

Code: DR-12-043-8R-B2-C0001

XR Sub-Woofer/12inch/Neo/Paper/500W/8ohm

KEY FEATURES

- ✓ Very high cone excursion, with very low THD
- ✓ Capable to handle very low frequencies
- ✓ High power handling, copper cap, stitched tinsel wires

QUICK SPECS

Impedance
8 Ω

Program Power
1000 W

Sensitivity
90.95 dB

Fs
35.00 Hz

Magnet
Neodymium

Voice Coil
63.5 mm

 Datasheet (PDF)

 2D Drawing

 3D Model (STEP)

Design Notes

The 12XR was designed around our new approach to the magnetic system. Our XR series speaker motors were designed so the voice coil winding doesn't leave the gap for most of the cone excursion. The desired cone excursion is carefully evaluated and incorporated into the design. The 12XR allows the designer to design sub-woofers with very large cone excursions, without the otherwise present harmonic distortion due to the voice coil leaving the magnetic gap. If you like the sound of a clean, undistorted bass, then the 12XR is the right transducer for your application.

Motor Design

We have also developed a new technique for manufacturing deep copper caps.

The design further sports a large spider on top of which is hot-pressed tinsel wires. Cone is carbon fiber reinforced, with a lightweight foamed rubber surround. The suspension was designed for large excursions.

Specifications

GENERAL SPECS

Nominal Diameter	12"
Rated Impedance	8 Ohm
Magnet	Neodymium
Basket Material	Aluminum

POWER HANDLING

AES Power	500 W
Continuous Power	1000 W
Peak Power	2000 W

VOICE COIL

Diameter	63.5 mm
Winding Wire	Copper
Former	Glass Fiber
Winding Height	12.6 mm

Resonant Frequency (Hz)	55.55 Hz
Re	5.70 μ 2126
Qes	0.730
Qms	10.50
Qts	0.680
Vas	89.70 liters
Sd	531.00 cm $\times$ 2
Mms	88.30 grams
Rms	1.85
Cms	0.2300
Bl	12.30 T $\times$ 7m
Le	0.240 mH
Sensitivity	90.95 dB

General Material

RED

Cone/Dome Material	Paper CF
Spider	Nomex
T-Plate	31 mm
Xmax (peak)	9.2 mm
Xmech	32.7 mm
Overall Diameter	320.00 mm
Bolt Circle Diameter	299.00 mm
Baffle Cutout Dia.	281.00 mm
Mounting Holes	8
Depth (flange to rear)	172.50 mm
Net Weight	5.70 kg

ORDERING CODES

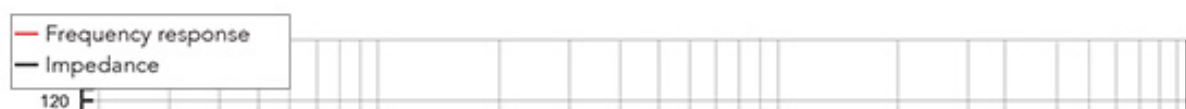
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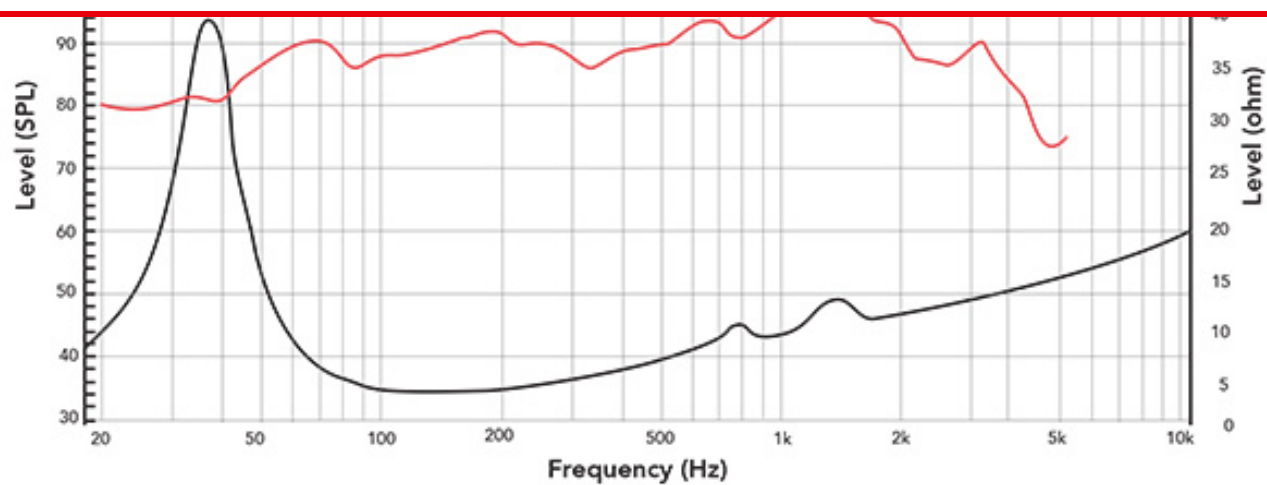
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 Datasheet (PDF)
  2D Drawing (PDF)
  3D Model (STEP)

