

# SPECIFICATIONS



## SW312TU02 12¼" alu-cone automotive subwoofer, 4 ohm

SW312TU02 is a woofer designed for dedicated subwoofer applications. The extremely stiff aluminium cone, the long linear throw, exaggerated ventilation, and the special dynamic linearization short circuiting rings together makes up for an unusually linear and low-distortion woofer. Even at very high signal levels, the unit behaves controlled and without distortion.

Due to low mechanical losses SW312TU02 masters equally well low level details and extreme dynamic requirements.



### FEATURES

- Extremely rigid aluminium cone to ensure piston motion at high levels and for better heat transfer at high continuous power levels
- Die cast alu chassis with optimal ventilation and increased stroke
- Vented cone neck for reduced distortion and compression
- Vented chassis for lower air flow speed reducing audible distortion
- Heavy-duty black fiber glass voice coil bobbin to reduce mechanical losses resulting in better dynamic performance and low-level details
- Large motor system with 2" voice coil diameter and 145mm magnet for better control and efficiency
- Black-anodized magnet structure steel parts for increased heat dissipation and power handling
- Two built-in alu field stabilizing rings for reduced high-level distortion
- Long linear stroke motor for reduced distortion at high levels
- Linear suspension with specially designed CONEX damper (spider) for long durability under extreme operating conditions
- 4-layer voice coil for increased control and better small-cabinet performance

### NOMINAL SPECIFICATIONS

Notes	Parameter	Value	Unit
	Nominal size	12¼	[inch.]
	Nominal impedance	4	[ohm]
	Recommended max. upper frequency limit	300	[Hz]
1, 3	Sensitivity, 2.83V/1m (calculated from T/S parameters)	90	[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	250	[W]
	Effective radiating area, S <sub>d</sub>	513	[cm <sup>2</sup> ]
3, 6	Resonance frequency (free air, no baffle), F <sub>s</sub>	27.5	[Hz]
	Moving mass, incl. air (free air, no baffle), M <sub>ms</sub>	194	[g]
3	Force factor, B <sub>xl</sub>	14.3	[N/A]
3, 6	Suspension compliance, C <sub>ms</sub>	0.173	[mm/N]
3, 6	Equivalent air volume, V <sub>as</sub>	65	[lit.]
3, 6	Mechanical Q, Q <sub>ms</sub>	11.5	[-]
3, 6	Electrical Q, Q <sub>es</sub>	0.53	[-]
3, 6	Total Q, Q <sub>ts</sub>	0.50	[-]
4	Voice coil resistance, R <sub>DC</sub>	3.2	[ohm]
5	Voice coil inductance, L <sub>e</sub> (measured at 1 kHz)	1.55	[mH]
	Voice coil inside diameter	51	[mm]
	Voice coil winding height	31	[mm]
	Air gap height	8	[mm]
	Magnet weight	2.7	[kg]
	Total unit net weight excl. packaging	6.5	[kg]
3, 5	K <sub>rm</sub>	10.4	[mohm]
3, 5	E <sub>rm</sub>	0.70	[-]
3, 5	K <sub>xm</sub>	11.3	[mH]
3, 5	E <sub>xm</sub>	0.75	[-]

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 20 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 After burn-in specifications are measured 12 hours after exiting the transducer by a 20 Hz sine wave for 2 hours at level 14.1 V<sub>RMS</sub>. The unit is not burned in before shipping.

