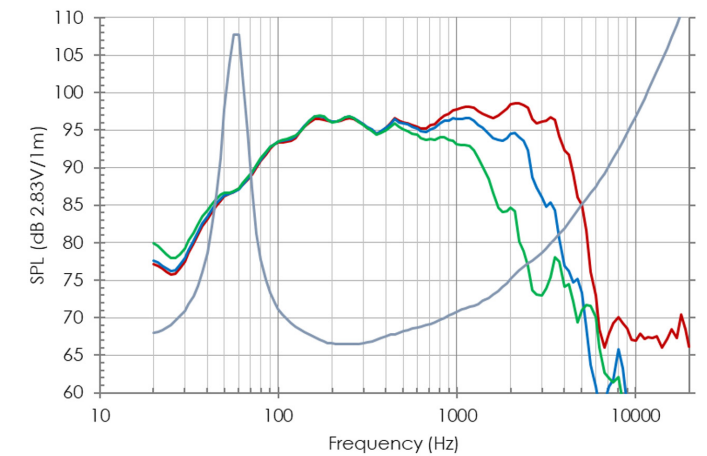
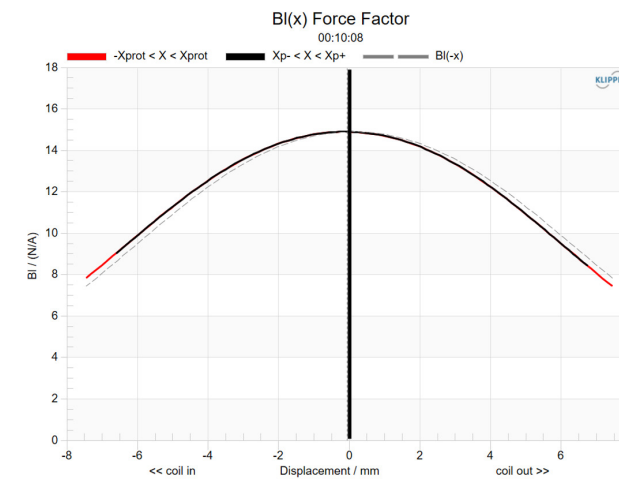
Magnetic FEA

FSL-1225R02-08

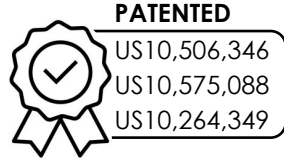
With all Peerless drivers, we use FEA simulation on every motor system design to maximize flux density and optimize BL symmetry. The result is an efficient and cost-competitive solution for your system.

Motor BL(x) Performance

FSL-1225R02-08



Every FSL woofer undergoes the full Peerless optimization workflow—from COMSOL FEA and to SoundCheck frequency response, impedance and distortion verification to Klippel small signal and large signal performance analysis. Each motor is magnetically modeled to maximize flux density per magnet volume and achieve highly symmetrical BL(x) and linear Le(x) curves, ensuring linear performance and low distortion even at high excursion. Suspension systems are refined through Kms(x) symmetry analysis, combining optimized precision spider and surround geometries to deliver uniform compliance and reliable centering. Paper diaphragms are FEA optimized for smooth axial and power response, supported by steel baskets, driven by vented ferrite motors that balance cost, performance, and rigidity. Thermal simulations as well as extensive power testing confirm robust endurance and consistent tonal character across production batches. The result is professional-grade performance engineered with full validation discipline—rarely applied at this price point.



Definition Compression Drivers

HIGH-FREQUENCY DOME COMPRESSION DRIVERS

Peerless Definition high-frequency compression drivers are engineered for today's most demanding professional sound reinforcement systems — resulting in high output, low distortion and high reliability. Our patented Energy Link Interface technology uses a coupler to maximize both mechanical and thermal energy transfer between the voice coil and titanium diaphragm. This interface improves transient response, extends bandwidth, and enhances power handling, reducing power compression — setting a new standard in performance and reliability. A polyimide surround enables reliable operation at lower crossover frequencies than conventional designs, while the high-stiffness titanium diaphragm, coated with a proprietary damping layer, produces an exceptionally smooth and natural sound character. Every detail — from the FEA-optimized dome, phase plug, and motor geometry with thermal management — has been designed for maximum performance-to-cost. The result is a compression driver family with high sensitivity, extended response, and low distortion that is equally applicable in “point & shoot” systems to installations and premium touring loudspeakers.

**SIZE RANGE**
0.75" – 1.4" EXIT
1" – 3" VC

**SUSPENSION**
POLYIMIDE

**MOTOR**
FERRITE & NEO

**DIAPHRAGM**
TITANIUM



DOME	FERRITE	NEO
25mm	DFL	
35mm, 44mm	DFM	DNM
50mm, 75mm		DNP

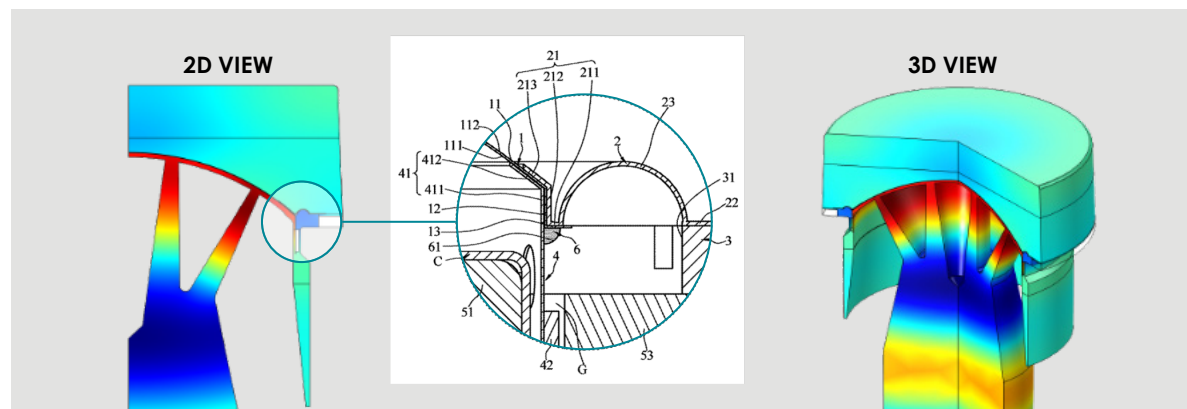


TECHNICAL HIGHLIGHTS

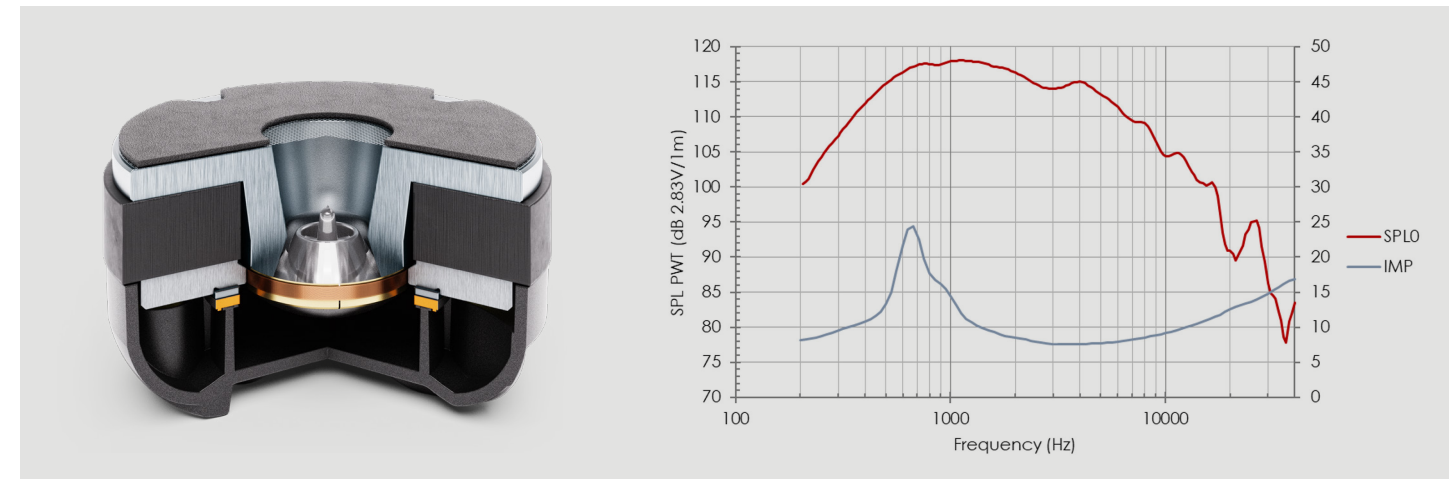
Our growing lineup of high frequency compression drivers are best suited for professional sound- reinforcement applications. Built for their reliability and high output, Our DFM-2535 is no different – we use environmental-resistant materials (heat, vibration, aging), to ensure years of stable performance.

Phase Plug Analysis – DFM2535R00-08

One function of the phase plug is to ensure the pressure waves coming out of the exit are flat. These flat pressure lines indicate that sound wave path lengths from driver to the listener are equalized. These critical dimensions can make or break a compression driver's performance. Our drivers are fine-tuned through extensive FEA optimization, prototyping and testing along with subjective listening tests to ensure optimum performance for the price.



Plane Wave Tube Performance: DFM2535R00-08



With the DFM-2535, we were able to achieve a crossover point at 1.5kHz, while most competitive models on the market are at 2.5kHz or higher. This is enabled by both design and material enhancements:

1. Our patented Energy Link Interface technology is an actuating flange on the voice coil to maximize both mechanical and thermal energy transfer into the diaphragm. This dual-action interface improves transient accuracy, extends usable bandwidth, and enhances power handling with reduced compression — setting a new standard in efficiency and consistency.
2. Unlike other compression drivers on the market, the DFM-2535 utilizes a separate kapton surround – the softer suspension and high-temperature, well-damped surround enables the lower Fs.
3. In addition, further market differentiation is realized in this price class with the use of high-stiffness titanium diaphragm, coated with a proprietary damping layer, produces an exceptionally smooth and natural sound character.



Peerless FS Coaxial

PROFESSIONAL POINT SOURCE COAXIAL LOUDSPEAKERS

Peerless FS Coaxials redefine point-source performance—combining FEA optimized ferrite woofers with Peerless Definition compression drivers with patented Energy Link Interface for seamless bandwidth, low distortion, and class-leading value in any system.



