

Documentation/Installation



cerasonar
invisible speakers

cerasonar1520 fit

cerasonar 2525 fit

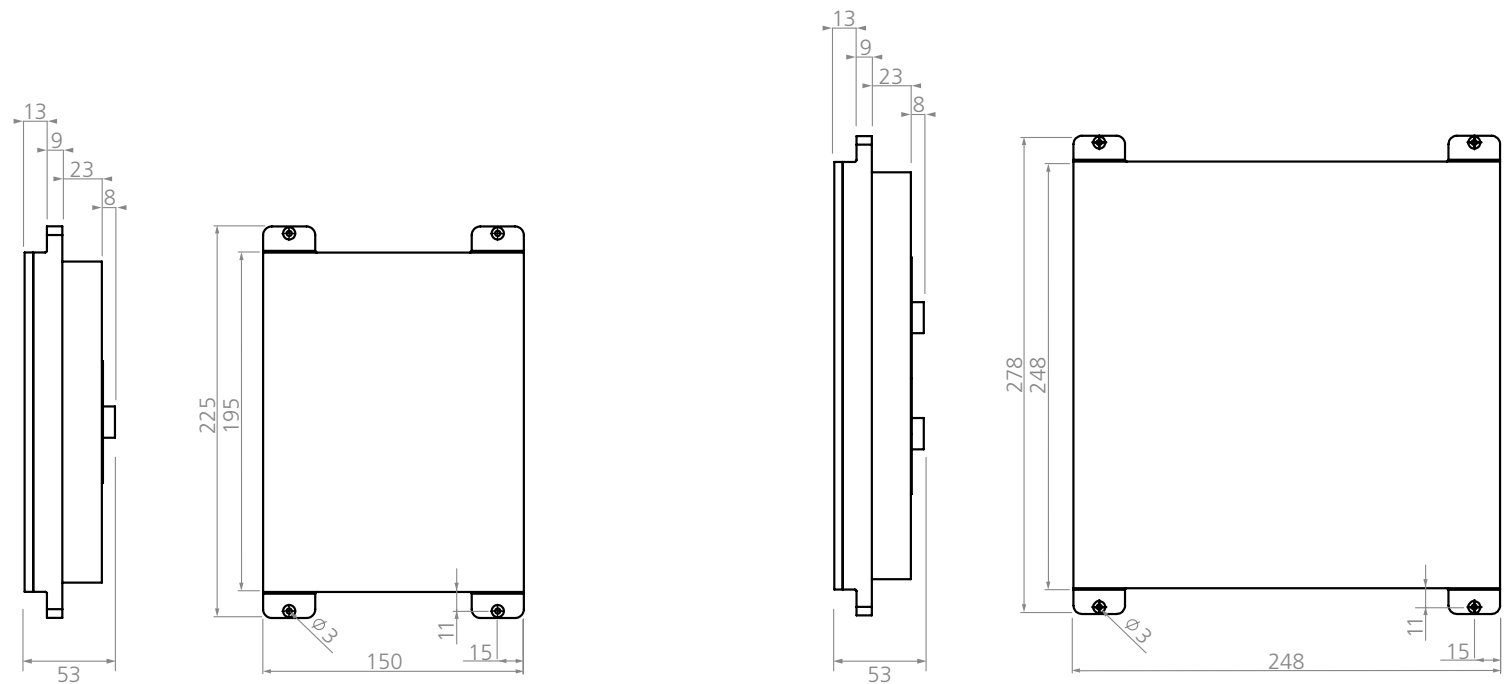
Product

The cerasonar fit series is packaged in a very small form factor, allowing the installation in limited space; its entry level price point makes it particularly indicated for large volumes projects. The installation is extremely straightforward: it is required to make a cutout in the drywall panel, screw the speaker and plaster it over.

Technical specification

Power rating rms (max)	25 w RMS / 50 w max	50 w RMS / 100 W max
Impedance	8 ohms	4 ohms
Driver	1 exciter	RMS / 2 exciters
Frequency range	100 - 18.000 hz*	100 - 18.000 hz*
Dispersion range	180° x 180° h./v.	180° x 180° h./v.
max SPL	97 db	100 db
Dimensions	15 x 22,5 x 5,3 cm	15 x 22,5 x 5,3 cm
Installation cut out	19,5 x 15	24,8 x 24,8
Installation type	1-layer 12,5 mm plasterboard only	1-layer 12,5 mm plasterboard only
Features	for humid enviroments	for humid enviroments, single-stereo mode (1/2power)
Substructure profile spacing	min 20 cm, put the speaker in the middle of the plasterboard to enhance bass performance	min 30 cm, put the speaker in the middle of the plasterboard to enhance bass performance
Weight	0,3 kg	0,6 kg

CAD details



Installation video



<https://youtu.be/FCxIThNmXM>



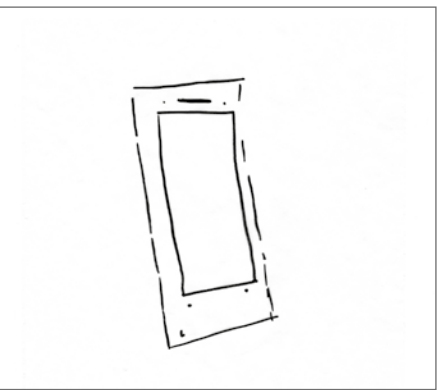
<https://youtu.be/E6DtBqxx-ag>

Accessories

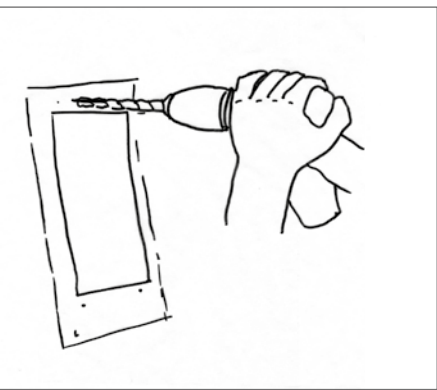
cerasonar protection unit 25 w
cerasonar protection unit 50 w
2x cerasonar protection unit 25 w for single stereo mode

Warranty period

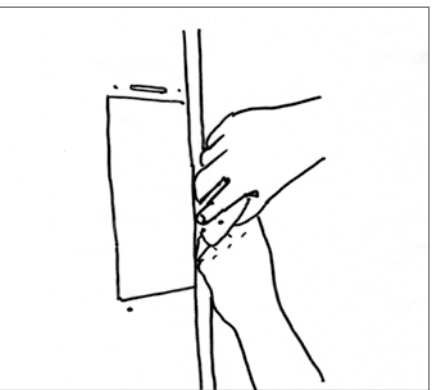
Cerasonar grants a 5-year functional warranty on speakers if the installation and setup protocol has been signed and registered with us. A cerasonar Protection Unit or a DSP with limiter and high pass filter at 80 hz / 12 dB is mandatory. Improper use or overloading may void the warranty.