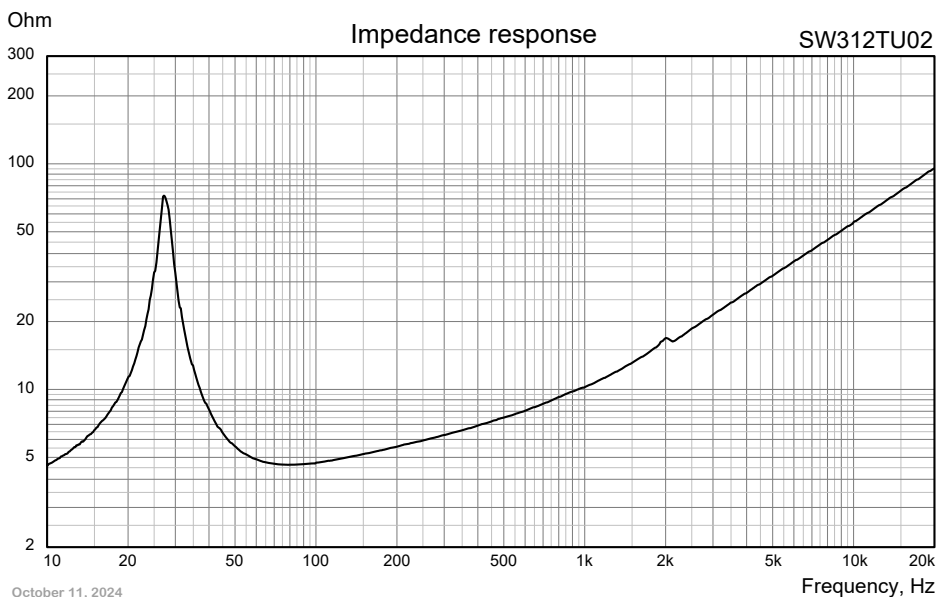
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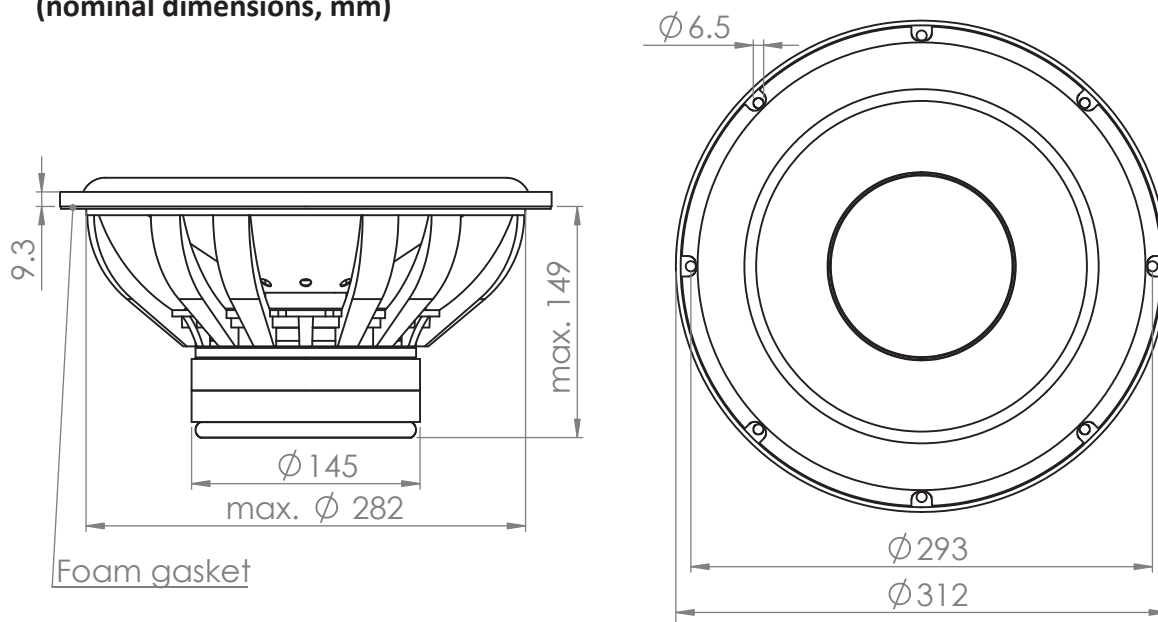
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## SW312TU02 12¼" alu-cone automotive subwoofer, 4 ohm



### OUTLINE DRAWING (nominal dimensions, mm)



### PACKAGING AND ORDERING INFORMATION

Part no. SW312TU02-01

Individual packaging (one piece per box)

Latest update: October 11, 2024

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