

SPECIFICATIONS

FR070WA05 2¾" neodymium, alu-cone fullrange, 4 ohm

Upgraded 70 mm fullrange with extended bass response. Recommended for small systems, where frequency range, neutrality, and low distortion are the highest priorities.

Also suitable for high definition full range line sources, with or without subwoofer assistance.

FEATURES

- True full-range design with useable frequency range 100 Hz - 20kHz
- Dual neodymium magnet structure for high efficiency and almost ideal magnetically shielding
- Copper cap on center pole to reduce voice coil inductance and to minimize variations in voice coil inductance as a function of voice coil position
- Black anodized alu cone for better heat transfer
- Vented polymer chassis for lower air flow speed reducing audible distortion
- Vented voice coil former for reduced distortion and compression
- Heavy-duty black fiber glass voice coil bobbin to reduce mechanical losses resulting in better dynamic performance and low-level details
- Large motor with 26 mm voice coil diameter for better control and power handling
- Low-loss suspension (high Qm) for better reproduction of details and dynamics
- Black motor parts for better heat transfer to the surrounding air
- Conex spider for better durability under extreme conditions
- Gold plated terminals to ensure long-term trouble free connection



NOMINAL SPECIFICATIONS

Notes	Parameter	FR070WA05		Unit
		Before burn-in	After burn-in	
	Nominal size	2¾		[inch.]
	Nominal impedance	4		[ohm]
	Recommended max. upper frequency limit	fullrange		[kHz]
1, 3	Sensitivity, 2.83V/1m (calculated from T/S parameters)	84		[dB]
2	Power handling, short term, IEC 268-5, no additional filtering			[W]
2	Power handling, long term, IEC 268-5, no additional filtering			[W]
2	Power handling, continuous, IEC 268-5, no additional filtering	15		[W]
	Effective radiating area, S _d	22		[cm ²]
3, 6	Resonance frequency (free air, no baffle), F _s	89		[Hz]
	Moving mass, incl. air (free air, no baffle), M _{ms}	3.6		[g]
3	Force factor, Bxl	3.76		[N/A]
3, 6	Suspension compliance, C _{ms}	0.88		[mm/N]
3, 6	Equivalent air volume, V _{as}	0.60		[lit.]
3, 6	Mechanical resistance, R _{ms}	0.16		[Ns/m]
3, 6	Mechanical Q, Q _{ms}	12.6		[-]
3, 6	Electrical Q, Q _{es}	0.49		[-]
3, 6	Total Q, Q _{ts}	0.47		[-]
4	Voice coil resistance, R _{DC}	3.4		[ohm]
5	Voice coil inductance, L _e (measured at 10 kHz)	0.10		[mH]
	Voice coil inside diameter	26		[mm]
	Voice coil winding height	9.4		[mm]
	Air gap height	4		[mm]
	Theoretical linear motor stroke, X _{max}	±2.7		[mm]
	Magnet weight			[kg]
	Total unit net weight excl. packaging			[kg]
3, 5	K _{rm}			[mohm]
3, 5	E _{rm}			[-]
3, 5	K _{xm}			[mohm]
3, 5	E _{xm}			[-]

Note 1 Measured in infinite baffle.

Note 2 Tested in free air (no cabinet).

Note 3 Measured using a semi-constant current source, nominal level 2 mA.

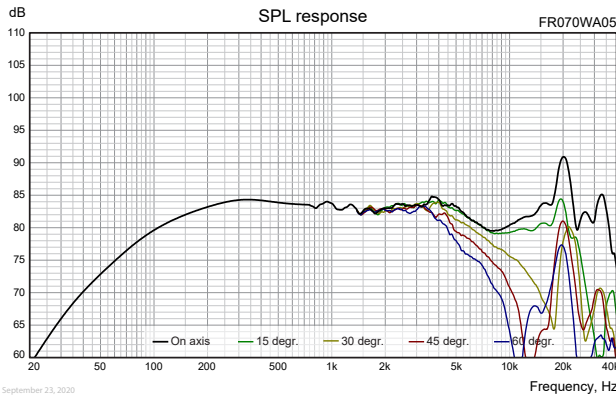
Note 4 Measured at 25 deg. C

Note 5 It is generally a rough simplification to assume that loudspeaker transducer voice coils exhibit the characteristics of an inductor. Instead it is a far more accurate approach to use the more advanced model often referred to as the "Wright empirical model", also used in LEAP-4 as the TSL model (www.linearx.com), involving parameters K_{rm}, E_{rm}, K_{xm}, and E_{xm}. This more accurate transducer model is described in a technical paper [here at our web site](#).

