

# SPECIFICATIONS



## SW259WA01/02 10¼" die cast, alu cone subwoofers, 4/8 ohm

SW259WA01 and SW259WA02 are woofers designed for dedicated sub bass applications. They work equally well for high-end hi-fi, high quality home theater systems, and top multimedia setups.

The extremely stiff aluminium cone, the long linear throw, exaggerated ventilation, and the special dynamic linearization short circuiting rings, together make up for an unusually linear and low-distortion woofer. Even at very high signal levels, the unit behaves controlled and without distortion.

Due to low mechanical losses SW259WA01 and SW259WA02 master equally well low level details and extreme dynamic peaks.

### FEATURES

- New optimized outer suspension (surround) for improved large-signal handling
- Extremely rigid aluminium cone to ensure piston motion at high levels and for better heat transfer at high continuous power levels
- New reinforced die cast alu chassis with optimal ventilation and increased stroke
- Venting through holes in cone neck for reduced distortion and compression
- Vented chassis for lower air flow speed reducing audible distortion
- Two internally built-in alu rings for stabilizing the magnetic field leading to lower high-level distortion
- Heavy-duty black fiber glass voice coil bobbin to reduce mechanical losses resulting in better dynamic performance and low-level details
- Large motor structure with 2" voice coil diameter and 145 mm magnet for better control and efficiency
- Black-anodized magnet structure steel parts for increased heat dissipation and power handling
- Long linear stroke motor for reduced distortion at high levels
- Linear suspension with specially designed CONEX damper (spider) for long durability under extreme operating conditions
- 4-layer voice coil for increased control and better small-cabinet performance



### NOMINAL SPECIFICATIONS

Notes	Parameter	SW259WA01		SW259WA02		Unit
		Before burn-in	After burn-in	Before burn-in	After burn-in	
	Nominal size	10¼		10¼		[inch.]
	Nominal impedance	4		8		[ohm]
	Recommended max. upper frequency limit	400		400		[Hz]
1, 3	Sensitivity, 2.83V/1m (calculated from T/S parameters)	83.5		81.5		[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	200		200		[W]
	Effective radiating area, S <sub>d</sub>	312		312		[cm <sup>2</sup> ]
3, 6	Resonance frequency (free air, no baffle), F <sub>s</sub>	29		24		[Hz]
	Moving mass, incl. air (free air, no baffle), M <sub>ms</sub>	173		158		[g]
3	Force factor, BxI	14.5		18.6		[N/A]
3, 6	Suspension compliance, C <sub>ms</sub>	0.18		0.29		[mm/N]
3, 6	Equivalent air volume, V <sub>as</sub>	25		40		[lit.]
3, 6	Mechanical resistance, R <sub>ms</sub>	3.1		1.64		[Ns/m]
3, 6	Mechanical Q, Q <sub>ms</sub>	10.0		14.2		[-]
3, 6	Electrical Q, Q <sub>es</sub>	0.49		0.44		[-]
3, 6	Total Q, Q <sub>ts</sub>	0.46		0.43		[-]
4	Voice coil resistance, R <sub>DC</sub>	3.3		6.5		[ohm]
5	Voice coil inductance, L <sub>e</sub> (measured at 1 kHz)	1.5		2.3		[mH]
	Voice coil inside diameter	51		51		[mm]
	Voice coil winding height	31		31		[mm]
	Air gap height	8		8		[mm]
	Theoretical linear motor stroke, X <sub>max</sub>	±11.5		±11.5		[mm]
	Magnet weight	2.7		2.7		[kg]
	Total unit net weight excl. packaging	6.6		6.6		[kg]
3, 5	K <sub>rm</sub>	40		75		[mohm]
3, 5	E <sub>rm</sub>	0.53		0.50		[-]
3, 5	K <sub>xm</sub>	7.6		9.7		[mH]
3, 5	E <sub>xm</sub>	0.80		0.81		[-]

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.

