# The GamuT “L” loudspeakers


GamuT

## User manual


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# Indhold



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# Every musical note…

**An introduction**

Congratulations you have just invested in one of the finest loudspeakers available!

Years back we chose the word "GamuT" for our products, because "GamuT" in Latin means "the entire range of musical notes".

The GamuT name is therefore the perfect fit to our philosophy of missing out on none of the tiny bits of information that creates a realistic sound experience.

There are many more things to reproducing music than just reproducing the individual musical tones, but it is the complex spectrum of multiple individual tones created by the musicians operating their instruments and voices, and the reflected signals thereof, that creates the sounds we detect with our ears and send to our brain to give us the wonderful sensations only music is capable of. These unique musical sensations are what we see as The GamuT mission to give to you!

As in every GamuT product our speakers are designed with the capability of getting you the best possible musical experience, which is synonymous with reproducing all of the essential information in the recordings to create the illusion of "being there".

To assure this we use only the best "raw materials" trimmed and crafted to perfection by the best engineers and sound enthusiasts in the industry.

Following the guidance lines in this manual will assure you an exquisite sound experience, so be ready for "the entire range of musical notes".

We wish you years of proud ownership and happy listening and feel confident that you will cherish these speakers for both their amazingly clear reproduction as well as for their splendid craftsmanship and beautiful appearance.

The best of wishes from all of us at

GamuT International A/S

# What's in the "box"?

## Unpacking

You have at this point successfully unscrewed the cover of the wooden transportation box, because you are now reading this manual!

**L3, L5 & L7** Turn the wooden box upside-down so the opening is facing downwards and gently pull the wooden box upwards, so the inner cardboard box slides free.

**Alternatively for L5 & L7**: lay the wooden box on its side or back and pull out the inner cardboard box, you may need to be 2 people to do this!

**L5 & L7**: these two speakers also contain a small carton with the following parts:

- 2 stainless steel rails with six small holes and two large holes
- 4 spikes
- 4 adjustment knobs
- 4 small diameter positioning lock rings (to lock the position of the spike)
- 4 large diameter counter screw rings (to lock the adjustment knob)
- 4 support discs
- 12 screws

Gently cut open the large cardboard box with a small sharp knife. Be very careful not to cut too deep so the speaker's hand-polished surface is damaged.

**L3**: Pull up the top foam lid, so you have access to the speakers that are packed inside cotton bags. Lift the speakers out of the box one by one. Now take each speaker out of its bag so it is ready to place on a stand or your bookshelf after you have read "How to connect" and "Location, location, location".

**L5 & L7**: Twist all four cardboard flaps outwards away from the opening. Place the carton vertically with the opening downwards on a thick carpet or other soft surface. Carefully slide the speaker out while pulling the carton upwards, but be careful that you do not hit anything, e.g. lamps or the ceiling. Also take care that the speaker does not fall.

**Alternatively for L5 & L7**: place the carton on the side, twist all four cardboard flaps outwards. Gently pull out the speaker making sure none of the polystyrene rings are moving and harming terminals etc.

Place the speaker so the bag opening is facing upwards. Carefully slide the thick polystyrene rings off, make sure the speaker terminals are not harmed.

**Mount the spikes (see instruction page 5)**

After mounting of the spikes take each speaker out of its bag, so it is ready to place in its position after you have read the sections "How to connect" and "Location, location, location".

To avoid harming your wooden floors or other delicate surfaces we supply 4 small stainless steel disks with each speaker to position underneath each spike. use those if needed.

