



WOOFER SPECIFICATION SHEET

EM-PHASER

The EMPASER G5 shallow woofer product line has been engineered with the target in mind, to allow woofer installs without compromises on either bass output or sound quality.

WOOFER KEY FEATURES

- PROPRIETARY DIE-CAST ALUMINUM BASKET
- 100 / 130 OZ. DOUBLE STACKED SR-FE MAGNET
- INJECTION MOULDED PP CONE
- NBR NITRILE RUBBER SURROUND
- HIGH EXCURSION NOMEX™ DOUBLE SPIDER
- 2 1/2" POLYIMIDE VOICE-COIL FORMER
- 4-LAYER WOUND COPPER VOICE COIL
- 10MM CNC MACHINED FRONT POLE PLATE
- UNDERCUT & EXTENDED CENTER POLE
- LARGE DIAMETER CENTER POLE VENT
- NBR NITRILE RUBBER FRONT GASKET
- PROPRIETARY PUSH TERMINALS

■ PROPRIETARY DIE-CAST ALUMINUM BASKET

EMPASER's proprietary cast aluminum basket line is overbuilt to offer a truly solid and anti-resonant platform for the ultra-heavy Strontium-Ferrite magnet motor assembly. A deep draw basket design enables huge cone travel to both sides, due to increased distance between lower spider platform and basket bottom, while the "open basket structure" maintains good airflow and cooling of parts encountering high thermal loads during high power use.

■ DOUBLE STACKED SR-FE MAGNET

Double stacked Strontium-Ferrite magnets with total weights of 100 oz. or 130 oz. form the heart and motor of the XT-G5 woofer models. The magnet systems use the strongest Sr-Fe magnets available today, to stand out with excellent acoustic efficiency values obtained from medium sized enclosures.

■ INJECTION MOULDED PP CONE

The XT-G5 woofers deploy a cone assembly consisting of three separate parts that are injection moulded from PP material. The special shape of the cone results in highest stiffness at low moving mass, providing lowest possible cone flex at high SPL which results in precise hard hitting bass lines.

■ NBR BUTYL RUBBER SURROUND

NBR nitrile rubber surrounds are deployed, to guarantee long service life as well as good micro- and macrodynamics for true and lifelike bass performance.

■ HIGH EXCURSION NOMEX™ DOUBLE SPIDER

The XT-G5 woofer models deploy double spider assemblies made of Nomex™ fiber of large diameters and progressive deflection characteristics. The double spider suspensions always keep the voice coils in tight and perfect alignment.

■ POLYIMIDE VOICE COIL FORMER

Polyimide voice coil formers are chosen for their non-magnetic and high temperature resistance material properties. Polyimide will not oscillate under mechanical load and provides a eddy current free magnetic flux for high Qms and precise sound quality.

■ 4-LAYER WOUND COPPER VOICE COIL

4-layer wound Copper wire voice-coils with 2.5 or 3" diameter provide very high thermal power handling to reach max. output without power compression due to rising vc-impedance under full power load.

■ CNC MACHINED POLE PLATES

CNC machined pole plates allow a tight air-gap design to extract the maximum possible magnetic energy, and when chrome plated and laser etched like for the XT-G5 woofers, also provide that extra look of quality and protection against environmental influences.

■ NBR RUBBER FRONT GASKET

NBR front gasket construction has been chosen and realized to allow the XT-G5 woofers being mounted traditionally with the magnet facing into the cabinet – but also in inverted manner with their cone side facing against the cabinet – allowing to deal with any kind of mounting situation.

■ PROPRIETARY PUSH TERMINALS

New push terminals have been designed to accept speaker wires with large cross section, keeping electrical losses at the wire contact junction as low as possible.

TECHNICAL SPECIFICATIONS:

	EX10T-G5	EX12T-G5	EX15T-G5
Usable Frequency Response*	25 – 100 Hz	20 – 100 Hz	20 – 100 Hz
Continuous Power Handling*	700 W RMS*	1000 W RMS*	1000 W RMS*
Peak Power Handling*	1400 W*	2300 W*	2800 W*
Nominal Impedance	4 Ohms	4 Ohms	4 Ohms
Voice Coil Diameter	2 1/2" / 63.5 mm	3" / 76.2 mm	3" / 76.2 mm
Voice Coil Winding Height	35.5 mm	36.1 mm	36.1 mm
Front Pole Plate Height	10 mm	10 mm	10 mm
Total Weight of Sr-Fe Magnet	100 oz. / 2835 g	130 oz. / 3690 g	130 oz. / 3690 g

*Exact performance data depending upon actual enclosure!