SIZE RANGE
6.5" – 15"



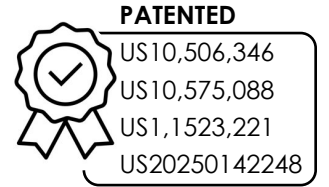
CHASSIS
STEEL



MOTOR
FERRITE



DIAPHRAGM
PAPER | TITANIUM



FSC1225R08-08

Architecture Flexibility: UniMotor for shallow-mount, lightweight systems or DuaMotor for maximum output and thermal stability.

Integrated Energy Link Interface: Patented dome voice coil coupling delivers superior thermal performance, extended bandwidth and reduced distortion.

Controlled Dispersion: Standard axisymmetric conical coverage, optional asymmetric horns or Peerless AxiContour Technology (PACT) for precise directivity control.

Thermal and Mechanical Robustness: Advanced venting and high-stability spiders ensure consistent reliability under continuous high-power use.

Applications: Ideal for point and shoot, installation, and cinema systems where designers seek maximum output and reliability per dollar.

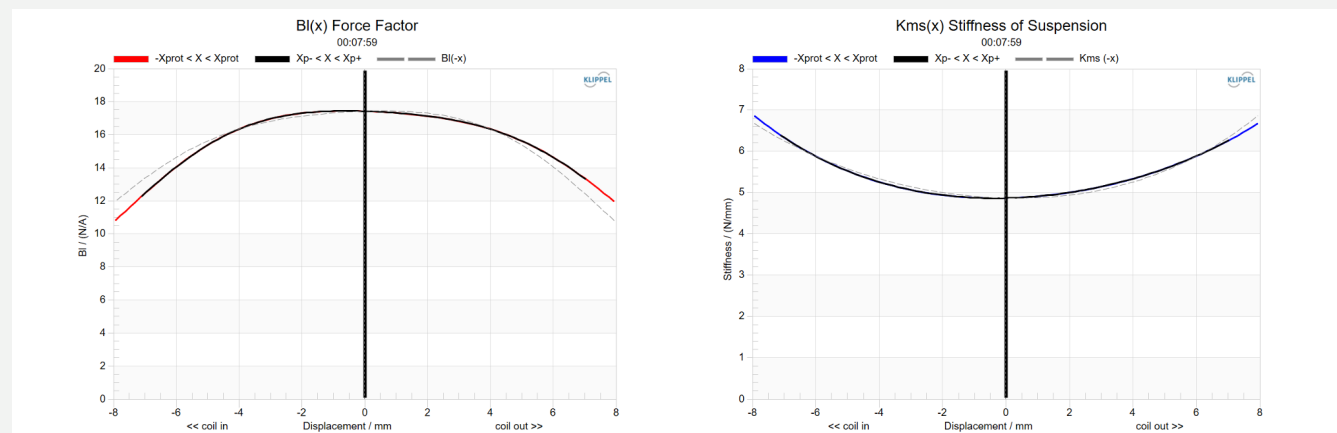


TECHNICAL HIGHLIGHTS

The Peerless FS Coaxial Series combines FEA-optimized ferrite woofers with our patented Energy Link compression drivers, delivering seamless point-source coherence, wide 120° coverage, and superior thermal stability.

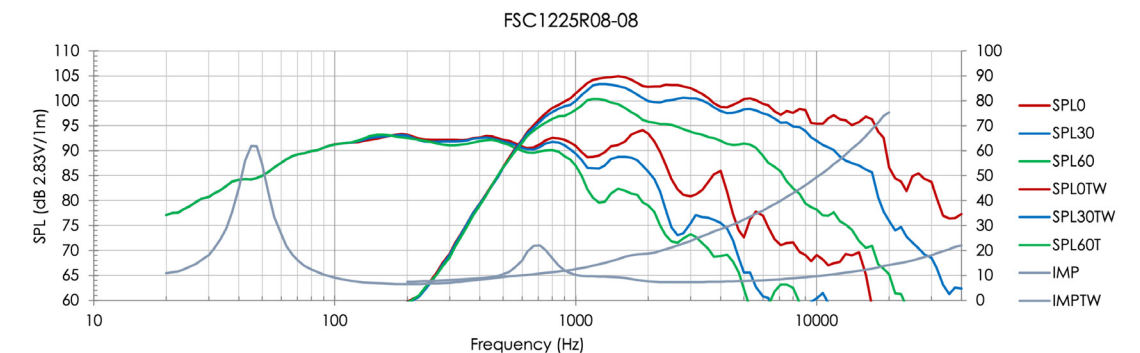
Design optimization

Every FS Coaxial model employs a high-efficiency ferrite motor system designed through 3D FEA simulation for maximum BL and KMS symmetry as well as low inductance modulation. High temperature voice coil design as well as under-spider venting enhance power handling with convection cooling, minimizing power compression under continuous use. The linearized BL(x) and Kms(x) curves ensure low distortion at high excursion, while the optimized magnetic gap geometry achieves high sensitivity—94 dB (LF) and 100 dB (HF)—for class-leading acoustic output at 250 W AES power handling.

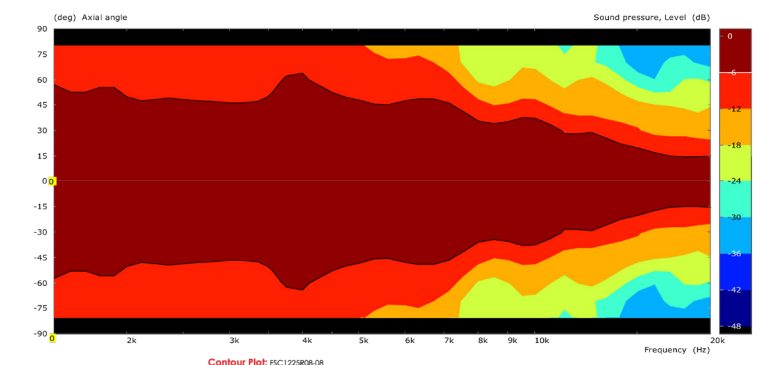


Acoustic performance optimization

The coaxial acoustic assembly features an optimized cone profile and throat transition engineered through combined FEA simulation. The result is a controlled 120° conical coverage with smooth axial response and minimized diffraction. The doped cone provides critical damping for balanced midrange performance, while the integrated phase plug and waveguide geometry ensure HF and LF acoustic centers align for coherent summation—producing consistent off-axis response and superior tonal uniformity.



Contour Plot: FSC1225R08-08





Peerless NSM Woofers

PROFESSIONAL LOUDSPEAKERS

Peerless NSM woofers redefine value in professional acoustic components. Designed with neodymium motors and steel frames, with a range spanning 4" to 12" models, the line scales so that audio product creators can hit performance-weight-cost targets.



↗ **SIZE RANGE**
4" – 12"

 **CHASSIS**
STEEL

 **MOTOR**
NEODYMIUM

 **DIAPHRAGM**
PAPER

NSM-0515R00-08

Ultra-Efficient Neodymium Shell Motor: Precision-optimized for magnetic symmetry and cooling efficiency, delivering superior sensitivity with minimal thermal compression.

Lightweight Weather-Sealed Cone: Fiber-reinforced, water-resistant paper diaphragm and double-roll cloth surround combine low mass with high durability for outdoor and touring use.

Symmetric Suspension: Dual roll surround with high performance spiders ensure linear excursion and reduced distortion across the full operating band.

Optimized Airflow Architecture: Vented motor and frame enable effective heat dissipation and consistent performance under high continuous power operation.

Advanced FEM-Driven Design: COMSOL and Klippel-validated optimization across magnetic, mechanical, and thermal domains ensure class-leading reliability and bandwidth.

Applications: Ideal for compact, high-output enclosures in portable PA, line array, installation, and cinema systems—where low distortion, high sensitivity, and reduced system weight define professional performance.



TECHNICAL HIGHLIGHTS

The Peerless NSM Series was engineered to deliver maximum acoustic output per gram. Using advanced finite element modeling, the magnetic circuit to the suspension geometry was highly optimized for linearity, symmetry, heat flow, and structural rigidity.

NSM Woofer Family

The NSM family is a lightweight, high-sensitivity neodymium motor platform with exceptional linearity and thermal stability, purpose-built for professional-grade woofer, midrange reproduction.

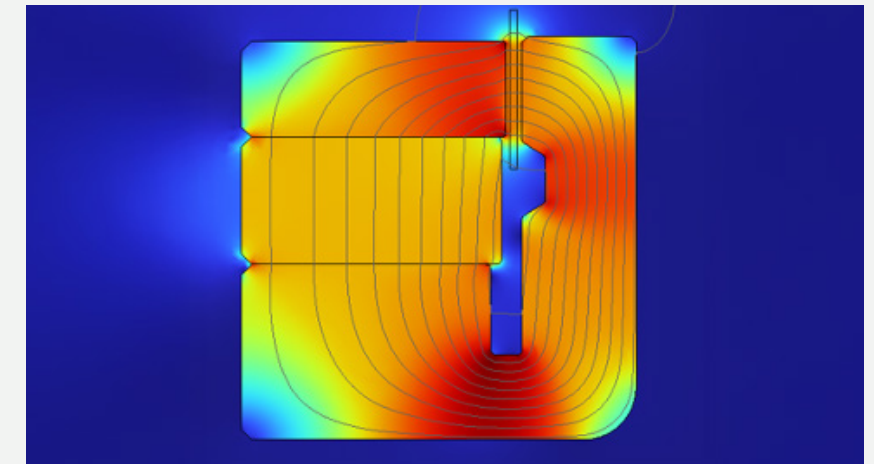
- **High efficiency neodymium shell motors** offer the best utilization of neodymium magnet material with the highest possible working point, that deliver ultra-high flux density with symmetrical $Bl(x)$ response for extremely low distortion.
- **Dual Demodulation Rings** — Linearize inductance and minimize intermodulation artifacts, ensuring clarity even under high SPL conditions.