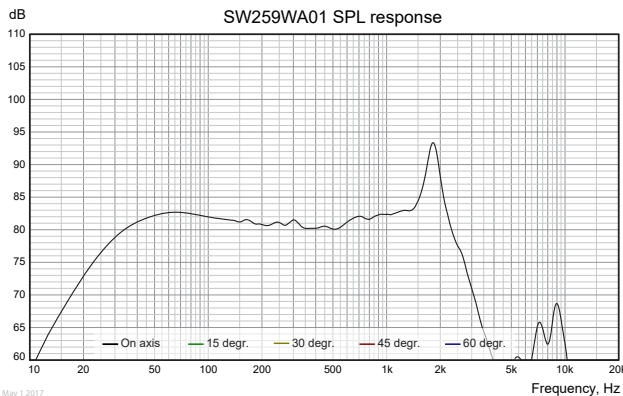
Note 4 Measured at 25 deg. C

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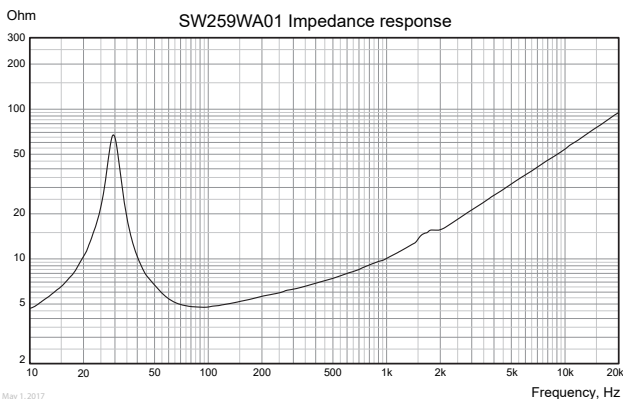
**Important!**  
Please observe that graphs on the left side of this page and the below text files for download are actual measurements of the drivers measured in infinite baffle and without any enclosure. Measuring the drivers in a finite baffle (like the baffle of most speaker cabinets) and in any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



[Download SW259WA01 on-axis SPL response as .txt file](#)

**Measuring conditions, SPL**

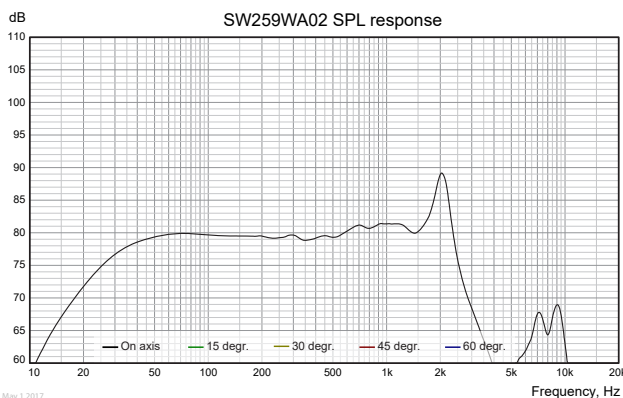
Driver mounting: Flush in infinite baffle, back side open (no cabinet)  
Microphone distance: 1.0 m  
Input signal: 2.83 VRMS stepped sine wave  
Smoothing: 1/6 oct.



[Download SW259WA01 Impedance response as .txt file](#)

**Measuring conditions, impedance**

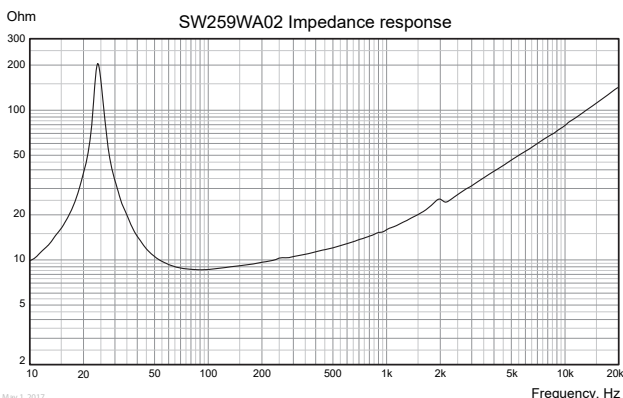
Driver mounting: Free air, no baffle, back side open (no cabinet)  
Input signal: Stepped sine wave, semi-current-drive, nominal current 2 mA  
Smoothing: None



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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.



