

# SPECIFICATIONS

## WF118WA01/02 4½" paper cone mid/woofers, 4/8 ohm

Nominal impedance is 4 ohm for WF118WA01 and 8 ohm for WF118WA02. Otherwise the two models are identical. WF118WA01/02 are mid/woofers designed for demanding bass and midrange applications. It works equally well for high-end hi-fi, high quality home theater systems, and top multimedia setups.

Powered by a large 85mm magnet structure that ensures good efficiency and optimal T/S parameters.

The large 32mm voice coil ensures high power handling - thermally and mechanically

The optimized paper cone ensures large bandwidth and low distortion. Distortion is further reduced by efficient venting and an alu shorting ring stabilizing the magnetic field in the air gap. WF118WA01/02 are excellent choices for very compact 2-way speaker systems or even as midrange in multi-way systems.



### FEATURES

- Alu field-stabilizing ring inside magnet assembly for reduced distortion at high levels
- Vented voice coil former for reduced distortion and compression
- New vented chassis for lower air flow speed reducing audible distortion
- Voice coil wound with Copper Clad Aluminium Wire for higher efficiency and better dynamics
- Heavy-duty black fiber glass voice coil bobbin to increase power handling and reduce mechanical losses resulting in better dynamic performance and low-level details
- Large motor system with 1¼" voice coil diameter and 85mm magnet for better control and efficiency
- Black magnet parts for better heat transfer to increase power handling
- Long linear stroke motor for reduced distortion at high levels
- New progressive suspension with specially designed CONEX damper (spider) for long durability under extreme operating conditions
- Gold plated terminals to prevent oxidation for long-term reliable connection

### NOMINAL SPECIFICATIONS

| Notes | Parameter  | WF118WA01      |               | WF118WA01      |               | 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                         | 4              |               | 4              |               | [kHz]              |
| 1, 3  | Sensitivity, 2.83V/1m (average 400-4,000 Hz)                   | 89             |               | 86             |               | [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 | 50             |               | 50             |               | [W]                |
|       | Effective radiating area, S <sub>d</sub>                       | 55             |               | 55             |               | [cm <sup>2</sup> ] |
| 3, 6  | Resonance frequency (free air, no baffle), F <sub>s</sub>      | 64             |               | 65             |               | [Hz]               |
|       | Moving mass, incl. air (free air, no baffle), M <sub>ms</sub>  | 6.2            |               | 6.0            |               | [g]                |
| 3     | Force factor, B <sub>xl</sub>                                  | 4.6            |               | 5.8            |               | [N/A]              |
| 3, 6  | Suspension compliance, C <sub>ms</sub>                         | 1.0            |               | 1.0            |               | [mm/N]             |
| 3, 6  | Equivalent air volume, V <sub>as</sub>                         | 4.3            |               | 4.3            |               | [lit.]             |
| 3, 6  | Mechanical resistance, R <sub>ms</sub>                         | 0.28           |               | 0.28           |               | [Ns/m]             |
| 3, 6  | Mechanical Q, Q <sub>ms</sub>                                  | 8.8            |               | 8.6            |               | [-]                |
| 3, 6  | Electrical Q, Q <sub>es</sub>                                  | 0.38           |               | 0.46           |               | [-]                |
| 3, 6  | Total Q, Q <sub>ts</sub>                                       | 0.36           |               | 0.44           |               | [-]                |
| 4     | Voice coil resistance, R <sub>DC</sub>                         | 3.2            |               | 6.3            |               | [ohm]              |
| 5     | Voice coil inductance, L <sub>e</sub> (measured at 10 kHz)     | 0.16           |               | 0.28           |               | [mH]               |
|       | Voice coil inside diameter                                     | 32             |               | 32             |               | [mm]               |
|       | Voice coil winding height                                      | 11             |               | 11             |               | [mm]               |
|       | Air gap height   | 5              |               | 5              |               | [mm]               |
|       | Theoretical linear motor stroke, X <sub>max</sub>              | ±3             |               | ±3             |               | [mm]               |
|       | Magnet weight  | 325            |               | 325            |               | [g]                |
|       | Total unit net weight excl. packaging                          | 0.95           |               | 0.95           |               | [kg]               |
| 3, 5  | K <sub>rm</sub>  |                |               |                |               | [mohm]             |
| 3, 5  | E <sub>rm</sub>  |                |               |                |               | [-]                |
| 3, 5  | K <sub>xm</sub>  |                |               |                |               | [mH]               |
| 3, 5  | E <sub>xm</sub>  |                |               |                |               | [-]                |