THIELE - SMALL PARAMETERS

	(Fs)	EX10T-G5	EX12T-G5	EX15T-G5
Free-Air Resonance	(Fs)	29 Hz	30 Hz	25 Hz
DC Resistance	(Re)	3.84 Ohms	3.94 Ohms	3.99 Ohms
Electrical Damping	(Qes)	0.47	0.48	0.61
Mechanical Damping	(Qms)	4.82	5.3	5.6
Total Damping	(Qts)	0.43	0.44	0.54
Equivalent Volume of Compliance	(Vas)	29.6 l	49.7 l	95.8 l
Moving Mass incl. Air Load	(Mms)	168 g	213 g	337 g
Electrically Limited Cone Excursion	(Xmax P-P)	25.5 mm	26.1 mm	26.1 mm
Effective Cone Surface	(Sd)	346 cm ²	511 cm ²	511 cm ²
Volume Displacement of Cone	(Vd)	883 cm ³	1334 cm ³	1334 cm ³
Voice Coil Inductance @ 1kHz	(Le)	4.03 mH	4.41 mH	4.38 mH
Efficiency (2.00V)	(RefSPL)	84.1 dB/1W/1m	86.4 dB/1W/1m	86.6dB/1W/1m



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MOUNTING DIMENSIONS

	EX10T-G5	EX12T-G5	EX15T-G5
Mounting Cutout Diameter	235 mm	282 mm	357 mm
Rear Mounting Clearance (Mounting Depth)	169 mm	187 mm	221 mm

ENCLOSURE SUGGESTIONS

EMPHASER Laboratories recommend to use the XT-G5 woofers in combination with sealed, vented and bandpass enclosures. To obtain the best possible performance of this woofer in your car audio system, make sure to follow the stated basic enclosure suggestions listed below. If the provided enclosure suggestions listed below are not applicable to your system, contact your authorized EMPHASER dealer to ask for further assistance.

SEALED ENCLOSURE

Net Volume:	25 l	35 l	65 l
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PORTED ENCLOSURE I (SPL)

Net Volume:	35 l	55 l	95 l
Inner Diameter of Port:	1 x 10 cm	2 x 10 cm	2 x 10 cm
Length of Port:	21 cm	24 cm each	20 cm each

PORTED ENCLOSURE II (LOW BASS)

Net Volume:	35 l	55 l	95 l
Inner Diameter of Port:	1 x 10 cm	1 x 10 cm	2 x 10 cm
Length of Port:	25 cm	28 cm	27 cm each

BANDPASS ENCLOSURE

Net Volume Ported Chamber:	20 l	28 l	55 l
Net Volume Sealed Chamber:	15 l	24 l	45 l
Inside Diameter of Ports:	1 x 10 cm	2 x 10 cm	3 x 10 cm
Port Length:	15 to 23 cm	22 to 27 cm each	18 to 23 cm each

ENCLOSURE CONSTRUCTION / CABINET DAMPING / BREAK-IN INFO

→ Always use 21mm or thicker MDF or birch plywood to build the enclosure. Make sure all joints are well sealed, since a woofer can only reach optimum performance when mounted to an airtight cabinet!

→ The enclosures should be damped according to their function principle: The sealed enclosure must be filled with polyfill (bonded acrylic fiber). The inner walls of the ported enclosure should be lined out with egg crate PU-foam. The sealed chamber of the bandpass enclosure has to be lined with PU-foam, while the ported chamber remains free of any damping material.

→ Loudspeakers that deploy double spiders made of Nomex™ aramide fiber material need extra time to break-in! Out of the box, the suspension system of any XT-G5 woofer model is stiff. To achieve optimum bass response, consider at least two weeks of daily playing at elevated playback levels. After that period of time, the suspension system has reached its equilibrium and will remain stable for the entire life-span of this product.

WARRANTY

EMPHASER Inc. Wyoming, Michigan U.S.A. warrants this woofer to be free of defects in materials and workmanship for two years from the original date of purchase at retail, contingent upon installation being performed or approved by an authorized EMPHASER dealer. EMPHASER Inc. will at its own discretion repair or replace any mechanically defective woofer at no charge, during the warranty period. This warranty is limited to the **original purchaser**.

Should your EMPHASER woofer require warranty service, please return it to the retailer from whom it was purchased.

Please do not send any product to EMPHASER Inc., Wyoming, Michigan U.S.A. Should you have difficulty in finding an authorized EMPHASER dealer or service center, details are available from the national distributor in the country of purchase.

Abuse of this loudspeaker is **not covered under warranty**. The warranty **does NOT cover**:

- Woofers that have been exposed to electrical input exceeding the rated power handling
- Any kind of freight damage
- Woofers damaged due to amplifier clipping
- Woofers exposed to water, oil, solvents or excessive heat
- Repair attempts by unauthorized individuals
- Install damage (i.e. screwdriver holes)