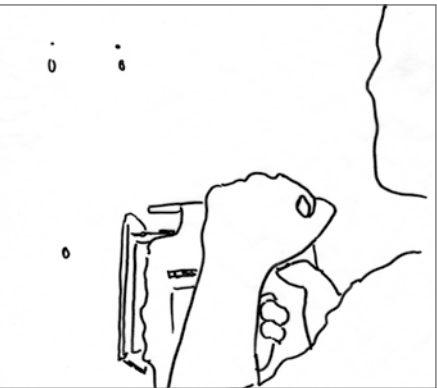
Check the construction for vibration noise, make sure the cavity has proper insulation. Attach the template on the wall or ceiling with tape



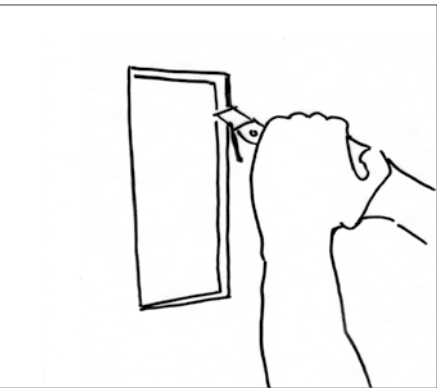
Drill four holes, these are intended for easy installation later. Drill size: 4 mm



Mark the contours with a knife



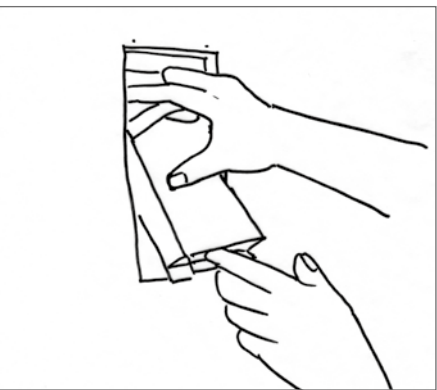
Cut out the marked contours with an appropriate tool



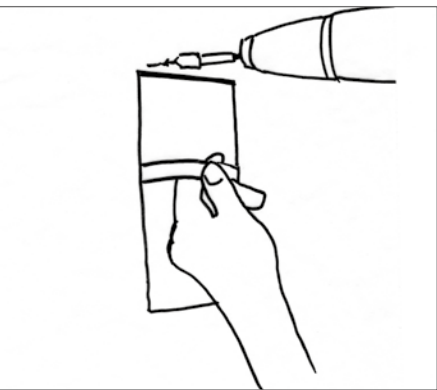
Smooth the edges and cut them by 45° furthermore moisten the edges for better joint with the filler



Strip the wire by 10 mm. Connect the speaker cable to the speaker, be aware of the polarity



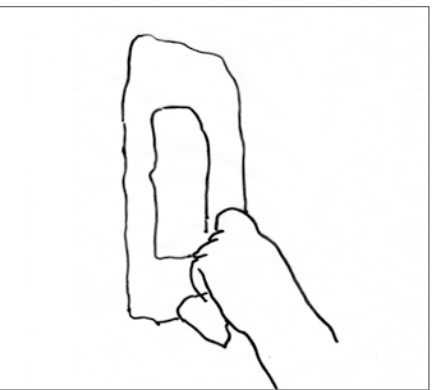
Insert the speaker, make sure there is no strain between the underlying insulation and speaker.



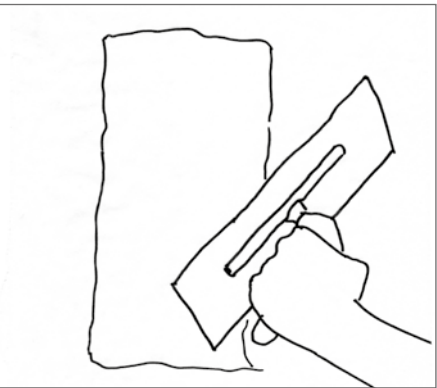
Use the delivered screws and tighten them carefully

ATTENTION: Test the speaker

Remove the installation strip

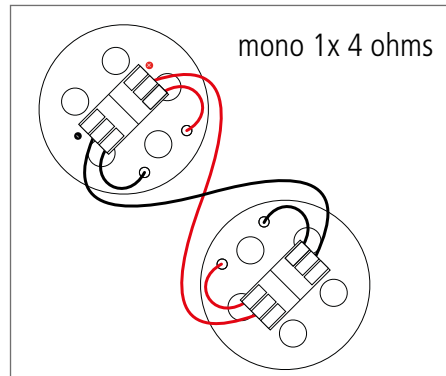


Use mesh tape in the plastering process. We recommend to use a flexible filler, e.g. Knauf Uniflott or Ardex 828

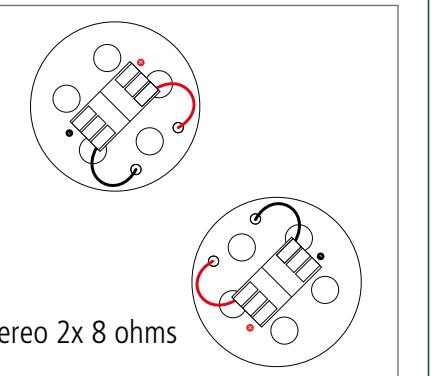


Up to 2mm of plaster can be applied Before using the speaker, let the plaster dry off. More information in the FAQ

