SPECIFICATIONS

WF223BD01/02 8¾" die cast, paper/glass fibre cone mid/woofers

The 8¾" transducers WF223BD01 (4 ohm) and WF223BD02 (8 ohm) were designed as high performance bass/midrange units for monitors and high-end hi-fi speakers. They offer outstanding deep bass performance and dynamic and detailed midrange.
Ideal for 3-way constructions they additionally offer designers the rare opportunity of working with 8" 2-way solutions if paired with a suitable tweeter like for instance some of the Wavecor 30 mm units.

BALANCED DRIVE

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
- Cone made of a new paper/glass fiber mix with improved consistency and stability
- Rigid die cast alu chassis with extensive venting for lower air flow speed reducing audible distortion
- Vented center pole with dual flares for reduced noise level and compressions 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 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

NOMINAL SPECIFICATIONS

Notes	Parameter	WF223BD01		WF223BD02		Unit
		Before burn-in	After burn-in	Before burn-in	After burn-in	
	Nominal size	8¾		8¾		[inch.]
	Nominal impedance	4		8		[ohm]
	Recommended max. upper frequency limit	2		2		[kHz]
1, 3	Sensitivity, 2.83V/1m	90		87		[dB]
2	Power handling, short term, IEC 268-5, no additional filtering	1,200		1,200		[W]
2	Power handling, long term, IEC 268-5, no additional filtering	300		300		[W]
2	Power handling, continuous, IEC 268-5, no additional filtering	150		150		[W]
	Effective radiating area, S_d	213		213		[cm²]
3, 6	Resonance frequency (free air, no baffle), F_s	32.6	31	33.1	31.6	[Hz]
	Moving mass, incl. air (free air, no baffle), M_{ms}	34		33		[g]
3	Force factor, Bxl	7.7		9.5		[N/A]
3, 6	Suspension compliance, C_{ms}	0.70	0.77	0.70	0.77	[mm/N]
3, 6	Equivalent air volume, V_{as}	45	49.5	45	49.5	[lit.]
3, 6	Mechanical resistance, R_{ms}	0.48	0.48	0.48	0.48	[Ns/m]
3, 6	Mechanical Q, Q_{ms}	14.5	13.8	14.3	13.6	[-]
3, 6	Electrical Q, Q_{es}	0.40	0.38	0.47	0.46	[-]
3, 6	Total Q, Q_{ts}	0.39	0.37	0.46	0.435	[-]
4	Voice coil resistance, R_{DC}	3.4		6.2		[ohm]
5	Voice coil inductance, L_e (measured at 1 kHz)	0.13		0.20		[mH]
	Voice coil inside diameter	39		39		[mm]
	Voice coil winding height	18		18		[mm]
	Air gap height	5		5		[mm]
	Theoretical linear motor stroke, Xmax	±6.5		±6.5		[mm]
	Magnet weight	0.97		0.97		[kg]
	Total unit net weight excl. packaging	2.5		2.5		[kg]
3, 5	K_{rm}					[mohm]
3, 5	E_{rm}					[-]
3, 5	K_{xm}					[mH]
3, 5	E_{xm}					[-]

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

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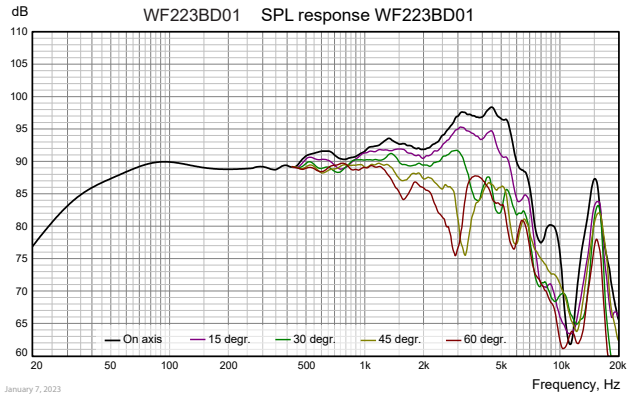
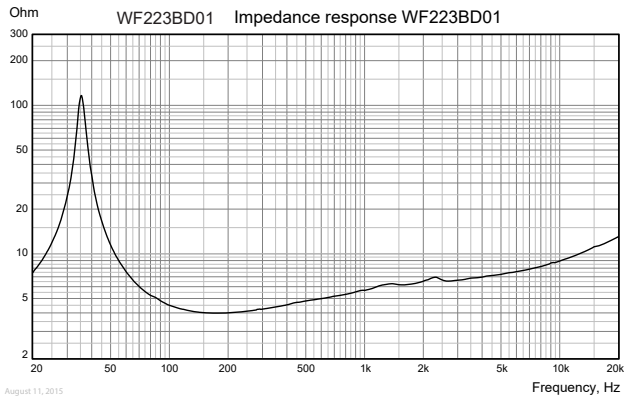
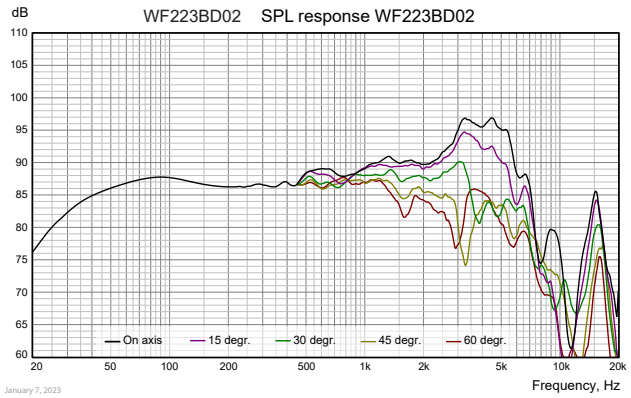


