

SPECIFICATIONS



TW022WA07/08/09/10 22 mm chambered neodymium textile tweeter, 4/8 ohm

TW022WA07/09 and TW022WA08/10 are true high-end tweeters designed for the most demanding applications featuring an array of performance improving details that participate in obtaining low resonance frequency, low distortion and very high frequency extension

FEATURES

- Precision textile dome ensuring extended response and very good consistency
- 22 mm voice coil design with high power handling and low resonance frequency
- Copper foil clad center pole yielding very low voice coil inductance for reduced distortion and increased high frequency output
- Vented through to a damped rear chamber for low resonance frequency and low distortion
- Optimized light-weight dome for ultra high frequency cut-off, high efficiency, and improved transient response
- Vented voice coil former for reduced distortion and compression
- Copper-clad aluminium voice coil wire offering lower moving mass for improved efficiency and transient response
- Built-in cavities under dome/edge to equalize pressure - for lower distortion and lower resonance frequency
- Flexible lead wires for higher power handling and larger excursion
- Gold plated terminals to prevent oxidation and ensure long-term reliable connection
- Delivered with foam gasket attached for hassle-free mounting and secure cabinet sealing



NOMINAL SPECIFICATIONS

Notes	Parameter	TW022WA07 TW022WA09	TW022WA08 TW022WA10	Unit
	Nominal size	22	22	[mm]
	Nominal impedance	4	8	[ohm]
	Recommended frequency range	2 - 30	2 - 30	[kHz]
1, 4	Sensitivity, 2.83V/1m (average SPL in range 5 - 20 kHz)	92	89.5	[dB]
2	Power handling, short term, IEC 268-5, 2.5 kHz@12dB/oct.	700	700	[W]
2	Power handling, long term, IEC 268-5, 2.5 kHz@12dB/oct.	70	70	[W]
2	Power handling, continuous, IEC 268-5, 2.5 kHz@12dB/oct.	20	20	[W]
	Effective radiating area, S_d	6.1	6.1	[cm ²]
3, 4, 6	Resonance frequency (free air, no baffle), F_s	700	730	[Hz]
	Moving mass, incl. air (free air, no baffle), M_{ms}	0.27	0.25	[g]
3	Force factor, B_{xl}	1.76	2.24	[N/A]
3, 4, 6	Suspension compliance, C_{ms}	0.19	0.19	[mm/N]
3, 4, 6	Equivalent air volume, V_{as}	10	10	[mlit.]
3, 4, 6	Mechanical resistance, R_{ms}	0.93	0.93	[Ns/m]
3, 4, 6	Mechanical Q, Q_{ms}	1.3	1.2	[-]
3, 4, 6	Electrical Q, Q_{es}	1.2	1.4	[-]
3, 4, 6	Total Q, Q_{ts}	0.62	0.66	[-]
4	Voice coil resistance, R_{DC}	3.1	6.0	[ohm]
5	Voice coil inductance, L_e (measured at 10 kHz)	22	37	[μH]
	Voice coil inside diameter	22	22	[mm]
	Voice coil winding height	1.8	1.8	[mm]
	Air gap height	2.5	2.5	[mm]
	Theoretical linear motor stroke, X_{max}	±0.35	±0.35	[mm]
	Magnet weight			[g]
	Total unit net weight excl. packaging			[kg]
3, 4, 5	K_{rm}			[mohm]
3, 4, 5	E_{rm}			[-]
3, 4, 5	K_{xm}			[mH]
3, 4, 5	E_{xm}			[-]

Note 1 Measured in infinite baffle.

Note 2 Tested in free air (no cabinet, no baffle).

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

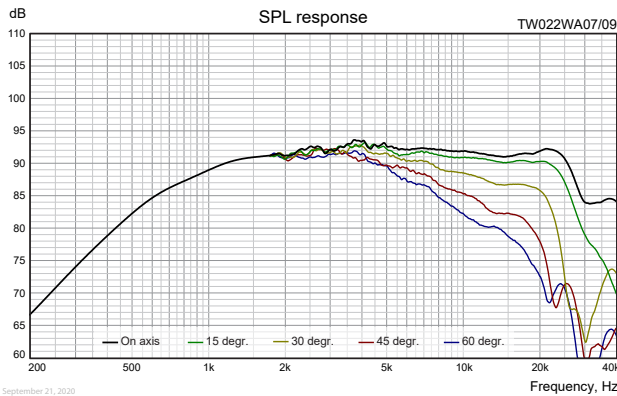
Note 4 Measured at 25 deg. C

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 Measured before burn in. The unit is not burned in before shipping.

