

# SPECIFICATIONS

## SW182BD03/04 7" die cast, alu-cone subwoofers, 4/8 ohm

The 7" transducers SW182BD03 (4 ohm) and SW182BD04 (8 ohm) were designed specifically for high performance compact subwoofer applications where sound quality and low distortion are the priorities. The pair was developed as an alternative to the previous designs SW182BD01 and SW182BD02 as a preferred choice in many typical applications because of optimized suspension, lower moving mass, and lower voice coil induction.



### FEATURES

- Balanced Drive motor structure for optimal drive force symmetry resulting in largely reduced even order harmonic distortion
- Extremely large linear stroke,  $X_{max} = \pm 7$  mm, ensuring low distortion at high output levels
- Optimized suspension for improved symmetry and matching of Force(x) curve
- Very rigid black aluminium cone to ensure piston motion at high levels and for better heat transfer at high continuous power levels
- Rigid die cast alu chassis with extensive venting for lower air flow speed reducing audible distortion
- Vented voice coil former for reduced distortion and compression
- Vented center pole with dual flares for reduced noise level at large cone excursions
- Heavy-duty black fiber glass voice coil former to reduce mechanical losses resulting in better dynamic performance and low-level details
- Large motor with 1½" voice coil diameter 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 cone and 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



### NOMINAL SPECIFICATIONS

Notes	Parameter	SW182BD03		SW182BD04		Unit
		Before burn-in	After burn-in	Before burn-in	After burn-in	
	Nominal size	7		7		[inch.]
	Nominal impedance	4		8		[ohm]
	Recommended max. upper frequency limit	600		600		[Hz]
1, 3	Sensitivity, 2.83V/1m (average SPL in range 100 - 300 Hz)	84		81.5		[dB]
2	Power handling, short term, IEC 268-5, no additional filtering	1,100		1,100		[W]
2	Power handling, long term, IEC 268-5, no additional filtering	250		250		[W]
2	Power handling, continuous, IEC 268-5, no additional filtering	125		125		[W]
	Effective radiating area, S <sub>d</sub>	131		131		[cm <sup>2</sup> ]
3, 6	Resonance frequency (free air, no baffle), F <sub>s</sub>	35.1		37.2		[Hz]
	Moving mass, incl. air (free air, no baffle), M <sub>ms</sub>	39.5		35.2		[g]
3	Force factor, B <sub>xl</sub>	7.6		10.2		[N/A]
3, 6	Suspension compliance, C <sub>ms</sub>	0.52		0.52		[mm/N]
3, 6	Equivalent air volume, V <sub>as</sub>	12.7		12.7		[lit.]
3, 6	Mechanical resistance, R <sub>ms</sub>	0.66		0.66		[Ns/m]
3, 6	Mechanical Q, Q <sub>ms</sub>	13.3		12.6		[-]
3, 6	Electrical Q, Q <sub>es</sub>	0.45		0.51		[-]
3, 6	Total Q, Q <sub>ts</sub>	0.44		0.49		[-]
4	Voice coil resistance, R <sub>DC</sub>	3.0		6.4		[ohm]
5	Voice coil inductance, L <sub>e</sub> (measured at 1 kHz)	1.0		1.7		[mH]
	Voice coil inside diameter	39		39		[mm]
	Voice coil winding height	19		18		[mm]
	Air gap height	5		5		[mm]
	Theoretical linear motor stroke, X <sub>max</sub>	±7		±7		[mm]
	Magnet weight	640		640		[g]
	Total unit net weight excl. packaging	1.85		1.85		[kg]
3, 5	K <sub>rm</sub>	2.65		3.9		[mohm]
3, 5	E <sub>rm</sub>	0.76		0.77		[-]
3, 5	K <sub>xm</sub>	7.0		10.9		[mH]
3, 5	E <sub>xm</sub>	0.76		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.

