

# SPECIFICATIONS

## TW045WA01 22/45 mm coaxial neodymium tweeter, 4 ohm

TW045WA01 is a unique new design, where a textile dome is combined with a ceramic cone in ensuring a larger bandwidth, high efficiency, and new levels of refinement and dynamics.

### FEATURES

- Dual-Piston design combining a 22 mm textile dome with a 45 mm ceramic cone. Precision textile dome ensuring high frequency extension, ceramic cone adding low frequency output and efficiency
- Copper clad center pole yielding very low voice coil inductance for reduced distortion and increased high frequency output
- Front-side reflection reducing foam ring
- Flat low-damping IIR surround
- Vented through to a damped rear, die cast, chamber for low resonance frequency and low distortion
- Alu chassis with built-in heat sink for increased long-term power handling
- Dual-neodymium magnet structure
- Optimized dome shape for ultra-high frequency cut-off
- Underhung voice coil design for improved linearity
- 22 mm voice coil design with high power handling, and low resonance frequency
- Copper-clad aluminium voice coil wire offering lower moving mass for improved efficiency and transient response
- 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	TW045WA01	Unit
	Nominal size	22/45	[mm]
	Nominal impedance	4	[ohm]
	Recommended frequency range	2 - 40	[kHz]
1, 4	Sensitivity, 2.83V/1m (average SPL in range 5 - 20 kHz)	95	[dB]
2	Power handling, short term, IEC 268-5, 3.0 kHz@12dB/oct.	1,300	[W]
2	Power handling, long term, IEC 268-5, 3.0 kHz@12dB/oct.	450	[W]
2	Power handling, continuous, IEC 268-5, 3.0 kHz@12dB/oct.	180	[W]
	Effective radiating area, S <sub>d</sub>	20	[cm <sup>2</sup> ]
3, 4, 6	Resonance frequency (free air, no baffle), F <sub>s</sub>	840	[Hz]
	Moving mass, incl. air (free air, no baffle), M <sub>ms</sub>	1.12	[g]
3	Force factor, B <sub>xl</sub>	3.0	[N/A]
3, 4, 6	Suspension compliance, C <sub>ms</sub>	0.032	[mm/N]
3, 4, 6	Equivalent air volume, V <sub>as</sub>	18	[mlit.]
3, 4, 6	Mechanical resistance, R <sub>ms</sub>	1.34	[Ns/m]
3, 4, 6	Mechanical Q, Q <sub>ms</sub>	4.4	[-]
3, 4, 6	Electrical Q, Q <sub>es</sub>	1.85	[-]
3, 4, 6	Total Q, Q <sub>ts</sub>	1.30	[-]
4	Voice coil resistance, R <sub>DC</sub>	2.9	[ohm]
5	Voice coil inductance, L <sub>e</sub> (measured at 10 kHz)		[μH]
	Voice coil inside diameter	22	[mm]
	Voice coil winding height	2.5	[mm]
	Air gap height	4.0	[mm]
	Theoretical linear motor stroke, X <sub>max</sub>	±0.75	[mm]
	Magnet weight	45.7 + 8.3	[g]
	Total unit net weight excl. packaging	270	[g]
3, 4, 5	K <sub>rm</sub>		[mohm]
3, 4, 5	E <sub>rm</sub>		[-]
3, 4, 5	K <sub>xm</sub>		[mH]
3, 4, 5	E <sub>xm</sub>		[-]

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.

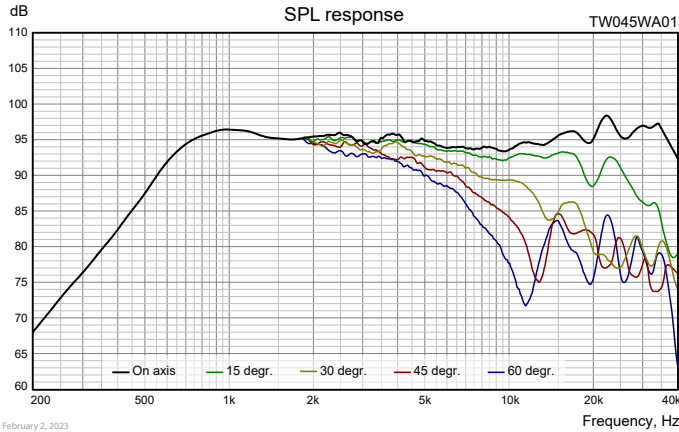
Note 4 Measured at 25 deg. C

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](http://www.linearx.com)), involving parameters K<sub>rm</sub>, E<sub>rm</sub>, K<sub>xm</sub>, and E<sub>xm</sub>. 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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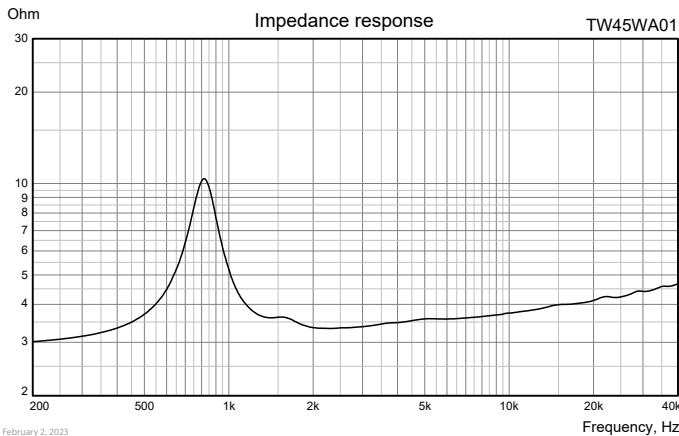


**Important!**  
Please observe that graphs on the left side of this page and the below text files for download are actual measurements of the drivers measured in infinite baffle and without any enclosure. Measuring the drivers in a finite baffle (like the baffle of most speaker cabinets) and in any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



