



Code: DR-12-016-8R-B2-C0001

REDCATT 121NPM 12-inch neodymium professional mid-woofer: 450 W AES, 100 dB sensitivity, 8 Ω , Fs 50 Hz, 76 mm voice coil. Full T/S parameters, datasheet, 2D drawing and STEP CAD file.

KEY FEATURES

- ✓ Very high efficiency mid-woofer
- ✓ Linear frequency response, low harmonic distortion
- ✓ Lightweight carbon fiber loaded paper cone, nomex spider

QUICK SPECS

Impedance
8 Ω

Program Power
900 W

Sensitivity
99.97 dB

Fs
50.00 Hz

Magnet
Neodymium

Voice Coil
76 mm

 [Datasheet \(PDF\)](#)

 [2D Drawing](#)

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

Design Notes

The 121NPM is a ultra high efficiency, (100dB 1watt / 1 meter) 12-inch mid bass woofer with incredibly linear frequency response characteristics, extreme high power handling capability while generating low harmonic distortion artifacts.-

The 121NPM uses a lightweight carbon fiber loaded cone assembly along with a precision double roll constant geometry surround. This combination provides remarkable strength, high efficiency and a excursion linearity of 14.2mm.

consistent, high integrity magnetic flux gap, ultra low distortion characteristic and high efficiency cooling system. The magnetic circuit design is optimized to generate the minimum amount of flux modulation, providing exceptional stability.

Specifications

GENERAL SPECS

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

POWER HANDLING

AES Power	450 W
Continuous Power	900 W
Peak Power	1800 W

VOICE COIL

Diameter	76 mm
Winding Wire	CCAW
Former	Glass Fiber
Winding Height	13 mm

Resonant Frequency (Hz)	55.55 Hz
Re	6.00 Ω
Qes	0.160
Qms	7.51
Qts	0.160
Vas	59.20 liters
Sd	531.00 cm ²
Mms	66.70 grams
Rms	2.79
Cms	0.1500
Bl	27.80 T·m
Le	0.510 mH
Sensitivity	99.97 dB

General Material

Table

Cone/Dome Material	Paper CF
Spider	Nomex
T-Plate	10 mm
Xmax (peak)	1.5 mm
Xmech	11.5 mm
Overall Diameter	315.00 mm
Bolt Circle Diameter	298.00 mm
Baffle Cutout Dia.	285.00 mm
Mounting Holes	8
Depth (flange to rear)	123.50 mm
Net Weight	4.00 kg
Packaging Dimensions	360X360X180 mm

