

SPECIFICATIONS

WF120BD01/02 4^{3/4}" die cast, Nomex cone mid/woofers, 4/8 ohm



The 4^{3/4}" transducers WF120BD01 (4 ohm) and WF120BD02 (8 ohm) were designed as high performance bass and midrange units for very 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 Nomex 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 1^{1/4}" 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



PRELIMINARY NOMINAL SPECIFICATIONS

Notes	Parameter	WF120BD01		WF120BD02		Unit
		Before burn-in	After burn-in	Before burn-in	After burn-in	
	Nominal size	4 ^{3/4}		4 ^{3/4}		[inch.]
	Nominal impedance	4		8		[ohm]
	Recommended max. upper frequency limit	4		4		[kHz]
1	Sensitivity, 2.83V/1m (average SPL in range 300 - 1,000 Hz)	85.5		83		[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	60		60		[W]
	Effective radiating area, Sd	54		54		[cm ²]
3, 4, 6	Resonance frequency (free air, no baffle), F _s	44		47		[Hz]
	Moving mass, incl. air (free air, no baffle), M _{ms}	9.0		8.0		[g]
3	Force factor, Bxl	5.1		6.3		[N/A]
3, 4, 6	Suspension compliance, C _{ms}	1.45		1.45		[mm/N]
3, 4, 6	Equivalent air volume, V _{as}	6.0		6.0		[lit.]
3, 4, 6	Mechanical Q, Q _{ms}	6.7		6.8		[-]
3, 4, 6	Electrical Q, Q _{es}	0.33		0.38		[-]
3, 4, 6	Total Q, Q _{ts}	0.31		0.36		[-]
4	Voice coil resistance, R _{DC}	3.4		6.4		[ohm]
5	Voice coil inductance, L _e (measured at 10 kHz)	0.12		0.18		[mH]
	Voice coil inside diameter	32		32		[mm]
	Voice coil winding height	12		12		[mm]
	Air gap height	4		4		[mm]
	Magnet weight	370		370		[g]
	Total unit net weight excl. packaging	1.0		1.0		[kg]
3, 5	K _{rm}	45		40		[mohm]
3, 5	E _{rm}	0.41		0.46		[-]
3, 5	K _{xm}	310		420		[mH]
3, 5	E _{xm}	0.17		0.18		[-]

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.

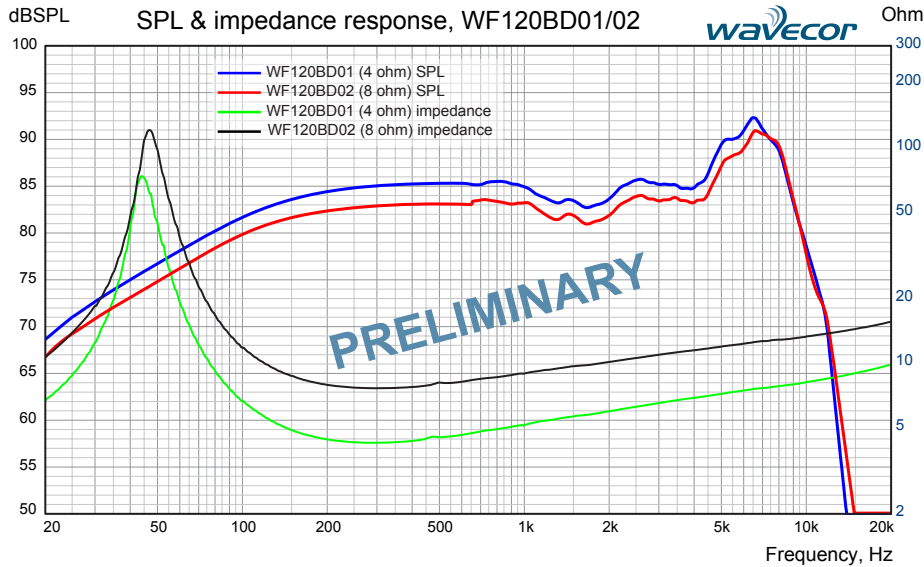
Note 4 Measured at 20 deg. C

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](#).

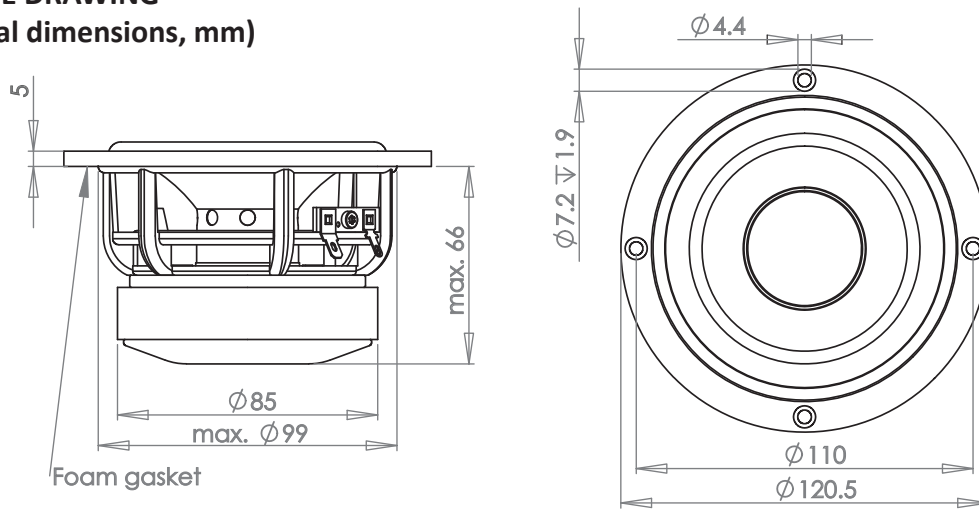
Note 6 After burn-in specifications are measured 12 hours after exiting the transducer by a 20 Hz sine wave for 2 hours at level 7.75/11 VRMS (4/8 ohm version). The unit is not burned in before shipping.

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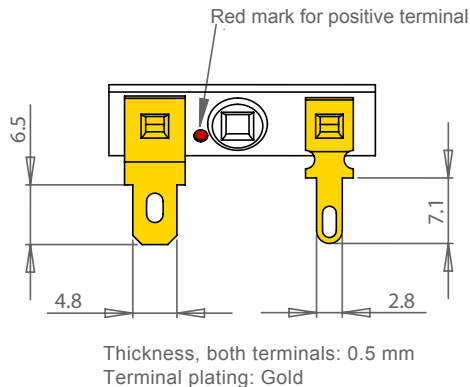
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OUTLINE DRAWING (nominal dimensions, mm)



CONNECTIONS



PACKAGING AND ORDERING INFORMATION

Part no. WF120BD01-01	4 ohm version, individual packaging (one piece per box)
Part no. WF120BD01-02	4 ohm version, bulk packaging
Part no. WF120BD02-01	8 ohm version, individual packaging (one piece per box)
Part no. WF120BD02-02	8 ohm version, bulk packaging

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