cerasonar connection mono



cerasonar connection single-stereo





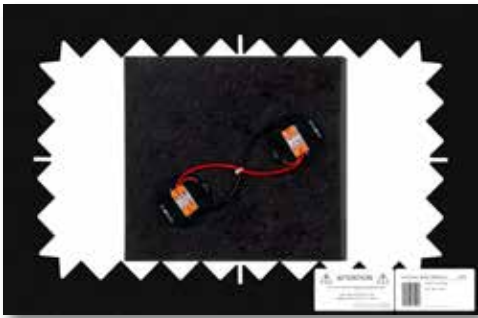
cerasonar 4062 ref

cerasonar 6062 ref

Product

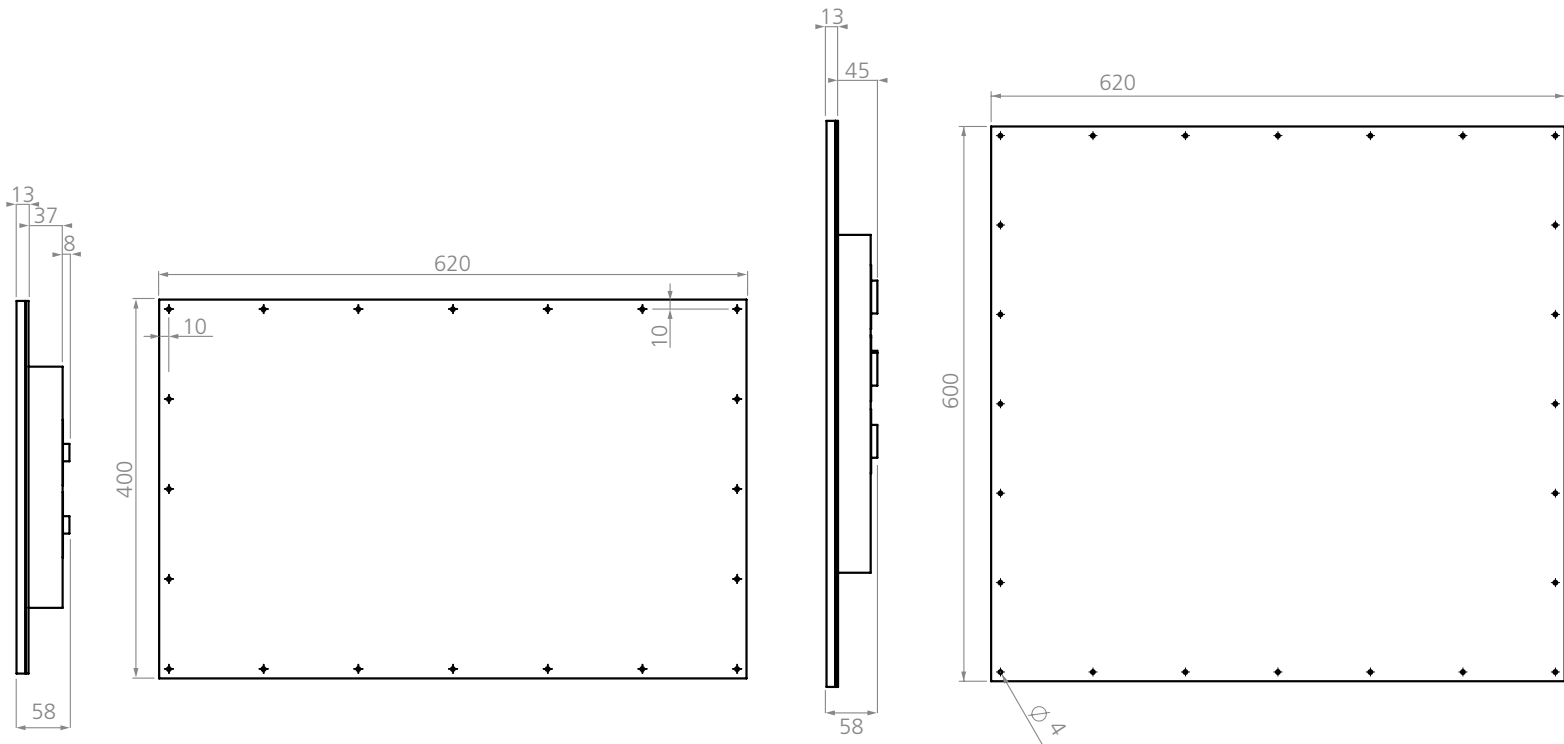
The cerasonar reference series is based on our patent pending Mode Control Correction (MCC) system, which ensures a natural sound due to proper damping of mode interferences. A great step to deliver premium sound quality. The cerasonar reference series panels are designed to be screwed directly on the studs, through the pre-drilled holes in every side, replacing the standard drywall panels or in solid walls by using the specific installation frame.

Technical specification



Power rating rms (max)	50 w RMS / 100 w max	100 w RMS / 200 w max
Impedance	4 ohms / 2x 8 ohms	8 ohms / 2x 4 ohms
Frequency range	70 - 18.000 hz*	60 - 18.000 hz*
Dispersion range	180° x 180° h./v.	180° x 180° h./v.
max SPL	105 db	108 db
Dimensions	40 x 62 x 5,8 cm	60 x 62 x 5,8 cm
Installation cut out	30 x 52 cm	50 x 52 cm
Drywall	1- or 2-layer 12,5 mm plasterboard	1- or 2-layer 12,5 mm plasterboard only
Features	single stereo mode(1/2 power), high SPL	single stereo mode(1/2 power),high SPL
Weight	1,2 kg	2,1 kg

CAD details



Installation video



<https://youtu.be/CB2ChPEh9WE>



<https://youtu.be/d6QjNBZLgM>

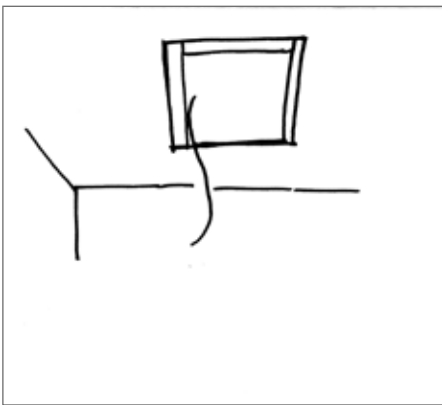
Accessories

- cs frame for solid walls and in-situ concrete
- cs backbox
- cs protection unit pro 50 / 100 w
- 2x cs protection unit pro 25 w for single stereo mode

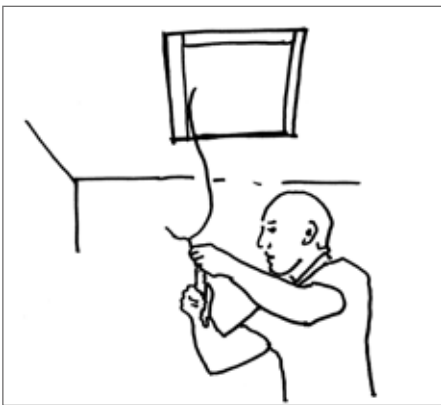
- cs frame for solid walls and in-situ concrete
- cs backbox
- cs protection unit pro 50 w / 100 w
- 2x cs protection unit pro 50/100 w for single stereo mode

