



MZ AUDIO



MiniRayl4
Mini Line Array

R&D Technical Approach

The MiniRay family represents compact line arrays. Balancing size and SPL is key. Following the dual 10" 3-way MiniRay10 (139dB), the next step is a large-format system exceeding 143dB for super-large applications — festivals, stadiums, outdoor plazas, and crowds over 10,000.

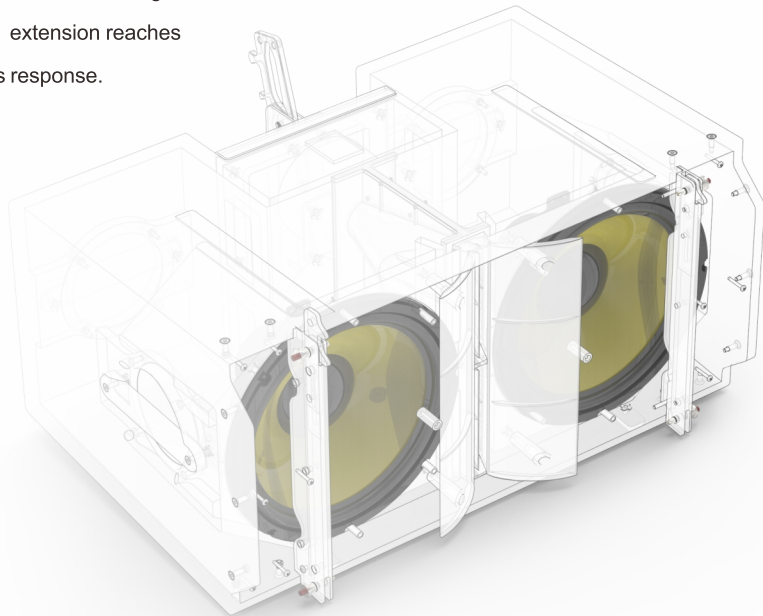
Leveraging experience from MiniRay10, our goal remains higher SPL in a smaller, lighter footprint. Typical 140dB+ systems use dual 12" 3-way; 143dB+ systems use dual 15" 3-way. Our target is significantly exceeding dual 12" SPL (143dB+) with a more compact, lighter 3-way design — essential for balanced full-range response at high SPL. This is the design goal of MiniRay14.

Compact Size, Massive Power

The cabinet is controlled at a width of 0.85m — significantly narrower than typical dual 12" three-way line array systems. Weighing only 57 kg, it delivers a maximum SPL of 145 dB, matching or even exceeding that of most large-format dual 15" three-way line arrays. The low-frequency extension reaches down to 40 Hz, providing ample, punchy, and elastic bass response.

45 Hz Resonant Frequency

The 14" woofer is designed to match mid-high LF output. Carbon fiber-reinforced cone for enhanced rigidity. 75mm aluminum flat-wire voice coil, high-performance long-excursion neodymium motor, and oversized dual spider deliver 40Hz resonance, 98dB sensitivity, and 500W AES power. A phase plug boosts sensitivity at 500Hz for seamless integration with the 100mm mid driver.



MiniRay14

Key Features

- 3-way, 2-Channel Driven
- Coaxial Mid-high Driver, HF Extension >18 kHz
- Maximum SPL 145 dB
- Hi-End Grade Crossover
- Preangle Adjustable Rigging Hardware



3-Way | 2 Driven | Hi-End Crossover

For simplified operation, the Mid-high and one woofer share a passive crossover; the other woofer is externally DSP-driven. Both woofers at 12Ω allow up to three boxes per amp channel at 4Ω-3000W driving 1500W for ample headroom and safety.

Standard NL4 connectors. Built-in passive crossover prevents HF driver damage from wiring errors.

Hi-End German Mundorf oil caps and air-core OFC inductors (resistor-free) minimize loss while adding a "Hi-Fi" character.



