



Code: DR-8-010-8R-B2-C0001

REDCATT 81NPM-2 8-inch neodymium professional mid-woofer: 200 W AES, 93.1 dB sensitivity, 8 Ω , Fs 69 Hz, 76.2 mm voice coil. Full T/S parameters, datasheet, 2D drawing and STEP CAD file.

KEY FEATURES

- ✓ EXTENDED FREQUENCY RESPONSE
- ✓ 2 demodulation rings powerful motor structure
- ✓ Designed for 2-way and multi-way speaker systems

QUICK SPECS

Impedance 8 Ω	Program Power 400 W
Sensitivity 93.05 dB	Fs 69.00 Hz
Magnet Neodymium	Voice Coil 76.2 mm

[📄 Datasheet \(PDF\)](#)[📎 2D Drawing](#)[📦 3D Model \(STEP\)](#)

Design Notes

The 81NPM was designed for good reproduction of voice. With an extended low-frequency response, this mid-woofer is highly suitable for two-way and multi-way systems. It's high power handling capabilities extend the ideal usage as a mid-range driver in line-array systems. The 81NPM uses a lightweight half-pressed paper cone reinforced by our proprietary cone treatment, which also works as weatherization protection. The used high-quality components ensure long-lasting performance even in high powered applications. The chosen material combination provides remarkable

The voice coil sports Kapton former material capable of withstanding peak temperatures above 300°C, well beyond the thermal requirements of modern audio systems. Former strength provides the ideal transfer of power between the voice coil and the cone assembly and assists in reducing distortion artifacts. By combining this material with state of the art adhesives and our winding voice coil technology, the 81NPM delivers incredibly high performance.

Specifications

GENERAL SPECS

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

POWER HANDLING

AES Power	200 W
Continuous Power	400 W
Peak Power	800 W

Diameter	78.2 mm
Winding Wire	CCAW
Former	Glass Fiber
Winding Height	18.6 mm

T/S PARAMETERS

Resonant Frequency (Fs)	69.00 Hz
Re	7.40 Ω
Qes	0.290
Qms	4.84
Qts	0.280
Vas	10.30 liters
Sd	219.00 cm ²
Mms	34.20 grams
Rms	3.06
Cms	0.1560
Bl	19.30 T·m
Le	0.750 mH
Sensitivity	93.05 dB

General Material

Table

Cone/Dome Material	Paper GF
Spider	Nomex
T-Plate	10.5 mm
Xmax (peak)	4.05 mm
Xmech	14.55 mm
Overall Diameter	210.00 mm
Bolt Circle Diameter	195.50 mm
Baffle Cutout Dia.	186.88 mm
Mounting Holes	8
Depth (flange to rear)	101.30 mm
Net Weight	3.20 kg

ORDERING CODES

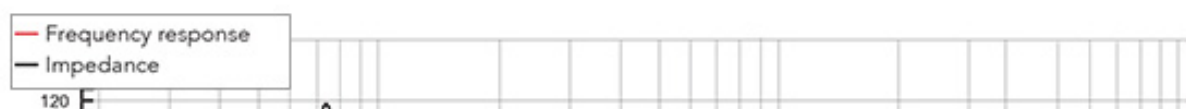
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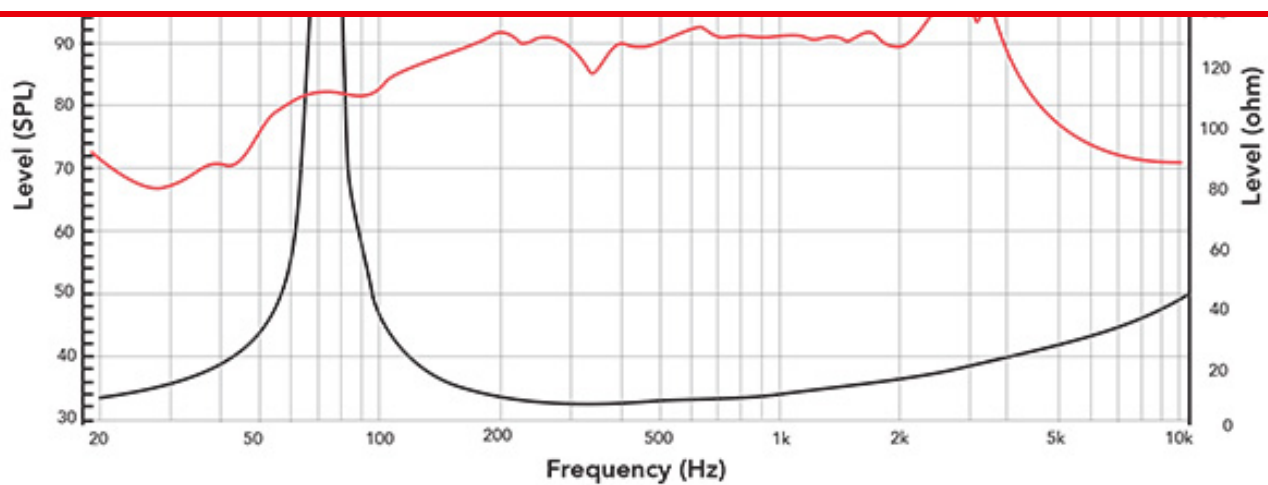
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 Datasheet (PDF)
  2D Drawing (PDF)
  3D Model (STEP)

