

# SPECIFICATIONS

## SW168WA01 6½" paper cone subwoofer, 4 ohm

6½" High Performance Steel Frame Subwoofer Unit.  
Suitable for dedicated subwoofer applications and as low frequency transducers in 2½-, 3- and multi-way speaker systems.

### FEATURES

- Balanced Drive motor structure for optimal drive force symmetry resulting in largely reduced even order harmonic distortion
- Large linear stroke, ensuring low distortion at high output levels
- Rigid paper cone to ensure piston motion even at high levels - for reduced distortion
- Rigid steel chassis with extensive venting for lower air flow speed reducing audible distortion
- Vented center pole with dual flares for reduced noise level at large cone excursions
- Heavy-duty fiber glass voice coil former to reduce mechanical losses resulting in better dynamic performance and low-level details
- Large motor structure for better control and power handling
- Built-in alu field-stabilizing ring for reduced distortion at high levels
- Low-loss suspension (high Qm) for better reproduction of details and dynamics
- Black plated motor parts for better heat transfer to the surrounding air
- Conex spider for better durability under extreme conditions
- Gold plated terminals to ensure long-term trouble free connection
- Delivered with foam gasket attached for hassle-free mounting and secure cabinet sealing



### NOMINAL SPECIFICATIONS

Notes	Parameter	Before burn-in	After burn-in	Unit
	Nominal size	6½		[inch.]
	Nominal impedance	4		[ohm]
	Recommended max. upper frequency limit	500		[Hz]
1, 3	Sensitivity, 2.83V/1m (calculated from T/S parameters)	88.5		[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	100		[W]
	Effective radiating area, S <sub>d</sub>	127		[cm <sup>2</sup> ]
3, 6	Resonance frequency (free air, no baffle), F <sub>s</sub>	43		[Hz]
	Moving mass, incl. air (free air, no baffle), M <sub>ms</sub>	32.5		[g]
3	Force factor, Bxl	7.5		[N/A]
3, 6	Suspension compliance, C <sub>ms</sub>	0.42		[mm/N]
3, 6	Equivalent air volume, V <sub>as</sub>	9.6		[lit.]
3, 6	Mechanical resistance, R <sub>ms</sub>	0.86		[Ns/m]
3, 6	Mechanical Q, Q <sub>ms</sub>	10.2		[-]
3, 6	Electrical Q, Q <sub>es</sub>	0.47		[-]
3, 6	Total Q, Q <sub>ts</sub>	0.45		[-]
4	Voice coil resistance, R <sub>DC</sub>	3.0		[ohm]
5	Voice coil inductance, L <sub>e</sub> (measured at 1 kHz)	1.3		[mH]
	Voice coil inside diameter	32		[mm]
	Voice coil winding height	18		[mm]
	Air gap height	4		[mm]
	Theoretical linear motor stroke, X <sub>max</sub>	±7		[mm]
	Magnet weight			[g]
	Total unit net weight excl. packaging	1.35		[kg]
3, 5	K <sub>rm</sub>	7.8		[mohm]
3, 5	E <sub>rm</sub>	0.69		[-]
3, 5	K <sub>xm</sub>	9.2		[mH]
3, 5	E <sub>xm</sub>	0.77		[-]

