

# SPECIFICATIONS

## SW118WA01/02 4½" paper cone subwoofer, 4/8 ohm

4½" High Performance Steel Frame Subwoofer Units.  
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 cones 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
- Heavy-duty fiber glass voice coil former to reduce mechanical losses resulting in better dynamic performance and low-level details
- Large motor structures for better control and power handling
- Built-in alu field-stabilizing rings 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	SW118WA01		SW118WA02		Unit
		Before burn-in	After burn-in	Before burn-in	After burn-in	
	Nominal size	4½		4½		[inch.]
	Nominal impedance	4		8		[ohm]
	Recommended max. upper frequency limit	1,200		1,200		[Hz]
1, 3	Sensitivity, 2.83V/1m (calculated from T/S parameters)	86		83.5		[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	40		40		[W]
	Effective radiating area, S <sub>d</sub>	49		49		[cm <sup>2</sup> ]
3, 6	Resonance frequency (free air, no baffle), F <sub>s</sub>	58		60		[Hz]
	Moving mass, incl. air (free air, no baffle), M <sub>ms</sub>	7.9		7.3		[g]
3	Force factor, B <sub>xl</sub>	4.7		5.9		[N/A]
3, 6	Suspension compliance, C <sub>ms</sub>	0.97		0.97		[mm/N]
3, 6	Equivalent air volume, V <sub>as</sub>	3.3		3.3		[lit.]
3, 6	Mechanical resistance, R <sub>ms</sub>	0.34		0.34		[Ns/m]
3, 6	Mechanical Q, Q <sub>ms</sub>	8.4		8.1		[-]
3, 6	Electrical Q, Q <sub>es</sub>	0.41		0.50		[-]
3, 6	Total Q, Q <sub>ts</sub>	0.39		0.47		[-]
4	Voice coil resistance, R <sub>DC</sub>	3.2		6.3		[ohm]
5	Voice coil inductance, L <sub>e</sub> (measured at 1 kHz)	0.48		0.78		[mH]
	Voice coil inside diameter	26		26		[mm]
	Voice coil winding height	12		12		[mm]
	Air gap height	4		4		[mm]
	Theoretical linear motor stroke, X <sub>max</sub>	±4		±4		[mm]
	Magnet weight					[g]
	Total unit net weight excl. packaging	0.80		0.80		[kg]
3, 5	K <sub>rm</sub>	0.17		0.27		[mohm]
3, 5	E <sub>rm</sub>	0.97		0.96		[-]
3, 5	K <sub>xm</sub>	7.0		10.7		[mH]
3, 5	E <sub>xm</sub>	0.66		0.65		[-]

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.

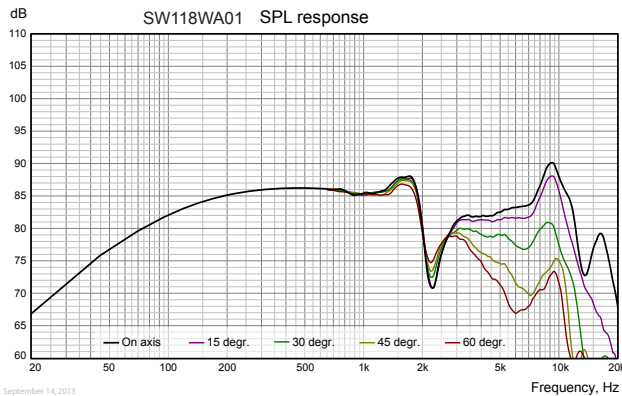
Note 4 Measured at 25 deg. C

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](#).

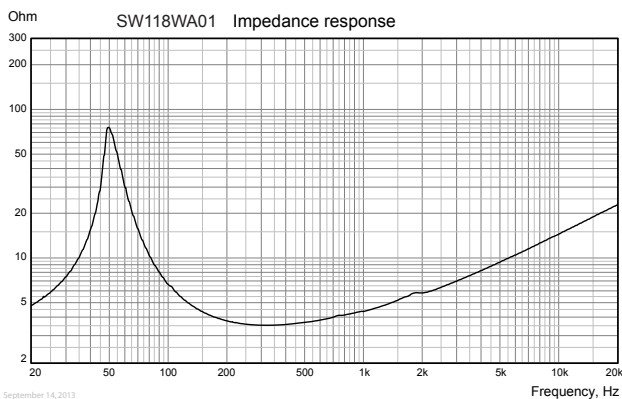
Note 6 After burn-in specifications are measured 12 hours after exiting the transducer by a 20 Hz sine wave for 2 hours at level 10/14.1 V<sub>RMS</sub> (4/8 ohm version). The unit is not burned in before shipping.

