

SPECIFICATIONS

WF152BD03/04 6" die cast, paper cone mid/woofers, 4/8 ohm



The 6" transducers WF152BD03 (4 ohm) and WF152BD04 (8 ohm) were designed as high performance bass and midrange units for compact monitors and high-end hi-fi speakers.

FEATURES

- Balanced Drive motor structure for optimal drive force symmetry resulting in largely reduced even order harmonic distortion
- Copper cap on center pole to reduce voice coil inductance and to minimize variations in voice coil inductance as a function of voice coil position
- Black coated semi-air-dried paper cone
- 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 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 | WF152BD03 | | WF152BD04 | | Unit |
|-------|----------------------------------------------------------------|----------------|---------------|----------------|---------------|--------------------|
| | | Before burn-in | After burn-in | Before burn-in | After burn-in | |
| | Nominal size | 6 | | 6 | | [inch.] |
| | Nominal impedance | 4 | | 8 | | [ohm] |
| | Recommended max. upper frequency limit | 3.5 | | 3.5 | | [kHz] |
| 1 | Sensitivity, 2.83V/1m (average SPL in range 300 - 1,000 Hz) | 91 | | 88.5 | | [dB] |
| 2 | Power handling, short term, IEC 268-5, no additional filtering | 120 | | 120 | | [W] |
| 2 | Power handling, long term, IEC 268-5, no additional filtering | 110 | | 110 | | [W] |
| 2 | Power handling, continuous, IEC 268-5, no additional filtering | 70 | | 70 | | [W] |
| | Effective radiating area, S _d | 93 | | 93 | | [cm ²] |
| 3, 6 | Resonance frequency (free air, no baffle), F _s | 55.5 | 50 | 56.5 | 51 | [Hz] |
| | Moving mass, incl. air (free air, no baffle), M _{ms} | 11.0 | | 10.5 | | [g] |
| 3 | Force factor, B _{xl} | 5.8 | | 7.3 | | [N/A] |
| 3, 6 | Suspension compliance, C _{ms} | 0.75 | 0.93 | 0.75 | 0.93 | [mm/N] |
| 3, 6 | Equivalent air volume, V _{as} | 9.2 | | 11.4 | | [lit.] |
| 3, 6 | Mechanical resistance, R _{ms} | 0.43 | | 0.43 | | [Ns/m] |
| 3, 6 | Mechanical Q, Q _{ms} | 8.9 | | 7.5 | | [-] |
| 3, 6 | Electrical Q, Q _{es} | 0.36 | | 0.44 | | [-] |
| 3, 6 | Total Q, Q _{ts} | 0.35 | | 0.42 | | [-] |
| 4 | Voice coil resistance, R _{DC} | 3.2 | | 6.3 | | [ohm] |
| 5 | Voice coil inductance, L _e (measured at 10 kHz) | 0.096 | | 0.15 | | [mH] |
| | Voice coil inside diameter | 32 | | 32 | | [mm] |
| | Voice coil winding height | 14 | | 14 | | [mm] |
| | Air gap height | 5 | | 5 | | [mm] |
| | Magnet weight | 630 | | 630 | | [g] |
| | Total unit net weight excl. packaging | 1.65 | | 1.65 | | [kg] |
| 3, 5 | K _{rm} | 46 | | 50 | | [mohm] |
| 3, 5 | E _{rm} | 0.39 | | 0.42 | | [-] |
| 3, 5 | K _{xm} | 260 | | 580 | | [mH] |
| 3, 5 | E _{xm} | 0.16 | | 0.12 | | [-] |

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.