Warranty period

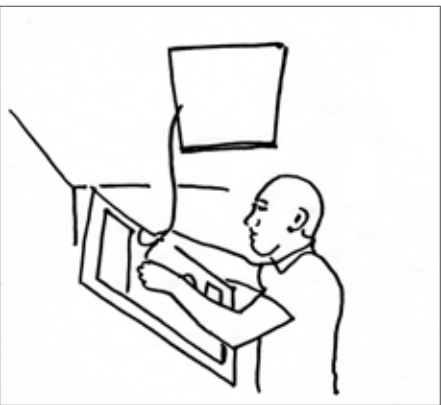
Cerasonar grants a 5-year functional warranty on speakers if the installation and setup protocol has been signed and registered with us. A cerasonar Protection Unit or a DSP with limiter and high pass filter at 80 hz / 12 dB is mandatory. Improper use or overloading may void the warranty.



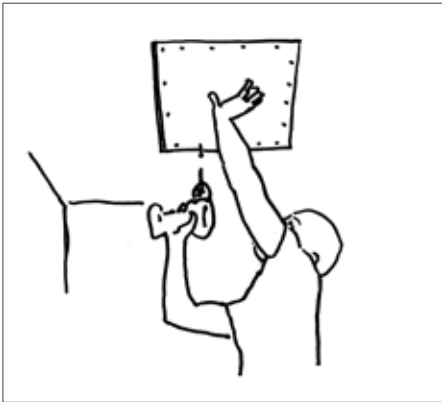
Check the construction for vibration noise, make sure the cavity has proper insulation. Prepare the wall or ceiling to fit in the speaker.



Strip the wire by 10 mm

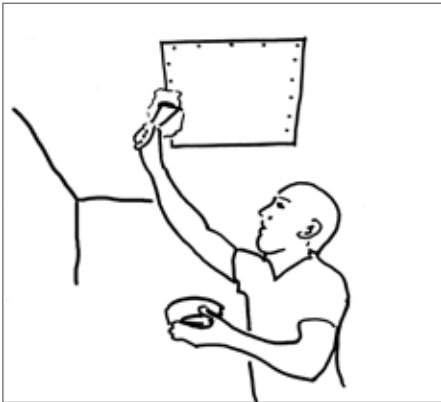


Connect the speaker cable to the speaker, be aware of the polarity

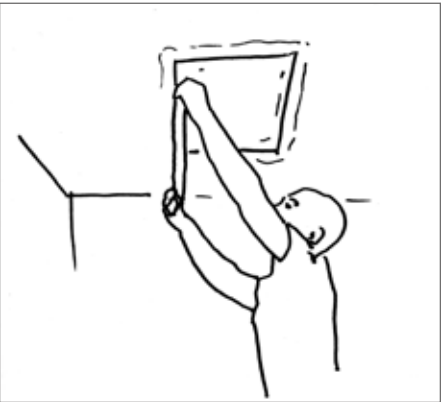


Insert the speaker, make sure there is no strain between the underlying insulation and speaker. Screw through all pre-drilled holes. The heads of the screws should penetrate about 1 mm into the panel material.

ATTENTION: Test the speaker!



Fill in plaster, we recommend to use a flexible filler, e.g. Knauf Uniflott or Ardex 828



Use mesh tape in the plastering process.

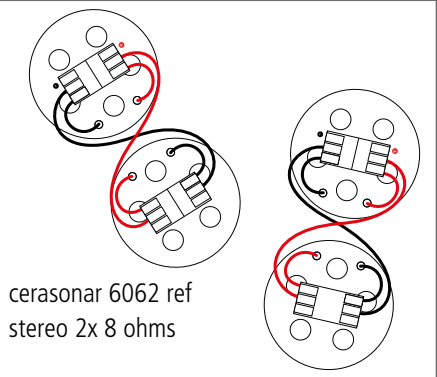
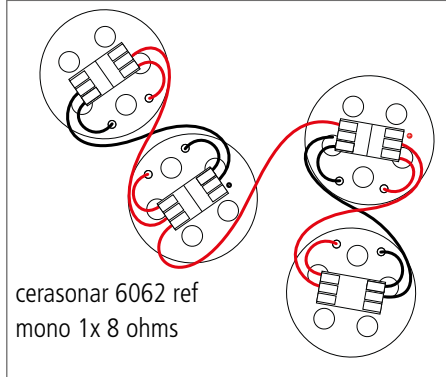
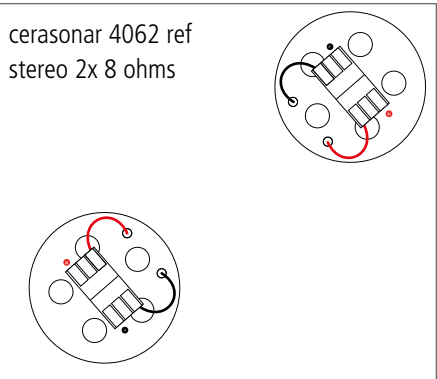
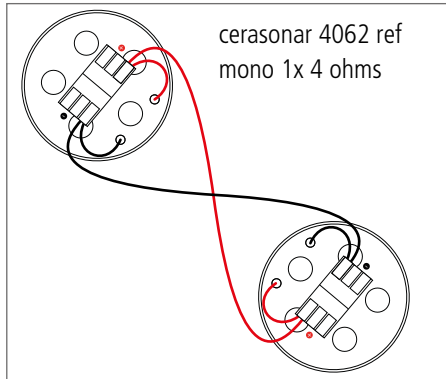


Up to 2mm of plaster can be applied, thus, Q3 and Q4 wall / ceiling quality levels are easily possible. ATTENTION: Before using the speaker, let the plaster dry off

More information about the installation process in our FAQ section.