Applications - Ideal for compact, high-output enclosures in portable PA, line array, installation, and cinema systems—where low distortion, high sensitivity, and reduced system weight define product requirements

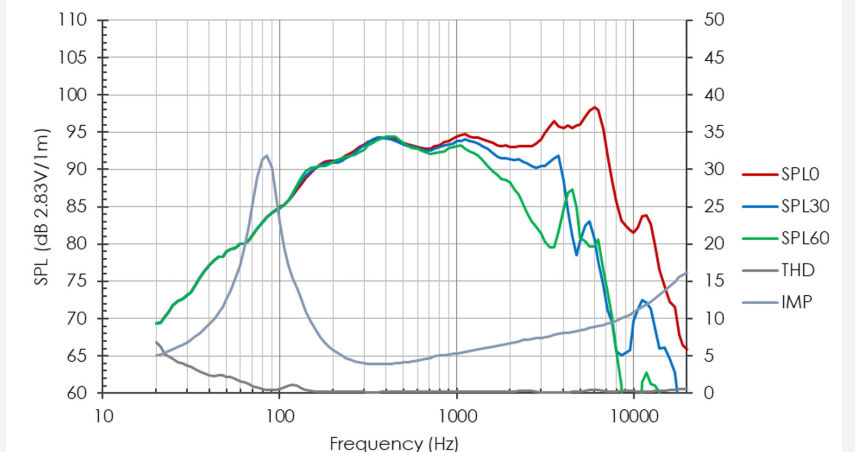
- **Vented Voice Coil Gap** — Promotes continuous airflow across the coil and top plate, reducing temperature rise and power compression.
- **Balanced Suspension System** — Matched spiders and surrounds produce uniform compliance and stable excursion characteristics.
- **Weather-Sealed Cone Assembly** — Water-resistant fiber-reinforced paper diaphragm and double-roll cloth surround withstand demanding live and outdoor environments.

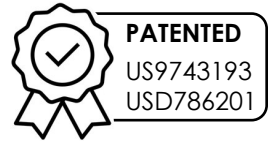
Motor Simulation

NSM0825R00-08



NSM0620R00-04





Peerless NCP

HIGH-PERFORMANCE PROFESSIONAL LOUD SPEAKERS

The Peerless NCP (Neo Cast Premium) series (10", 12", 15") is the flagship professional transducer platform, engineered for maximum sustained output and thermal resilience. The NCP's proprietary Neodymium motor structure featuring integrated cooling technology and rigid cast aluminum chassis form the basis of its unmatched performance.



SIZE RANGE
10" - 15"



CHASSIS
ALUMINUM



MOTOR
NEODYMIUM



DIAPHRAGM
REINFORCED PAPER



NCP1230R01-08

Forced Convection Cooling (FCC)

Patented technology that utilizes the cast aluminum frame and directed vents to greatly reduce voice coil operating temperature and power compression.

Premium Architecture

Features FEA-optimized Neodymium motors and cones for high power density and Klippel-validated, fiber-reinforced cones.

Performance & Reliability

Delivers class-leading power handling (1200W RMS AES) and high sensitivity (up to 98 dB) for consistent and reliable performance under demanding conditions.

Applications Summary

The NCP series is ideal for demanding professional sound reinforcement applications, including commercial installation, and high-end point & shoot systems, where maximizing sustained SPL per unit of weight is essential.

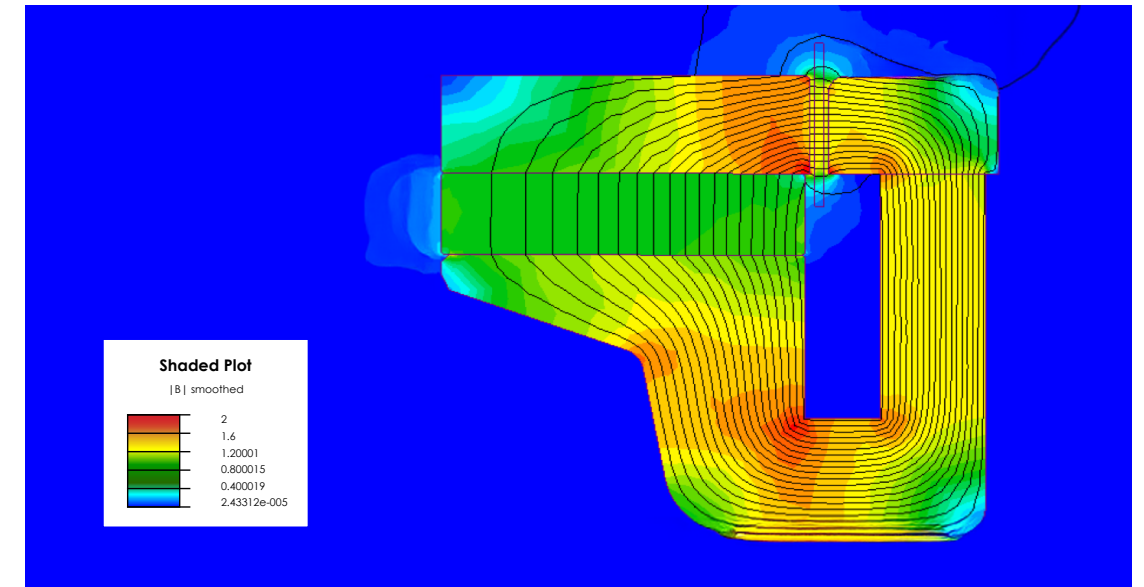
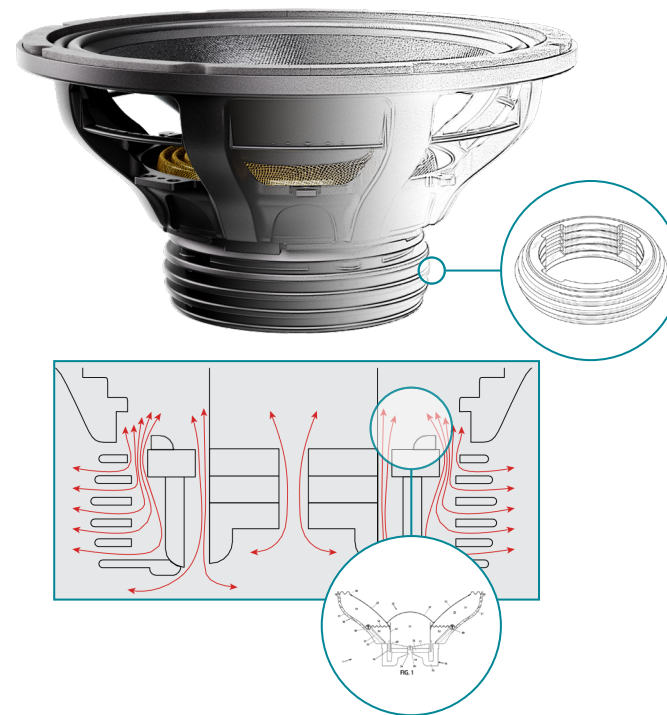


TECHNICAL HIGHLIGHTS

The NCP platform originates from Peerless' premium neodymium development program, combining COMSOL-driven motor geometry, Klippel-validated cone and suspension behavior, and patented motor thermal management architecture. NCP establishes a new high-performance benchmark for efficiency, output, cooling, and reliability in neodymium cast-frame woofers.

Forced Convection Cooling System

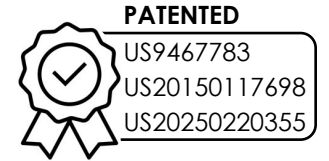
The NCP chassis is a purpose-built cast-aluminum architecture acting simultaneously as a structural backbone and a heat-extraction system. Airflow is engineered with strategically positioned vents that channel high-velocity air past the motor, through the under-spider vents, and directly over the finned heat-sink. The vertically oriented fins dissipate heat in the mounting orientation used in professional loudspeakers. The result is 1200 W AES / 2400 W continuous power handling that is ~20% higher thermal stability than leading competitors, with low power compression even under sustained use.



Magnet Simulation: NCP-1230R01-08

Motor Design Optimization

The NCP1540's neodymium motor is fully parametrically optimized for flux symmetry, linear BL(x), and exceptionally low inductive modulation with a T style yoke design. The result: >8 mm linear excursion with a beta exceeding 111 Tm²/re, delivering the motor strength expected from top-tier EU competitors. The large-signal behavior remains stable with high excursion, enabling clean, high-SPL low-frequency performance without the power compression seen in conventional neodymium motors.



GB Series

SHALLOW MOUNT – DEEP PERFORMANCE WOOFERS

The Peerless GB Series redefines what shallow woofers can be. When installation depth is greatly constrained, yet low-frequency performance cannot be compromised, the GB woofers deliver. Built around our patented shallow transducer technology (US9467783, US20150117698, US20250220355), the GB series achieves the volume displacement and maximum output normally associated with standard depth woofers — but in less than half the height.

	SIZE RANGE		CHASSIS		MOTOR		DIAPHRAGM
	3" – 10" Round 3 x 5" Obround						
			STEEL		FERRITE, NEODYMIUM		PAPER ALUMINIUM

A domed-profile diaphragm with unique inverted suspension topology work together to unlock performance inside an enclosure depth previously considered impossible. The series now expands with the latest GBX and GBA neodymium variants, pushing motor force, linearity, and output even further while cutting total mass dramatically. Available in round and obround formats, with ferrite or neodymium motor systems, the GBS family enables system designers in automotive, consumer, and professional markets to deliver uncompromised bass in the tightest physical environments.



GBX65140N25AL00-04



GBA200N38CP01-02

Applications: Automotive subwoofer modules, residential or commercial in-wall, on-wall systems, premium consumer systems, and any product where great bass performance must fit into shallow industrial design envelopes.



TECHNICAL HIGHLIGHTS

Creating a shallow woofer without sacrificing displacement capability is notoriously difficult challenge to accomplish. The Peerless GBS architecture solves this through patented design innovations (US9467783, US20150117698, US20250220355) that preserve full excursion capability while reducing total driver height compared with conventional designs — without compromising low frequency maximum output and extension.

Excursion Clearance

The GBS series along with the latest GBX and GBA neodymium variants elevate the GBS platform to a higher performance tier. An FEA-optimized shell NEO motor design delivers exceptional magnet efficiency, low inductance modulation, and highly symmetrical $Bl(x)$ behavior with greater than 9 mm stroke based on 50% of the at rest Bl value. The lightweight NEO architecture reduces total mass while increasing sensitivity. With the unique dome and suspension geometry, the voice coil remains controlled through the entire displacement envelope, preserving linearity at high excursion.

The result: clean, high-output bass from a remarkably shallow package.

DESIGN EVOLUTION

Evolution of the shallow GBS woofer design



Depth and Weight Advantages

Overall height reduction: From ~110 mm in a standard 8" woofer to <50 mm in the GBA200N38 — a 55% reduction with no compromise in displacement capability.

Total mass reduction: From 2.5 kg to 1.2 kg, a 53% weight savings, yielding great reduction in carbon footprint throughout the product lifecycle.

