

# SPECIFICATIONS

## SW215WA01 8½" paper cone subwoofer, 4 ohm

8½" 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 air-dried 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   | 8½             |               | [inch.] |
|       | Nominal impedance  | 4              |               | [ohm]   |
|       | Recommended max. upper frequency limit                         | 500            |               | [Hz]    |
| 1, 3  | Sensitivity, 2.83V/1m (calculated from T/S parameters)         | 89             |               | [dB]    |
| 2     | Power handling, short term, IEC 268-5, no additional filtering | 1,500          |               | [W]     |
| 2     | Power handling, long term, IEC 268-5, no additional filtering  | 400            |               | [W]     |
| 2     | Power handling, continuous, IEC 268-5, no additional filtering | 150            |               | [W]     |
|       | Effective radiating area, Sd                                   | 206            |               | [cm²]   |
| 3, 6  | Resonance frequency (free air, no baffle), F <sub>s</sub>      | 32             |               | [Hz]    |
|       | Moving mass, incl. air (free air, no baffle), M <sub>ms</sub>  | 53             |               | [g]     |
| 3     | Force factor, Bxl  | 8.4            |               | [N/A]   |
| 3, 6  | Suspension compliance, Cms                                     | 0.46           |               | [mm/N]  |
| 3, 6  | Equivalent air volume, V <sub>as</sub>                         | 27.7           |               | [lit.]  |
| 3, 6  | Mechanical resistance, R <sub>ms</sub>                         | 0.89           |               | [Ns/m]  |
| 3, 6  | Mechanical Q, Q <sub>ms</sub>                                  | 12             |               | [-]     |
| 3, 6  | Electrical Q, Q <sub>es</sub>                                  | 0.49           |               | [-]     |
| 3, 6  | Total Q, Q <sub>ts</sub>                                       | 0.47           |               | [-]     |
| 4     | Voice coil resistance, R <sub>DC</sub>                         | 3.2            |               | [ohm]   |
| 5     | Voice coil inductance, L <sub>e</sub> (measured at 1 kHz)      | 1.2            |               | [mH]    |
|       | Voice coil inside diameter                                     | 39             |               | [mm]    |
|       | Voice coil winding height                                      | 25             |               | [mm]    |
|       | Air gap height   | 5              |               | [mm]    |
|       | Theoretical linear motor stroke, X <sub>max</sub>              | ±10            |               | [mm]    |
|       | Magnet weight  |                |               | [g]     |
|       | Total unit net weight excl. packaging                          | 2.4            |               | [kg]    |
| 3, 5  | K <sub>rm</sub>  | 7.0            |               | [mohm]  |
| 3, 5  | E <sub>rm</sub>  | 0.68           |               | [-]     |
| 3, 5  | K <sub>xm</sub>  | 6.9            |               | [mH]    |
| 3, 5  | E <sub>xm</sub>  | 0.78           |               | [-]     |

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

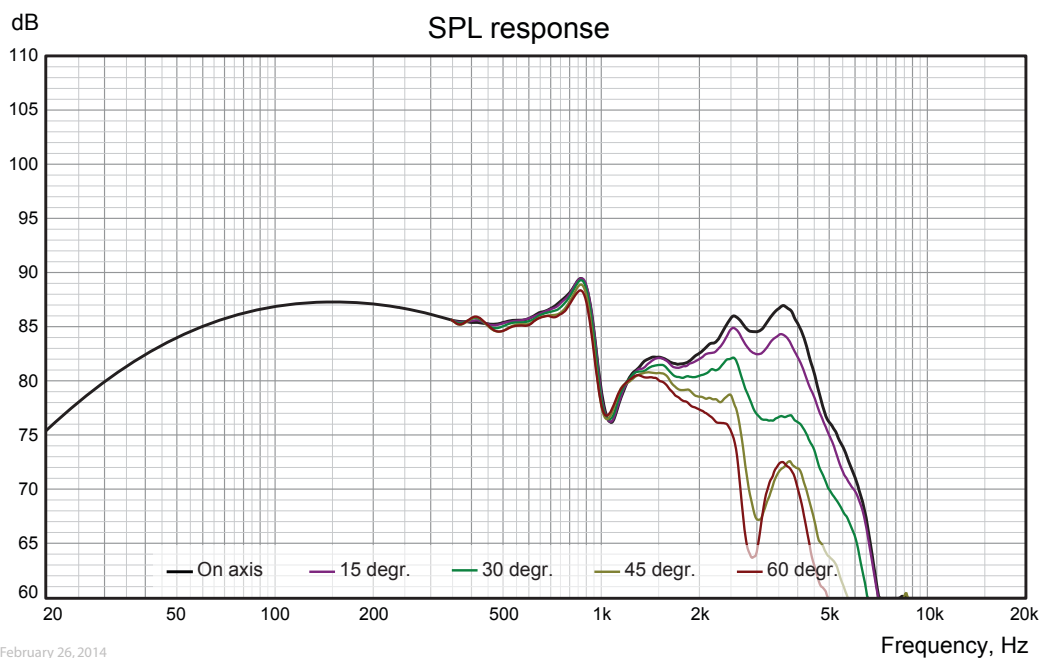
Note 5 It is generally a rough simplification to assume that loudspeaker transducer voice coils exhibit the characteristics of an inductor. Instead it is a far more accurate approach to use the more advanced model often referred to as the "Wright empirical model", also used in LEAP-4 as the TSL model ([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 V<sub>RMS</sub>. The unit is not burned in before shipping.