Note 6 After burn-in specifications are measured 12 hours after exciting the transducer by a 20 Hz sine wave for 2 hours at level xx V_{RMS}. The unit is not burned in before shipping.

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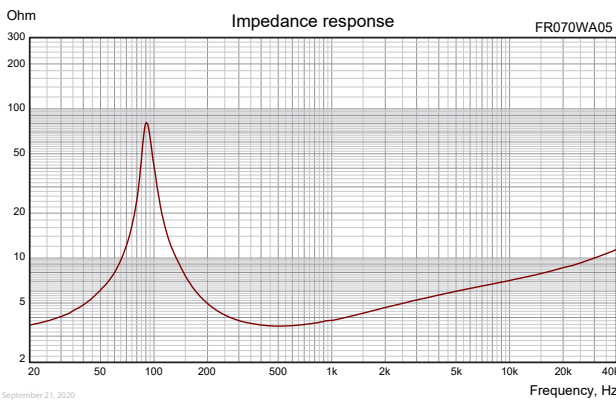
Important!
Please observe that graphs on the left side of this page and the below text files for download are actual measurements of the drivers measured in infinite baffle and without any enclosure. Measuring the drivers in a finite baffle (like the baffle of most speaker cabinets) and in any size of enclosure will lead to different response curves.



[Download FR070WA05 on-axis SPL response as .txt file](#)

Measuring conditions, SPL

Driver mounting: Flush in infinite baffle, back side open (no cabinet)
Microphone distance: 1.0 m
Input signal: 2.83 VRMS stepped sine wave
Smoothing: 1/6 oct.

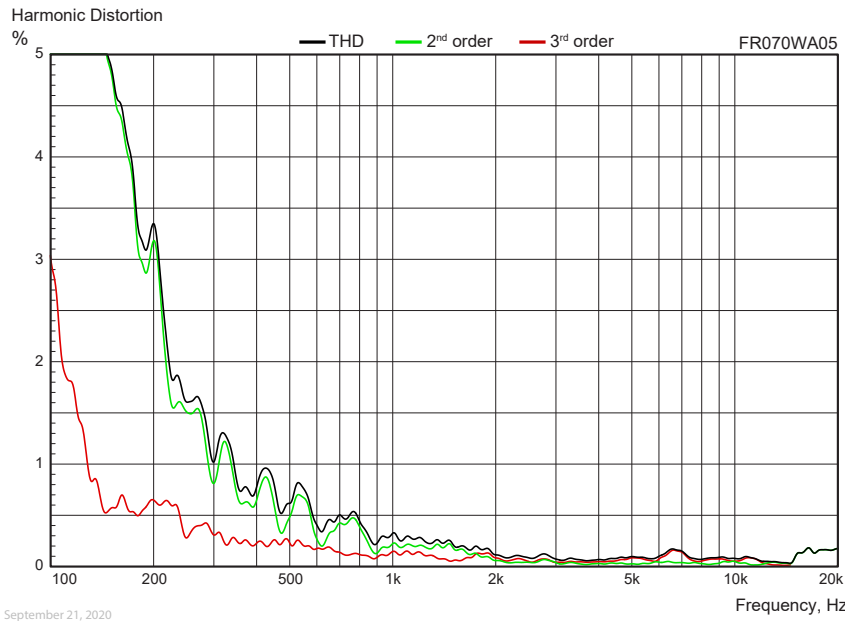


[Download FR070WA05 Impedance response as .txt file](#)

Measuring conditions, impedance

Driver mounting: Free air, no baffle, back side open (no cabinet)
Input signal: Stepped sine wave, semi-current-drive, nominal current 2 mA
Smoothing: None