cerasonar connection mono

cerasonar connection single-stereo





cerasonar 9062 ulti

Product

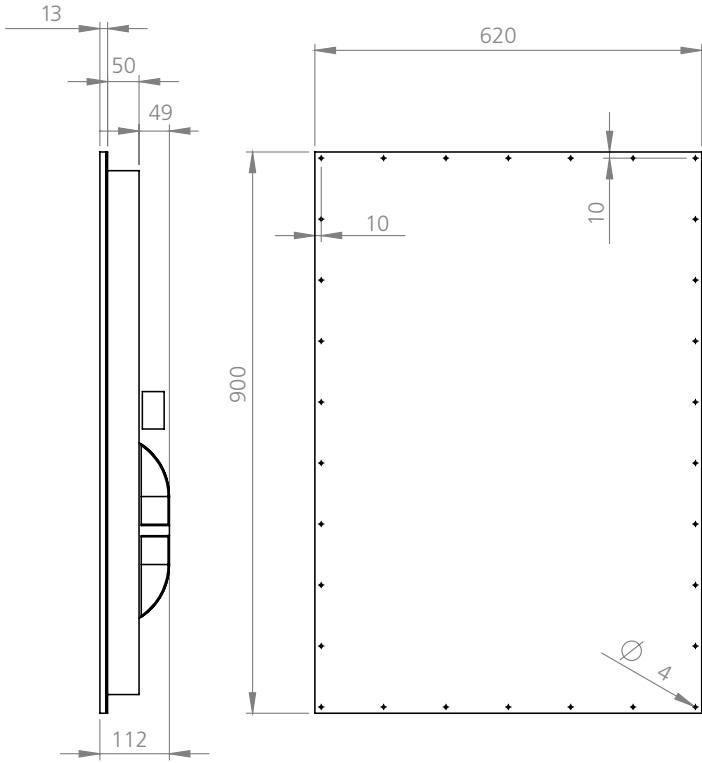
The cerasonar ultimate is a fullrange panel, it includes a 12” bass driver. It can be connected to any standard amplifier without the need of a protection unit or additional sub. The cerasonar ultimate series panels are designed to be screwed directly on the studs, through the pre-drilled holes in every side, replacing the standard drywall panels.



Technical specification

Power rating rms (max)	100 w RMS / 200 w max
Impedance	4 ohms
Driver	1 bass driver, 2 excitors
Frequency range	35 - 18.000 hz*
Dispersion range	180° x 180°
max SPL	105 db
Dimensions	90 x 62 x 11,2 cm
Installation Cut Out	84,5 x 56,5 cm
Drywall	1- or 2-layer 12,5 mm plasterboard
Features	protection inbuilt
Weight	9,5 kg

CAD details



Installation video



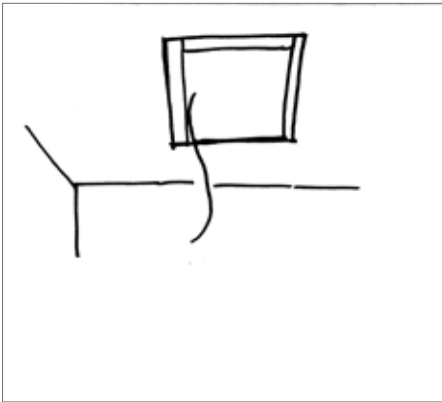
<https://youtu.be/8mvNpZrN--M>

Accessories

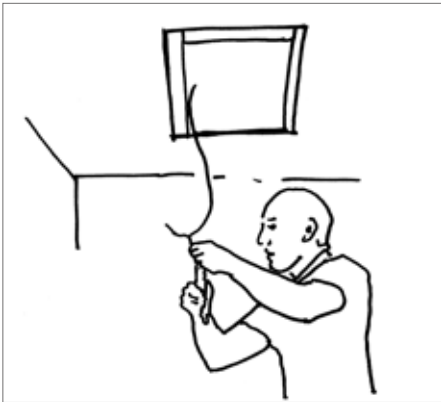
cerasonar frame for solid walls and in-situ concrete

Warranty period

Cerasonar grants a 5-year functional warranty on speakers if the installation and setup protocol has been signed and registered with us. A DSP with limiter is mandatory. Improper use or overloading may void the warranty.



Check the construction for vibration noise, make sure the cavity has proper insulation. Prepare the wall or ceiling to fit in the speaker.



Strip the wire by 10 mm

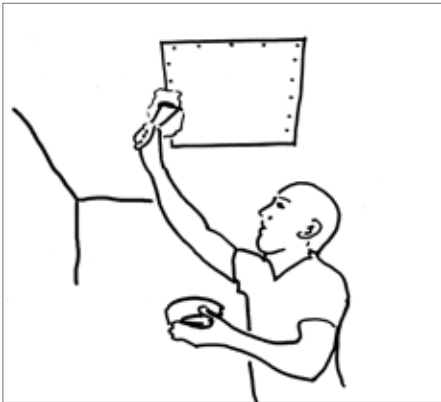


Connect the speaker cable to the speaker, be aware of the polarity

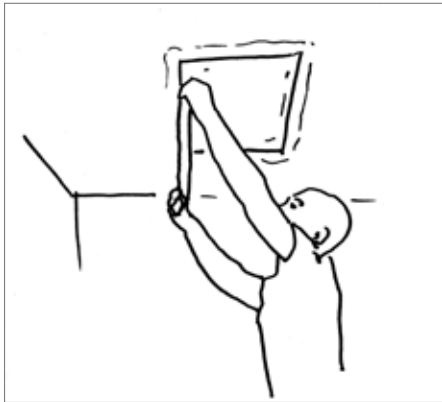


Insert the speaker, make sure there is no strain between the underlying insulation and speaker. Screw through all pre-drilled holes. The heads of the screws should penetrate about 1 mm into the panel material.

ATTENTION: Test the speaker!



Fill in plaster, we HIGHLY recommend to use a flexible filler, e.g. Knauf Uniflott or Ardex 828



Use mesh tape in the plastering process



Up to 2mm of plaster can be applied, thus, Q3 and Q4 wall / ceiling quality levels are easily possible. ATTENTION: Before using the speaker, let the plaster dry off

More information about the installation process in our FAQ section.