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

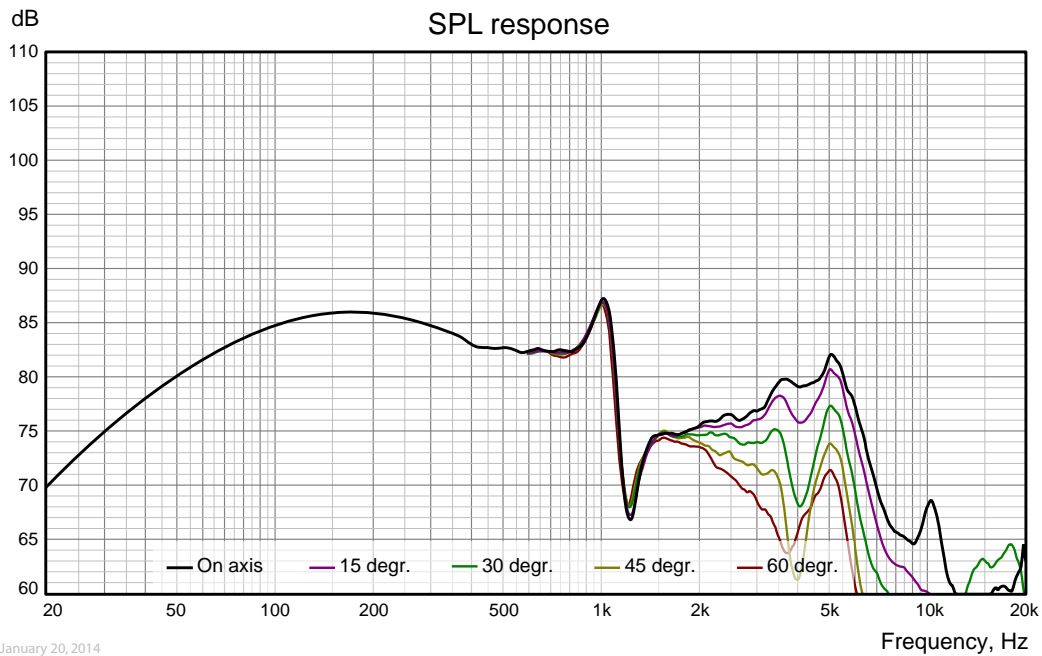
Note 5 It is generally a rough simplification to assume that loudspeaker transducer voice coils exhibit the characteristics of an inductor. Instead it is a far more accurate approach to use the more advanced model often referred to as the "Wright empirical model", also used in LEAP-4 as the TSL model ([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 12 hours after exiting the transducer by a 20 Hz sine wave for 2 hours at level 10/14.1 V<sub>RMS</sub> (4/8 ohm version). The unit is not burned in before shipping.

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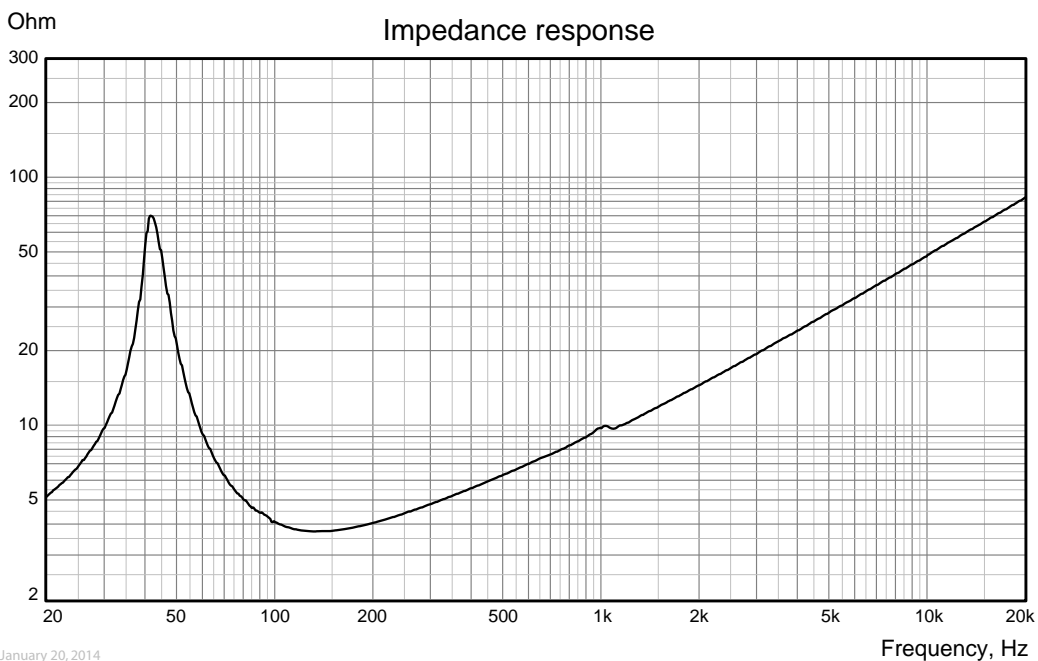


### Measuring conditions, SPL

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.