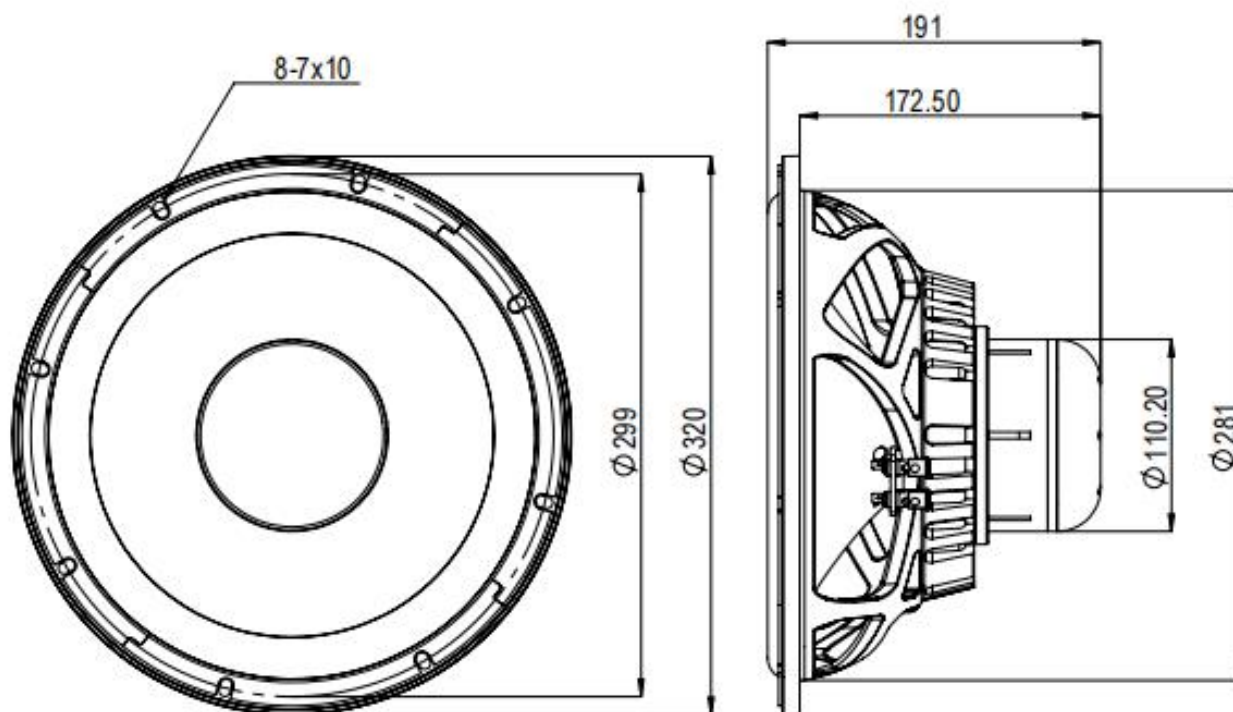
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Frequency Response & Impedance





2D Drawing



continuous) into a nominal 8-ohm impedance, built around the XR (eXtended Range) radial neodymium motor system. Large neodymium magnets are positioned along the voice coil winding so the entire coil remains within the magnetic field throughout the rated excursion, minimizing harmonic distortion associated with coil-to-gap overhang at high drive levels. A deep copper cap reduces voice coil inductance to 0.24 mH, extending frequency response and lowering inductance-modulation distortion without the use of a static shorting coil. The high Qms (10.5) indicates a near-lossless suspension in which system damping is governed primarily by the amplifier and enclosure.

The driver is rated for amplification of approx. 500 W AES (1000 W continuous) into 8 ohms, with a recommended high-pass filter in the 22-33 Hz range for vented alignments depending on tuning. Active sealed systems benefit from DSP shelf correction below 50 Hz, with excursion limiting applied below 25 Hz. The 8-ohm impedance suits bridged amplifier configurations, and the low inductance (0.24 mH) enables clean integration at crossover frequencies up to approximately 500 Hz, making the driver suitable as a bass driver in multi-way speaker systems.

The 12XRX8-270 is intended for dedicated hi-fi subwoofer enclosures, 2.1 and multi-channel home theater systems, large 2-way or 3-way floorstanding loudspeakers, and studio reference monitoring applications where the XR motor's extended linear excursion, the CF paper cone's rigidity, and the low voice coil inductance combine to deliver accurate, low-distortion bass reproduction.

Recommended enclosure volumes are simulated results. For best enclosure volumes and tuning, we recommend secondary simulation and careful evaluation. Several rounds of samples and fine-tuning may be required for optimal results.

Enclosure Recommendations

Recommended enclosure alignments (bass reflex):

- 30 liters tuned to 40 Hz: high output, strong mid-bass, reduced excursion; -3 dB approx. 37 Hz, HP filter 32 Hz

approx. 28 Hz, HP filter 21 Hz

Frequently Asked Questions

What are the key features of the 12XR?



What enclosure is recommended for the 12XR?



What applications is the 12XR suited for?



What are the power and sensitivity specs of the 12XR?



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