Volume displacement maintained: Despite the radically compact architecture, GBA maintains a full 7.4 mm X_{max} , (>9.0mm X_{var}) enabling the same low-frequency authority as conventional woofers, dramatically improving the bass density – decibels per unit woofer volume.

Together, these advantages give system designers an entirely new degree of freedom: true deep-bass performance that fits where traditional woofers physically cannot.



High Definition Sound

PREMIUM PERFORMANCE WOOFERS

The HDS family stays true to its Peerless heritage with enhanced performance. HDS drivers feature cast aluminum frames, ferrite magnets and inductance controlling features. Multiple cone materials are available for unique visual and acoustic characteristics. These drivers are designed with vented cast aluminum frames for structural rigidity and thermal management, as well as under-spider venting to reduce compression and shorting rings to lower distortion.

↗ **SIZE RANGE**
4" – 8"



CHASSIS
CAST



MOTOR
FERRITE



DIAPHRAGM
VARIOUS



HDS-P830875

Cast-aluminum, vented basket for rigidity and heat shedding.

Ferrite motor with aluminum shorting ring to reduce and linearize inductance over displacement reducing harmonic distortion.

Vented Motor and Cone Neck Architecture signature design reduces air compression at high excursion.

FEA-optimized suspension – surround & spider - for highly linear compliance for reduced distortion at maximum displacement.

Multiple cone options to tune tonality and visuals for audio system creators.

The HDS series is designed with performance in mind for studio monitor, premium consumer and Hi-Fi applications.



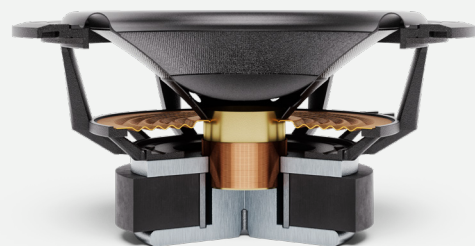
TECHNICAL HIGHLIGHTS

The HDS series is perfectly suited for premium multi-way loudspeaker systems, including high-fidelity bookshelf and tower speakers, sophisticated studio monitors requiring uncompromising neutrality, and high-quality sealed or vented enclosures where bass accuracy and dynamic detail are critical. The HDS series is world renowned for smooth and extended frequency and power response that yields midrange linearity that enables seamless crossover designs in audio systems.

Compression and Thermal Management

HDS woofers utilize dual venting system, with ventilation under the spider and a vented cone neck. This architecture provides necessary compression relief, ensuring air pressure equalizes quickly. This maintains dynamic headroom, guaranteeing that the driver's response remains linear and predictable even during demanding high-excursion peaks.

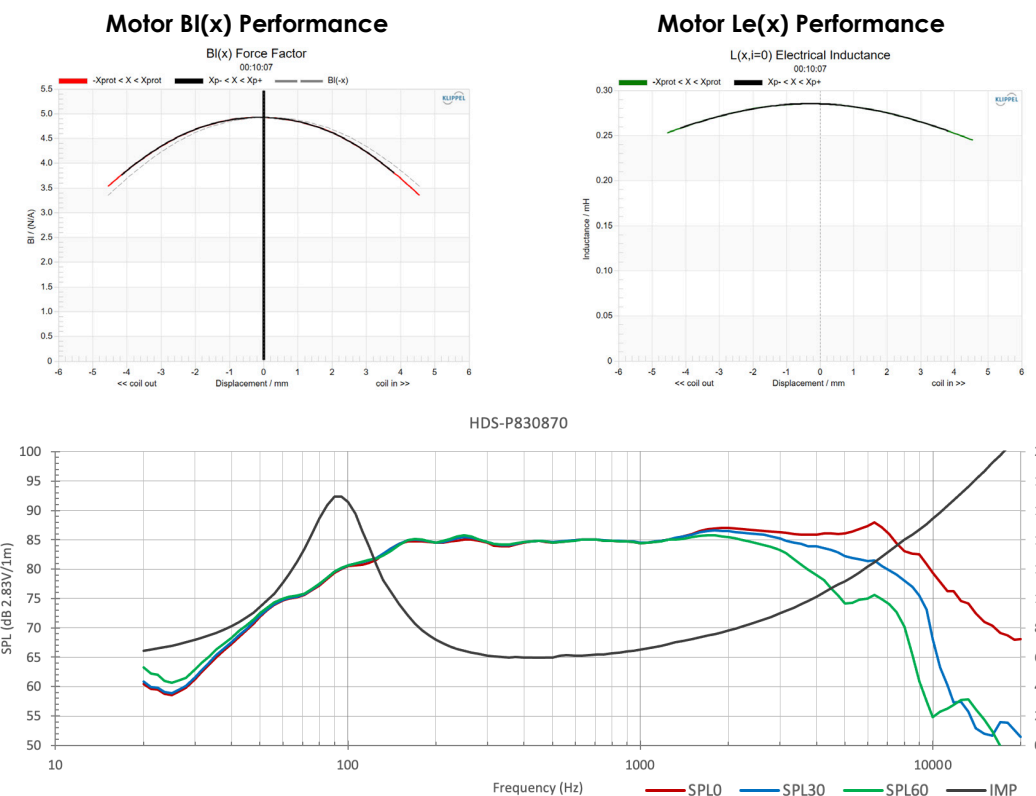
Sectional View



The thermal stability of the motor is maintained by using a robust, precision cast aluminum basket. The cast frame provides exceptional structural rigidity, preventing flex or ringing that could compromise sound quality. Furthermore, the cast aluminum acts as a highly efficient heat sink to conduct and dissipate the heat from the voice coil.

Flux Modulation Control

The foundation of the HDS series' linearity is the incorporation of an aluminum shorting ring (also known as a flux demodulation ring) within the motor gap. The primary function of the shorting ring is to drastically reduce voice coil inductance. Strategically located shorting rings ensure that the electrical impedance of the driver is reduced at high frequencies and predictable across the frequency band, thereby extending the usable high-frequency response and providing a linear inductance with displacement that dramatically reduces distortion.





Superior Series

COAXIALS, WOOFERS, SUBWOOFERS

The Peerless Superior product line is the foundation of low-frequency performance: a full portfolio of coaxials, woofers and subwoofers engineered to deliver uncompromised output, reliability, and value across every major application in consumer and professional segments. From the classic SDS woofers and UL-friendly SBS subwoofers to the fullrange, long-stroke SLS, the ultra-linear SDF, and the monster STW, Superior is built on decades of proven engineering and relentless refinement.

Each series solves a different user problem with purpose-built designs—steel frames for cost-sensitive system integration, long-stroke motors and suspensions for deep bass with control, cast frame platforms for mechanically stable, high power, distortion-critical applications, and oversized motors for extreme low frequency output.

Together, they provide audio system creators with dependable, scalable toolkit: consistent acoustic performance, robust thermal design, and predictable reliability backed by Peerless' 100-year legacy. Superior isn't just a product line - it's our mindset to deliver greater output, durability, and value than anything in its class.



SLS85S25CP05-08



SDS160F25PR01-08



SDF250F75PR01-06



Superior Dynamic

WOOFERS

The Peerless SDS series is one of the most enduring expressions of classic Peerless engineering: Danish acoustic design principles executed with modern Asian manufacturing precision. The SDS drivers deliver the smooth response, low distortion, and predictable system behavior that made Peerless a global reference for compact 2-way loudspeakers.



SIZE RANGE
4" – 6.5"



CHASSIS
STEEL



MOTOR
FERRITE



DIAPHRAGM
COATED PAPER



SDS160F25PR01-08

With drivers in 4" to 6.5" sizes, SDS models are built around carefully balanced motor structures, lightweight cones, and optimized suspensions that prioritize neutrality, bandwidth, and ease of system integration. Their clean roll-off, consistent performance, and robust reliability make them a favorite among designers who need dependable performance without unnecessary complexity or cost. SDS is the quintessential Peerless woofer: refined over decades, trusted worldwide, and engineered to deliver real acoustic value in every application—whether in consumer audio or professional audio systems.

Applications – Consumer, professional.



TECHNICAL HIGHLIGHTS

The SDS series represents classic Peerless Danish design—clean engineering, smooth acoustics, and honest performance—refined through modern Asian manufacturing efficiency.

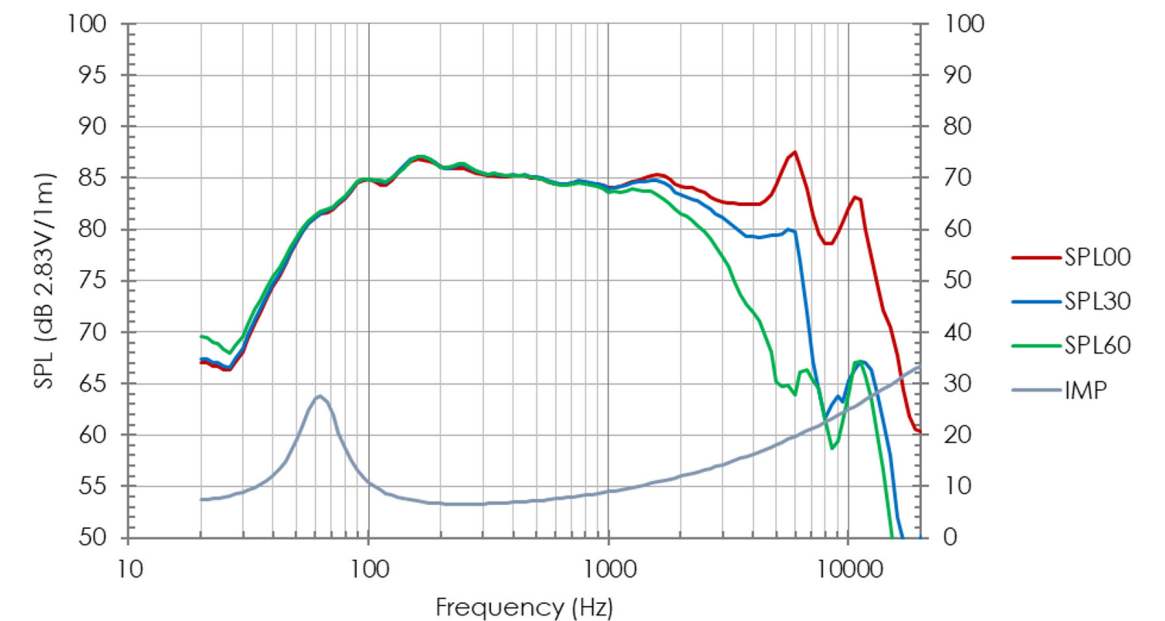
Spanning 4" to 6.5", SDS woofers deliver high value, wide bandwidth, and predictable system behavior for compact 2-way loudspeakers.

