

SPECIFICATIONS

SW215WA01 / 02 8½” paper cone subwoofer, 4 / 8 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 | SW215WA01 | | SW215WA02 | | Unit |
|-------|--|----------------|---------------|----------------|---------------|--------------------|
| | | Before burn-in | After burn-in | Before burn-in | After burn-in | |
| | Nominal size | 8½ | | 8½ | | [inch.] |
| | Nominal impedance | 4 | | 8 | | [ohm] |
| | Recommended max. upper frequency limit | 500 | | 500 | | [Hz] |
| 1, 3 | Sensitivity, 2.83V/1m | 89 | | | | [dB] |
| 2 | Power handling, short term, IEC 268-5, no additional filtering | 1,500 | | 1,500 | | [W] |
| 2 | Power handling, long term, IEC 268-5, no additional filtering | 400 | | 400 | | [W] |
| 2 | Power handling, continuous, IEC 268-5, no additional filtering | 150 | | 150 | | [W] |
| | Effective radiating area, S _d | 206 | | 206 | | [cm ²] |
| 3, 6 | Resonance frequency (free air, no baffle), F _s | 33 | 30 | 35 | | [Hz] |
| | Moving mass, incl. air (free air, no baffle), M _{MS} | 53 | | 49 | | [g] |
| 3 | Force factor, Bxl | 8.45 | | 11.4 | | [N/A] |
| 3, 6 | Suspension compliance, C _{MS} | 0.43 | 0.54 | 0.43 | | [mm/N] |
| 3, 6 | Equivalent air volume, V _{AS} | 26 | 32.5 | 26 | | [lit.] |
| 3, 6 | Mechanical resistance, R _{MS} | 1.0 | 1.0 | 1.0 | | [Ns/m] |
| 3, 6 | Mechanical Q, Q _{MS} | 11 | 10 | 10.7 | | [-] |
| 3, 6 | Electrical Q, Q _{ES} | 0.51 | 0.46 | 0.52 | | [-] |
| 3, 6 | Total Q, Q _{TS} | 0.49 | 0.44 | 0.49 | | [-] |
| 4 | Voice coil resistance, R _{DC} | 3.3 | | 6.3 | | [ohm] |
| 5 | Voice coil inductance, L _e (measured at 1 kHz) | 1.2 | | 1.7 | | [mH] |
| | Voice coil inside diameter | 39 | | 39 | | [mm] |
| | Voice coil winding height | 25 | | 25 | | [mm] |
| | Air gap height | 5 | | 5 | | [mm] |
| | Theoretical linear motor stroke, X _{max} | ±10 | | ±10 | | [mm] |
| | Magnet weight | | | | | [g] |
| | Total unit net weight excl. packaging | 2.4 | | 2.4 | | [kg] |
| 3, 5 | K _{rm} | 7.0 | | 10.4 | | [mohm] |
| 3, 5 | E _{rm} | 0.68 | | 0.94 | | [-] |
| 3, 5 | K _{xm} | 6.9 | | 15.1 | | [mH] |
| 3, 5 | E _{xm} | 0.78 | | 0.74 | | [-] |

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.

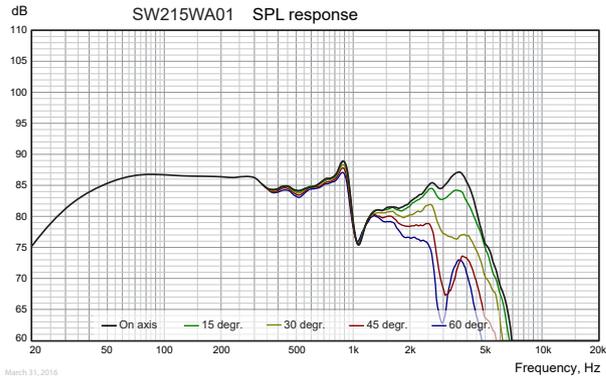
Note 4 Measured at 25 deg. C

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), involving parameters K_{rm}, E_{rm}, K_{xm}, and E_{xm}. This more accurate transducer model is described in a technical paper [here at our web site](#).

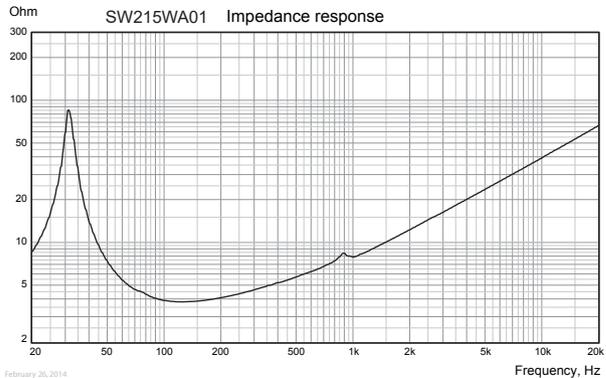
Note 6 After burn-in specifications are measured 12 hours after exiting the transducer by a 20 Hz sine wave for 2 hours at level 10 VRMS. The unit is not burned in before shipping.