cerasonar 6062 sub

cerasonar 10040 sub

cerasonar 13362 sub

Product

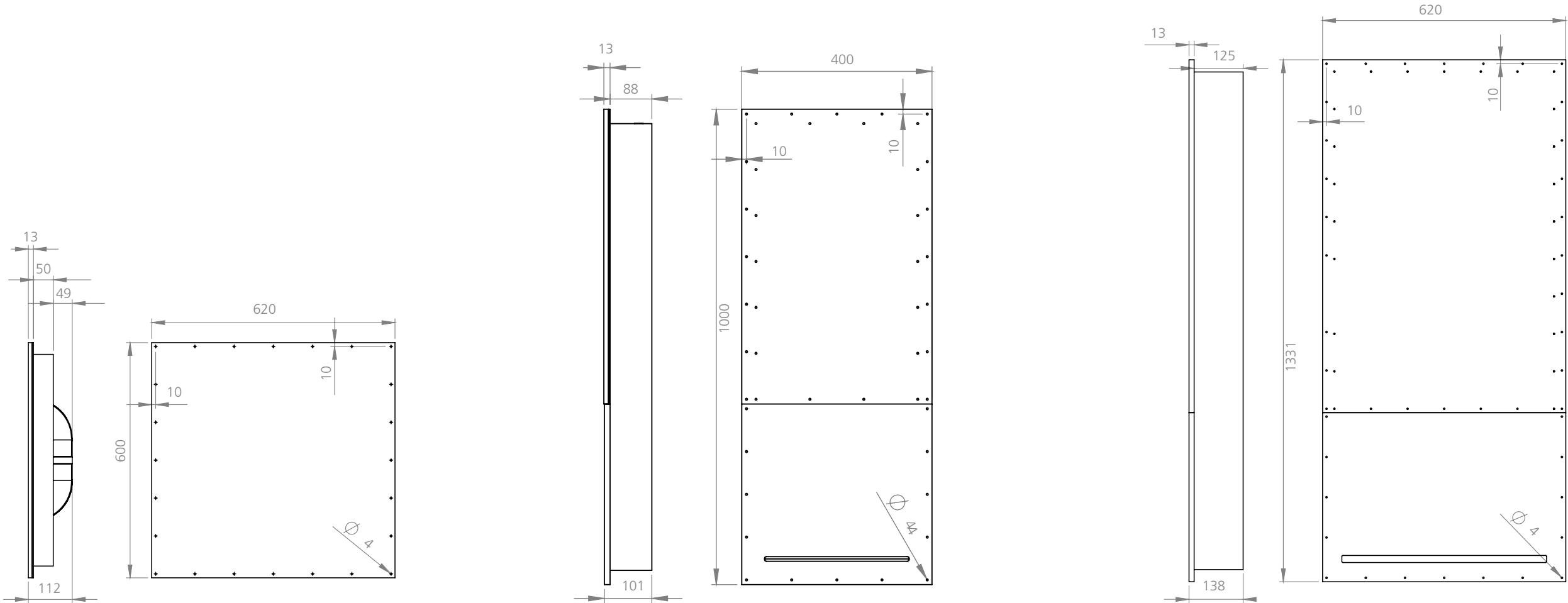
The cerasonar subwoofers are the natural complement of our speakers. The cerasonar 6062 sub can be easily installed in ceiling and walls, and is conceived to provide an extra bass kick for every invisible multiroom music projects. The cerasonar 10040 sub and 13362 sub are the ideal choice for bass demanding applications like home cinema. They have an integrated backbox to ensure consistent quality in every installation situation.

Technical specification



Power rating rms (max)	120 w	150 w	250 w
Impedance	4 ohms	4 ohms	4 ohms
Frequency range	35 – 150 hz	35 – 150 hz	25 – 150 hz
Dispersion range	hemispherical	hemispherical	hemispherical
max SPL	107 db	108 db	111 db
Dimensions	60 x 62 x 11,2 cm	100 x 40 x 10,1 cm / vent: 10 x 304 mm	133 x 62 x 12,5 cm vent: 18 x 522 mm
Installation cut out	50 x 52 cm	95,5 x 34,5 cm	127,5 x 56,5 cm
Drywall	1- or 2-layer 12,5 mm plasterboard	1- or 2-layer 12,5 mm plasterboard	1- or 2-layer 12,5 mm plasterboard
Weight	5 kg	10 kg	25 kg

CAD details



Installation video



<https://youtu.be/qydAmWyx2JA>

Accessories

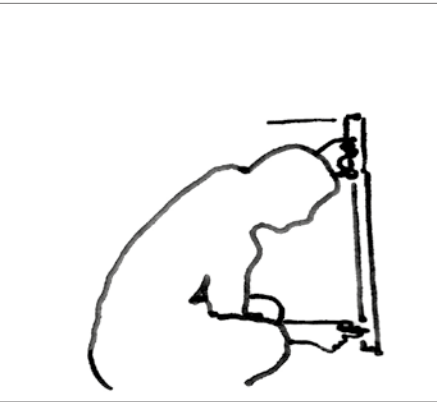
cerasonar frame for solid walls and in-situ concrete

cerasonar frame for solid walls and in-situ concrete

cerasonar frame for solid walls and in-situ concrete

Warranty period

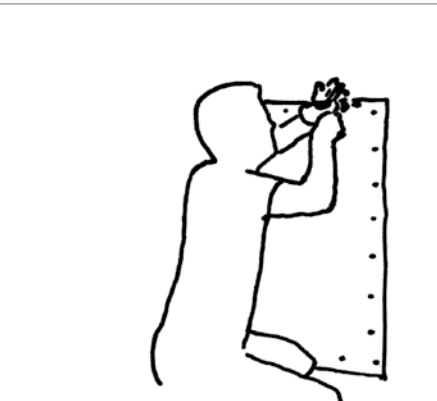
Cerasonar grants a 5-year functional warranty on speakers if the installation and setup protocol has been signed and registered with us. A DSP with limiter is mandatory. Improper use or overloading may void the warranty.



Check the construction for vibration noise, make sure the cavity has proper insulation. Prepare the wall or ceiling to fit in the speaker.



Strip the wire by 10 mm. Connect the speaker cable to the speaker, be aware of the polarity

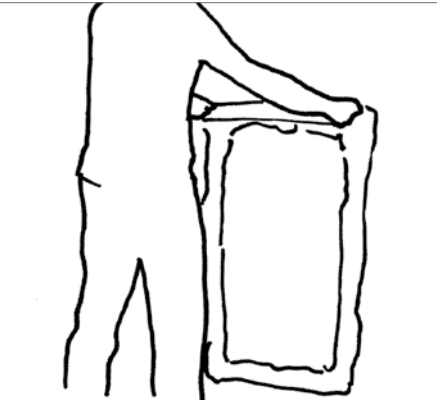


Insert the speaker, make sure there is no strain between the underlying insulation and speaker. Screw through all pre-drilled holes. The heads of the screws should penetrate about 1 mm into the panel material.