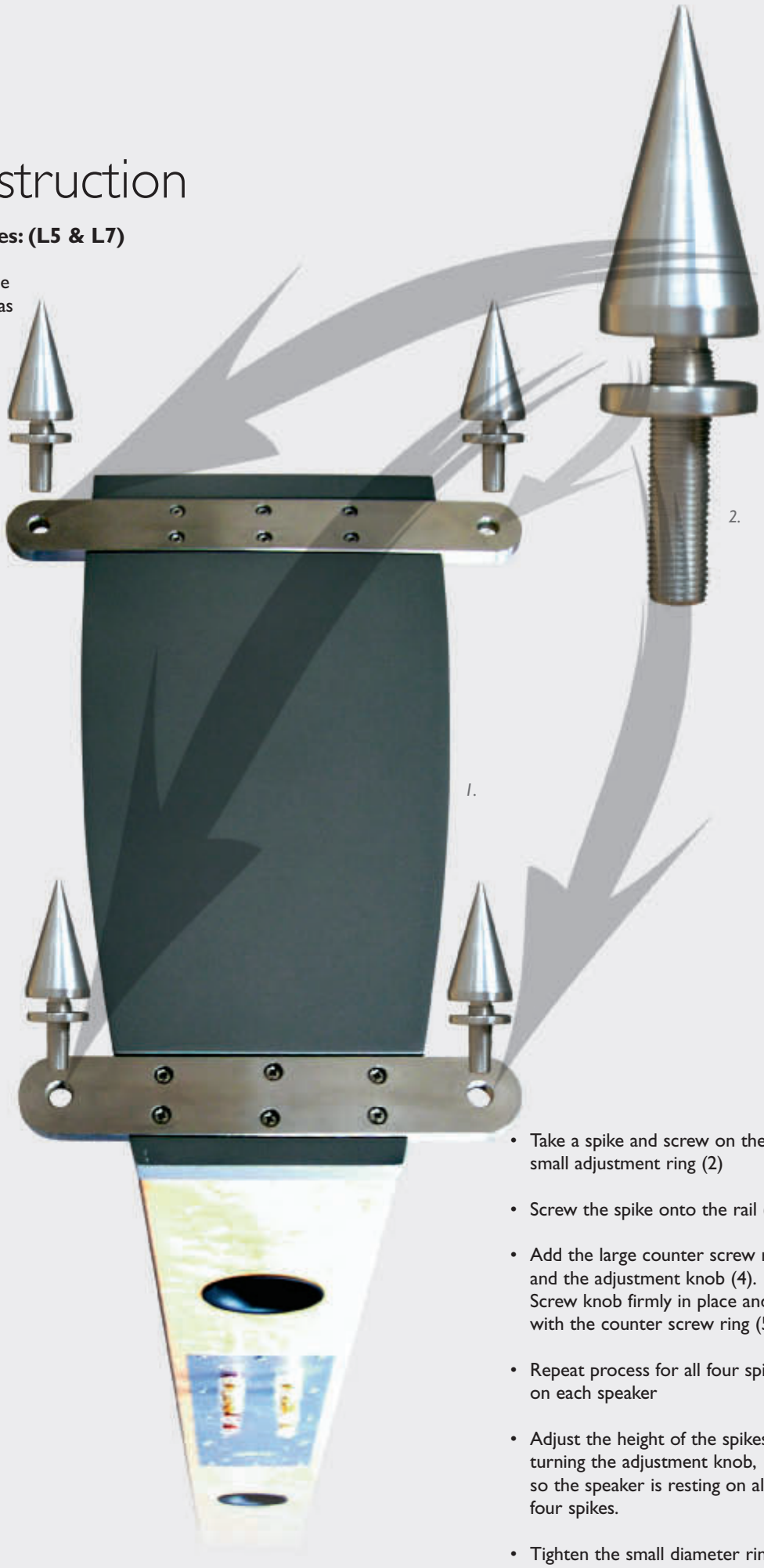
Even for softer surfaces or less delicate surfaces, these disks may prove beneficial, as they assure an even coupling to the surface, and allow for easier adjustment of the spikes.

*Remember to keep all packing materials in a safe place in case you need them for transportation at a later time.*

# Mounting Instruction

**Mounting & using the spikes: (L5 & L7)**

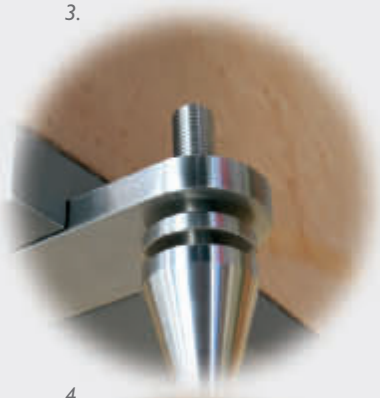
Open the bag enough to attach the front and rear stainless steel rails as shown in picture (1) below and screw them tightly to the base of the speakers with six screws for each rail.



1.

2.

3.



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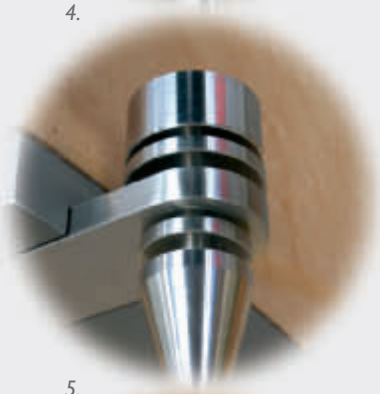

5.

