

Code: DR-12-017-8R-B2-C0001

REDCATT 121XR 12-inch neodymium professional woofer: 500 W AES, 95.8 dB sensitivity, 8 Ω , Fs 46 Hz, 63.5 mm voice coil. Full T/S parameters, datasheet, 2D drawing and STEP CAD file.

KEY FEATURES

- ✓ EXTENDED FREQUENCY RESPONSE, high excursion, ultra low THD
- ✓ Static demodulation coil, large spider with stitched tinsel wires
- ✓ Carbon fiber loaded paper cone

QUICK SPECS

Impedance
8 Ω

Program Power
1000 W

Sensitivity
95.78 dB

Fs
46.00 Hz

Magnet
Neodymium

Voice Coil
63.5 mm

 [Datasheet \(PDF\)](#)

 [2D Drawing](#)

 [3D Model \(STEP\)](#)

Design Notes

The 121XR was designed to be simply the best driver for 2-way and multi-way systems on the market, yet this driver will also shine in sub-woofer applications. The combination of our XR patented technology with static shorting coil brings an nonparallel opportunity to the audio designers. The common request for 2-way speakers is “more of everything”. Designers wishes for more bass, more mids. Well, there you have it! But not only that. We bring this with clarity in the mid-frequencies and undistorted bass. Our designers were able to achieve THD below 0.5% from 20Hz up to 2.5kHz. There isn't

The magnetic design incorporates large neodymium magnets placed along the voice coil winding, together with the 2nd and static coil placed on the pole piece. This has allowed us to push the cone excursion to 25mm peak to peak, while lowering the inductance. The shorting coil covers the complete main coil excursion. This is also an improvement compared to some previous designs on the market. Unique gap venting ensures good air circulation and greatly improves the reliability of this driver.

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

Diameter	33.3 mm
Winding Wire	Copper
Former	Glass Fiber
Winding Height	18.3 mm

T/S PARAMETERS

Resonant Frequency (Fs)	46.00 Hz
Re	5.60 Ω
Qes	0.420
Qms	1.56
Qts	0.330
Vas	69.10 liters
Sd	531.00 cm ²
Mms	66.80 grams
Rms	12.37
Cms	0.1800
Bl	16.00 T·m
Le	0.160 mH
Sensitivity	95.78 dB

General Material

Table

Cone/Dome Material	Paper CF
Spider	Nomex
T-Plate	31 mm
Xmax (peak)	6.35 mm
Xmech	29.85 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	5.10 kg
Packaging Dimensions	370X370X240 mm

