

# SPECIFICATIONS

## WF165TU01 5½" alu cone automotive mid/woofer, 4 ohm

- 32 mm voice coil ensuring high power handling and improved mechanical stability.
- Field-stabilizing alu ring reducing magnetic field variations at high power levels.
- Black plated magnet parts.
- Grey alu cone.
- Vented voice coil former.
- Gold plated screw terminals.



### NOMINAL SPECIFICATIONS

Notes	Parameter	Value		Unit
		Before burn-in	After burn-in	
	Nominal size	5½		[inch.]
	Nominal impedance	4		[ohm]
	Recommended max. upper frequency limit	3		[kHz]
1, 4	Sensitivity, 2.83V/1m (average SPL in range 100 - 3,000 Hz)	88		[dB]
2, 4	Power handling, short term, IEC 268-5, no enclosure, no filtering	450		[W]
2, 4	Power handling, long term, IEC 268-5, no enclosure, no filtering	170		[W]
2, 4	Power handling, continuous, IEC 268-5, no enclosure, no filtering	70		[W]
	Effective radiating area, S <sub>d</sub>	136		[cm <sup>2</sup> ]
3, 4, 6	Resonance frequency (free air, no baffle), F <sub>s</sub>	59	56	[Hz]
	Moving mass, incl. air (free air, no baffle), M <sub>ms</sub>	16		[g]
3, 4	Force factor, B <sub>xl</sub>	4.3		[N/A]
3, 4, 6	Suspension compliance, C <sub>ms</sub>	0.46	0.50	[mm/N]
3, 4, 6	Equivalent air volume, V <sub>as</sub>	12	13	[lit.]
3, 4, 6	Mechanical resistance, R <sub>ms</sub>	0.52	0.52	[Ns/m]
3, 4, 6	Mechanical Q, Q <sub>ms</sub>	11.4	10.9	[-]
3, 4, 6	Electrical Q, Q <sub>es</sub>	0.95	0.91	[-]
3, 4, 6	Total Q, Q <sub>ts</sub>	0.88	0.84	[-]
4	Voice coil resistance, R <sub>DC</sub>	3.0		[ohm]
5	Voice coil inductance, L <sub>e</sub> (measured at 10 kHz)			[mH]
	Voice coil inside diameter	32		[mm]
	Voice coil winding height	10		[mm]
	Air gap height	4		[mm]
	Theoretical linear motor stroke, X <sub>max</sub>	±3		[mm]
	Magnet weight	360		[g]
	Total unit net weight excl. packaging	1.0		[kg]
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).

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

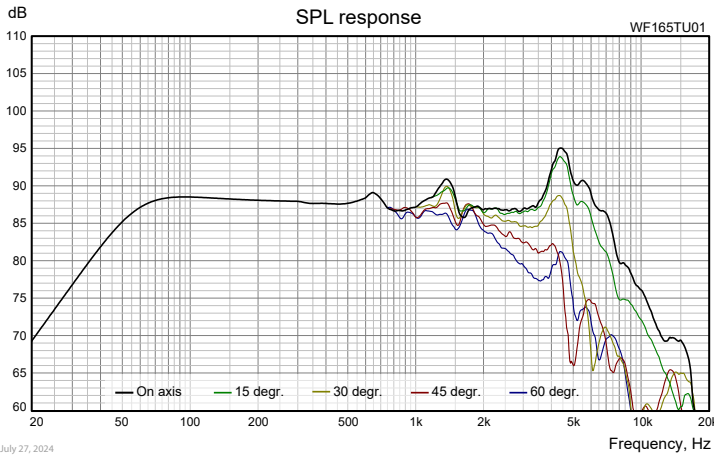
Note 4 Measured at 25 deg. C

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 After-burn-in specifications are measured at least 12 hours after exciting the transducer by a sine wave at the frequency of F<sub>s</sub> for 2 hours at level 6 V<sub>RMS</sub>. The unit is not burned in before shipping.

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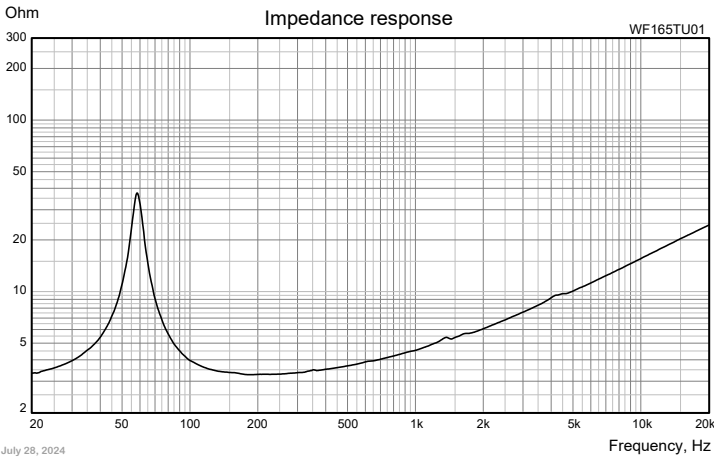


**Important!**  
Please observe that graphs on the left side of this page and the below text files for download are actual measurements of the drivers measured in infinite baffle and without any enclosure. Measuring the drivers in a finite baffle (like the baffle of most speaker cabinets) and in any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



