

FR084WA01/02 3 1/2" alu-cone fullranges, 4/8 ohm

The 3 1/2" transducers FR084WA01 (4 ohm) and FR084WA02 (8 ohm) were designed especially for high quality multimedia and lifestyle speakers, where sound reproduction without compromise is required while still keeping size small.

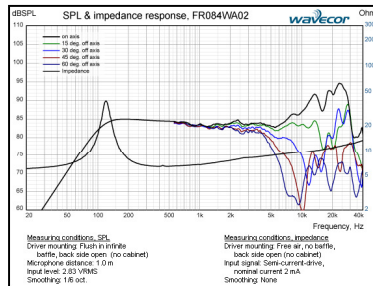
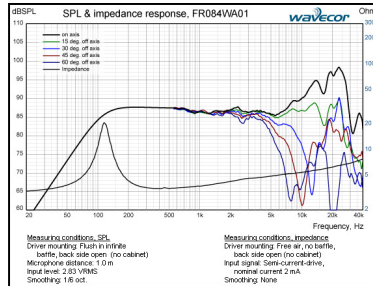
Expectations, Impedance, Compliance, Sensitivity



FEATURES

- True full-range design with on-axis output to beyond 20 kHz
- 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 anodized alu-cone for better heat transfer
- Vented polymer chassis for lower air flow speed reducing audible distortion
- Vented voice coil former for reduced distortion and compression
- Heavy-duty black fiber glass voice coil bobbin to reduce mechanical losses resulting in better dynamic performance and low-level details
- Large motor with 22 mm voice coil diameter for better control and power handling
- Low-loss suspension (high Qm) for better reproduction of details and dynamics
- Black motor parts for better heat transfer to the surrounding air
- Cones 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

FREQUENCY RESPONSE

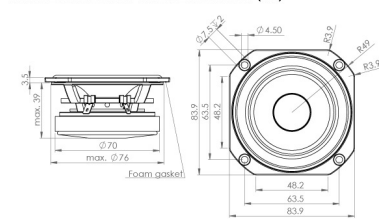


NOMINAL SPECIFICATIONS

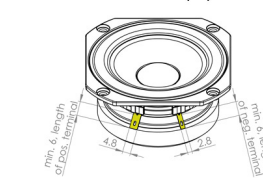
Notes	Parameter	FR084WA01		FR084WA02		Unit
		Before burn-in	After burn-in	Before burn-in	After burn-in	
	Nominal size	3 1/2"	3 1/2"	3 1/2"	3 1/2"	[inch]
	Nominal impedance	4	8	8	8	[ohm]
	Recommended max. upper frequency limit	full range		full range		[kHz]
1, 4	Sensitivity, 2.83Vrms (average SPL in range 200 - 8,000 Hz)	67	64	64	64	[dB]
2	Power handling, short term, EC 265-5, no additional filtering					[W]
2	Power handling, continuous, EC 265-5, no additional filtering					[W]
	Effective radiating area, S_d	36	36	36	36	[cm ²]
3, 4, 6	Resonance frequency (free air, no baffle), F_s	113	109	114	110	[kHz]
	Moving mass, incl. air (free air, no baffle), M_{ms}	3.45	3.35	3.35	3.35	[g]
3	Force factor, Bld	7.9	7.9	3.85	3.85	[N/A]
3, 4, 6	Suspension compliance, C_{ms}	0.80	1.02	0.83	0.83	[cm/N]
3, 4, 6	Equivalent air volume, V_{as}	1.07	1.14	1.07	1.14	[l]
3, 4, 6	Mechanical resistance, R_{ms}	0.44	0.44	0.45	0.45	[N/cm]
3, 4, 6	Mechanical Q, Q_{ms}	5.6	5.4	5.3	5.2	[-]
3, 4, 6	Electrical Q, Q_{es}	0.96	0.93	1.10	1.06	[-]
3, 4, 6	Total Q, Q_{ts}	0.82	0.79	0.92	0.88	[-]
4	Voice coil resistance, R_{DC}	3.3	6.1			[ohm]
5	Voice coil inductance, L_e (measured at 10 kHz)					[uH]
	Voice coil inside diameter	22	22			[mm]
	Voice coil winding height	7	6			[mm]
	Alt gap height	3	3			[mm]
	Theoretical linear motor stroke, x_{max}	42	42.5			[mm]
	Magnet weight	160	160			[g]
	Total unit net weight excl. packaging	0.37	0.37			[kg]
3, 4, 5	K_m					[N/cm]
3, 4, 5	F_{ms}					[N]
3, 4, 5	K_{ms}					[N/m]
3, 4, 5	F_{ms}					[N]

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 75 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 LEIS-4 as the TSL model (www.linear-con.com), including parameters G_m , G_m , K_m , and G_m . This more accurate transducer model is described in a technical paper (PDF) here.
 Note 6: After burn-in specifications are measured at least 12 hours after exiting the transducer by a 20 Hz sine wave for 2 hours at level 2.834.0 V RMS (4.0 ohm version). Unit are not burned in before shipping.

OUTLINE DRAWING AND NOMINAL DIMENSIONS (mm)



TERMINAL NOMINAL DIMENSIONS (mm)



PACKAGING AND ORDERING INFORMATION

Part no. FR084WA01-01	4 ohm version, individual packaging (one piece per box)
Part no. FR084WA01-02	4 ohm version, bulk packaging
Part no. FR084WA02-01	8 ohm version, individual packaging (one piece per box)
Part no. FR084WA02-02	8 ohm version, bulk packaging