6.

- Take a spike and screw on the small adjustment ring (2)
- Screw the spike onto the rail (3)
- Add the large counter screw ring and the adjustment knob (4). Screw knob firmly in place and lock with the counter screw ring (5)
- Repeat process for all four spikes on each speaker
- Adjust the height of the spikes by turning the adjustment knob, so the speaker is resting on all four spikes.
- Tighten the small diameter rings on each spike against the rail, so the spike's position is locked in place (6)

# Stay Connected

## Connecting to your amplifier

The Gamut L series speakers are equipped with two pairs of terminals placed on the aluminium panel on the rear side of the speaker.

The lower pair is for low frequency input, and the higher pair is for the high frequency input.

Red is the positive input and White the negative input.

**It is very important that both speakers are connected in phase, meaning the positive input from each channel on the amplifier must be connected to the same input terminal on the speakers, and preferably the positive terminal,** this will assure you the right sound quality from your sound system.

**The terminals on your amplifier are normally colour coded.**

**If in doubt check your amplifier's user manual to make sure which terminal is the positive/negative output terminal.**

*Your GamuT speakers can be connected in three different ways:*

**Single-wiring (one cable for each channel)**
Using one cable for each speaker, you will have to make a connection between the high frequency input terminal, and the low frequency input terminal.

Preferably you can use a part of the same cable you use from the amplifier to the speaker.

If this is not possible, and you will have to use a lower quality cable between the inputs, we recommend you connect the cable from the amp to the tweeter input terminals.

**Instruction**: Cut an appropriate piece of cable app. 5" or 12-15 cm.

Separate the marked wire and the unmarked wire to get two separate pieces of wire, and strip app. 1" or 12-15 mm of the insulation at each end (4 ends).

Now connect the positive Low frequency input terminal to the positive High frequency input terminal using one of the premade wires.

With the second piece of pre-made wire, connect the negative Low frequency input terminal to the negative High frequency input terminal

**Bi-wiring**
**(one separate cable for each input terminal)**
Using separate cables for each pair of input terminals you have the option of lowering the coloration/smearing between the high and low frequencies that happens in transferring the signals from the amplifier to the speaker.

We recommend you use the same cable type for both the high frequency input and the low frequency input, to avoid changing the delicate balance these speaker are designed to have.

**Instruction**: Connect the two sets of cables to your speaker terminals, one cable to the high frequency input terminal and one cable to the low frequency input terminal.

**Make sure the marked wire is connected to the positive input terminals, and the unmarked wire to the negative input terminals.**

Connect the two cables to the amplifier making sure both marked wires are connected to the positive output terminal, and both unmarked wires are connected to the negative output terminal.

If your amplifier has two sets of output terminals, use one set for one of the cables and the second set of output terminals for the second pair of cables.

**Bi-amping (separate amplifiers (with separate cables) for each pair of input terminals)**
Using Separate amplifiers for each input terminal is the optimum solution if you want to assure the maximum performance of the speakers.

None of the high frequency signals will then be harmed by the high currents needed to drive the low frequency section, and an absolute maximum of performance is obtained.

**Instruction**: Connect the two sets of cables to your speaker terminals, one cable to the high frequency input terminal and one cable to the low frequency input terminal.

**Make sure the marked wire is connected to the positive input terminals, and the unmarked wire to the negative input terminals.**

Connect one of the two cables to one of the amplifiers making sure the marked wire is connected to the positive output terminal, and the unmarked wire is connected to the negative output terminal.

Now connect the second cable to the second amplifier in the same way.

We strongly recommend using two identical amplifiers to ensure perfect time and phase coherence between the high and low frequency drivers.

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# Bringing them to life

**Running in**

**WHY RUNNING IN?**
In the first hours of operation the characteristics of the materials used in your loudspeakers will change dramatically, so actually when you get your speakers they are off spec!

**A run in period therefore is essential before you evaluate the performance of your speakers.**

Letting your speakers operate at high level with a full spectrum input will get them within specifications in app. 12 hours time. (See instructions on how to do this later in this section).

Full performance of your speakers will happen after app. 2-400 Hours of use depending on the power level you drive them with.

Also time/aging is of importance as the materials used will change over time.

Under normal circumstances full performance will be met after app. 6-12 months of aging where the final condition of the materials used will be met.

After this period they will continue to perform optimally for decades, assuming the speakers are not abused or overloaded.

