

SPECIFICATIONS

WF166TU02 6½" die cast car woofer, 4 ohm

WF166TU02 is a mid/woofer designed for demanding bass and midrange applications. It works equally well for most applications but is designed especially for automotive high-end sound.

The optimized paper cone ensures wide bandwidth and low distortion. Distortion is further reduced by efficient venting and a separate alu field-stabilizing ring.

WF166TU02 is a good choice for 2-way car speaker systems.

FEATURES

- Very rigid die cast alu chassis
- Built-in alu field stabilizing ring for reduced high-level distortion
- Vented voice coil former and magnet center pole for reduced distortion and compression
- Vented chassis for lower air flow speed reducing audible distortion
- Heavy-duty black fiber glass voice coil bobbin to increase power handling and reduce mechanical losses resulting in better dynamic performance and low-level details
- Large motor system with 1¼" voice coil diameter and large 90 mm magnet for better control and efficiency
- Linear suspension with specially designed CONEX damper (spider) for long durability under extreme operating conditions
- Gold plated terminals to prevent oxidation for long-term reliable connection - important in a car environment



NOMINAL SPECIFICATIONS

Notes	Parameter	Before burn-in	After burn-in	Unit
	Nominal size		6½	[inch.]
	Nominal impedance		4	[ohm]
	Recommended max. upper frequency limit		3.5	[kHz]
1, 5	Sensitivity, 2.83V/1m (average SPL in range 300 - 1,000 Hz)		91	[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		60	[W]
	Effective radiating area, S _d		139	[cm ²]
3, 5, 7	Resonance frequency (free air, no baffle), F _s	50		[Hz]
	Moving mass, incl. air (free air, no baffle), M _{ms}		12.5	[g]
3	Force factor, B _{xl}		5.0	[N/A]
3, 5, 7	Suspension compliance, C _{ms}	0.81		[mm/N]
3, 5, 7	Equivalent air volume, V _{as}	22.3		[lit.]
3, 5, 7	Mechanical resistance, R _{ms}	0.40		[Ns/m]
3, 5, 7	Mechanical Q, Q _{ms}	9.8		[-]
3, 5, 7	Electrical Q, Q _{es}	0.50		[-]
3, 5, 7	Total Q, Q _{ts}	0.48		[-]
4	Voice coil resistance, R _{DC}		3.2	[ohm]
6	Voice coil inductance, L _e (measured at 10 kHz)		0.23	[mH]
	Voice coil inside diameter		32	[mm]
	Voice coil winding height		11	[mm]
	Air gap height		5	[mm]
	Magnet weight (dual neodymium)		400	[g]
	Total unit net weight excl. packaging		1.15	[kg]
3, 6	K _{rm}		109	[μohm]
3, 6	E _{rm}		0.97	[-]
3, 6	K _{xm}		2.04	[mH]
3, 6	E _{xm}		0.79	[-]

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

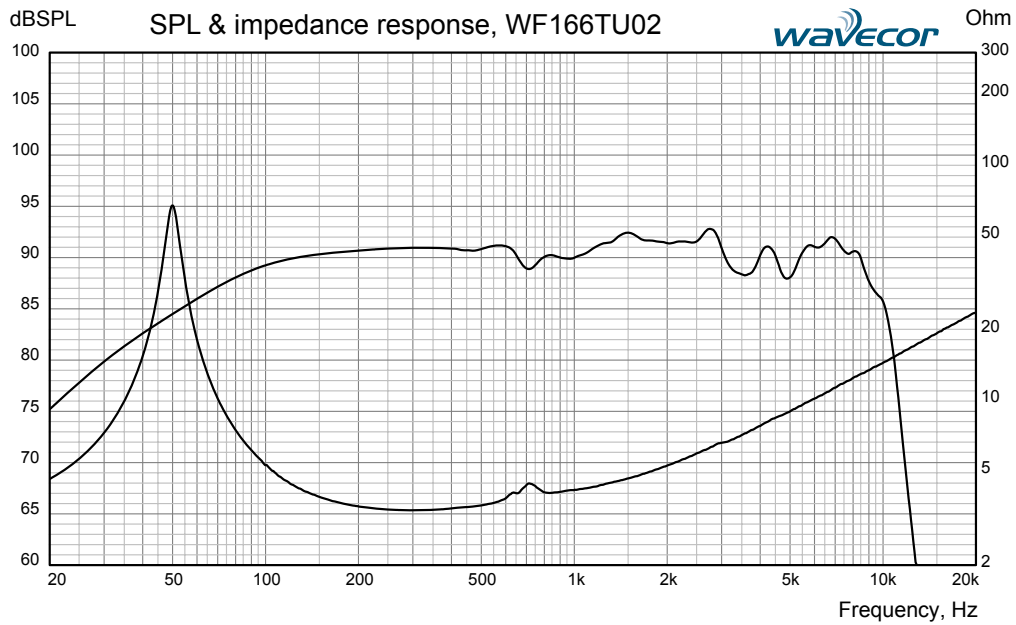
Note 5 Measured at 25 deg. C

Note 6 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](#).