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**Measuring conditions, impedance**

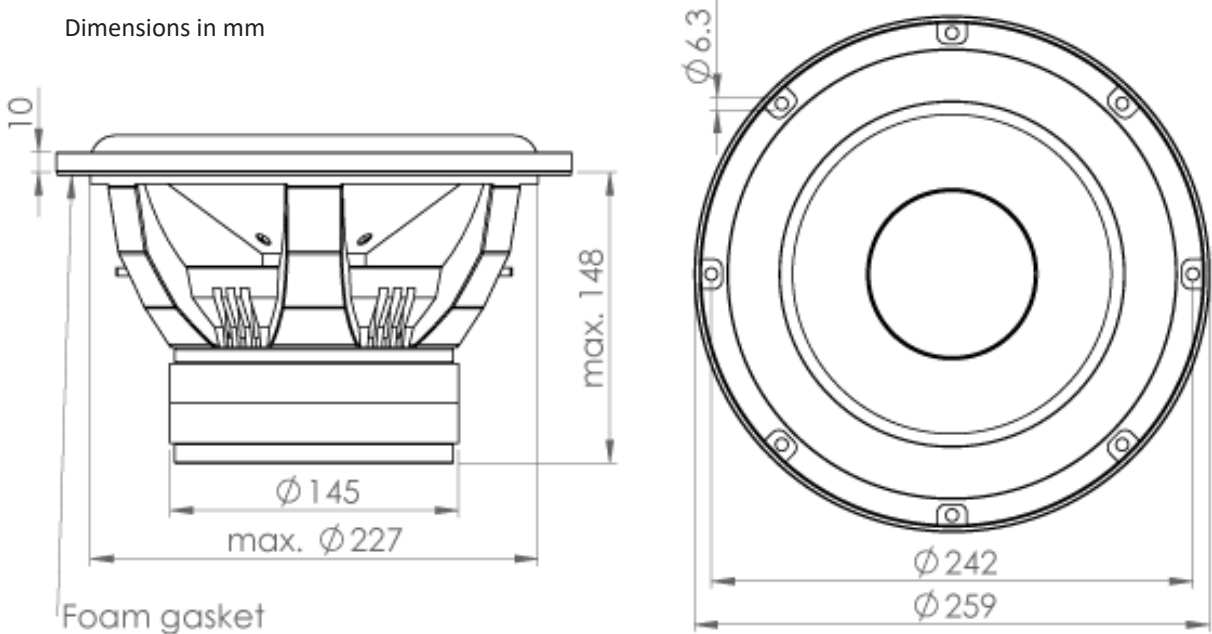
Driver mounting: Free air, no baffle, back side open (no cabinet)  
Input signal: Stepped sine wave, semi-current-drive, nominal current 2 mA  
Smoothing: None

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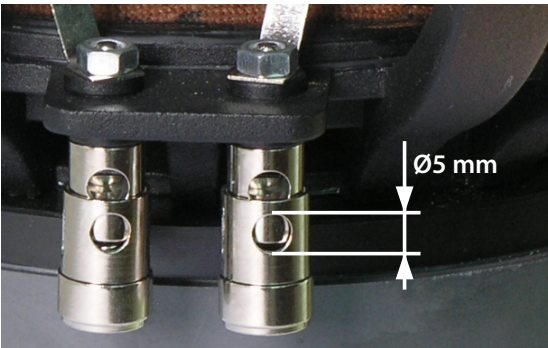
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### OUTLINE DRAWING (nominal dimensions)

Dimensions in mm



### CONNECTIONS



### PACKAGING AND ORDERING INFORMATION

Part no. SW259WA01-01	4 ohm version, individual packaging (one piece per box)
Part no. SW259WA02-01	8 ohm version, individual packaging (one piece per box)

Latest update: June 28, 2017