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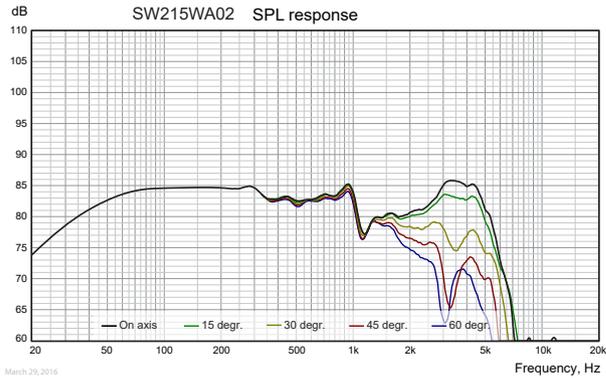
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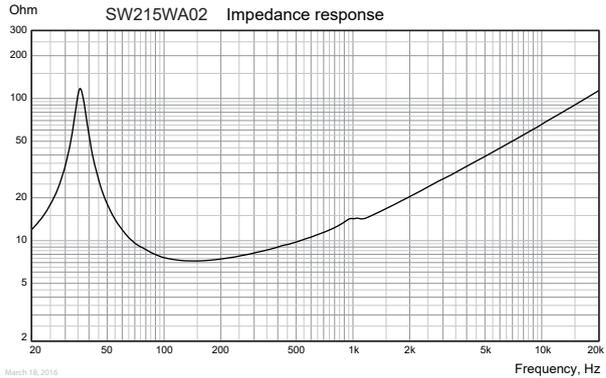
Measuring conditions, SPL
 Driver mounting: Flush in infinite baffle, back side open (no cabinet)
 Microphone distance: 1.0 m
 Input signal: 2.83 VRMS stepped sine wave
 Smoothing: 1/6 oct.



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



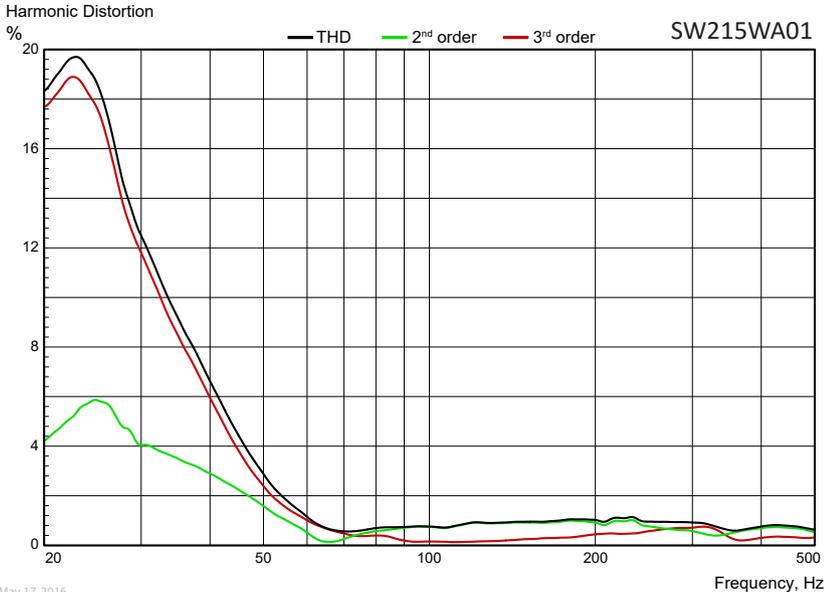
Measuring conditions, SPL
 Driver mounting: Flush in infinite baffle, back side open (no cabinet)
 Microphone distance: 1.0 m
 Input signal: 2.83 VRMS stepped sine wave
 Smoothing: 1/6 oct.