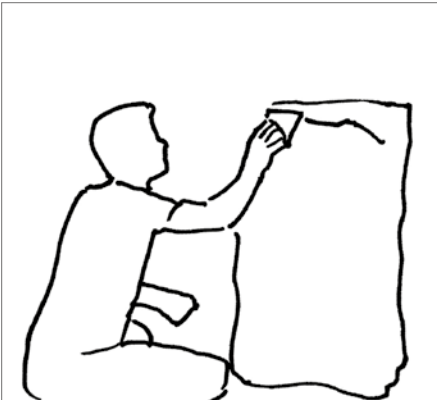


Fill in plaster, we HIGHLY recommend to use a fl exible filler, e.g. Knauf Unifl ott or Ardex 828

ATTENTION: Test the speaker!



Use mesh tape in the plastering process



Up to 2mm of plaster can be applied, thus, Q3 and Q4 wall /ceiling quality levels are easily possible.

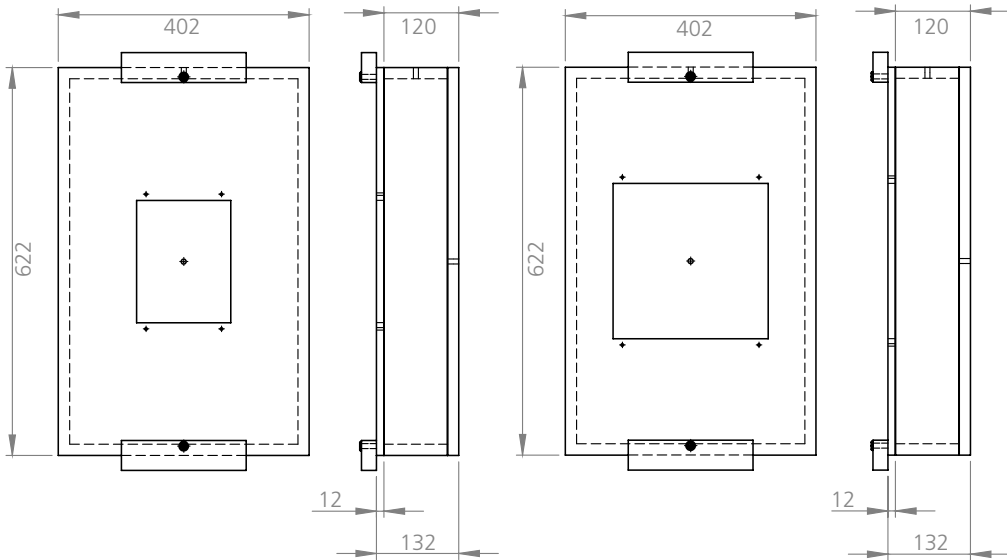
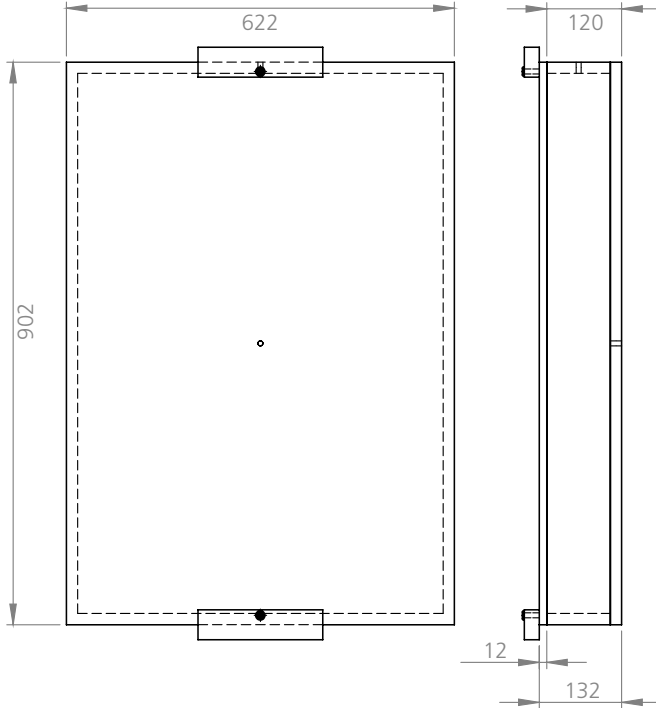
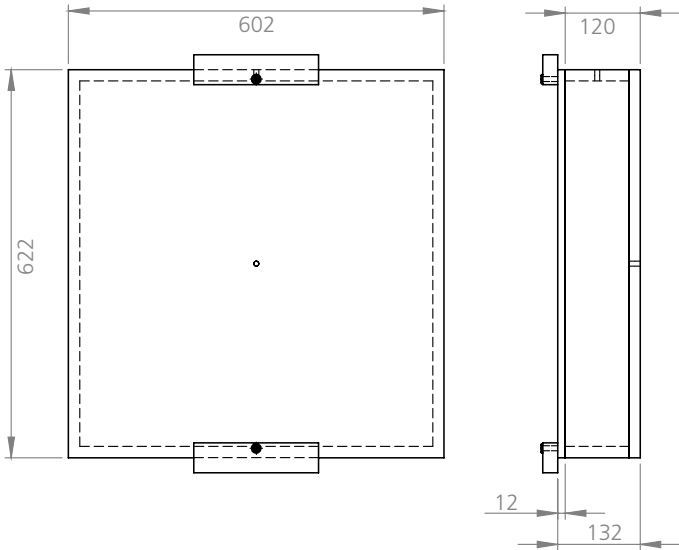
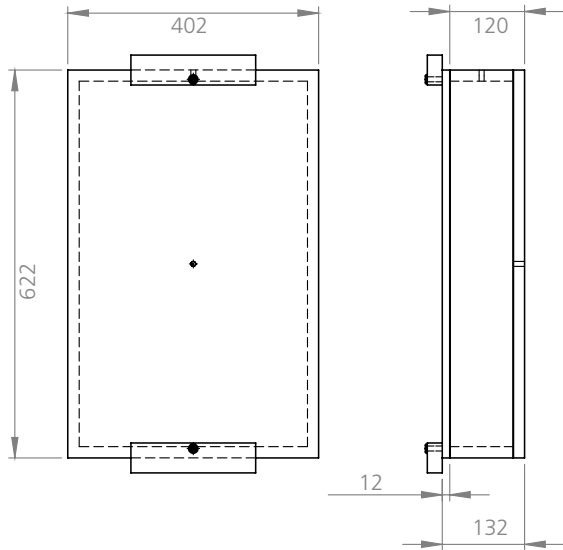
ATTENTION: Before using the speaker, let the plaster dry off More information about the installation process in our FAQ section.