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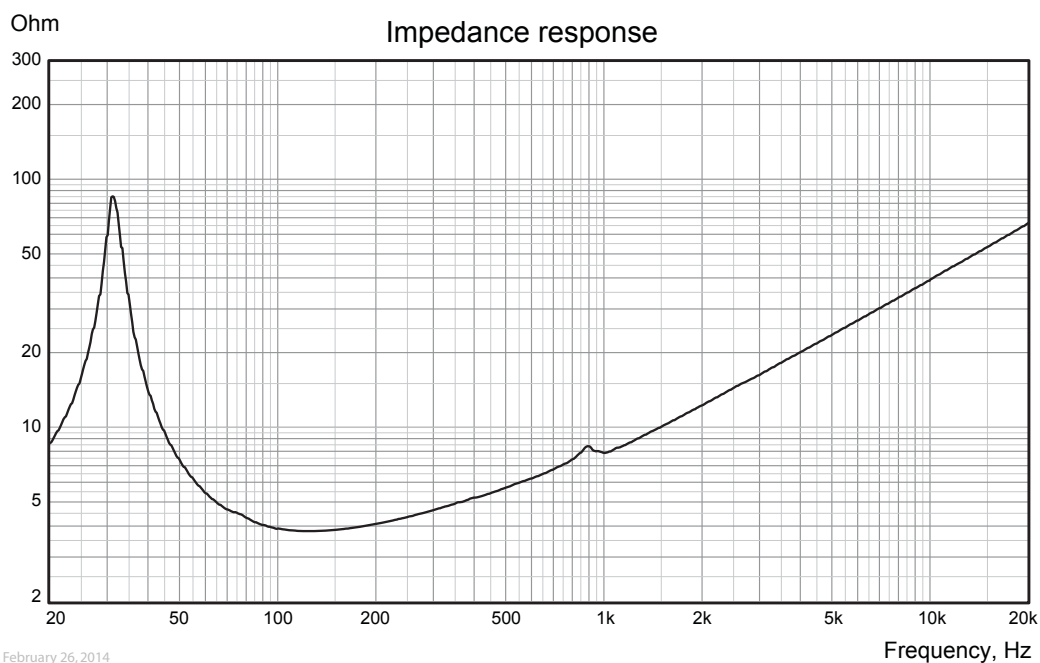


### Measuring conditions, SPL

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

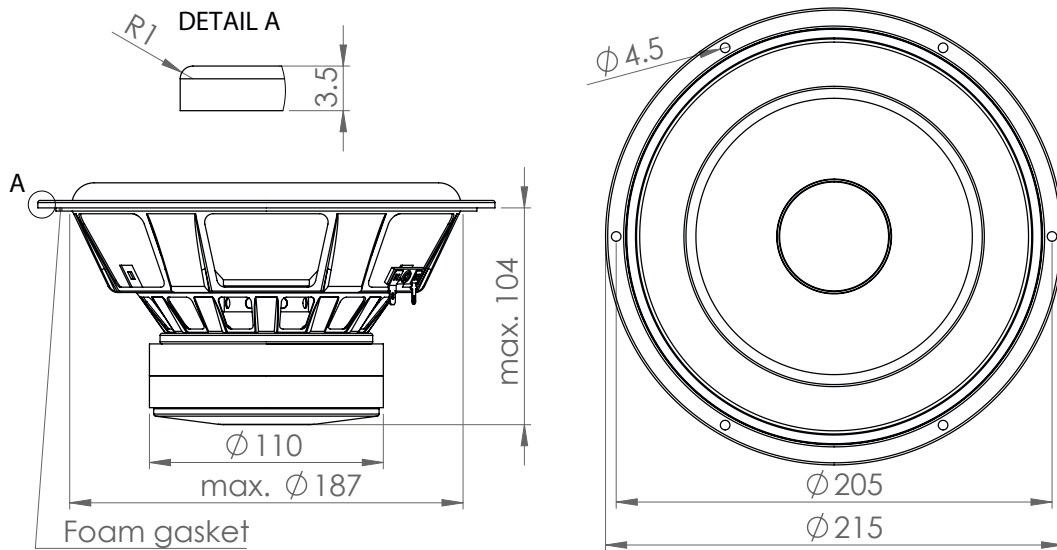


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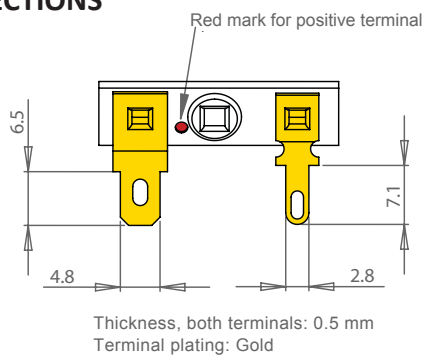
## OUTLINE DRAWING (nominal dimensions)

Dimensions in mm



March 5, 2014

## CONNECTIONS



## PACKAGING AND ORDERING INFORMATION

|                       |   |
|-----------------------|---|
| Part no. SW215WA01-01 | 4 ohm version, individual packaging (one piece per box) |
|-----------------------|---|

Latest update: Nov. 19, 2015