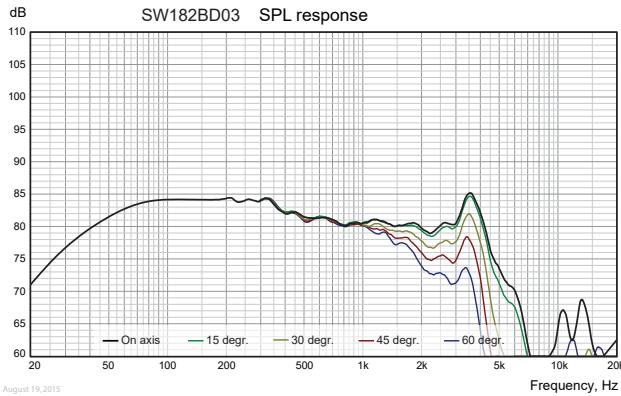
Note 4 Measured at 25 deg. C

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 VRMS (4/8 ohm version). The unit is not burned in before shipping.

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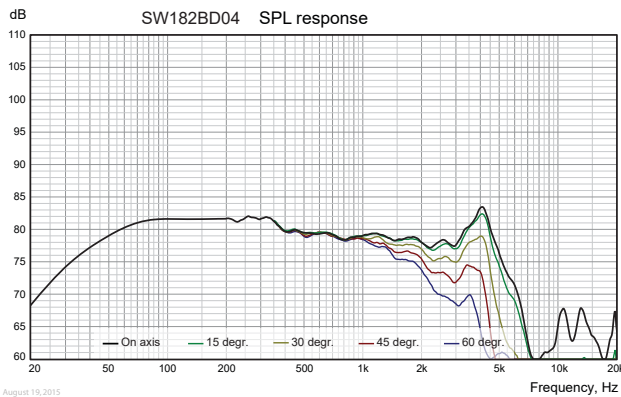
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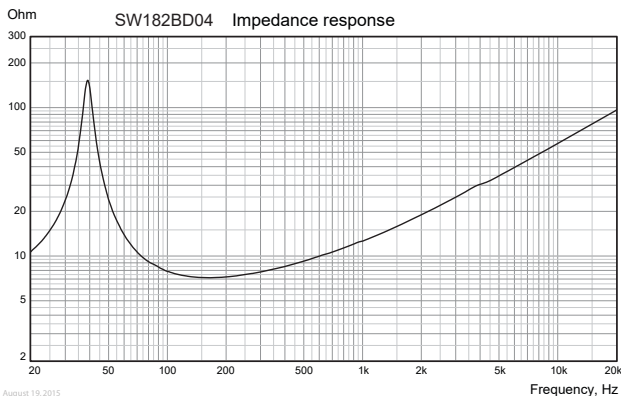
Measuring conditions, SPL  
 Driver mounting: Flush in infinite baffle, back side open (no cabinet)  
 Microphone distance: 1.0 m  
 Input signal: 2.83 V<sub>RMS</sub> stepped sine wave  
 Smoothing: 1/6 oct.



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



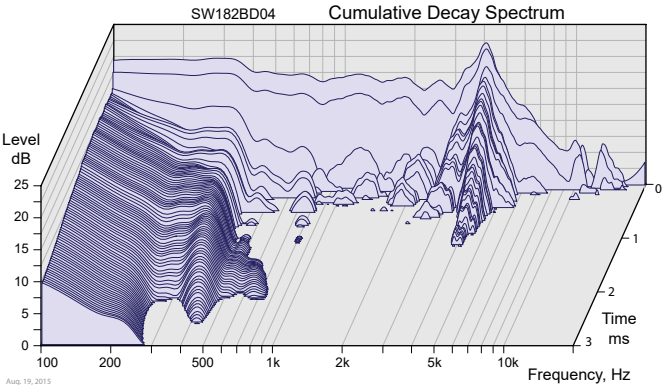
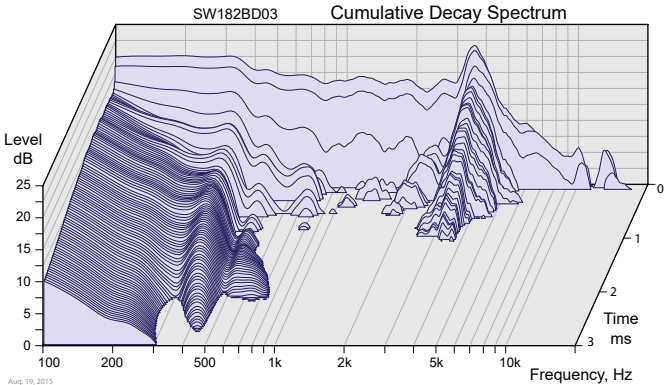
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 Microphone distance: 1.0 m  
 Input signal: 2.83 V<sub>RMS</sub> stepped sine wave  
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Measuring conditions, impedance  
 Driver mounting: Free air, no baffle, back side open (no cabinet)  
 Input signal: Stepped sine wave, semi-current-drive, nominal current 2 mA  
 Smoothing: None