### 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

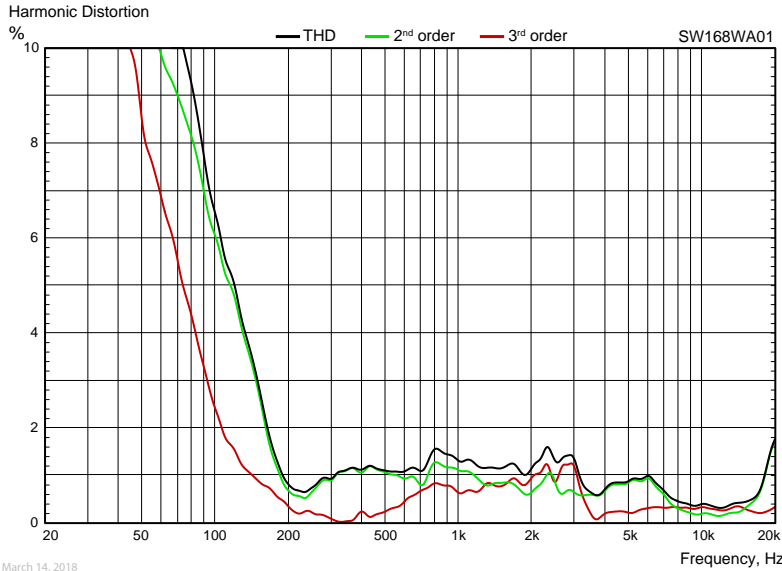


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### HARMONIC DISTORTION



Measuring conditions, Harmonic Distortion

Driver mounting: In sealed, heavily stuffed enclosure, internal volume 28 lit.

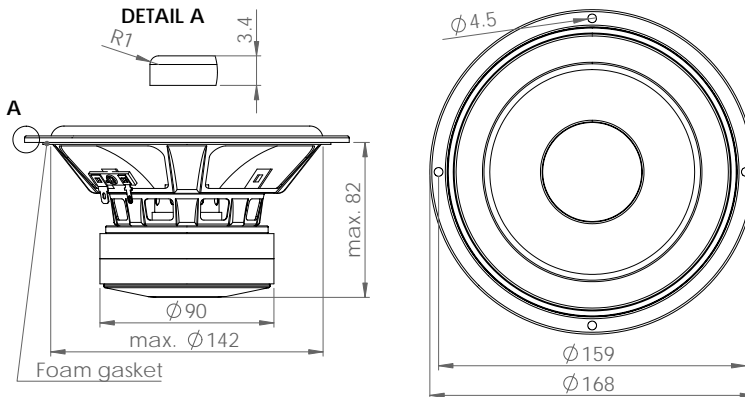
Microphone distance: 0.5 m

Input signal: Stepped sine wave, 6.3 VRMS

Smoothing: 1/12 oct.

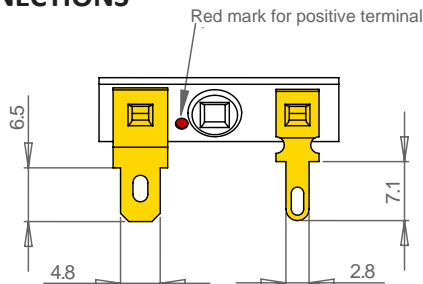
### OUTLINE DRAWING (nominal dimensions)

Dimensions in mm



March 1, 2014

### CONNECTIONS



Thickness, both terminals: 0.5 mm  
Terminal plating: Gold

### PACKAGING AND ORDERING INFORMATION

Part no. SW168WA01-01	4 ohm version, individual packaging (one piece per box)
Part no. SW168WA01-02	4 ohm version, bulk packaging

Latest update: Mar. 15, 2018