Motor Design and Optimization

SDS motors use FEA-guided ferrite topologies with optimized magnetic symmetry, controlled inductance, and under spider vented designs for reduced compression. The suspension system and motor geometry are tuned to deliver stable performance and low distortion, providing reliable performance at competitive cost levels.



SDSP830656



High Efficiency Design

SDS woofers are known for their exceptionally smooth, extended on-axis response and well-balanced power response. The controlled breakup behavior and natural roll-off enable simple crossover design and seamless integration into 2-way systems—ideal for bookshelf, satellite, and compact tower loudspeakers where predictability matters.



Superior Long Stroke

HIGH DISPLACEMENT, HIGH VALUE SUBWOOFERS

The Peerless SLS series is built for one job: deliver serious low-frequency output from today's compact loudspeaker designs. These drivers take the classic Peerless engineering approach and push it toward higher displacement, stronger motors, and lower compliance to produce deep bass in small enclosures. With sizes from 2.5" to 12", SLS woofers use stamped steel frames, ferrite motors, and coated paper cones, all optimized through modern simulation and validation.



SIZE RANGE
2.5" – 12"



CHASSIS
STEEL



MOTOR
FERRITE



DIAPHRAGM
PAPER



SLS135F32CP01-04

The result is a family that offers clean, controlled excursion, impressive low-frequency output and reliable performance at system-friendly costs. SLS is the go-to choice for designers who need big-speaker bass from small acoustic volumes—ideal for compact home audio, studio monitors, portable systems, and automotive solutions where space is tight but low-end authority matters.

Applications – Consumer, professional, automotive systems.

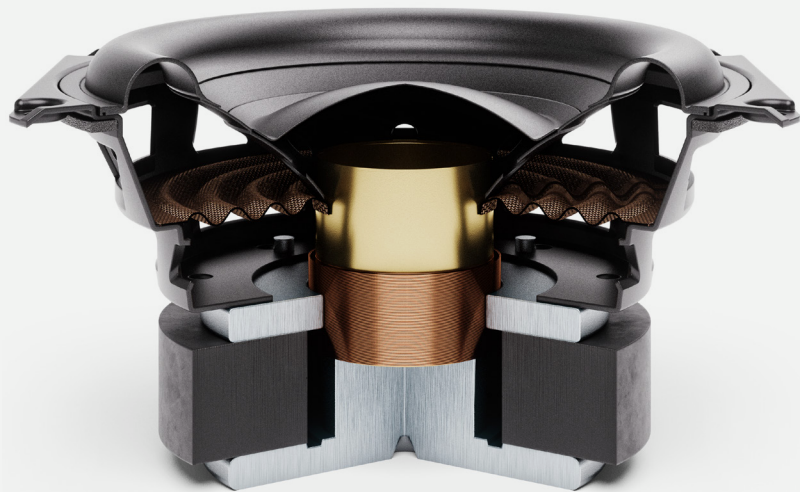


TECHNICAL HIGHLIGHTS

The SLS series evolved from Peerless' long history of high-value, high-output woofers—engineered specifically to maximize displacement, motor strength, and low Vas for powerful bass in compact modern compact loudspeaker systems.

Motor & Suspension Design — High Displacement, Linear Performance

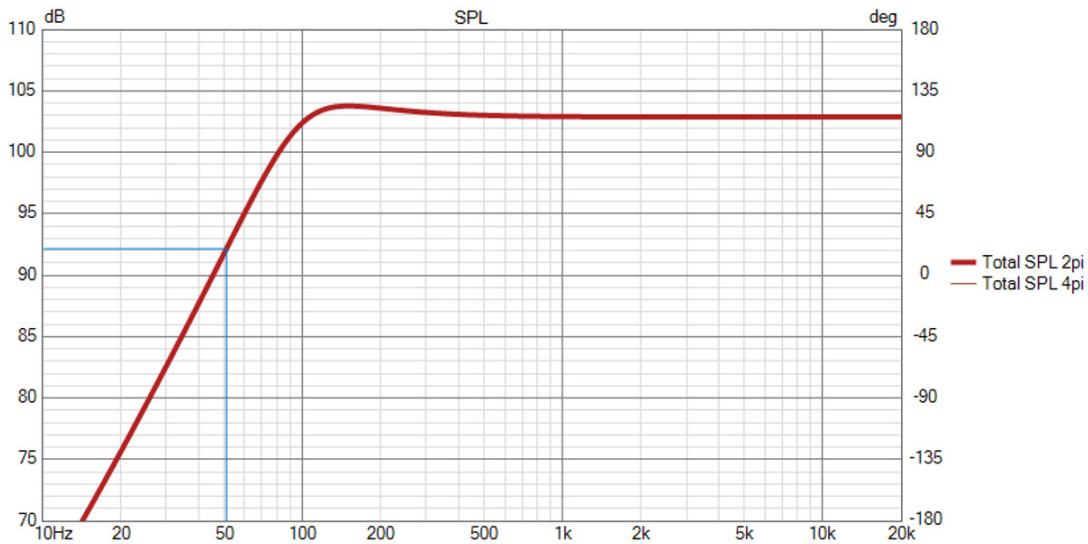
SLS woofers use ferrite motors optimized for class leading motor strength and high linear stroke. The long-throw suspension system—deep surround, compliant spider, and carefully designed geometry—keeps the coil centered and the motion controlled across large excursions. This balance delivers clean bass, low distortion, and predictable behavior at high drive levels.



In-Cabinet Simulation

SLS135F32CP01-04

14cm x 14cm x 14cm 2.7l | Enclosure 80W



Small-Cabinet Low-Frequency Performance

Designed for bass efficiency in sealed and small-volume enclosures, SLS woofers achieve deep extension with tight control thanks to low Vas, high moving mass, and strong motor force. The result is authoritative low-frequency output without the need for large cabinets—perfect for compact systems where designers refuse to compromise on bass quality.



Superior Dynamic Ferrite

PREMIUM WOOFERS, SUBWOOFERS

Peerless SDF Series — high-power, high linearity woofers engineered for deep, accurate bass in compact enclosures, featuring large format voice coil (typically 3") long-coil motors with flux modulation control, aluminum frames, and vented paper cones for exceptional cooling and performance.



SIZE RANGE
10" – 15"



CHASSIS
CAST ALUMINIUM



MOTOR
FERRITE



DIAPHRAGM
PAPER



SDF250F75PR01-06

Compact bass – Designed for greater bass in smaller enclosures.

High power handling – 3" high temperature, long winding, high temperature voice coil.

Low distortion – Outstanding motor design with flux modulation control along with suspension linearity ensure high output and low distortion.

Structural strength – Precision cast aluminum frame for rigidity and heat dissipation.

Applications – Premium consumer, professional studio monitors, compact high-output subwoofer systems.



TECHNICAL HIGHLIGHTS

Building on Peerless' long legacy of low-frequency innovation, the Superior Dynamic (SDF) subwoofers were engineered for extreme excursion and precision control. The SDF series embodies superior motor symmetry, delivering exceptional linearity, dynamic headroom, and reliability in demanding professional applications.

Motor Design and Optimization

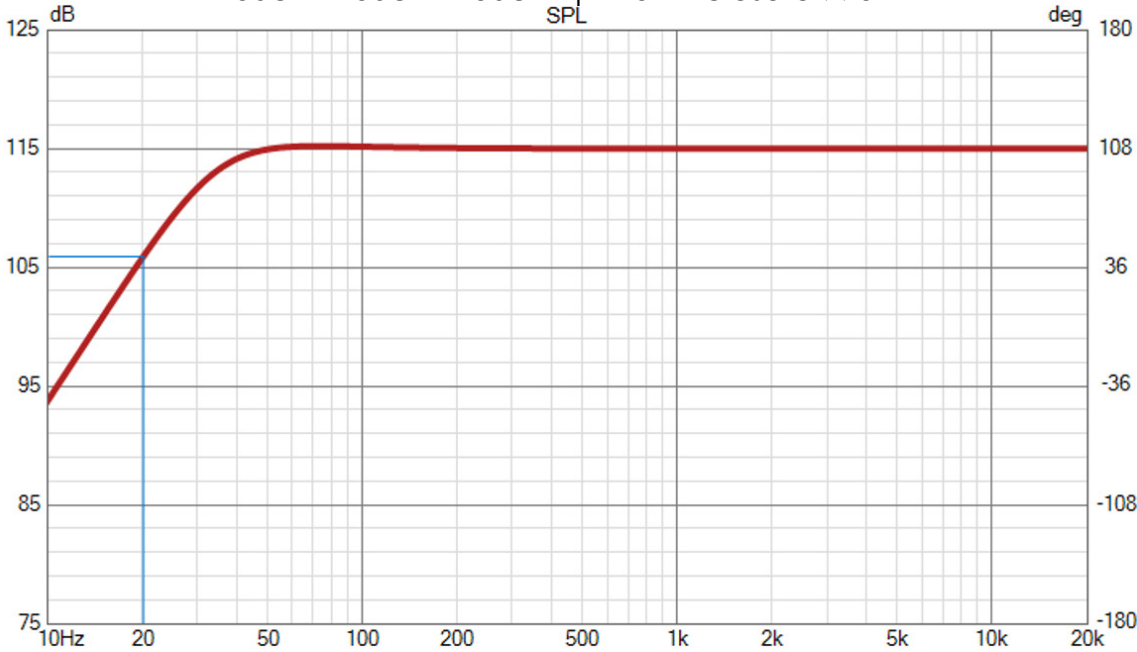
The SDF motor system represents a new level of magnetic efficiency and mechanical precision. Through advanced FEA optimization, the double-stacked ferrite motor with a 75mm voice coil achieves exceptionally high linear motor strength, with a β value exceeding 130 Tm²/re, supporting a class-leading >23 mm linear excursion (Xmax) for the SDF375. The motor and suspension geometries are refined for symmetry in BL(x), Kms(x) and Le(x) to control distortion while maintaining force uniformity across the entire stroke.