**Run-in Instruction:**
To not disturb you neighbours or other sensitive creatures you can do the following:

- Connect the speakers in opposing phase.
  (one speaker being connected with the positive output from the amp going to the negative input and the negative output going to the positive input, while the other speaker is connected correctly + to + and - to -)
- Move them close together, facing each other (head to head). This will assure the bass output is almost eliminated!
- Use a piece of music with a broad spectrum of energy. (lows & mids & higs) Special recordings for this purpose are available through hi-fi magazines or record shops specializing in specialty recordings etc...
- Turn up the volume until normal to high setting, while watching the excursion of the bass drivers & making sure the speakers are not overloaded.
- Leave the speakers like this for half a day or more (while at work...) and you will have a set of speakers ready to enjoy when you come home at night.

During the next period of time the speakers will improve further while being used.

In the next 6-12 moths the material used in the drive units and the cabinet will go through an aging process that basically never stops, but the materials will be close to their final specification after app. 12 months of aging, so there will be lot of good things coming worth waiting for!

# How to drive them

**Caution on choosing and using the electronic equipment:**

**Choosing your amp:**
Loudspeakers are current driven devices, so under normal circumstances you should choose and get the best performance from amplifiers with high current capability.

To give you the performance we designed the GamuT speakers to have, you will need a power amp with frequency linear and low output impedance, which normally means using well designed high power solid state amps.

We have used the GamuT D200MKIII & M200MKIII in combination with the D3 Pre-amp during the design process of the L speakers. Using the D200 MKIII/M200MKII & the D3 amps in combination with the L Speakers will give you the ultimate GamuT sound experience.

Some high quality valve amps will probably be capable of driving the GamuT speakers with excellent performance, but we will leave that for you to find out.

**Using your amp:**
Loudspeakers are rarely damaged by high-power signals, but by clipped signals.

Therefore, it is always preferable to use a large and powerful amplifier with lots of headroom rather than a small amplifier, which will start distorting at much lower output levels.

A distorted signal will multiply the input to your high frequency section and cause damage to your high frequency drive unit and high frequency crossover network, so never play your loudspeaker at higher levels than where the sound is clear and undistorted.

The D200 MK II & M200 MK III has all the power you need to drive the L speakers to their optimum

# Location, location!

**Why is location critical?**
Placing your speakers correctly in your listening room is extremely essential to get the optimum sound experience.

Main reason is that the listening room is an acoustic resonator and reflector, and these resonances and reflections (off the walls/floors and ceiling), vastly influences your listening experience.

By positioning your speaker correctly relative to the boundaries of the room assures you a listening "window" where you will receive as much undisturbed sound as possible, thereby allowing your hearing to sort out the good signals from the distorted reflected signals.

**Minimum recommendations for positioning:**
- Please note: The minimum distance between the speakers and the minimum listening distance is the same.

- We recommend the following minimum listening distances: L3: 8' or 2,5 m. L5: 10' or 3 m. and the L7: 12' or 3,5 m
- Distance from the side wall should be as big as possible, and a minimum of app. 30" or 75 cm. (measured from the centre of the tweeter)
- Distance from the rear wall must be a minimum of app. 25" or 65 cm again measured from the centre of the tweeter

### Toe-in (Or NOT to toe-in):

We have designed our speakers to be listened to off axis. There are a few good reasons for that.

- On the axis of a speaker you will find most diffraction effects of the cabinet and drivers, as most diffractions (the really bad ones) originate from symmetric structures around the drivers (cabinets, frames etc.)
- On axis the drive units will have the highest distortion numbers. The reason is that the driver is directional and that distortion is at higher frequencies, so the directivity kills most of the distortion of the drivers if you go off axis…so why not?
- The only reason for toeing the speakers towards the listening position is if you have problems with too many reflections off the sidewalls, then a moderate toe-in can help

### Tilting (Optimizing to your listening height):

All our GamuT Speakers are designed to have a listening window that is pointing a little upwards.
(We assume you are either sitting in a chair listening or walking around in your living room while listening….)
This means you should always be at a listening height where your ears are at least on the same height as the tweeter or a little above, again assuming the speaker is not tilted.
If your listening position is relatively low, you should use your spikes to tilt the speaker a little forward.
Only if you are standing up listening, or have a very high listening position, the speakers will need to be angled backwards.

## NOW START TO PLACE YOUR SPEAKERS

by using the instructions below!

### How to calculate your speakers & listening position:

In the following example we assume you will position you speakers on the short wall in the room.
This is not always the best choice, but the guide lines can be used in the same way if you choose to set up your speakers on the longest wall of your room.