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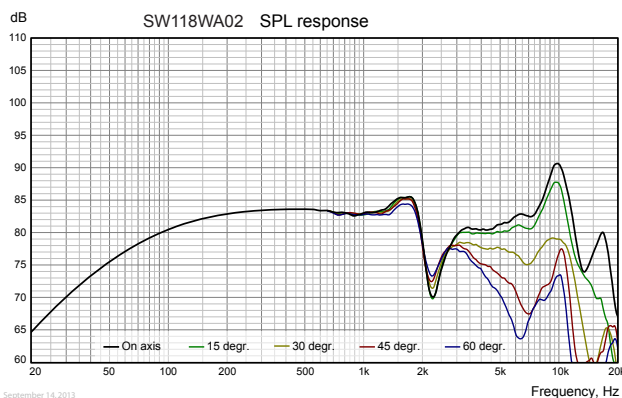
## SW118WA01/02 4½" paper cone subwoofer, 4/8 ohm



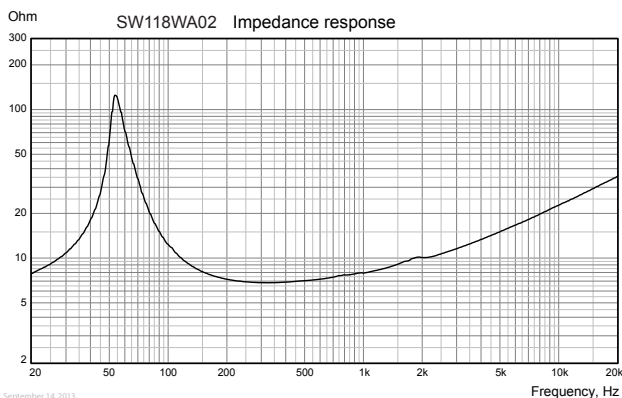
Measuring conditions, SPL  
 Driver mounting: Flush in infinite baffle, back side open (no cabinet)  
 Microphone distance: 1.0 m  
 Input signal: 2.83 VRMS stepped sine wave  
 Smoothing: 1/6 oct.



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



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.



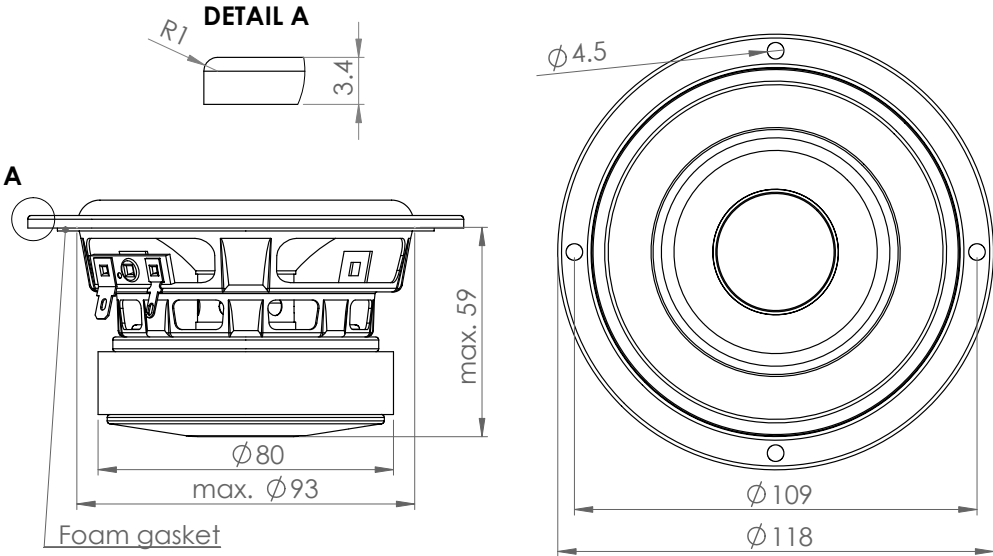
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 Driver mounting: Free air, no baffle, back side open (no cabinet)  
 Input signal: Stepped sine wave, semi-current-drive, nominal current 2 mA  
 Smoothing: None

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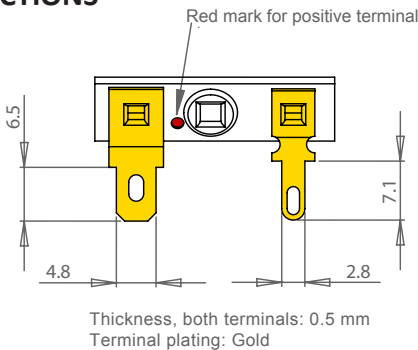
### OUTLINE DRAWING (nominal dimensions)

Dimensions in mm



March 1, 2014

### CONNECTIONS



### PACKAGING AND ORDERING INFORMATION

Part no. SW118WA01-01	4 ohm version, individual packaging (one piece per box)
Part no. SW118WA01-02	4 ohm version, bulk packaging
Part no. SW118WA02-01	8 ohm version, individual packaging (one piece per box)
Part no. SW118WA02-02	8 ohm version, bulk packaging

Latest update: Jun. 3, 2014