HARMONIC DISTORTION



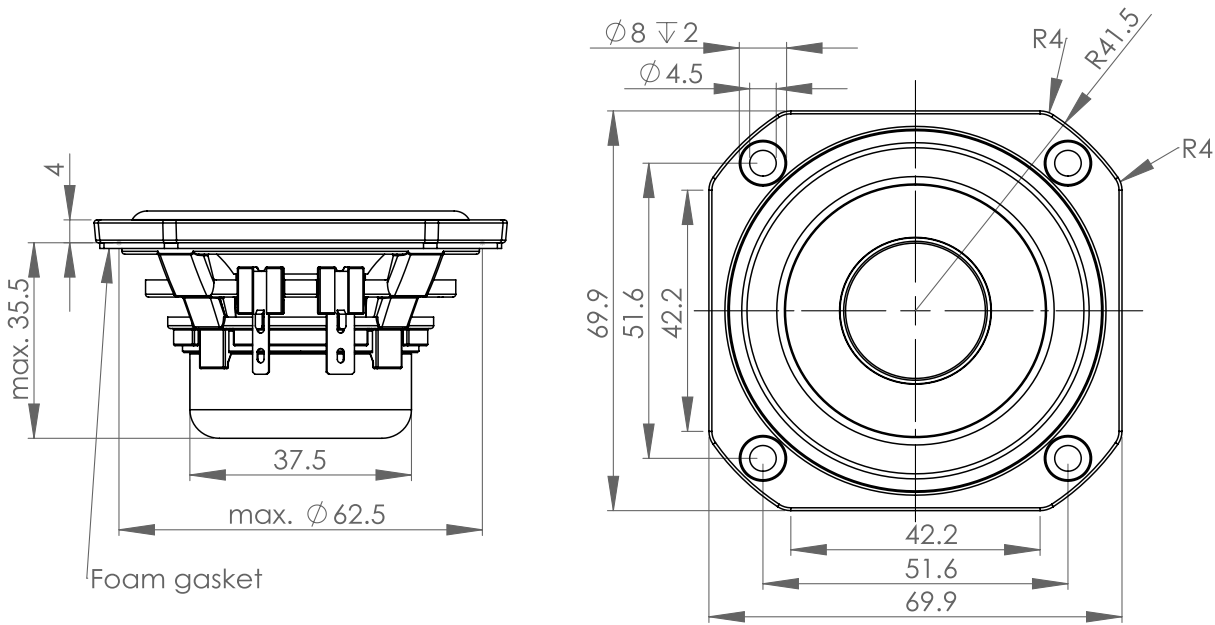
Measuring conditions, harmonic distortion
Driver mounting: In sealed, heavily stuffed enclosure, internal volume 1 lit.
Microphone distance: 0.5 m
Input signal: Stepped sine wave, 2.45 VRMS
Smoothing: 1/6 oct.

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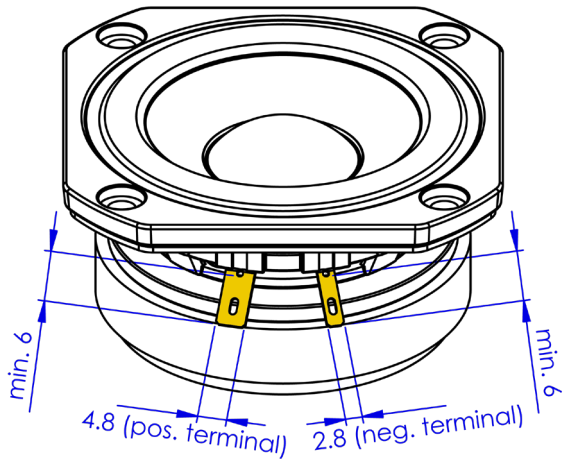
OUTLINE DRAWING (nominal dimensions)

Dimensions in mm



October 10, 2020

CONNECTIONS



PACKAGING AND ORDERING INFORMATION

Part no. FR070WA05-01	4 ohm, packed in pairs
Part no. FR070WA05-02	4 ohm, packed in bulk (industrial) packaging

Latest update: October 18, 2020