In-Cabinet Simulation

SDF375F75PR01-04

50cm x 50cm x 50cm | 125l Enclosure 775W



High Efficiency | High Output Design

Optimized motor and suspension dynamics allow the SDF subwoofers to deliver deep, controlled low-frequency output before the onset of distortion, even in compact enclosures. In a 125L vented cabinet with 775 W input, the SDF375 achieves >105 dB at 20 Hz at 23mm Xmax, setting the standard for low frequency performance. The result is subwoofer performance that combines compact design, high efficiency, and effortless dynamics—ideal for both professional studio monitors and high-end residential audio systems.



STW

SUBWOOFERS

The Peerless STW Series redefines what is possible in compact, high-output subwoofer design. Engineered from the ground up for uncompromised low-frequency performance, STW subwoofers deliver deep, accurate bass from dramatically smaller enclosures.



SIZE RANGE
15"



CHASSIS
CAST ALUMINUM



MOTOR
FERRITE



DIAPHRAGM
PAPER



STW-350F188PR01-04

Compact Enclosure Design – Optimized Thiele-Small parameters enable deep, high-output bass down to 10Hz from enclosures up to 50% smaller than traditional subwoofers.

8-Inch Voice Coil – Massive voice coil winding ensures exceptional motor strength (high BL), thermal stability, and excursion capability with negligible power compression at peak output.

FEA-Optimized Internal Magnet Motor – In-coil ferrite magnet architecture achieves >90% flux utilization, delivering greater efficiency and symmetry of force.

Triple Suspension System – A surround with dual spiders maintain linear excursion and precise centering for ultra-low distortion at high SPLs.

High Moving Mass with Controlled Compliance – Tailored cone and suspension balance extend low-frequency response while preserving transient accuracy and control.

Applications: - Ideal for premium compact subwoofers, studio monitoring, home cinema, and installation systems requiring maximum low-end performance from minimal enclosure volume. Referred to as a “Monster” subwoofer transducer.

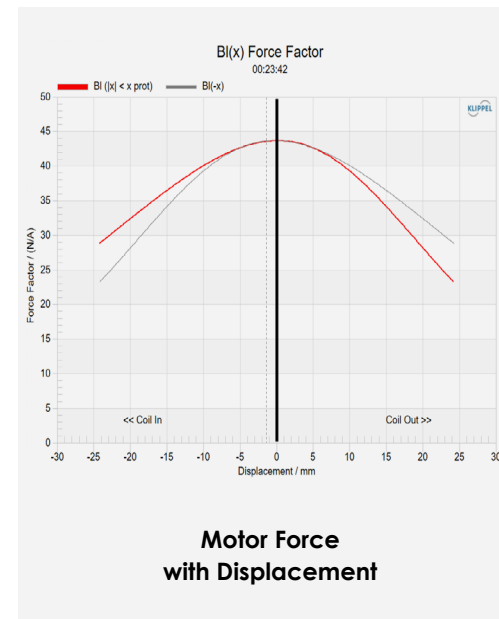


TECHNICAL HIGHLIGHTS

STW subwoofers were designed to provide optimal bass performance in an enclosure that is much smaller than a traditional design. These drivers were developed with a triple suspension and dual spiders for low distortion, high-moving mass, and a large voice coil — enabling high peak-to-peak displacement.

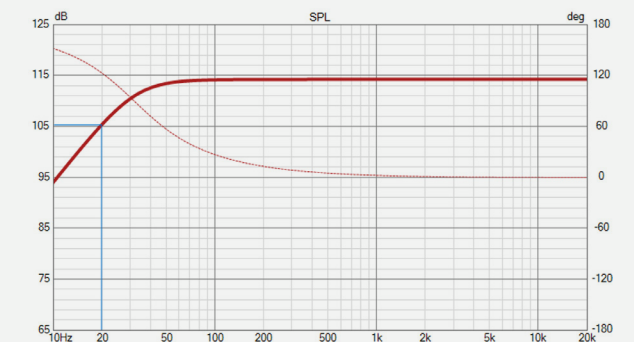
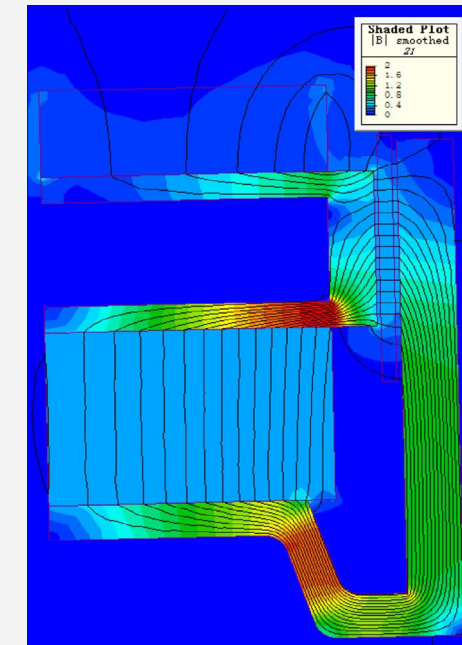
Benefits of a Large Voice Coil

With a small enclosure design, high-moving mass is necessary, but it needs to be applied where it can be put to work. With STW, it was put into the voice coil – this improves the performance of the driver by raising the motor force factor. Unlike a conventional motor design, Bl changes very slowly as a function of voice coil displacement. A voice coil with large surface area offers another benefit – power compression is practically non-existent. Because of this, the voice coil takes longer to heat up, resulting in uncompressed dynamic musical peaks.



Motor Simulation

STW-350F188PR01-04



In Box Simulation

40cm x 40cm x 40cm
64l Enclosure 1000W Input

High Efficiency Motor Design

We were able to achieve more efficient use of the ferrite magnet by putting it inside the voice coil. Motor structures with the magnet outside of the motor lose 50% of their energy in stray fields, while a magnet on the inside of the voice coil will have 90% or better magnet utilization.



Amplifier Modules

PEERLESS PRO FAMILIES OF POWER AMPLIFIER MODULES

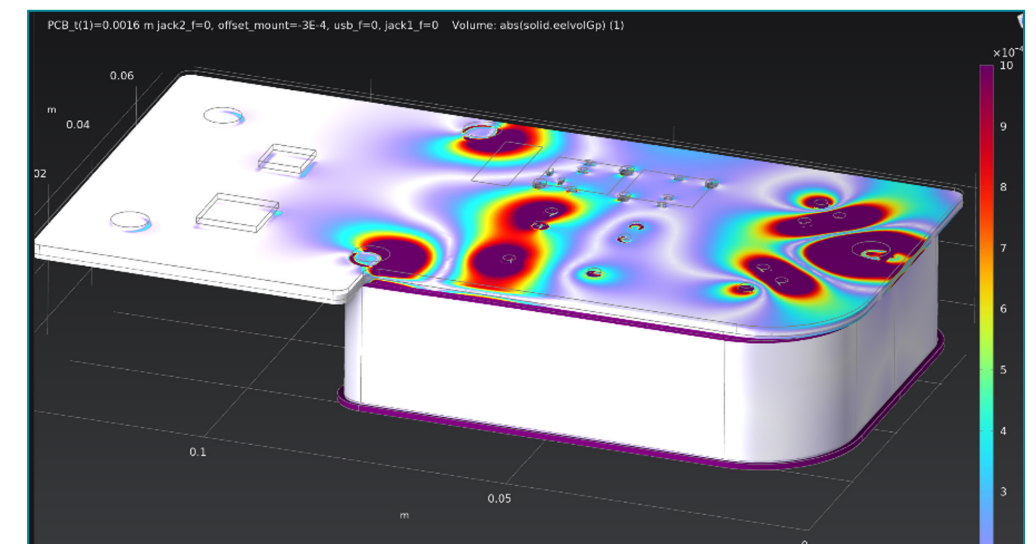
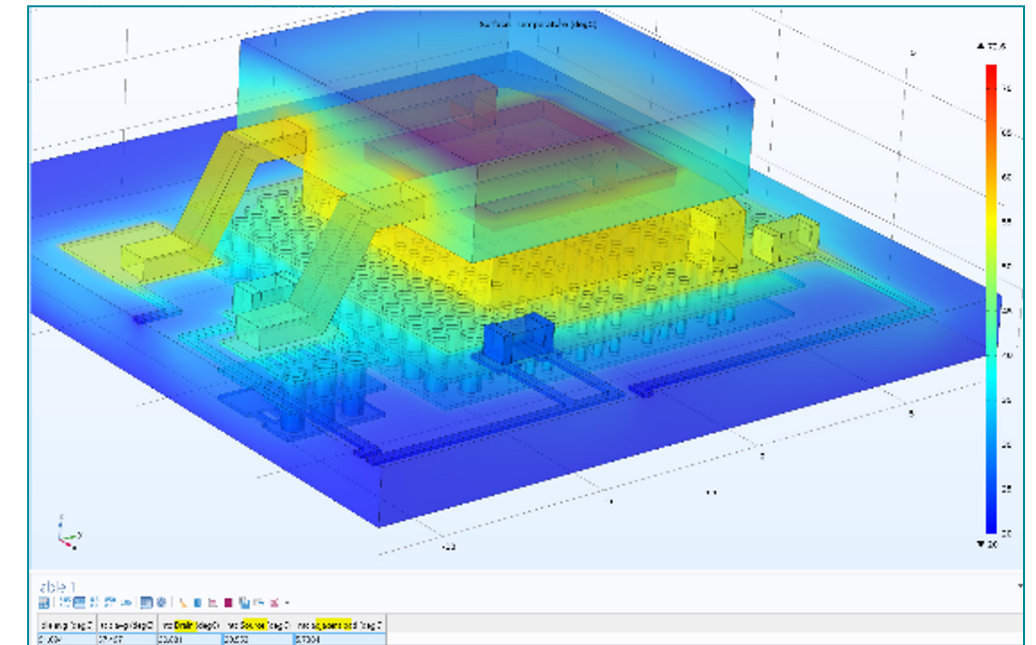
For over a decade, Peerless has been driving innovation and working with the most respected names in the pro industry. We bring that extensive experience and our system design mindset to our amplifier modules.

Peerless's professional power amplification modules are road proven by the industry.

Our amplifier modules have the reliability and flexibility to enable your teams to design class leading products that stand out with the performance, features, and competitiveness to win in the market.

Our LC range are cost optimized solutions with maximum watt per dollar. The LCPF range integrates more features required for higher power applications.

	<1000 Watts	>1000 Watts	>2000 Watts
Analog protection		LCPF1200	
I2C Control / FW Protection	LC600	LC1000, LCPF1204	LCPF2000
Power Factor Correction		LCPF1200, LCPF1204	LCPF2000
Auto Switch Universal Power	LC600	LC1000	





LC Amplifier Modules

PEERLESS PROFESSIONAL AMPLIFIER MODULES

The LC modules offer high voltage rails (160V on LC1000, 80V on LC600) with advanced onboard control, monitoring and protection to ensure reliability under all conditions.