Coaxial Mid-High Design

MiniRay14 shares the same coaxial mid-high compression driver as MiniRay10, combined via simulated line-source waveguides and large-format horns-extending smooth response down to 500Hz. The coaxial section handles the entire 500Hz-18kHz range, providing excellent image at cabinet center for precise stereo imaging and symmetry.



PreAngle 3P Rigging

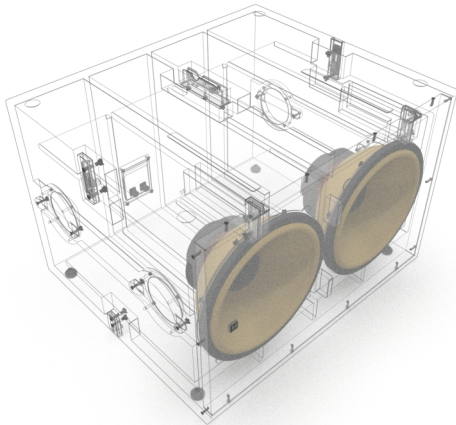
MiniRay10 Patented 3 point rigging hardware. Preset angles for flying or stacking. Same with as MiniRay10 for seamless connection - no adapter needed.



MVS28

Key Features

- Dual 18" direct-radiating, bass-reflex design
- Stack full-range on sub without adapter frame
- Extra-large port reduces air turbulence noise
- Frequency extension down to 30 Hz



Universal Stacking Design

Compatible for direct stacking with MiniRay12, MiniRay14, MiniRay3C, and MiniRay10 - no additional adapter required. The MVS28 is a dual 18" subwoofer purpose-matched for the MiniRay12. With a cabinet width of 1 meter, integrated stacking hardware allows full-range speakers to be stacked directly on the sub without any conversion frame.

New Design Approach

For the MVS218 subwoofer, the MZ Audio R&D team use high efficiency direct-radiating design. Optimized cabinet volume and port tuning for dual 18" drivers - 115 mm voice coils, 1000 W AES, neodymium magnets.

High Volume Direct-Radiating Bass-Reflex

The MVS218 features a direct-radiating configuration with dual 18" drivers. Matched with an optimized large enclosure volume, it achieves a frequency range of 25Hz–200Hz - delivering both deep, powerful low-end extension and articulate punch, providing an immersive, wrap-around sub-bass experience with exceptional long-throw capability.



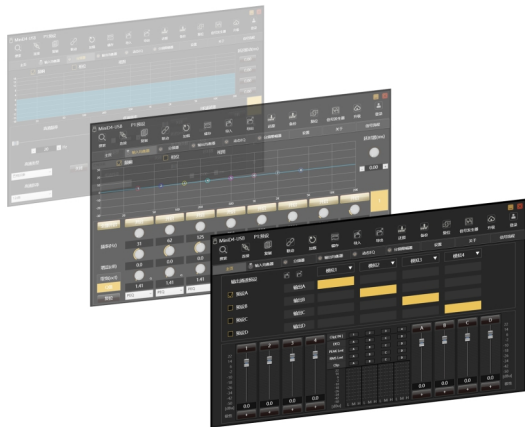
MD2000-4V

Key Features

- 12000W Powerful Power Supply
- 4 x 2000W @ 8Ω Output
- Built-in DSP Highly Integrated
- Up To MAX +23dBu

Ultra-High Output Power

The MD2000-4V features a 12000W switching power supply, enabling all four channels to deliver 3000W each at 4Ω simultaneously, or dynamically allocate power to allow individual channels to reach 3200W at 4Ω. This differs significantly from common four-channel amplifiers sharing a 4000-5000W power supply rated at 4 x 1300W. The design greatly enhances application flexibility, allowing any channel assignment without power budget concerns.