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

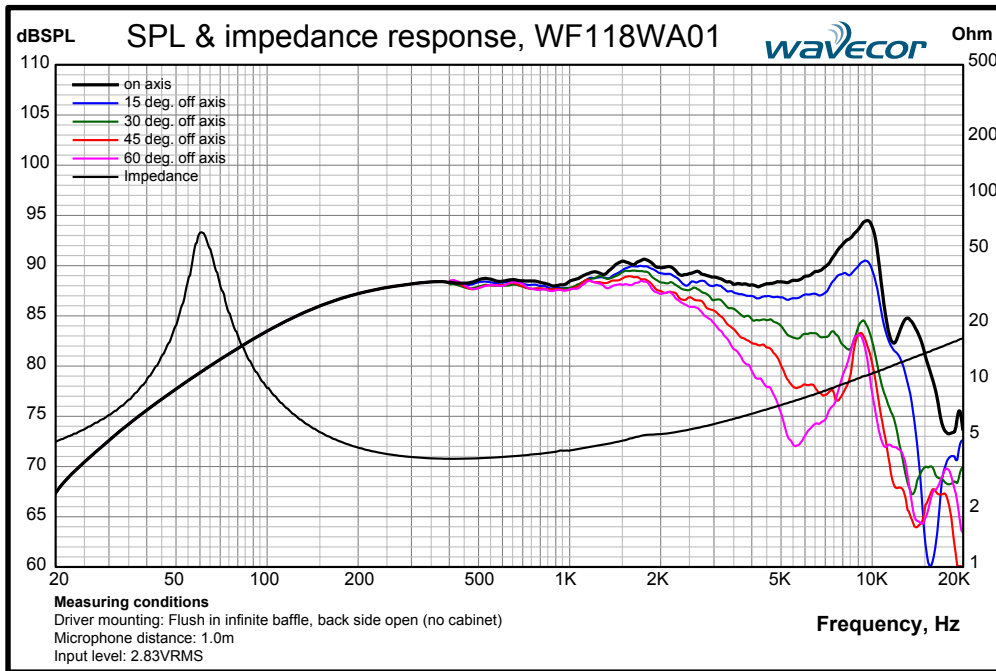
Note 5 It is generally a rough simplification to assume that loudspeaker transducer voice coils exhibit the characteristics of an inductor. Instead it is a far more accurate approach to use the more advanced model often referred to as the "Wright empirical model", also used in LEAP-4 as the TSL model ([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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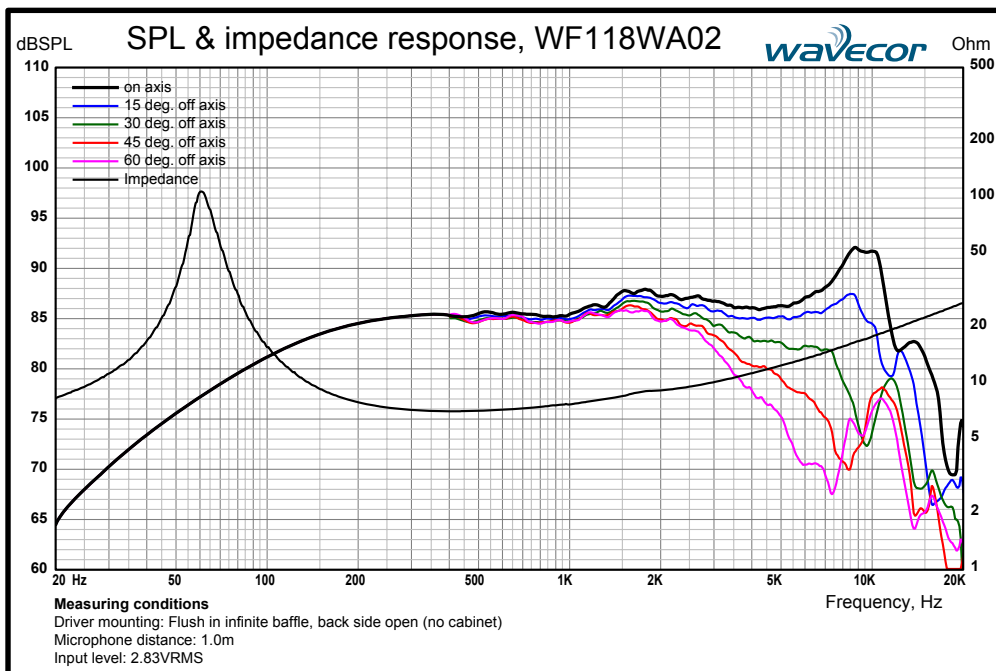