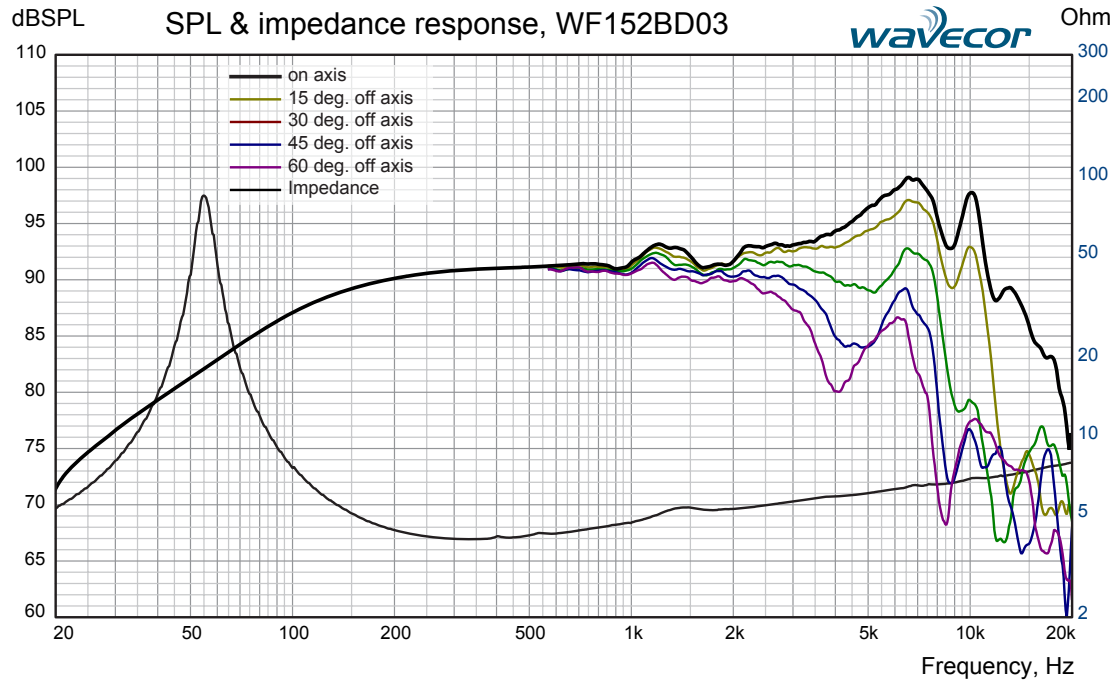
Note 4 Measured at 20 deg. C

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 10/14.1 V_{RMS} (4/8 ohm version). The unit is not burned in before shipping.

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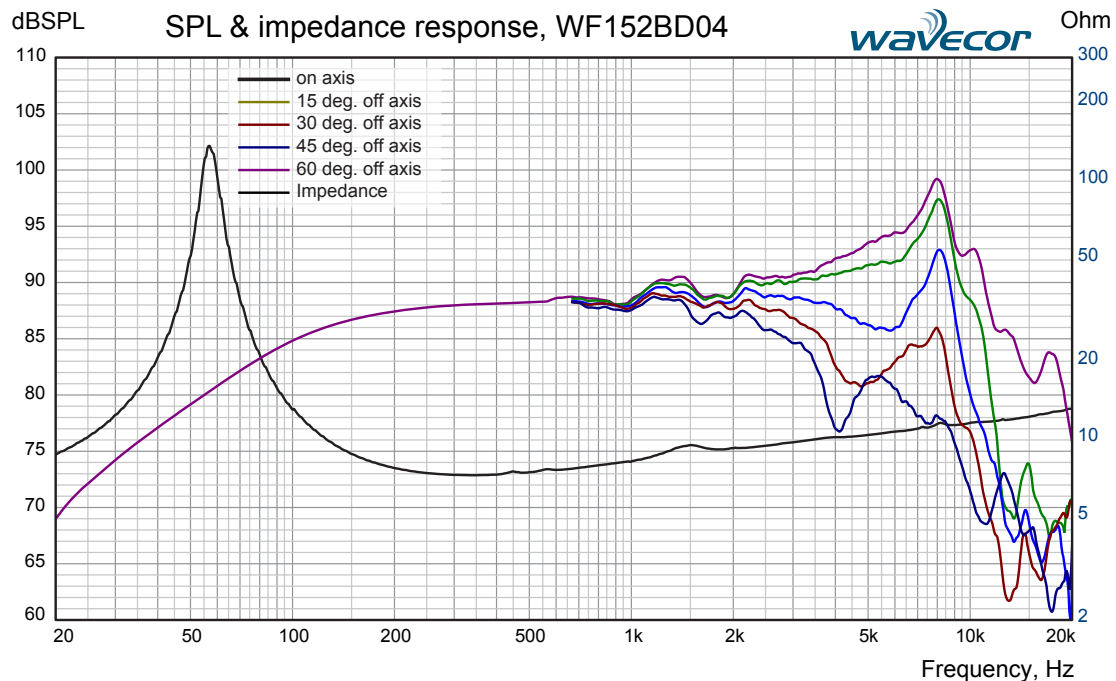