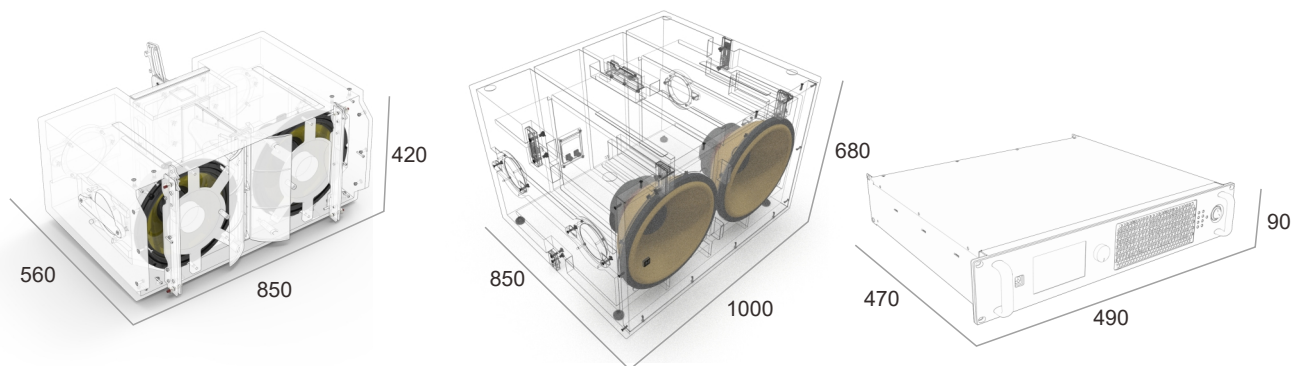


Built-In DSP Module

The MD2000-4V features a built-in 4-channel DSP module-eliminating the need for an external processor for a highly compact, easy-to-operate system.

The MiniD4 processor delivers +22dBu maximum output, exceeding the headroom of most digital mixers to fundamentally eliminate input clipping. Dynamic EQ, crossover limiting, and other advanced functions enhance loudspeaker protection and system stability

Parameter



SPECIFICATIONS

MiniRayI4

MVS28

Frequency Range(-10dB)	40 Hz - 18 kHz	25 Hz - 200 Hz
MAX SPL	145dB SPL Peak	142 dB SPL Peak
Coverage	Horizontal 90° / Vertical 0-7° Adjustable	Horizontal 360° / Vertical 180°
Transducers	2 x14" ND Woofers; 2 x 100 mm + 65 mm Coaxial ND Mid-High Driver	2 x 18"115 mm Voice Coil ND Woofers
Nominal Impedance	FR 8Ω Low 8 Ω	4 Ω
Driving Mode	3-Way Two Drive	One Way Single Drive
Power (AES)	FR 500 W; Low 500 W	2000 W AES
Cabinet	Baltic Birch Plywood, Black Polyurea Finish	Baltic Birch Plywood, Black Polyurea Finish
Dimensions (W×H×D)	850 x 420 x 560 mm 33.4 x 16.5 x 21.8 in	1000 × 680 × 850 mm 39.37 × 26.77 × 33.46 in
Weight	57kg / 125 lbs	102kg / 224.87 lbs

MD2000-4V

Amplifier Module

DSP Module

Amplifier Output	4 × 2000W@ 8Ω	Input Impedance	20KΩ	SNR	≥ 113 dB
Frequency Response	20 Hz-35 kHz ±1 dB	Output Impedance	100Ω	Noise Floor	≤ -96 dB A-weighted
Rated Voltage	100~240V AC 50~60Hz	A/D Dynamic Range	118dB	CMRR	74dB
SNR	Typical > 120dB	D/A Dynamic Range	118dB	Dante Input Channels	4
Dimensions (W×H×D)	490 × 90× 470 mm 19.29 × 3.54 × 18.5 in	Max Input Level	23dBu	AES Digital Input Channels	2
Weight	16.8 kg / 37 lbs	Max Output Level	17dBu	4 Analog Input Channels	4
		THD	≤0.004%	USB Control Port	1
		Frequency Response	20Hz~40kHz	Network Control Port	1
		Crosstalk	≤-102dB		

MiniRayl4

Mini Line Array

small footprint
SONIC IMPACT



MZ AUDIO

www.mzaudio.net

MZ audio technology development Co.,Ltd.

V2.0