

SPECIFICATIONS

TW022WA02 22 mm neodymium textile tweeter, 4 ohm

TW022WA02 is a compact 22 mm neodymium tweeter for applications, where small size is important, while still requiring the highest level of performance.

The best of two worlds?

The design with 22 mm voice coil and wide surround caters for both applications that would normally require traditional ¾" tweeters and those, where 1" tweeters would usually be preferred.

Innovation

In order to keep distortion and resonance frequency low the TW022WA02 is designed around a small external neodymium ring magnet to allow for a larger internal volume than that of traditional neodymium tweeters.

There is a version of TW022WA02 without face plate available for manufacturers, for building the unit directly into the cabinet baffle. The part number of this version is TW022WA01 and the electrical/acoustical specifications are identical to that of TW022WA02. Please [contact us](#) for more information.



FEATURES

- 22 mm design for optimal compromise between on- and off-axis frequency response, resonance frequency, and power handling
- External ring neodymium magnet for lower resonance frequency and distortion
- Precision-coated textile diaphragm for improved consistency and high-frequency extension
- 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
- Build-in cavities under dome/edge to equalize pressure - for lower distortion and lower resonance frequency
- High-stability ferro fluid for increased power handling
- 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	Value	Unit
	Nominal size	22	[mm]
	Nominal impedance	4	[ohm]
	Recommended frequency range	2.5 - 30	[kHz]
1, 4	Sensitivity, 2.83V/1m (average SPL in range 2 - 20 kHz)	88.5	[dB]
2	Power handling, short term, IEC 268-5, kHz@12dB/oct.		[W]
2	Power handling, long term, IEC 268-5, kHz@12dB/oct.		[W]
2	Power handling, continuous, IEC 268-5, 2.5 kHz@12dB/oct.	30	[W]
	Effective radiating area, S_d	6.1	[cm ²]
3, 4, 6	Resonance frequency (free air, no baffle), F_s	1,150	[Hz]
	Moving mass, incl. air (free air, no baffle), M_{ms}	0.28	[g]
3	Force factor, B_{xl}	1.33	[N/A]
3, 4, 6	Suspension compliance, C_{ms}	68	[µm/N]
3, 4, 6	Equivalent air volume, V_{as}	3.6	[mlit.]
3, 4, 6	Mechanical resistance, R_{ms}	1.33	[Ns/m]
3, 4, 6	Mechanical Q, Q_{ms}	1.53	[-]
3, 4, 6	Electrical Q, Q_{es}	4.1	[-]
3, 4, 6	Total Q, Q_{ts}	1.11	[-]
4	Voice coil resistance, R_{DC}	3.6	[ohm]
5	Voice coil inductance, L_e (measured at 20 kHz)	36	[µH]
	Voice coil inside diameter	22	[mm]
	Voice coil winding height	1.6	[mm]
	Air gap height	2.5	[mm]
	Theoretical linear motor stroke, X_{max}	±0.45	[mm]
	Magnet weight		[g]
	Total unit net weight excl. packaging	0.06	[kg]
3, 4, 5	K_{rm}	2.5	[µohm]
3, 4, 5	E_{rm}	1.14	[-]
3, 4, 5	K_{xm}	3.0	[mH]
3, 4, 5	E_{xm}	0.56	[-]

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

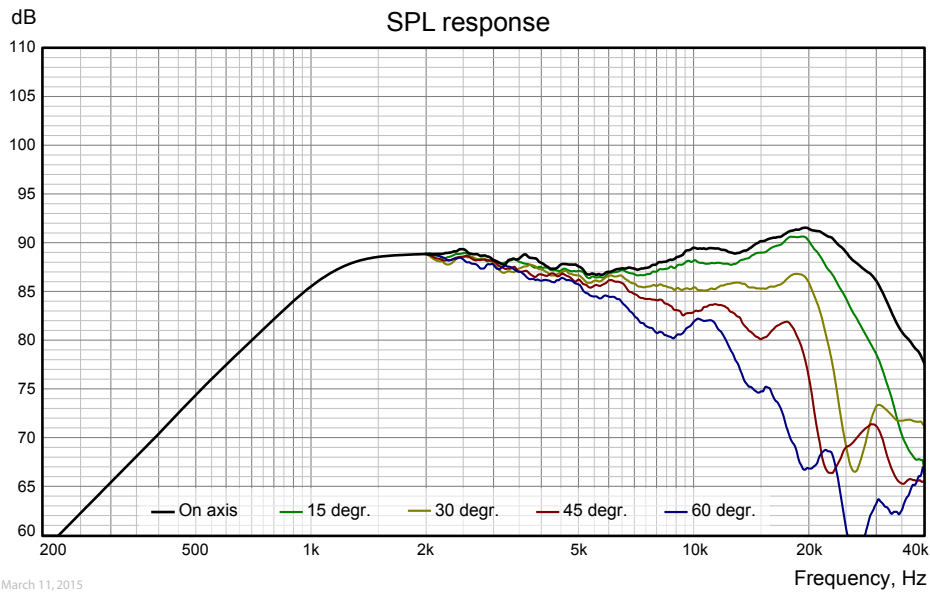
Note 5 It is generally a rough simplification to assume that loudspeaker transducer voice coils exhibit the characteristics of an inductor. Instead it is a far more accurate approach to use the more advanced model often referred to as the "Wright empirical model", also used in LEAP-4 as the TSL model (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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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.