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Important!

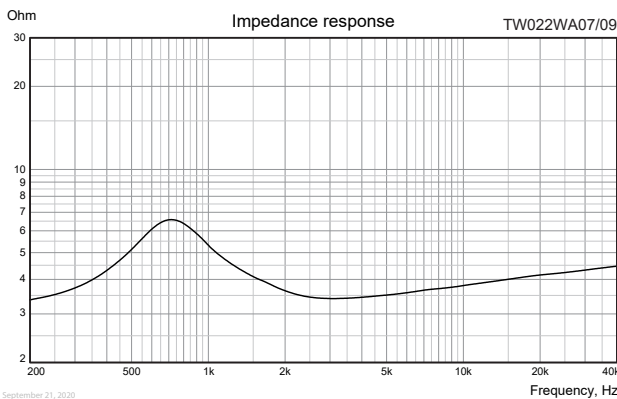
Please observe that graphs on the left side of this page and the below text files for download are actual measurements of the drivers measured in infinite baffle and without any enclosure. Measuring the drivers in a finite baffle (like the baffle of most speaker cabinets) and in any size of enclosure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



Download TW022WA07/09 on-axis SPL response as .txt file

Measuring conditions, SPL

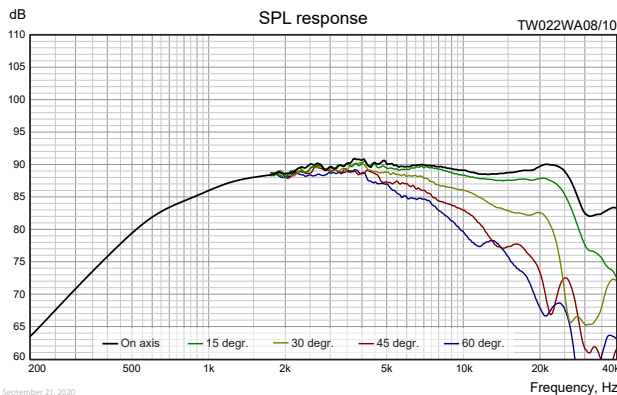
Driver mounting: Flush in infinite baffle, back side open (no cabinet)
Microphone distance: 1.0 m
Input signal: 2.83 VRMS stepped sine wave
Smoothing: 1/6 oct.



Download TW022WA07/09 impedance response as .txt file

Measuring conditions, impedance

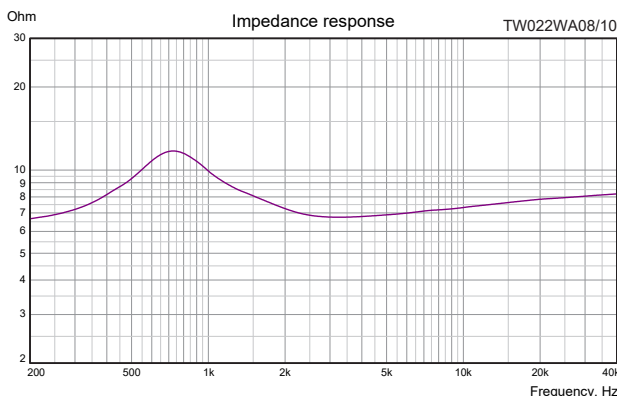
Driver mounting: Free air, no baffle, back side open (no cabinet)
Input signal: Stepped sine wave, semi-current-drive, nominal current 2 mA
Smoothing: None



Download TW022WA08/10 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 TW022WA08/10 impedance response as .txt file