Measuring conditions, SPL

Driver mounting: Flush in infinite baffle, back side open (no cabinet)
Microphone distance: 1.0 m
Input level: 2.83 V_{RMS}
Smoothing: 1/6 oct.

Measuring conditions, impedance

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

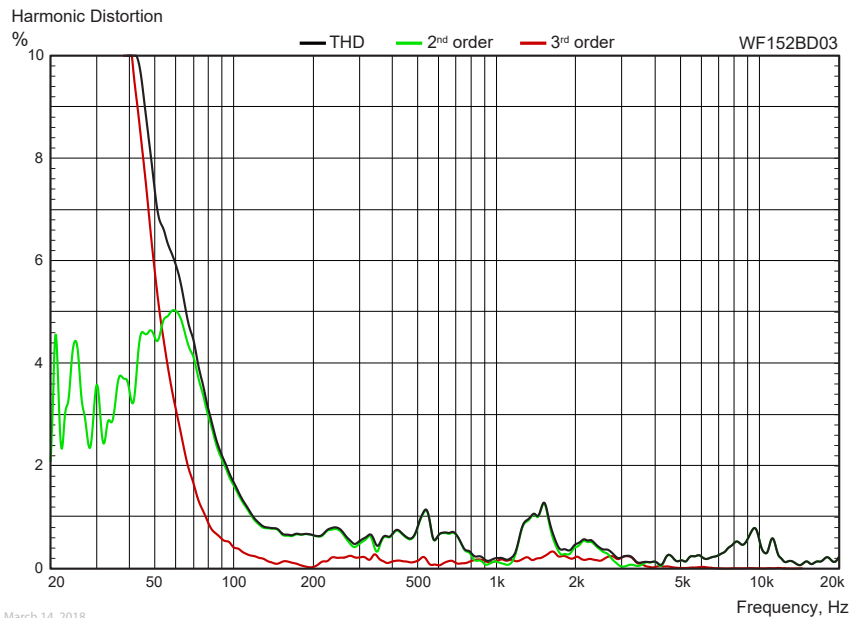


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HARMONIC DISTORTION



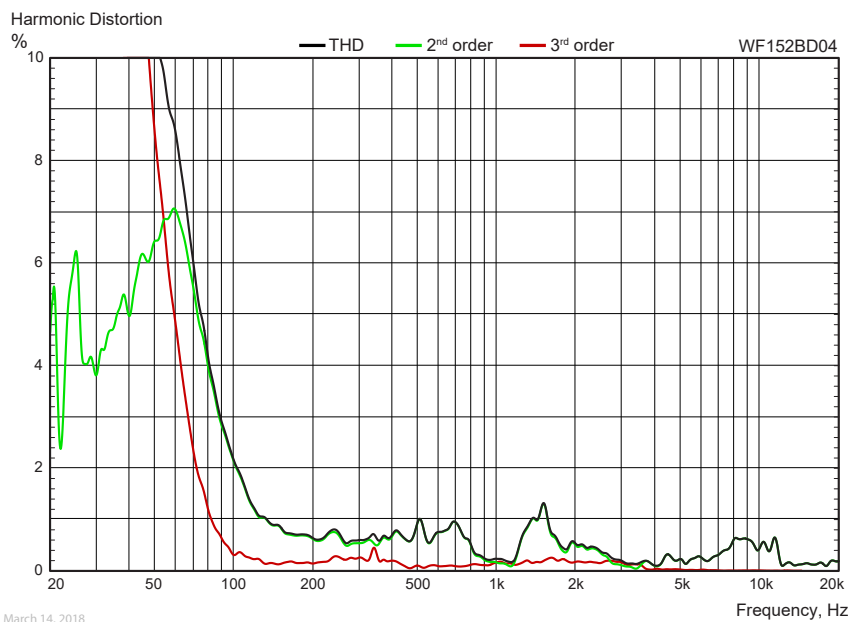
Measuring conditions, Harmonic Distortion

Driver mounting: In sealed, heavily stuffed enclosure, internal volume 7 lit.