ORDERING CODES

Product Code DR-12-016-8R-B2-C0001

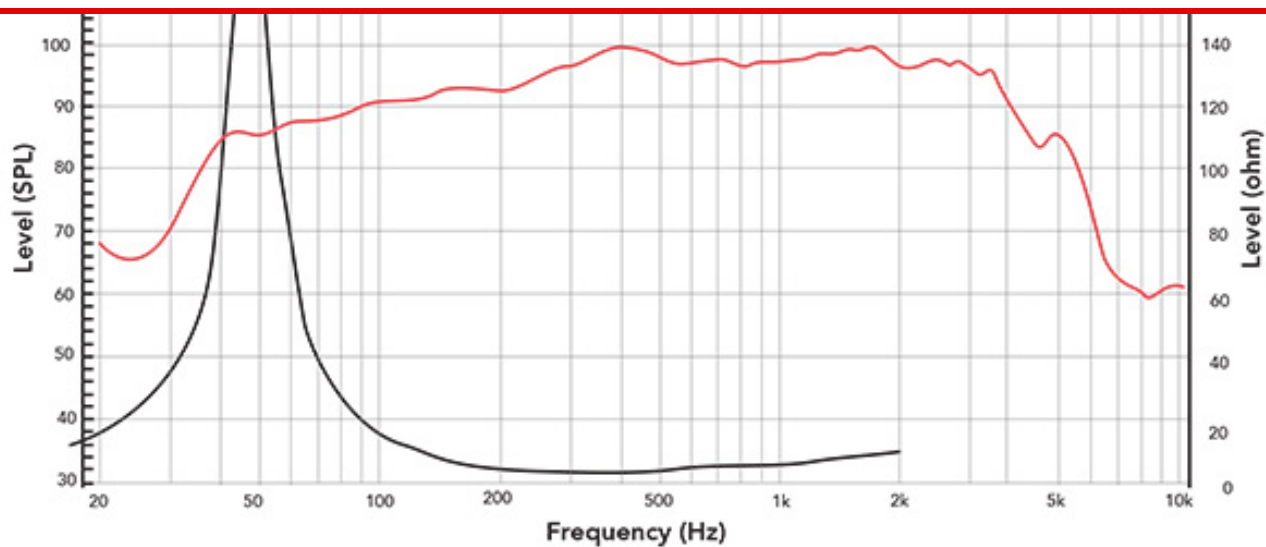
DOWNLOADS

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

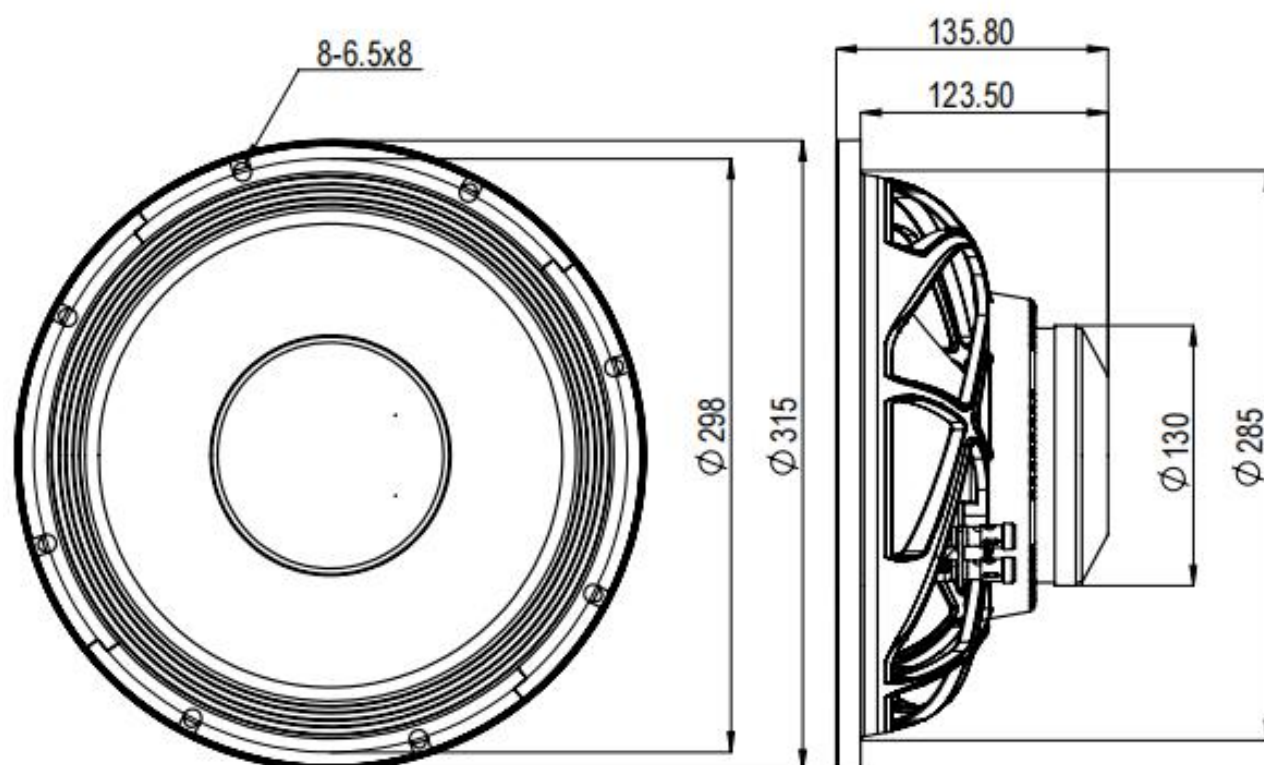
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Frequency Response & Impedance





2D Drawing



high-efficiency 2-way PA speaker systems, compact touring cabinets, and permanently installed enclosures crossed to a compression driver or horn. It features a carbon fiber paper cone, double-roll constant-geometry fabric surround, Nomex spider, and a 3-inch CCAW voice coil on a glass fiber former, driven by a neodymium outside ring magnetic circuit optimized for minimum flux modulation and maximum motor linearity. Sensitivity is 99.97 dB (1W/1m) - approximately 3.5 dB higher than the ferrite 121FIND variants from the same platform. With a Qts of 0.16, this driver uses a low Qts, high motor strength design optimized to maintain consistent performance at high drive levels, with controlled excursion and reduced thermal compression during long-term operation.

The 121NPMX8-079 handles approx. 450 W AES and 900 W continuous power, delivering a peak SPL of 126.5 dB at 1 metre (AES) - the highest of the three 12-inch variants in the 121 family, and 6 dB above the ferrite FIND models at equivalent power. A high-pass filter at 40-60 Hz is recommended depending on alignment. The operating bandwidth is approximately 55-843 Hz; cone beaming onset at 843 Hz defines the upper limit, and a crossover to a compression driver on horn at 800 Hz to 1.5 kHz is required. Third or fourth-order crossover slopes are recommended to control directivity above 843 Hz.

This driver is suited for compact high-efficiency vented 2-way PA touring cabinets where maximum SPL per cabinet weight is the design objective; permanently installed 2-way enclosures in large venues requiring high sensitivity; 2-way stage monitor wedges with horn crossover at 1.0-1.2 kHz; and line array or column system applications where high sensitivity, low distortion, and precise midrange reproduction are required. The neodymium outside ring motor and CCAW voice coil on glass fiber former provide a lightweight, high-efficiency transducer capable of sustained high-power output with minimal thermal compression.

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

Hz, HP filter 39 Hz

- 85 liters tuned to 41 Hz: balanced response, general-purpose (recommended); -3 dB approx.

35 Hz, HP filter 31 Hz

- 90 liters tuned to 38 Hz: extended low-frequency, requires HP filter protection; -3 dB

approx. 32 Hz, HP filter 26 Hz

Frequently Asked Questions

What are the key features of the 121NPM?



What enclosure is recommended for the 121NPM?



What applications is the 121NPM suited for?



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



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CONTACT

 info@redcatt.net

 (+86) 769 8318 1898

 Dongguan, China