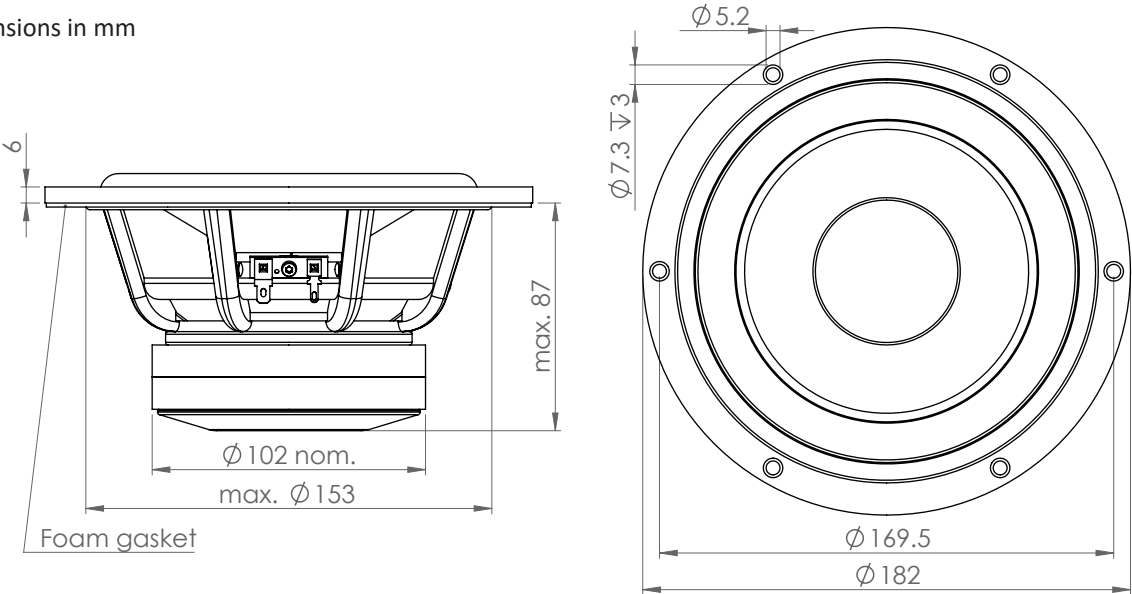
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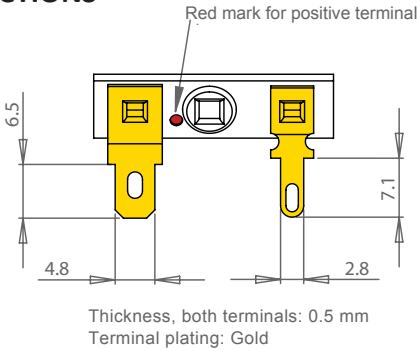


### OUTLINE DRAWING (nominal dimensions)

Dimensions in mm



### CONNECTIONS



### PACKAGING AND ORDERING INFORMATION

Part no. SW182BDD03-01	4 ohm version, individual packaging (one piece per box)
Part no. SW182BDD03-02	4 ohm version, bulk (industrial) packaging
Part no. SW182BDD04-01	8 ohm version, individual packaging (one piece per box)
Part no. SW182BDD04-02	8 ohm version, bulk (industrial) packaging

Latest update: Nov. 11, 2015