1. Measure your room dimensions (Width and Length) and write down the measures Example: W: 5,20 & L: 6,40
2. Divide the W & L measures with 5 and write that number down. This example: W5=1,04 & L5=1,28
3. Divide the W & L measures with 7 and write that number down. This example: W7=0,74 & L7=0,91
4. Divide the W & L measures with 9 and write that number down. This example: W9=0,58 & L9=0,71
   Now with the recommendations for minimum distances to side & rear walls in mind you can derive a good starting position for you speaker.
   We assume you have bought the L5, so the minimum listening distance is 3,0m.
   The distance from sidewalls must be minimum 0.75m so the maximum spacing is W - 2 x "minimum wall distance" = 5,20-2x0.75 = 3,70 and minimum 3m. which is the same as the minimum listening distance.
5. Now find the calculated figures of W5/W7/W9 closest to or bigger than 0.75m W7:0,74m or W5:1,04m meters from the wall
6. Now calculate the minimum listening distance & spacing using W7&W5: W(5,20)-2xW5(1,04)= 3,12 Or W(5,20)-2xW7 (0,74)=3,72. Choose the wider position, and if this causes problems with the 3D imaging use the guidelines in the "tuning the sound character" section.
7. You can now choose the speaker distance from the rear wall, and as all the measures of L5/L7/L9 are bigger than the recommended minimum distance from the back wall, we recommend you start out with the minimum distance possible, in this case L9(0,71 cm), (measured from the centre of the tweeter).
8. Now calculate your listening position using the following formula:
   Distance from the back wall(L9) + spacing x 0.866= 0.71 + 3,72 x 0.866= 3,93. The listening position will then be the first multi plum of L5/L7/L9 that is closest to and larger than 3,93m.
   In this case: 6x0.71=4,26, or the second option 5x0.91=4,55, or the third option 7x0.71=4,97.
   (measured from the wall behind the speakers.)
9. If you prefer to sit farther away just keep on multiplying L5/L7/L9, to find the "optimum" listening positions
10. Now setup your speakers (without toe-in) and tilt them to fit you listening height (see instruction above)

### Tuning the sound character (Optimizing the listening position and speaker positioning)

*After you have run in the speakers, you can use the following guide lines to find the optimum positions.*

- By listening to the speakers you should be able to determine if the overall performance and frequency balance is ok. If not use the following guidelines to correct the sound character:
- If the bass character is too weak move the speaker closer to either the back wall or the side walls. If you have too much bass move the speakers away from the side walls / back wall. 4" or 10 cm. will make quite a difference.
- If you want to optimize on the 3D-imaging (height depth width) you will need to work on limiting the high frequency energy being reflected. There are two possibilities:
- 1: Move the speakers away from the side walls and the back wall
- 2: If moving the speakers away from the walls/ back wall ruins the bass performance a solution can be to dampen or diffuse the reflections of the side walls and the back wall, suited materials can probably be bought at your dealer or at specialist shops.
- If you can not find the perfect compromise a new listening position is probably a solution. Try moving your head a little back or a little forward, to determine if the sound changes, if so you should move your listening position and start over with the positioning of the speakers if needed.
- As you have probably found out by now this process can be relatively time consuming, but we assure you it is worth the effort! HAPPY HUNTING.

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# Technical Specifications:

## L3:

| | |
|---|---|
| High frequency driver | 38mm (1,5") ring radiator, SD-2 neodymium motor, non-resonant aluminium chamber, multiple chamber low compression design, machined aluminum faceplate and stainless steel phase plug |
| Low/mid frequency driver | Two 180mm (7") bass/midrange, powerful vented SD-1 motor, sliced paper cone, low loss linear suspension, low compression aerodynamic aluminium chassis, spike-mounted in cabinet |
| Crossover network | Multi order Non-Resonant Linked Impulse (NRLI) technology by GamuT, Electromagnetic and circuit optimized bi-level board layout |
| Cabinet | High density fiber board featuring internal skeleton braces and dampened with bitumen. Realwood veneer with eleven layers of hand polished high-gloss lacquer |
| Frequency response | 42 – 60.000Hz |
| Sensitivity | 88dB @ 2,83V |
| Impedance | 6 ohms nominal, minimum 4,6 ohms @ 200Hz |
| Recommended power | 50-300W |
| Input connections | High-quality, gold plated WBT binding posts with 4mm plugs. Bi-wire and bi-amp capability |
| Cabinet dimensions (HxWxD) | 380 x 200 x 380mm (15 x 7.9 x 15") |
| Weight | 15 kg (34lbs) |