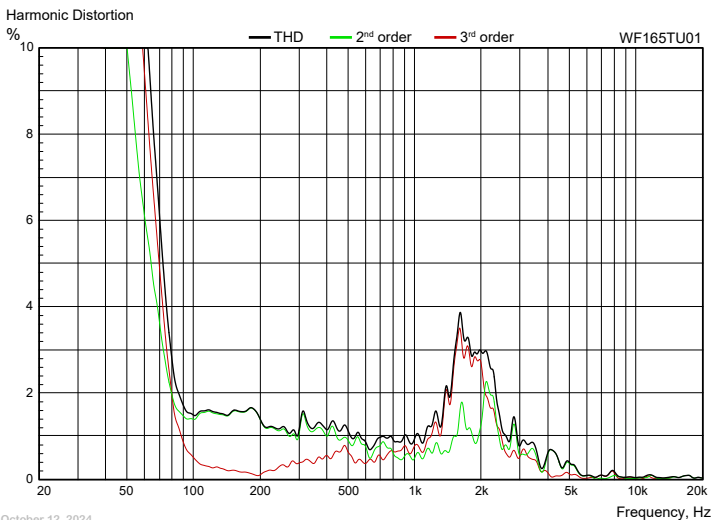
Download WF165TU01 on-axis SPL response as .txt file

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 WF165TU01 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

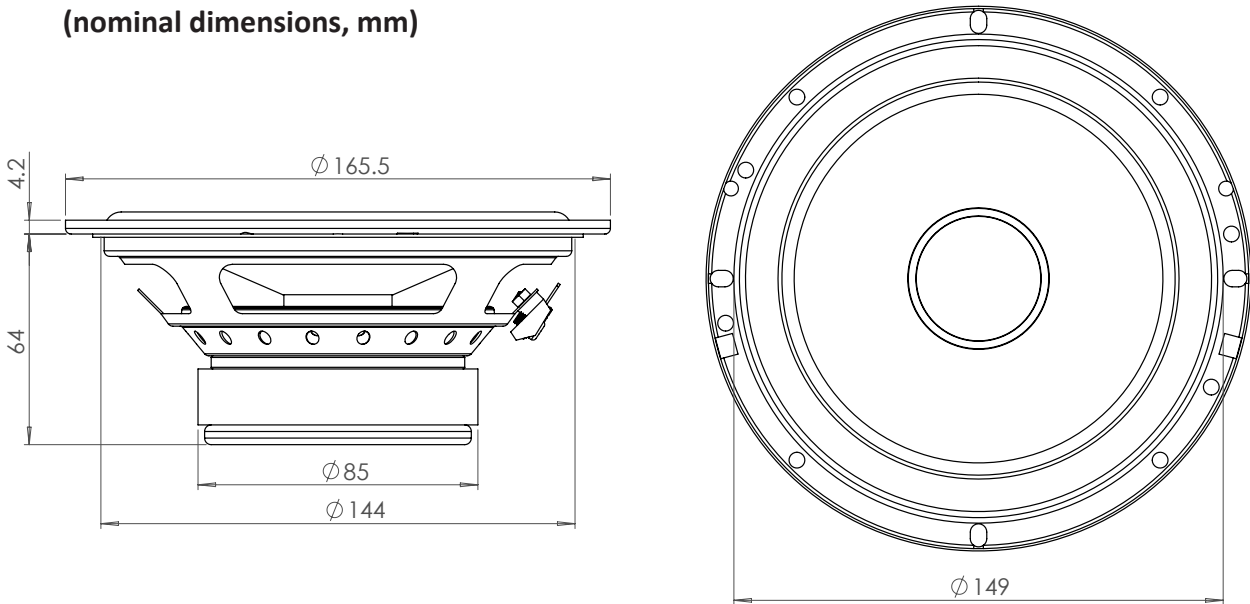


Measuring conditions, distortion  
Driver mounting: 16 lit. sealed cabinet  
Input voltage: 5.3 V<sub>RMS</sub>  
Smoothing: 1/12 oct.

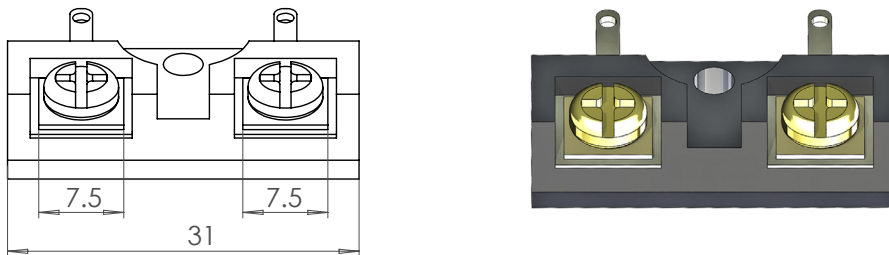
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### OUTLINE DRAWING (nominal dimensions, mm)



### CONNECTIONS



### PACKAGING AND ORDERING INFORMATION

Part no. WF165TU01-01: One piece, retail packaging (packaged one piece per white box)

Latest update: October 12, 2024