Measuring conditions, impedance

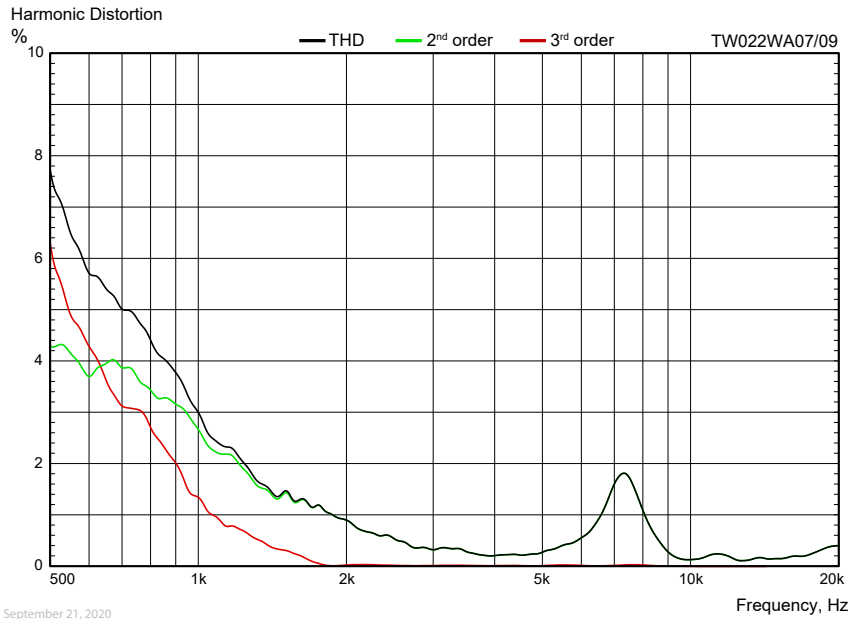
Driver mounting: Free air, no baffle, back side open (no cabinet)
Input signal: Stepped sine wave, semi-current-drive, nominal current 2 mA
Smoothing: None

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HARMONIC DISTORTION



September 21, 2020

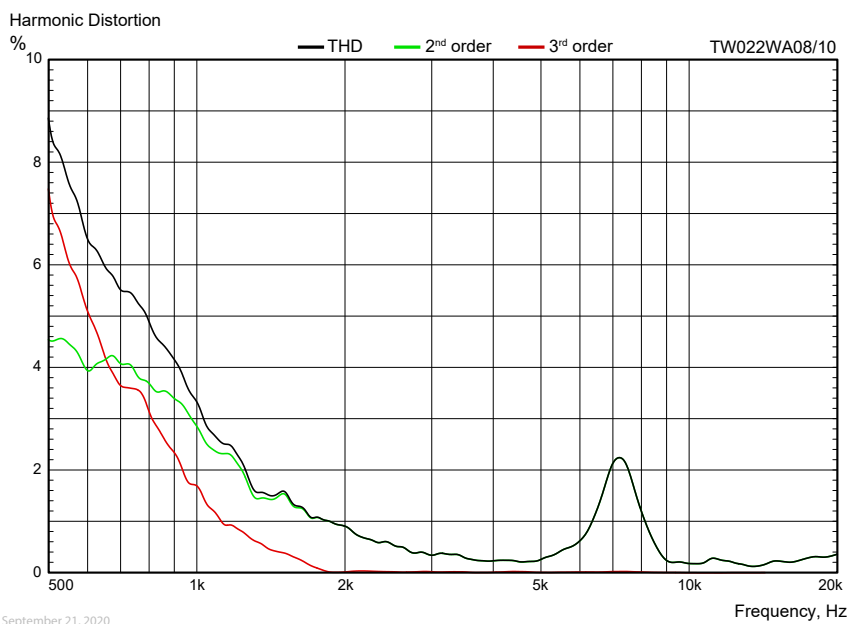
Measuring conditions, Harmonic Distortion

Driver mounting: Infinite baffle

Microphone distance: 0.5 m

Input signal: Stepped sine wave, 2.0 VRMS (TW030WA13) / 2.83 VRMS (TW030WA14)

Smoothing: 1/6 oct.