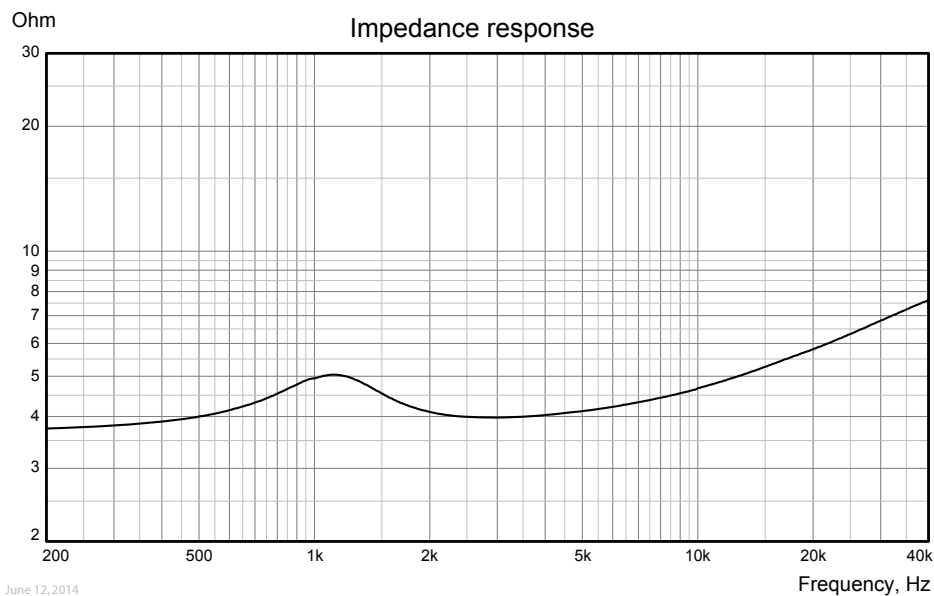
[Download on-axis SPL response as .txt file](#)

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



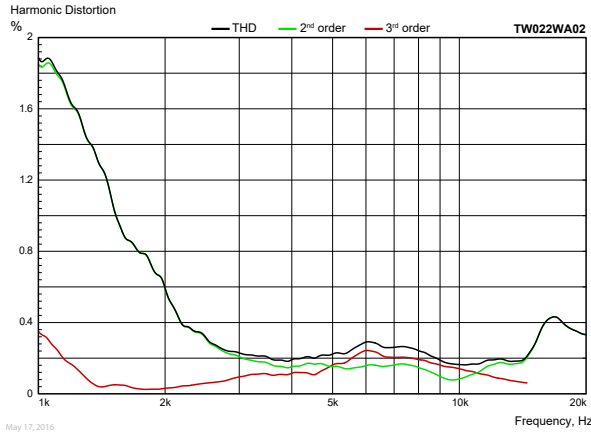
[Download Impedance response as .txt file](#)



SPECIFICATIONS

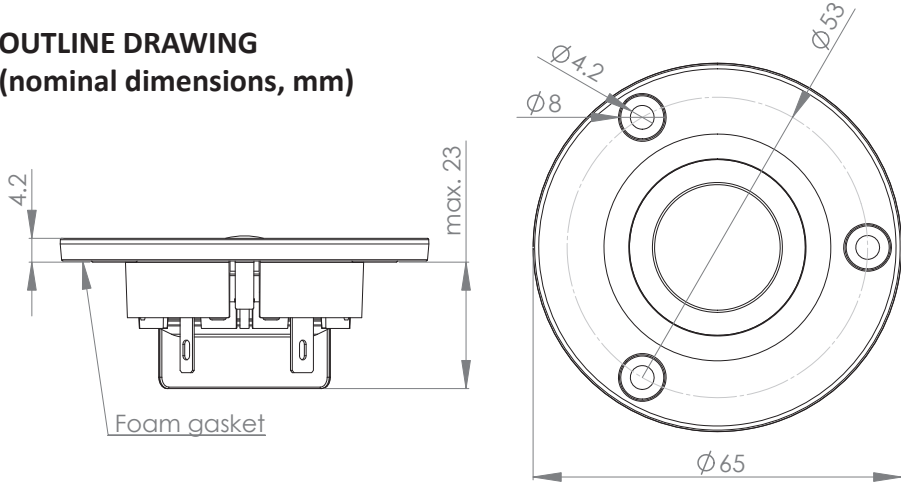
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HARMONIC DISTORTION

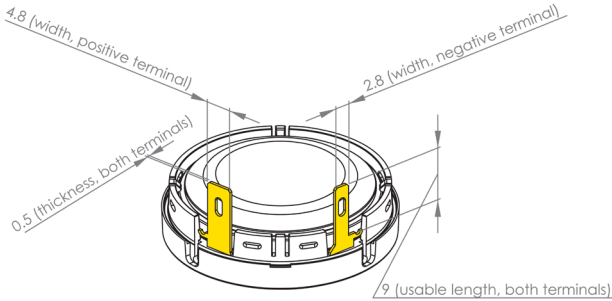


Measuring conditions, harmonic distortion
 Driver mounting: In "infinite" baffle
 Microphone distance: 0.5 m
 Input signal: Stepped sine wave, 2.83 VRMS
 Smoothing: 1/6 oct.

OUTLINE DRAWING (nominal dimensions, mm)



CONNECTIONS



PACKAGING AND ORDERING INFORMATION

Part no. TW022WA02-01	Packed in pairs (two pieces per box)
Part no. TW022WA02-02	Bulk packaging

Latest update: Apr. 21, 2018