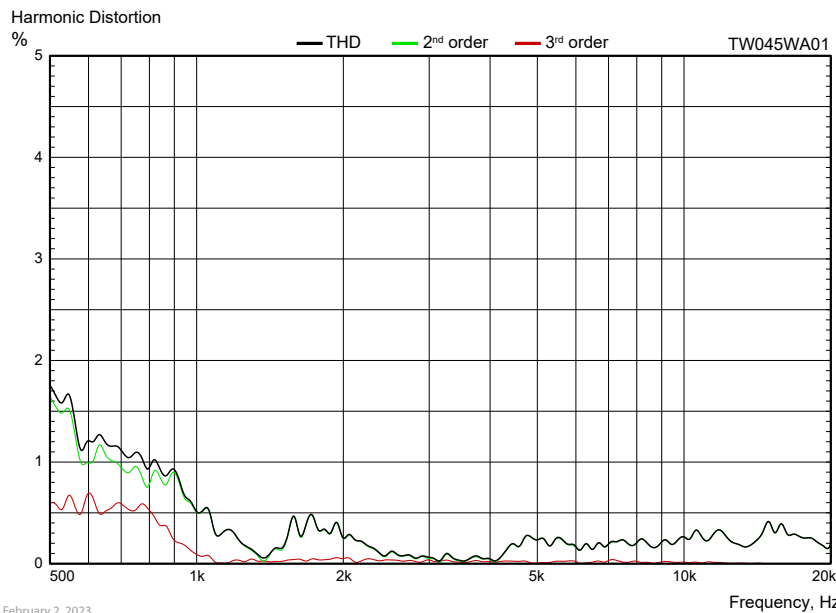
Download TW045WA01 on-axis SPL response as .txt file

Measuring conditions, SPL  
Driver mounting: Flush in infinite baffle, back side open (no cabinet)  
Microphone distance: 1.0 m  
Input signal: 2.83 V<sub>RMS</sub> LogChirp, 64k, Hanning/2  
Smoothing: 1/6 oct.



Download TW045WA01 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

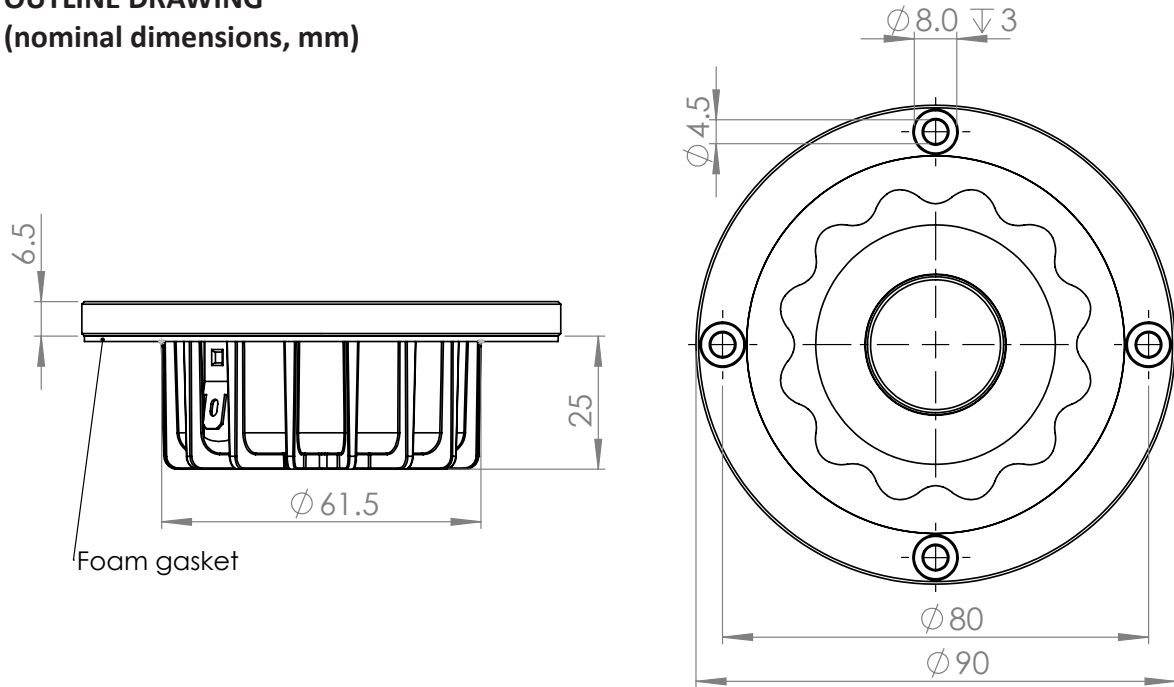


Measuring conditions, distortion  
Driver mounting: 5 lit. sealed cabinet  
Input voltage: 2.0 V<sub>RMS</sub>  
Smoothing: 1/12 oct.

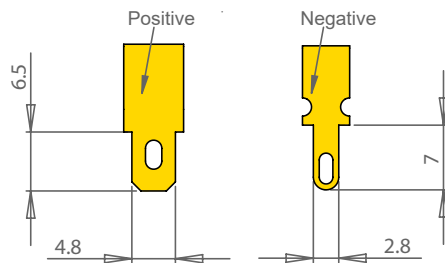
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## OUTLINE DRAWING (nominal dimensions, mm)



## CONNECTIONS



Terminal thickness: 0.5 mm  
Terminal plating: Gold

## PACKAGING AND ORDERING INFORMATION

Part no. TW045WA01-01	4 ohm version, round, individual packaging (one piece per box)
Part no. TW045WA01-02	4 ohm version, round, bulk packaging

Latest update: Feb. 13, 2023