Automatic mains range switching allows universal power input (90-132Vac and 180-265Vac).

LC features a pair of single ended channels which can be bridged.

The latest models use GAN devices in both PSU and amp stages to reduce material use in filter design, and increase power efficiency.



POWER RANGE
600W TO
1200W



POWER SUPPLY
AUTO SWITCHING
UNIVERSAL POWER



CONFIGURATIONS
FLEXIBLE 1-2
CHANNELS



LC1000



LCPF Modules

PEERLESS PROFESSIONAL AMPLIFIER MODULES

The LCPF modules offer high voltage rails (160V on LCPF2000, 120V on LCPF1202) with advanced onboard control, monitoring and protection to ensure reliability under all conditions.

Active PFC allows consistent performance under a wide mains voltage range from 85V to 265V.

LCPF features four single ended channels which can be bridged in pairs, allowing the full power to be used across one, two three or four outputs.

The latest models use GAN devices in both PSU and amp stages to reduce material use in filter design, and increase power efficiency.



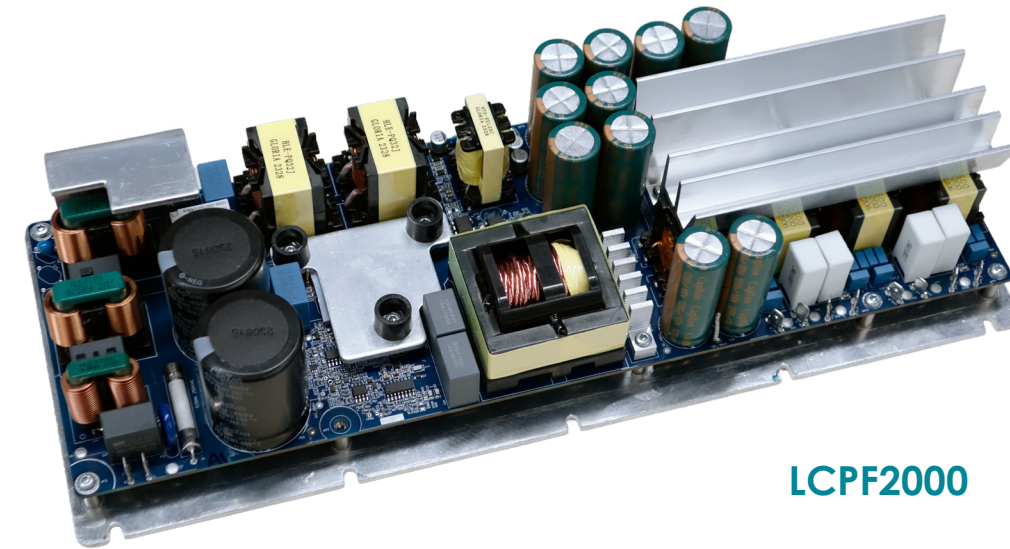
POWER RANGE
1200W TO
2000W



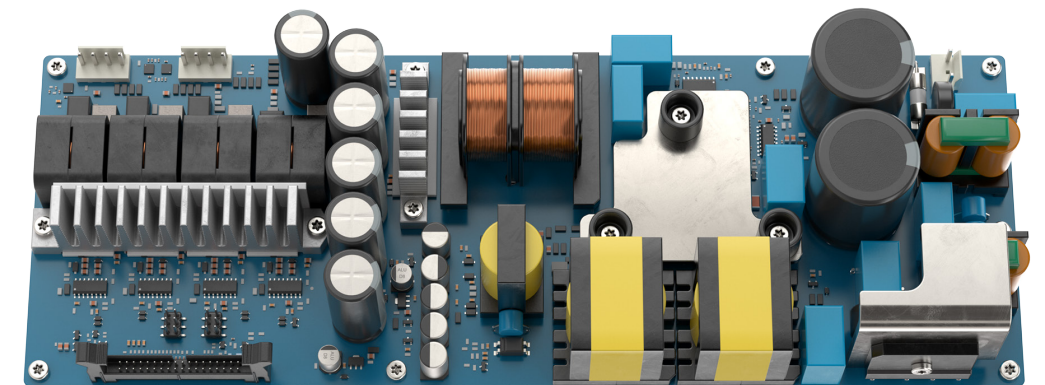
POWER SUPPLY
RESONANT LLC –
ACTIVE PFC



CONFIGURATIONS
FLEXIBLE 2 – 4
CHANNELS



LCPF2000



LCPF1200



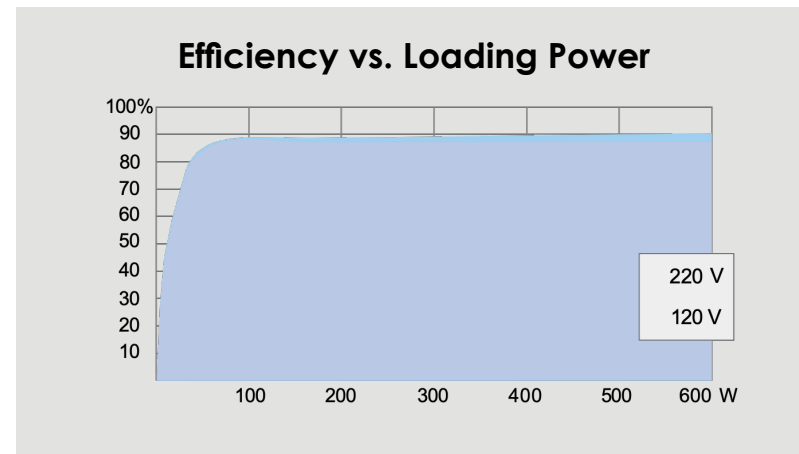
TECHNICAL HIGHLIGHTS

The LCPF family of amplifier modules introduces a robust power supply, extensive monitoring facilities, and output configuration flexibility for your pro system design needs.

Optimized Power Supply Driving Performance

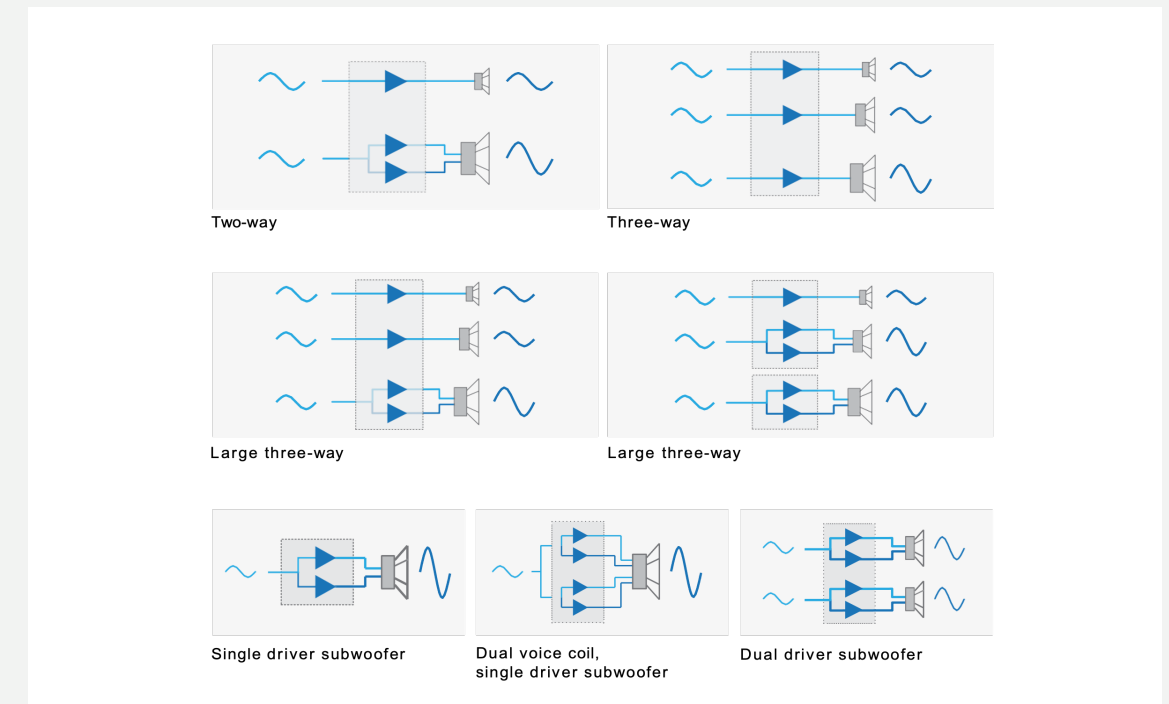
The LCPF amplifier modules contain an interleaved PFC which brings low and optimal current draw from the mains supply and avoids the need for multiple voltage versions of products. PFC also improves performance when a system is being run off a current-limited supply. The second stage of the SMPS design, the LLC converter, provides well-regulated and low-noise voltage rails with an absence of mains ripple.

Finally, our integrated power supply is optimized for continuous and peak output. Our designs are named after our power supply ratings in the most demanding use case (low mains voltage, low frequency). No bad surprise, no inflated numbers.



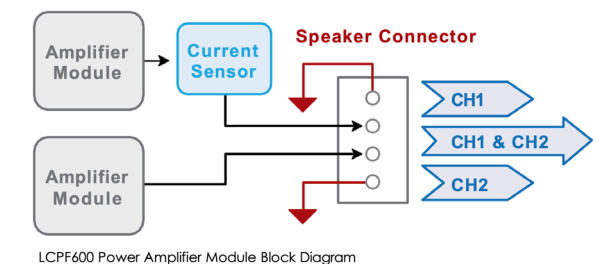
Flexible Channel Configuration With Systems In Mind

As the output channels can be run as single-ended (SE) or bridge-tied-load (BTL), multiple channel configurations are possible, allowing you to create many different systems from our standard modules. Additionally, they can be built into rack amplifiers, offering a great variety of output power configurations.



Monitoring to Improve System Performance With DSP

Extensive monitoring is included — for each amplifier stage, the output current and voltage are continuously reported back to the front-end board for analysis, reaction, and performance optimization. Amplifier and power supply temperatures are also continuously reported so appropriate measures can be taken to protect the system in extreme thermal conditions.





Rack Amp Modules

PEERLESS PROFESSIONAL AMPLIFIER MODULES

Our modular PSU and amp power stages allow the design of rack mount amplifiers with a high degree of flexibility.