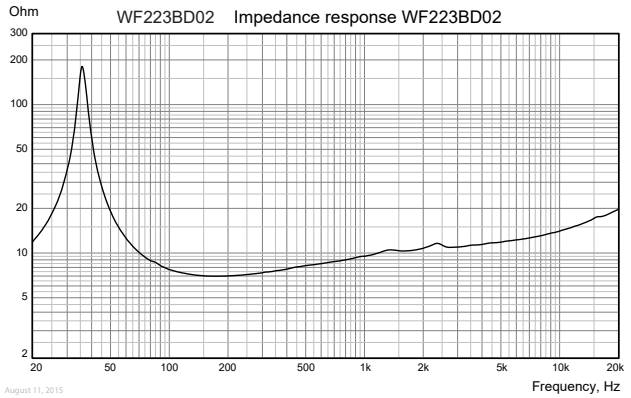
Measuring conditions, SPL
Driver mounting: Flush in infinite baffle, back side open (no cabinet)
Microphone distance: 1.0 m
Input signal: 2.83 VRMS stepped sine wave
Smoothing: 1/6 oct.



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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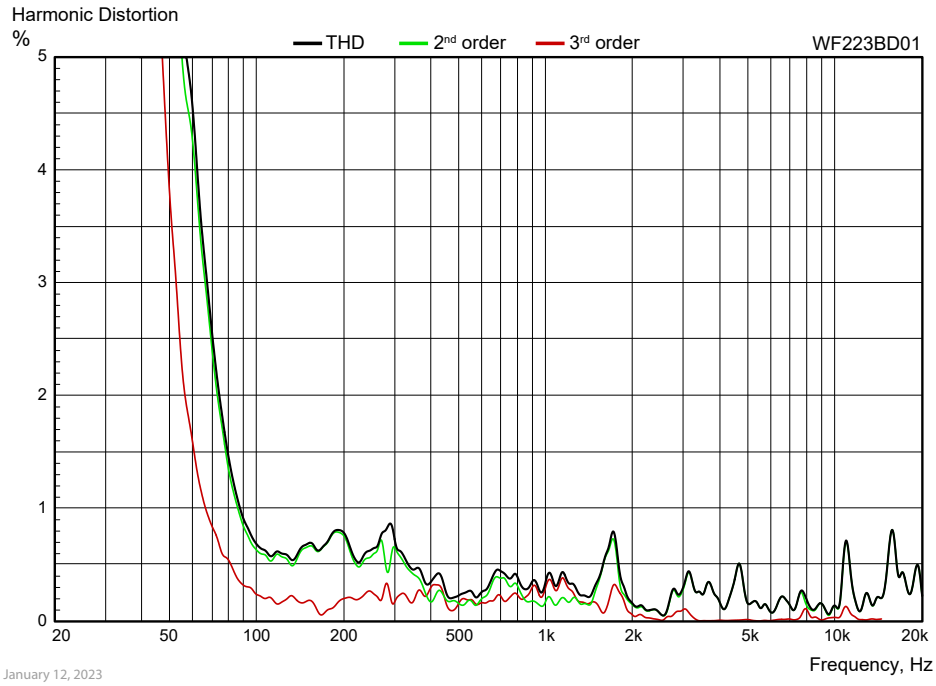
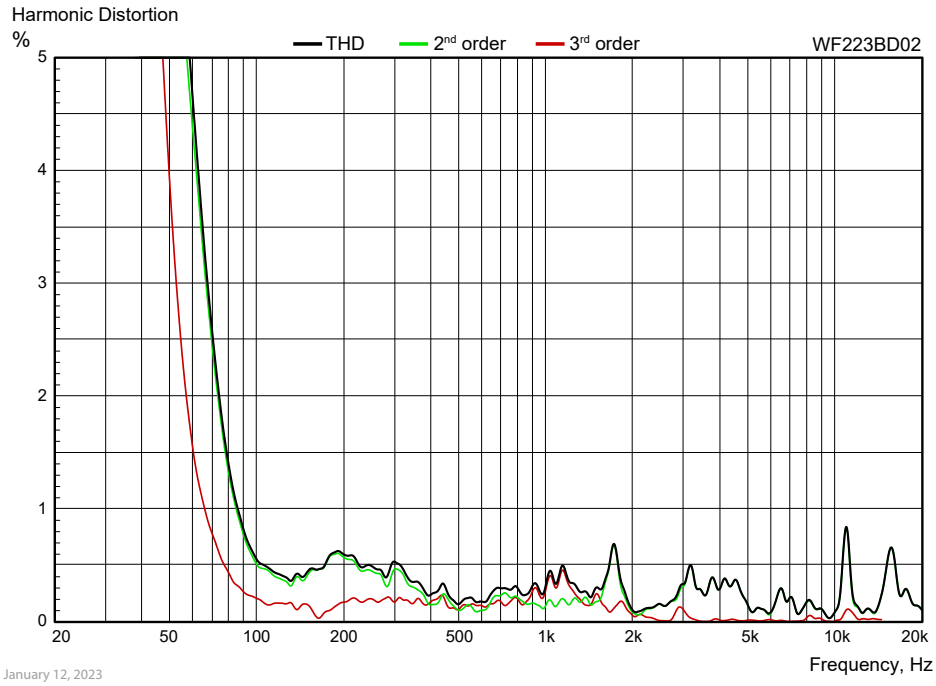