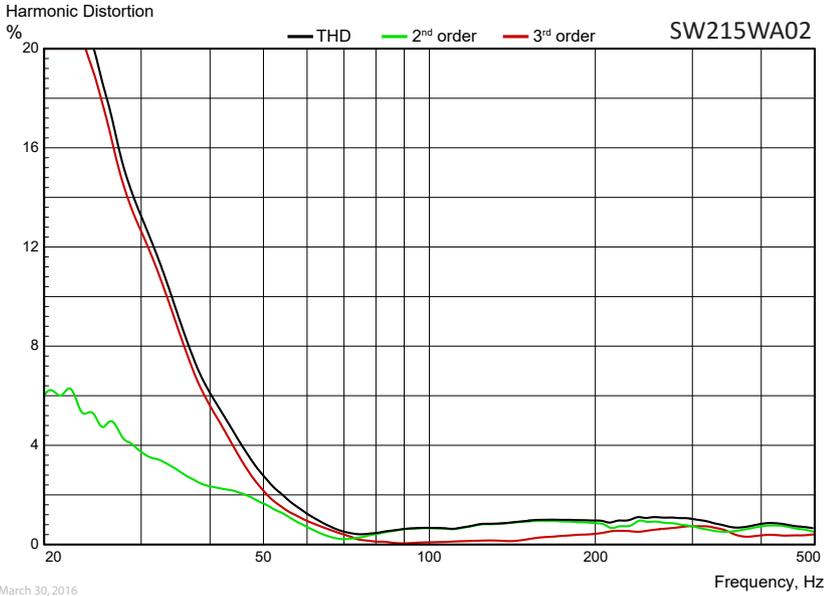
Measuring conditions, impedance
 Driver mounting: Free air, no baffle, back side open (no cabinet)
 Input signal: Stepped sine wave, semi-current-drive, nominal current 2 mA
 Smoothing: None

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Measuring conditions, Harmonic Distortion
 Driver mounting: In sealed, heavily stuffed enclosure, internal volume 29 lit., baffle dimensions 336 mm x 336 mm
 Microphone distance: 0.5 m
 Input signal: Stepped sine wave, 7.7 VRMS (SW215WA01) / 11 VRMS (SW215WA02)
 Smoothing: 1/6 oct.

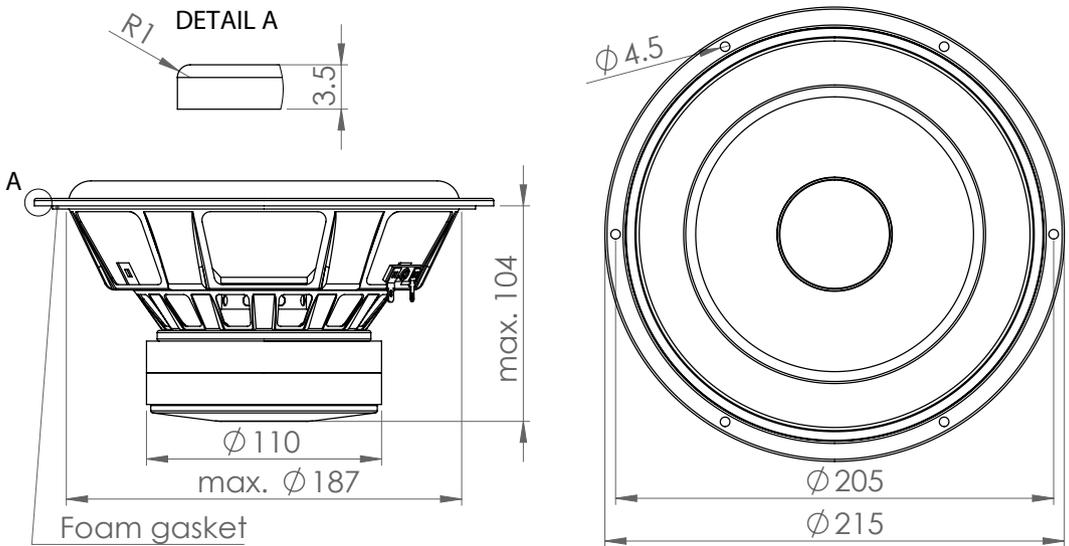


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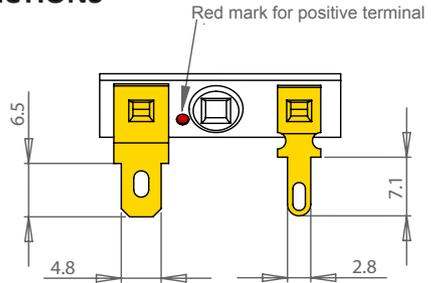
OUTLINE DRAWING (nominal dimensions)

Dimensions in mm



March 5, 2014

CONNECTIONS



Thickness, both terminals: 0.5 mm
Terminal plating: Gold

PACKAGING AND ORDERING INFORMATION

| | |
|-----------------------|---|
| Part no. SW215WA01-01 | 4 ohm version, individual packaging (one piece per box) |
| Part no. SW215WA02-01 | 8 ohm version, individual packaging (one piece per box) |

Latest update: Jun. 24, 2016