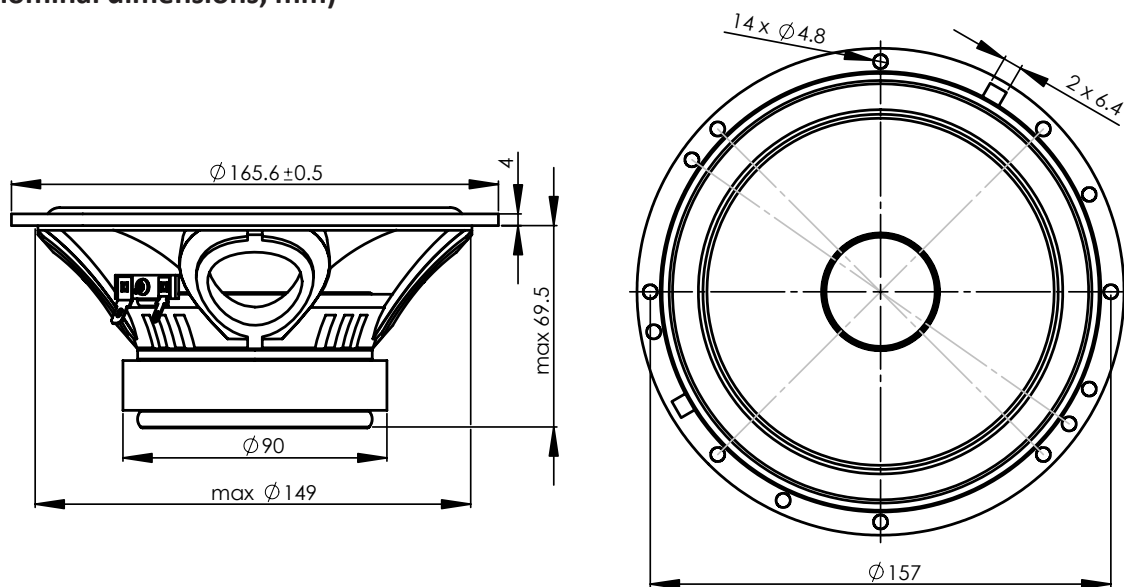
Note 7 After burn-in specifications are measured at least 12 hours after exiting the transducer by a 20 Hz sine wave for 2 hours at level 10 VRMS. Units are not burned in before shipping.

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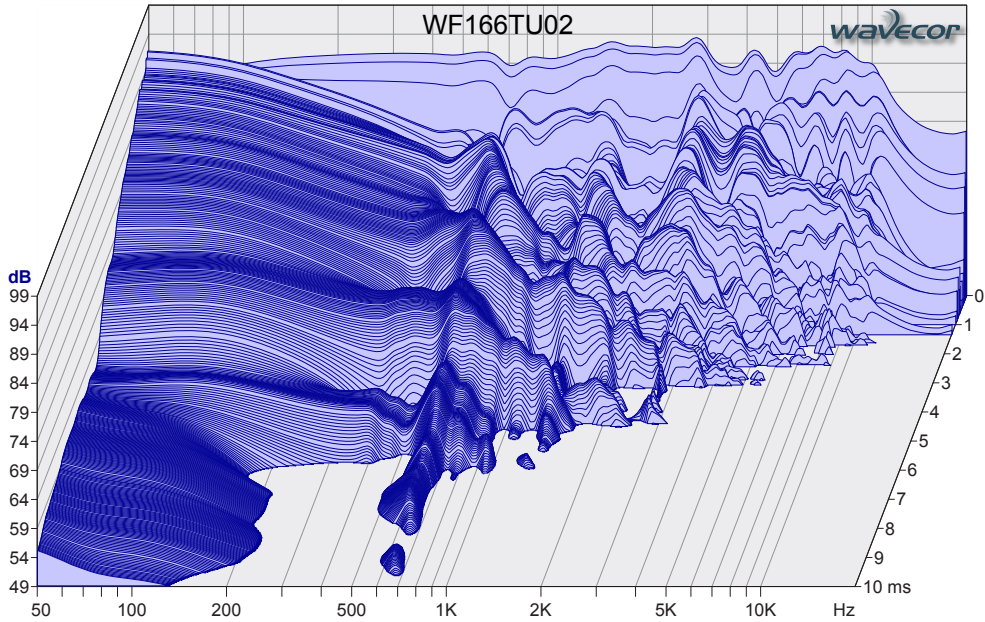
OUTLINE DRAWING (nominal dimensions, mm)



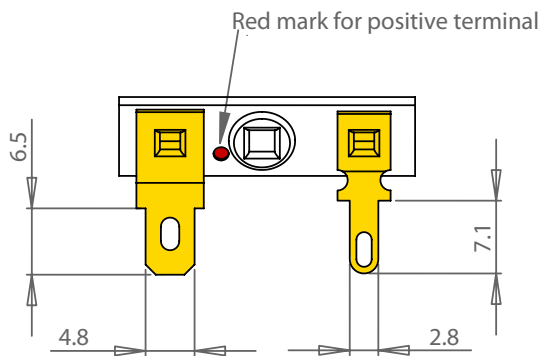
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CUMULATIVE SPECTRAL DECAY PLOT



CONNECTIONS



Thickness, both terminals: 0.5mm
Terminal plating: Gold

PACKAGING AND ORDERING INFORMATION

Part no. WF166TU02-01	Individually packaged (one piece per box)
Part no. WF166TU02-02	Bulk packaging

Latest update: March 26, 2024