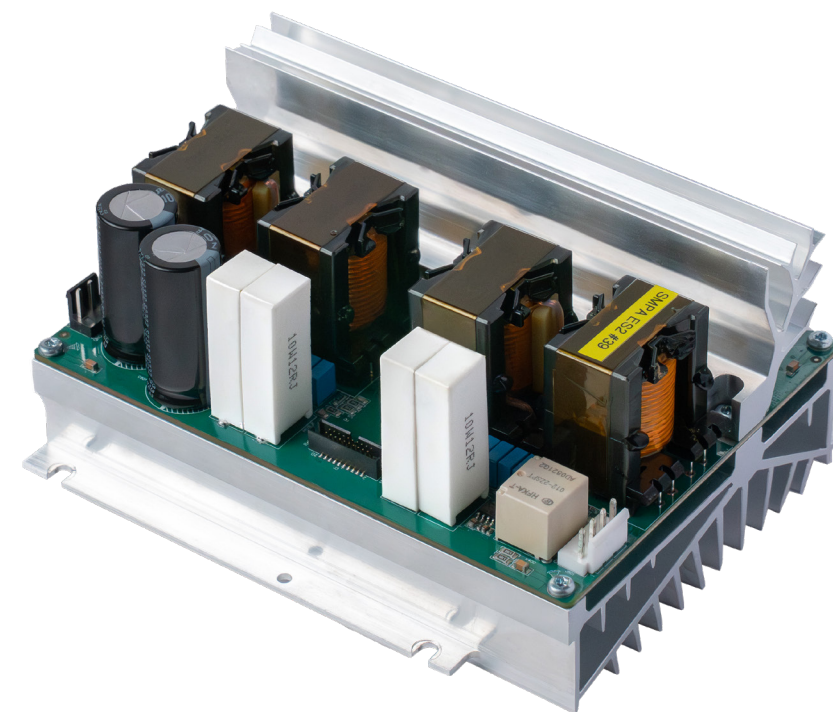
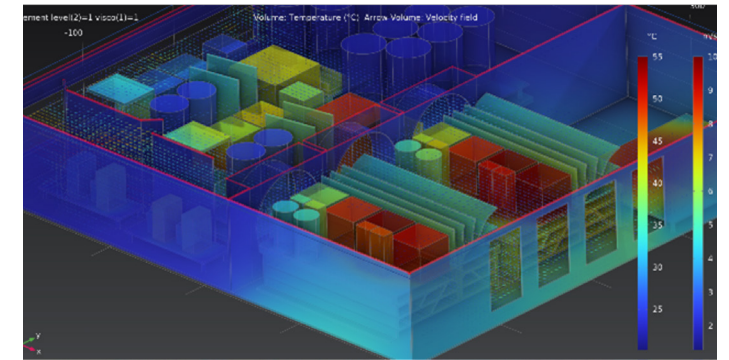
All modules are designed to fit in 1U or 2U heights either full or half width.

Active PFC allows consistent performance under a wide mains voltage range from 85V to 265V with 420v fault tolerant operation.

By using Can-Bus or I2C between modules allows for control, monitoring and protection of every aspect of the signal from primary side of the PSUs to output devices on the amp boards.

Our power sharing architecture allows flexible configurations of PSU and output amplification channels.

GAN devices are used in both PSU and amp modules to reduce material use in filter design, and increase power efficiency.



(((•))) **POWER RANGE**
600W TO
2000W

⚡ **POWER SUPPLY**
RESONANT LLC –
ACTIVE PFC

↻ **CONFIGURATIONS**
FLEXIBLE 2 – 8
CHANNELS

2U RACK AMP MODULE



TECHNICAL HIGHLIGHTS

PEERLESS PROFESSIONAL AMPLIFIER MODULES

SMPS MODULES		
	1200 Watt	1800 Watt
Height	1U	2U
Voltage	125v	160v
Peak Power	1600W (25 ms) 1400W (100ms)	2800W (20 ms) 2100W (100ms)
Voltage input	85 – 265Vac	85 – 265Vac
Standby Power	<0.25W	<0.35W
Fan Control	4 channel PWM	4 channel PWM

AMPLIFIER MODULES		
	1U Module	2U Module
Height	1U	2U
Channels	2	2
Max Rail Voltage	160v	165v
Output Current	25A	35A
Semiconductor	200v GAN FET	200v GAN FET
Signal Input	I2S	I2S
Monitoring/Control	I2C (CAN available)	I2C (CAN available)



LCPF Modules

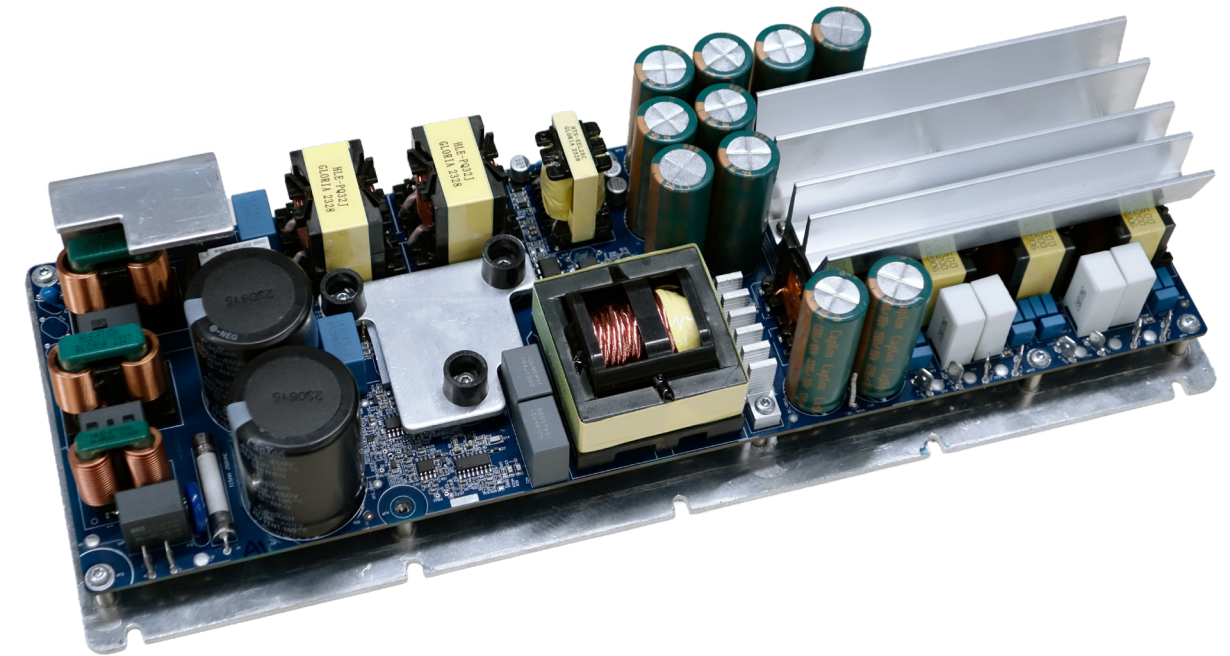
PEERLESS PROFESSIONAL AMPLIFIER MODULES

The LCPF modules offer high voltage rails (160V on LCPF2000, 120V on LCPF1202) with advanced onboard control, monitoring and protection to ensure reliability under all conditions.

Active PFC allows consistent performance under a wide mains voltage range from 85V to 265V.

LCPF features four single ended channels which can be bridged in pairs, allowing the full power to be used across one, two three or four outputs.

The latest models use GAN devices in both PSU and amp stages to reduce material use in filter design, and increase power efficiency.



POWER RANGE
1200W TO
2000W



POWER SUPPLY
RESONANT LLC –
ACTIVE PFC



CONFIGURATIONS
FLEXIBLE 2 – 4
CHANNELS

LCPF2000



LCPF Modules

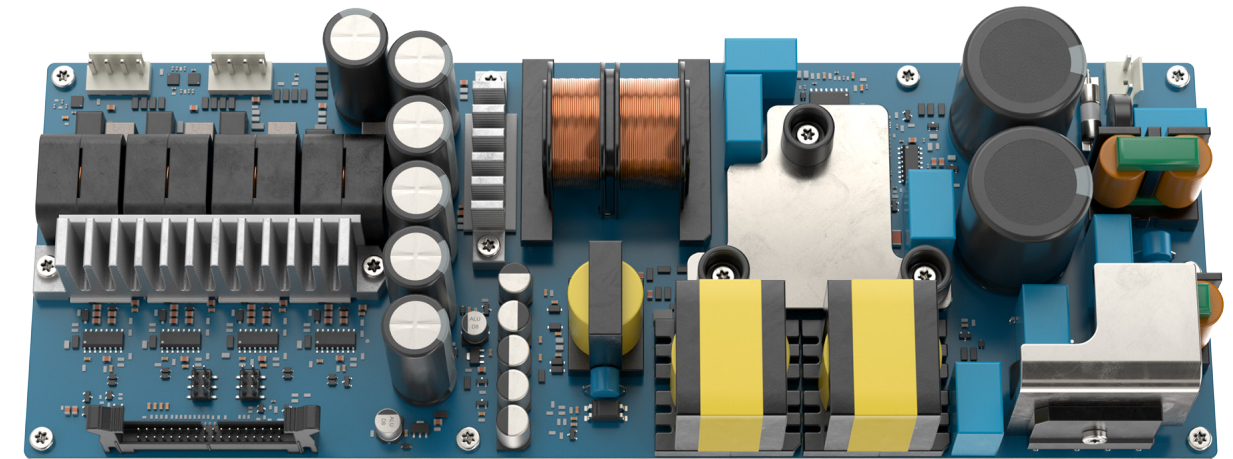
PEERLESS PROFESSIONAL AMPLIFIER MODULES

The LCPF modules offer high voltage rails (160V on LCPF2000, 120V on LCPF1202) with advanced onboard control, monitoring and protection to ensure reliability under all conditions.

Active PFC allows consistent performance under a wide mains voltage range from 85V to 265V.

LCPF features four single ended channels which can be bridged in pairs, allowing the full power to be used across one, two three or four outputs.

The latest models use GAN devices in both PSU and amp stages to reduce material use in filter design, and increase power efficiency.



POWER RANGE
1200W TO
2000W



POWER SUPPLY
RESONANT LLC –
ACTIVE PFC



CONFIGURATIONS
FLEXIBLE 2 – 4
CHANNELS

LCPF1200