Microphone distance: 0.5 m

Input signal: Stepped sine wave, 5.3 VRMS (WF152BD03) / 7.5 VRMS (WF152BD04)

Smoothing: 1/12 oct.

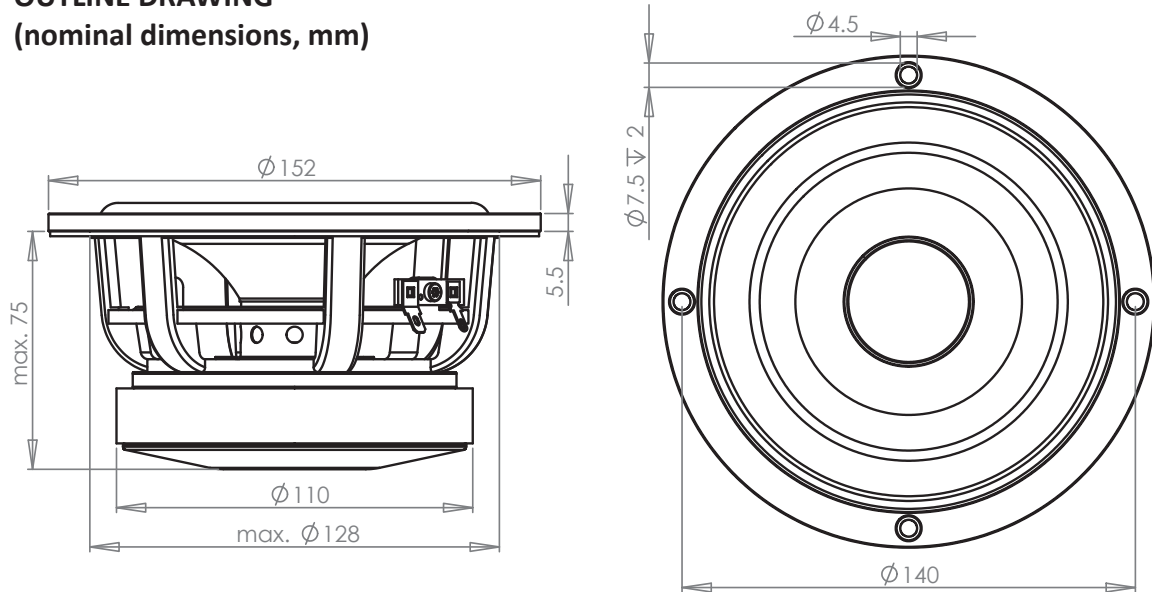


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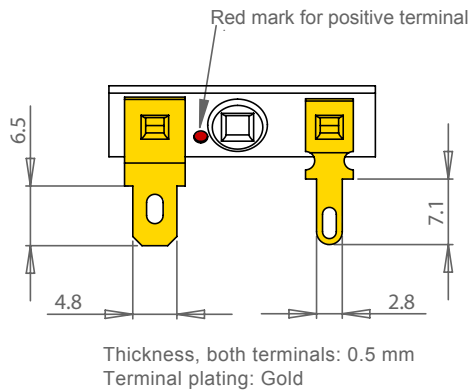
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OUTLINE DRAWING (nominal dimensions, mm)



CONNECTIONS



PACKAGING AND ORDERING INFORMATION

| | |
|-----------------------|---------------------------------------------------------|
| Part no. WF152BD03-01 | 4 ohm version, individual packaging (one piece per box) |
| Part no. WF152BD03-02 | 4 ohm version, bulk packaging |
| Part no. WF152BD04-01 | 8 ohm version, individual packaging (one piece per box) |
| Part no. WF152BD04-02 | 8 ohm version, bulk packaging |

Latest update: Mar. 1, 2021