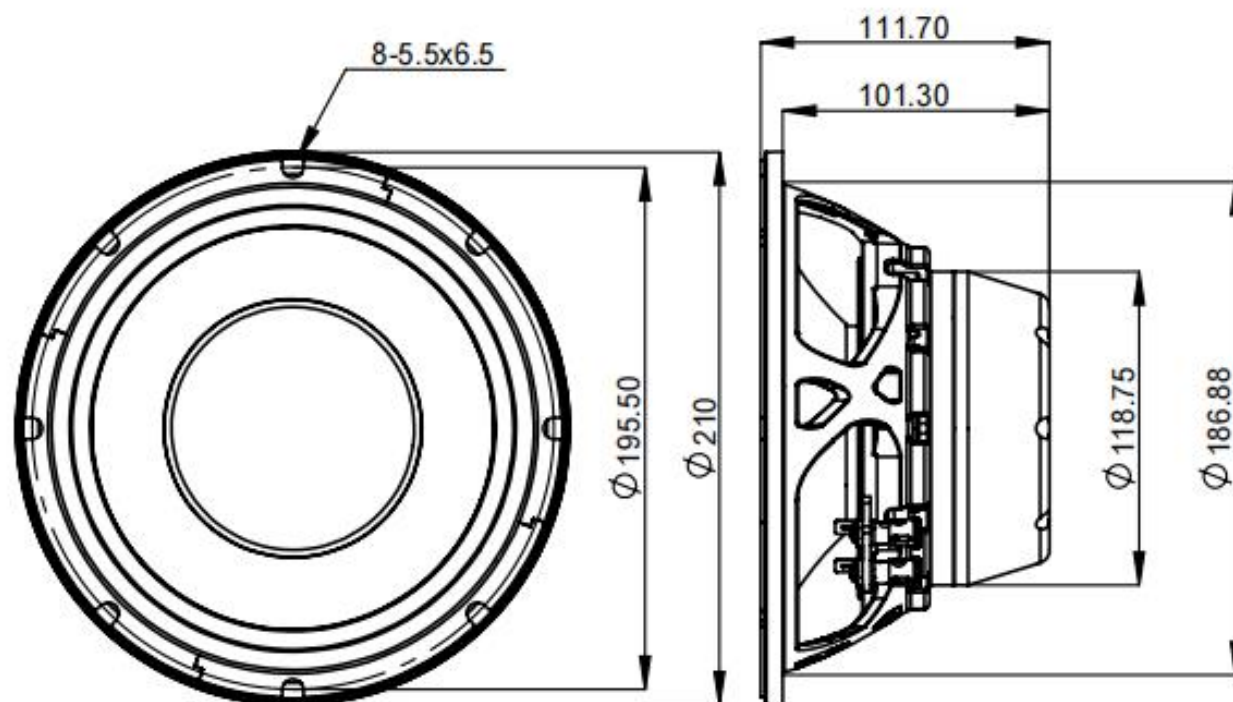
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Frequency Response & Impedance





2D Drawing



way, multi-way, and line array systems requiring high power handling (200 W AES / 400 W continuous), tight motor control, and low-distortion reproduction. It features a 3-inch CCAW voice coil on a glass fiber former with Kapton-grade thermal tolerance, a weatherized half-pressed paper cone with fabric surround, and a neodymium motor with 2 demodulation rings for reduced harmonic and intermodulation distortion. With a sensitivity of 93 dB (1W/1m) and a very low Qts of 0.28, 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 requires active DSP crossover management in both configurations. In vented mid-woofer use, a high-pass filter in the range of 44-61 Hz (24 dB/octave Linkwitz-Riley) is recommended depending on enclosure tuning, with a typical crossover to a high-frequency driver at 1.2-3 kHz. In sealed midrange use, a high-pass filter in the range of 170-350 Hz is recommended depending on enclosure volume and system architecture. In both cases, appropriate limiting is required to manage thermal and mechanical stress during sustained operation.

This driver is particularly effective in professional touring line arrays, compact 2-way portable loudspeakers, multi-way point-source cabinets, and installation systems where versatility across mid-woofer and midrange roles, high power handling, low distortion, and environmental durability are priorities. The neodymium motor with demodulation rings, lightweight cone assembly, and weatherized treatment provide consistent performance in demanding touring and outdoor environments.

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):

- 10 liters tuned to 71 Hz: high output, strong mid-bass, reduced excursion; -3 dB approx. 65 Hz, HP filter 63 Hz

Frequently Asked Questions

What are the key features of the 81NPM-2?



What enclosure is recommended for the 81NPM-2?



What applications is the 81NPM-2 suited for?



What are the power and sensitivity specs of the 81NPM-2?



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