January 12, 2023

Measuring conditions, distortion
Driver mounting: In sealed enclosure, internal volume 28.5 lit.
Microphone distance: 0.5 m
Input signal: Stepped sine wave, 7.75 VRMS
Smoothing: 1/12 oct.



January 12, 2023

Measuring conditions, distortion
Driver mounting: In sealed enclosure, internal volume 28.5 lit.
Microphone distance: 0.5 m
Input signal: Stepped sine wave, 9.0 VRMS
Smoothing: 1/12 oct.

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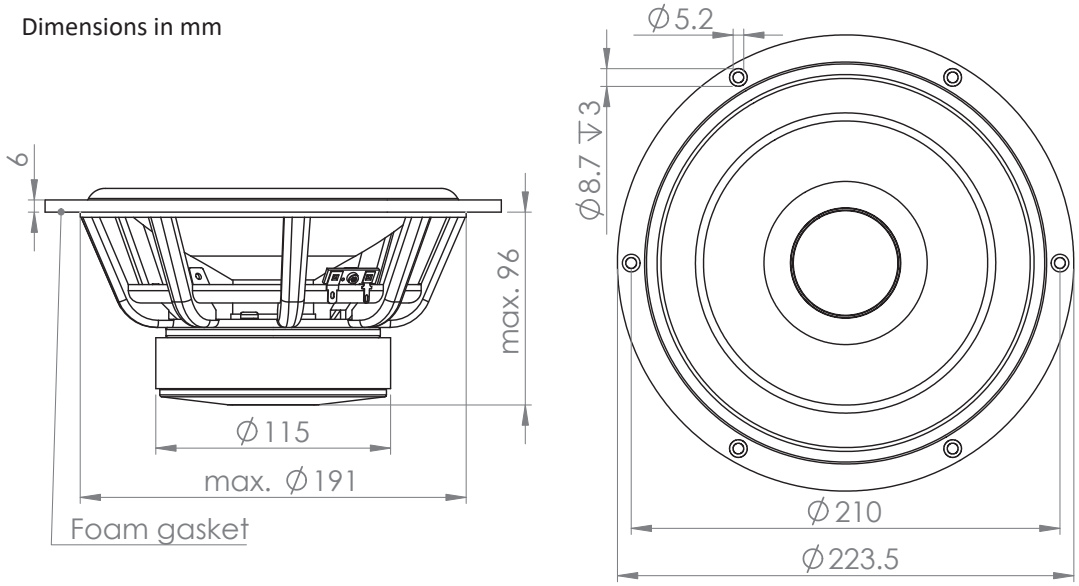
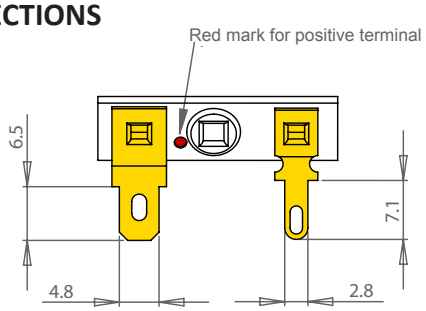
OUTLINE DRAWING (nominal dimensions)

Dimensions in mm



CONNECTIONS



Thickness, both terminals: 0.5 mm
Terminal plating: Gold

PACKAGING AND ORDERING INFORMATION

Part no. WF223BD01-01	4 ohm version, individual packaging (one piece per box)
Part no. WF223BD02-01	8 ohm version, individual packaging (one piece per box)

Latest update: Feb. 29, 2024