



Code: DR-2-003-8R-B2-C0001

REDCATT 22NFR 2-inch neodymium full-range loudspeaker driver: 20 W AES, 85 dB sensitivity, 8 Ω , Fs 255 Hz, 25.4 mm voice coil. Full T/S parameters, datasheet, 2D drawing and STEP CAD file.

KEY FEATURES

- ✓ Full-range FREQUENCY RESPONSE
- ✓ Optimized frequency response
- ✓ Usage in home Hi-fi, TV bars, columns systems and arrays

QUICK SPECS

Impedance
8 Ω

Program Power
40 W

Sensitivity
85.04 dB

Fs
255.00 Hz

Magnet
Neodymium

Voice Coil
25.4 mm

 Datasheet (PDF)

 2D Drawing

 3D Model (STEP)

Design Notes

This small, but mighty, driver was designed for application where full-range frequency response from one unit is required.

Magnetic circuit is designed with neodymium slug and u-cup steel. This circuit delivers very good level of performance in compact and a cost effective way.

Very lightweight cone with attached rubber surround ensures good pistonic behavior across wide frequency range.

REDCATT has designed new basket for this application. The basket features front flange

variety of applications, from column speakers, multi-way systems, portable products, etc.

Specifications

GENERAL SPECS

Nominal Diameter	2"
Rated Impedance	8 Ohm
Magnet	Neodymium
Basket Material	Steel

POWER HANDLING

AES Power	20 W
Continuous Power	40 W
Peak Power	80 W

VOICE COIL

Diameter	25.4 mm
Winding Wire	CCAW
Former	kapton
Winding Height	5.5 mm

Resonant Frequency (Hz)	200.00 Hz
Re	5.60 Ω
Qes	0.980
Qms	6.46
Qts	0.850
Vas	0.08 liters
Sd	15.90 cm ²
Mms	1.67 grams
Rms	0.41
Cms	0.2300
Bl	3.91 T·m
Le	0.060 mH
Sensitivity	85.04 dB

General Material

Table

Cone/Dome Material	Paper GF
Spider	Conex
T-Plate	4 mm
Xmax (peak)	0.75 mm
Xmech	4.75 mm
Overall Diameter	60.50 mm
Bolt Circle Diameter	64.00 mm
Baffle Cutout Dia.	52.00 mm
Mounting Holes	4
Depth (flange to rear)	35.50 mm
Net Weight	0.12 kg
Packaging Dimensions	110X100X65 mm