## L5:

| | |
|---|---|
| High frequency driver | 38mm (1,5") ring radiator, SD-2 neodymium motor, non-resonant aluminium chamber, multiple chamber low compression design, machined aluminum faceplate and stainless steel phase plug |
| Low/mid frequency driver | Two 180mm (7") bass/midrange, powerful vented SD-1 motor, sliced paper cone, low loss linear suspension, low compression aerodynamic aluminium chassis, spike-mounted in cabinet |
| Crossover network | Multi order Non-Resonant Linked Impulse (NRLI) technology by GamuT, Electromagnetic and circuit optimized bi-level board layout |
| Cabinet | High density fiber board featuring internal skeleton braces and dampened with bitumen. Realwood veneer with eleven layers of hand polished high-gloss lacquer |
| Frequency response | 32 – 60.000Hz |
| Sensitivity | 89dB @ 2,83V |
| Nominal impedance | 4 ohms nominal, minimum 2,8 ohms at 200Hz |
| Recommended power | 50-300W |
| Input connections | High-quality, gold plated WBT binding posts with 4mm plugs. Bi-wire and bi-amp capability |
| Cabinet dimensions (HxWxD) | 1150 x 200 x 430mm (45.3 x 7.9 x 16.9") |
| Weight | 39 kg (88.4lbs) |
| Stands | Stainless steel spikes |

## L7:

| | |
|---|---|
| High frequency driver | 38mm (1,5") ring radiator, SD-2 neodymium motor, non-resonant aluminium chamber, multiple chamber low compression design, machined aluminum faceplate and stainless steel phase plug |
| Mid frequency driver | 180mm (7") bass/midrange, powerful vented SD-1 motor, sliced paper cone, low loss linear suspension, low compression aerodynamic aluminium chassis, spike-mounted in cabinet |
| Low frequency driver | 2 pcs 180mm (7") bass/midrange, powerful vented SD-1 motor, sliced paper cone, low loss linear suspension, low com pression aerodynamic aluminium chassis, spike-mounted in cabinet |
| Crossover network | Interlinked multi order Non-Resonant Linked Impulse (NRLI) technology by GamuT, electromagnetic and circuit optimized electrically separated board layout |
| Cabinet | High density fiber board featuring internal skeleton braces and dampened with bitumen. Realwood veneer with eleven layers of hand polished high-gloss lacquer |
| Frequency response | 27 – 60.000Hz |
| Sensitivity | 90dB @ 2,83V |
| Nominal impedance | 4 ohms nominal, minimum 2,6ohms at 220 Hz |
| Recommended power | 50-300W |
| Input connections | High-quality, gold plated WBT binding posts with 4mm plugs. Bi-wire and bi-amp capability |
| Cabinet dimensions (HxWxD) | 1280 x 200 x 430mm (50.4 x 7.9 x 16.9") |
| Weight | 44 kg (99,7lbs) |
| Stands | Stainless steel spikes |

# Many years of enjoyment

**Maintenance:**

Clean the cabinet by using a soft and dry cloth. If the cabinet is very dirty, use a small amount of all-purpose cleaner like washing-up liquid diluted with water. Use as little fluid as possible to avoid the risk of spilling on the membranes.

Do not clean the speaker units' membranes; they are very sensitive to liquid. You can remove dust carefully with a soft dry cloth.

The speaker grille can be vacuum-cleaned when it has been removed from the cabinet.

# How we do business

**The famous GamuT quality:**

GamuT originally started by selling amplifier equipment to recording studios where everything has to turned on day and night, year after year, while performing flawlessly.

The amplifiers are built with hard professional use in mind, and the development of your new speakers has followed this rigid rule of thinking. As long as you don't overload the speakers or subject them to dampness or other physical damage, they will perform without complaining.

Many hours of development work and intensive listening have gone into these speakers even before they were produced.

Skilled craftsmen have carefully fettled the cabinets, so they are acoustically tuned and have the same silky mirror surface as a grand piano.

Only the highest quality materials and components have been used to ensure the best possible sound will be available in your home for many, many years.

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# Your comments are always welcome

We welcome any opinions that you may have, both positive and negative;
this helps us to produce even better products in the future.

Therefore, if you do have anything you wish to tell us,
please write to your national GamuT distributor or to us at the following address:

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