ORDERING CODES

Product Code DR-12-017-8R-B2-C0001

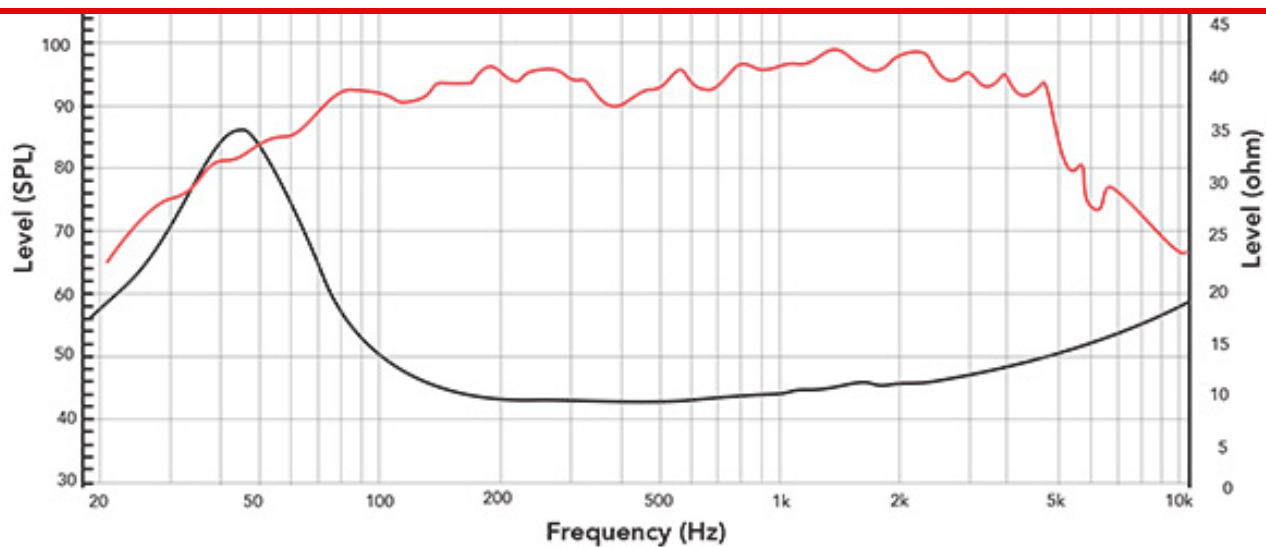
DOWNLOADS

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

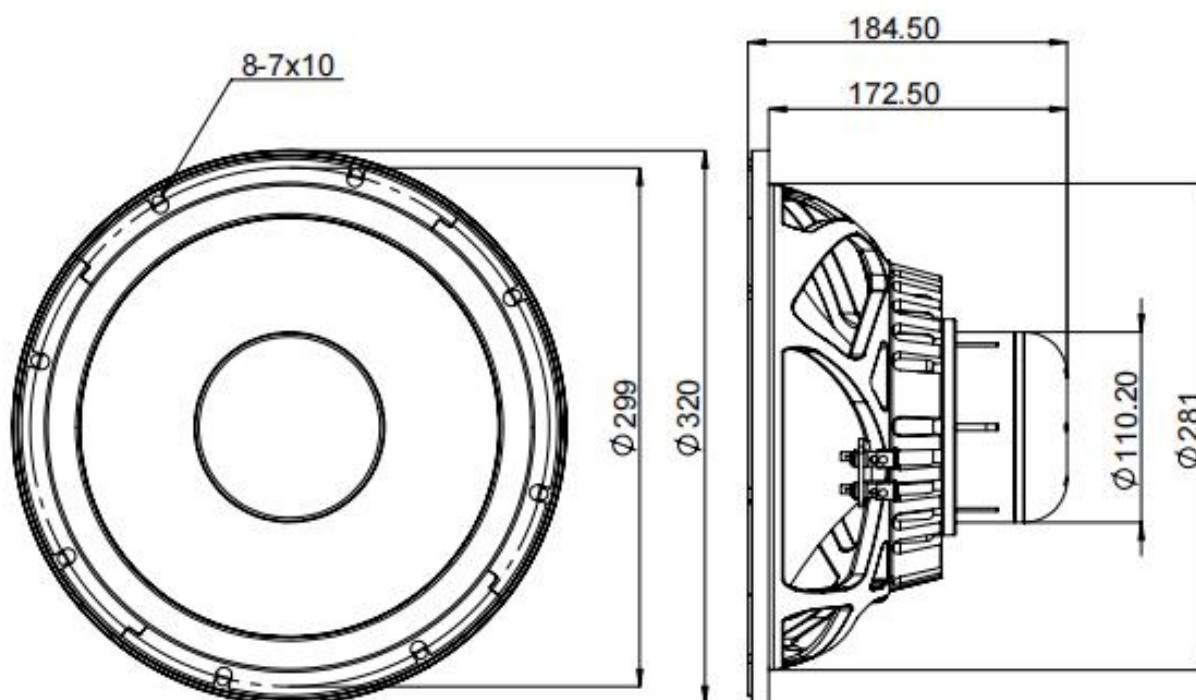
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Frequency Response & Impedance





2D Drawing



multi-way systems requiring high sensitivity (96 dB 1W/1m) and controlled low-frequency behavior. The motor and suspension are optimized to maintain consistent performance at high drive levels, with controlled excursion and reduced thermal compression during long-term operation.

The driver is intended for use with high-power amplification (approx. 500 W AES / 1000 W continuous) and DSP control. A high-pass filter in the range of 27-43 Hz is recommended depending on enclosure tuning, along with proper limiting to manage thermal and mechanical stress. Typical operating bandwidth is 33-2000 Hz, covering bass through upper-mid frequencies for direct integration with a compression driver or tweeter in a two-way or multi-way system.

This design is particularly effective in single or multi-driver bass reflex systems used in professional two-way and multi-way PA systems, powered monitors, and compact bass-reflex enclosures, where extended bandwidth, controlled distortion across the full operating range, and versatile system integration are required.

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):

- 55 liters tuned to 51 Hz: high output, strong mid-bass, reduced excursion; -3 dB approx. 47 Hz, HP filter 43 Hz
- 65 liters tuned to 45 Hz: balanced response, general-purpose (recommended); -3 dB approx. 38 Hz, HP filter 35 Hz
- 80 liters tuned to 39 Hz: extended low-frequency, requires HP filter protection; -3 dB approx. 33 Hz, HP filter 27 Hz

What are the key features of the 121XR?



What enclosure is recommended for the 121XR?



What applications is the 121XR suited for?



What are the power and sensitivity specs of the 121XR?



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