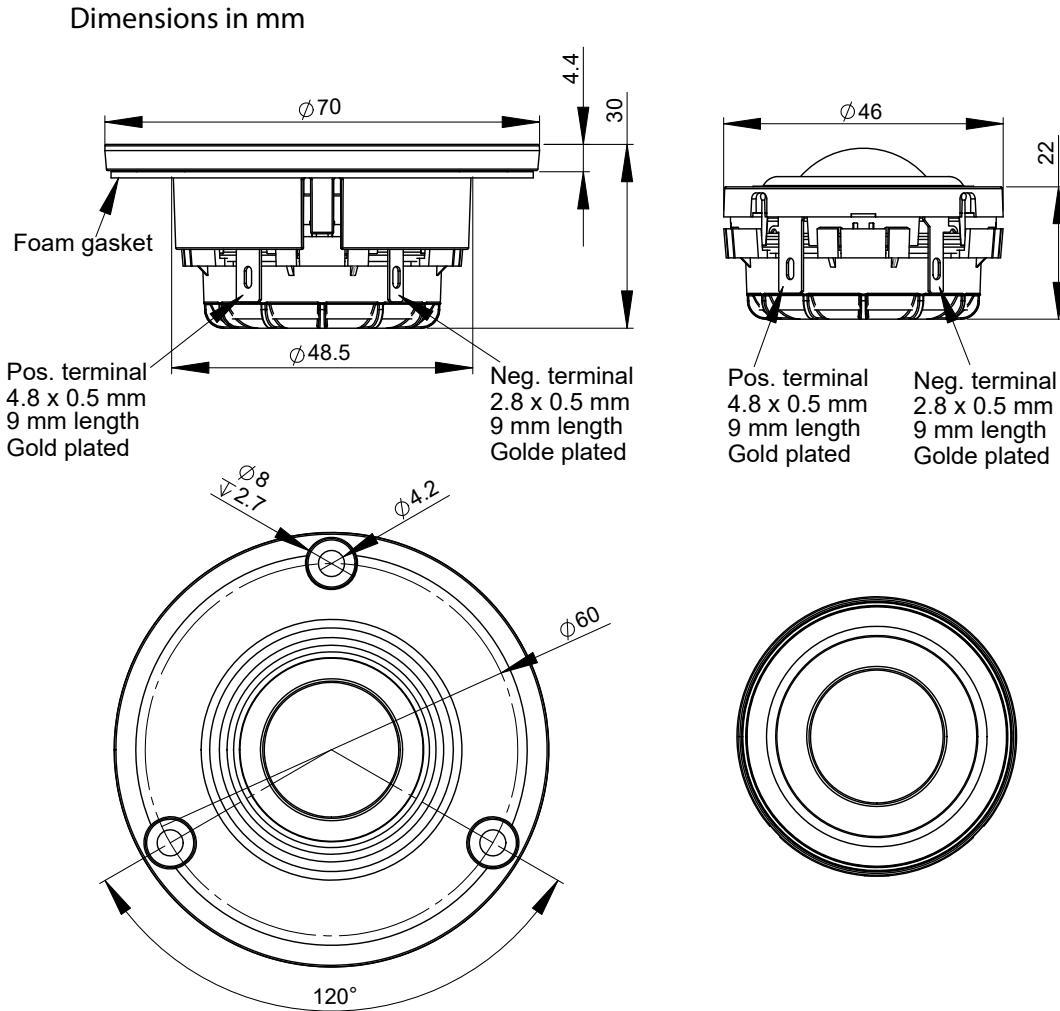


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OUTLINE DRAWING (nominal dimensions)



September 22, 2020

PACKAGING AND ORDERING INFORMATION

Part no. TW022WA07-01	4 ohm version, without face plate, individual packaging (one pair per box)
Part no. TW022WA07-02	4 ohm version, without face plate, bulk (industrial) packaging
Part no. TW022WA08-01	8 ohm version, without face plate, individual packaging (one pair per box)
Part no. TW022WA08-02	8 ohm version, without face plate, bulk (industrial) packaging
Part no. TW022WA09-01	4 ohm version, with face plate, individual packaging (one pair per box)
Part no. TW022WA09-02	4 ohm version, with face plate, bulk (industrial) packaging
Part no. TW022WA10-01	8 ohm version, with face plate, individual packaging (one pair per box)
Part no. TW022WA10-02	8 ohm version, with face plate, bulk (industrial) packaging

Latest update: October 18, 2020