ORDERING CODES

Product Code DR-2-003-8R-B2-C0001

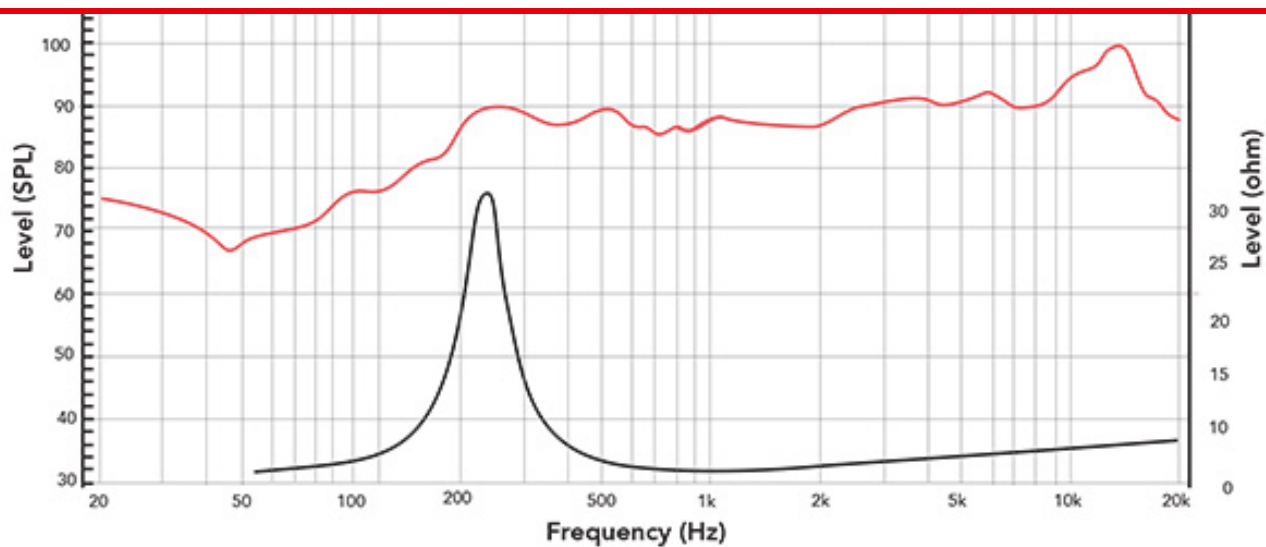
DOWNLOADS

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

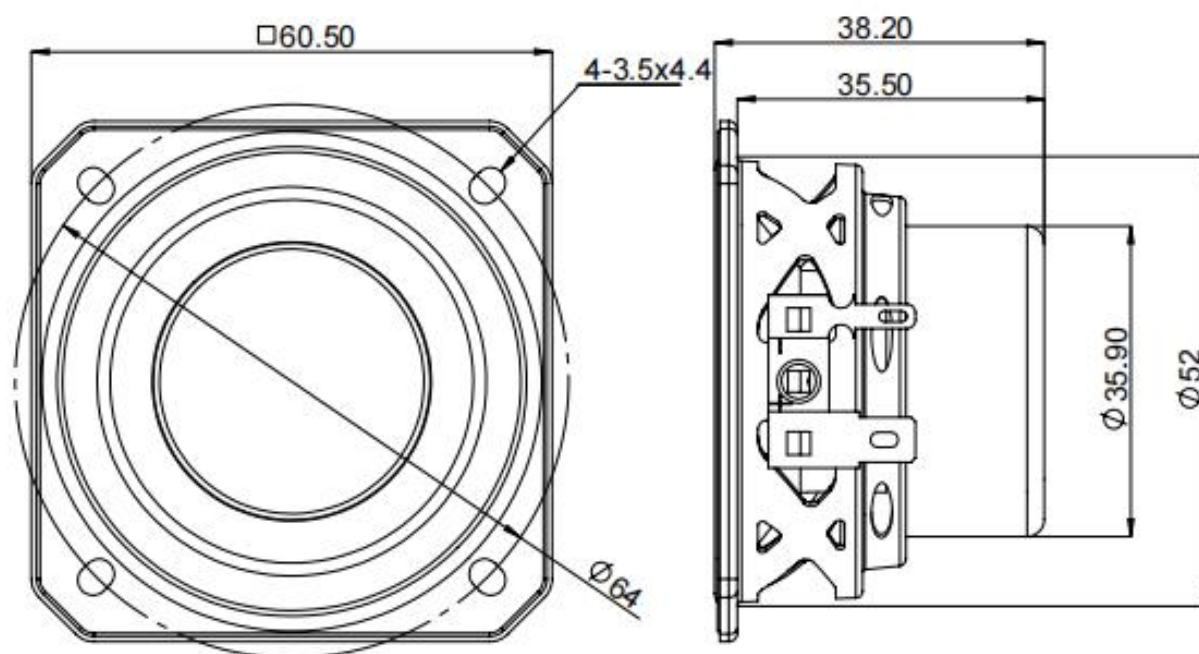
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Frequency Response & Impedance





2D Drawing



multi-way systems, portable products, and TV bar applications requiring high power handling from a compact 8ohm driver. It features a glass fiber reinforced paper cone, fabric surround, 25.4mm CCAW voice coil on a Kapton former, and a neodymium U-cup magnetic circuit in a steel basket with an all-around front flange that supports both front- and back-mounting. Sensitivity is 83.49 dB (1W/1m) / 85.04 dB (2.83V/1m) with a BI of 3.91 T.m, supporting 20W AES / 40W continuous power handling - the highest rated power of the 20NFR/21NFR/22NFR driver family. $Q_{ts} = 0.85$ reflects a compliant suspension design suited to free-air and open-back installations; at Q_{ts} above 0.707, Butterworth sealed alignment is physically unachievable and any sealed enclosure reduces rather than extends low-frequency response.

- 208 mL / $Q_{tc}=1.00$ / f-3dB 236 Hz - largest practical sealed cavity for portable use
- 81 mL / $Q_{tc}=1.20$ / f-3dB 265 Hz - compact rear chamber for soundbar or column enclosures
- 38 mL / $Q_{tc}=1.50$ / f-3dB 315 Hz - minimal TV or ultra-slim chassis cavity; full DSP correction required

Amplification of 20-40W from an 8ohm amplifier output is appropriate, delivering a peak SPL of 96.5 dB at 1 metre (20W AES). The 0.75mm X_{max} is the critical mechanical constraint: only 1.19 cm³ of volume displacement is available, and bass boost below 255 Hz must be applied conservatively with excursion limiting regardless of available power. A mandatory high-pass filter at 150-200 Hz is recommended in all installations. The inductance rolloff onset at 14,854 Hz is well beyond the audio band, and cone beaming onset at 4,867 Hz defines the upper limit of wide-dispersion coverage. In column array applications, the 60.5mm driver OD limits coherent vertical directivity to approximately 2.8 kHz. The 22NFRX8-462A is suited for column speaker arrays requiring standard 8ohm impedance and the highest SPL capability of the 2-inch NFR family; multi-way systems as an upper-band element crossed above 300 Hz to a dedicated woofer or subwoofer; compact portable products where thermal power handling takes priority over bass extension; and TV bar or soundbar designs where the front/back mounting flexibility and high power density are primary selection criteria.

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.

Recommended enclosure alignments (sealed):

- 0.05 liters (Qtc 0.85): compact, punchy character; system resonance approx. 411 Hz
- 0.05 liters (Qtc 0.707): maximally flat Butterworth response (recommended); system resonance approx. 411 Hz
- 0.05 liters (Qtc 0.6): extended response, smooth gradual rolloff; system resonance approx. 411 Hz

Frequently Asked Questions

What are the key features of the 22NFR?



What enclosure is recommended for the 22NFR?



What applications is the 22NFR suited for?



What are the power and sensitivity specs of the 22NFR?



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