## WF118WA01/02 4½" paper cone mid/woofers, 4/8 ohm



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

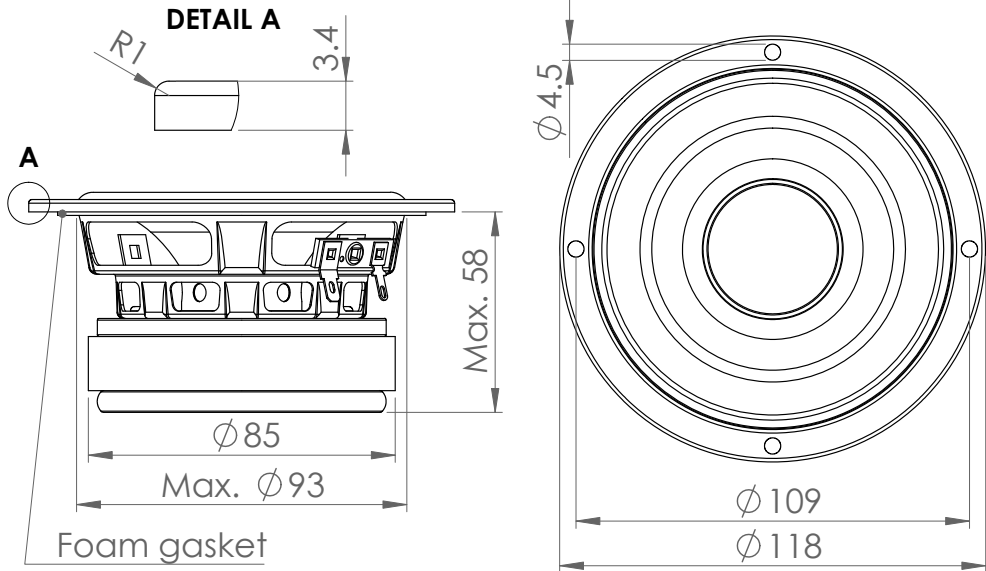


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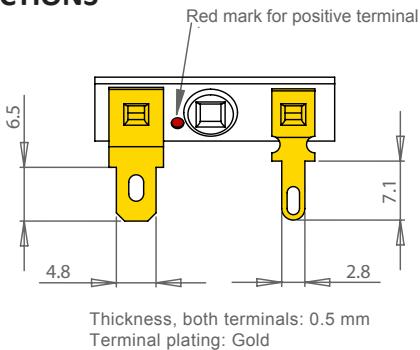
### OUTLINE DRAWING (nominal dimensions)

Dimensions in mm



May 1, 2014

### CONNECTIONS



### PACKAGING AND ORDERING INFORMATION

|                       |   |
|-----------------------|---|
| Part no. WF118WA01-01 | 4 ohm version, individual packaging (one piece per box) |
| Part no. WF118WA01-02 | 4 ohm version, bulk packaging                           |
| Part no. WF118WA02-01 | 8 ohm version, individual packaging (one piece per box) |
| Part no. WF118WA02-02 | 8 ohm version, bulk packaging                           |

Latest update: February 6, 2015