Product	cerasonar frame 4062	cerasonar frame 6062
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These frames allow the installation of our invisible loudspeakers into solid wall constructions. The frame of plywood is installed into a created niche. The installation material includes the insulating material as a part of the delivered package. Can be used for in situ concrete construction as well

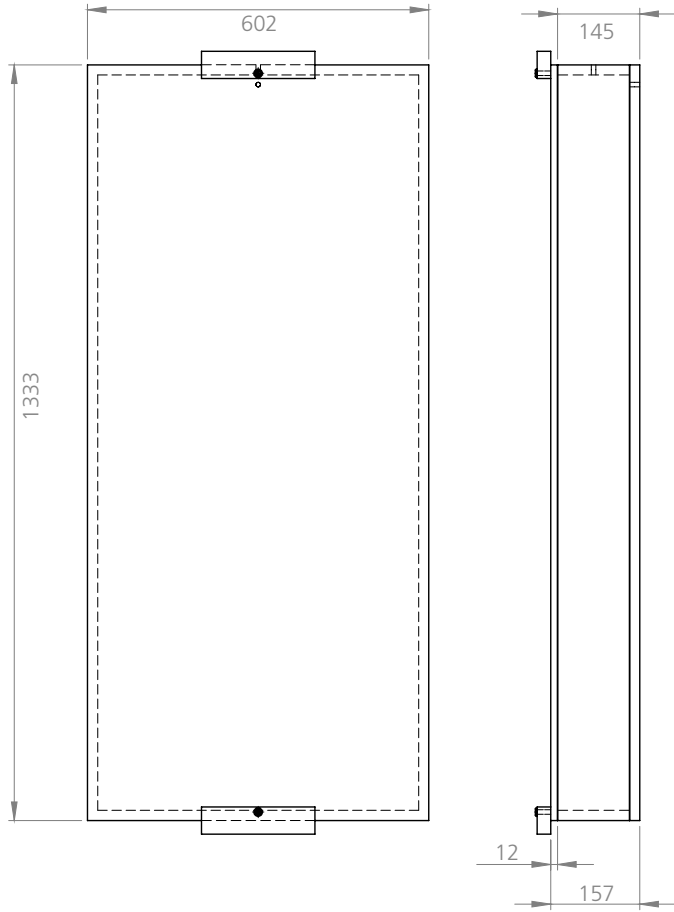
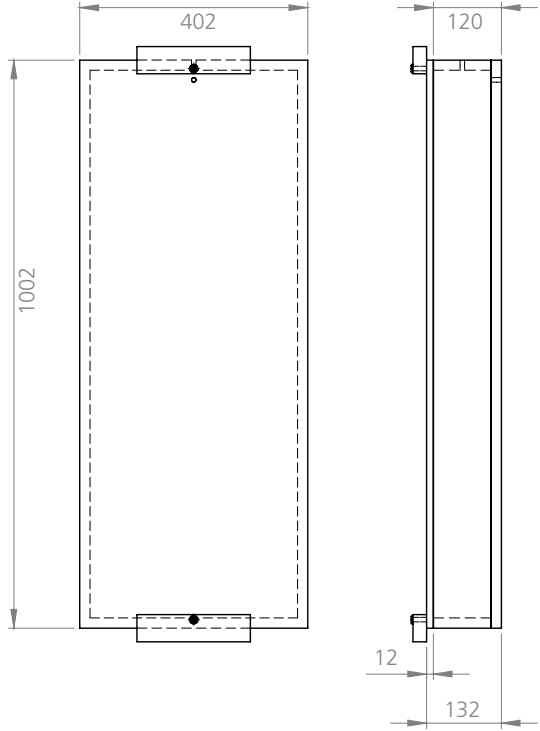
Dimensions			cerasonar frame 9062	cerasonar frame 1520 / 2525
Size	40,2 x 62,2 x 12 cm	60,2 x 62,2 x 12 cm	90,2 x 62,2 x 12 cm	60,2 x 62,2 x 12 cm
Installation cut out	42,0 x 64,0 x 13 cm	62,0 x 64,0 x 13 cm	92,0 x 64,0 x 13 cm	62,0 x 64,0 x 13 cm
Weight	2,5 kg	3,7 kg	5,5 kg	3,7 kg

CAD details

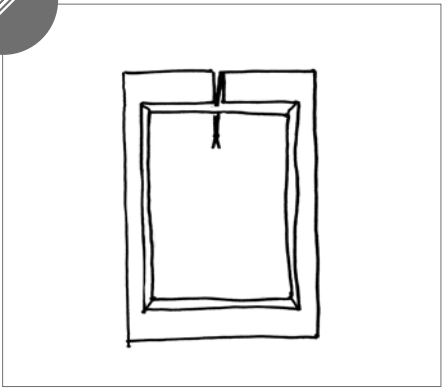


Product	cerasonar frame 10040 sub	cerasonar frame 13362 sub
Dimensions		
Size	100,2 x 40,2 x 12 cm	133,2 x 62,2 x 15 cm
Installation cut out	102,0 x 42,0 x 13 cm	135 x 64,0 x 16 cm
Weight	3,9 kg	7,2 kg

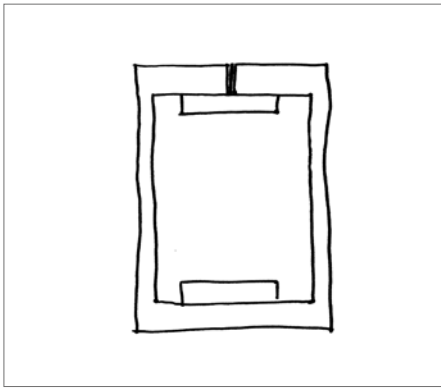
CAD details



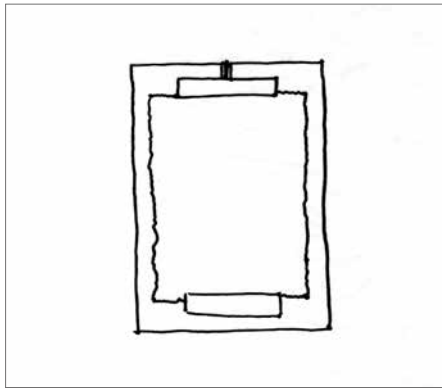
Warranty period	Cerasonar grants a 5-year functional warranty.
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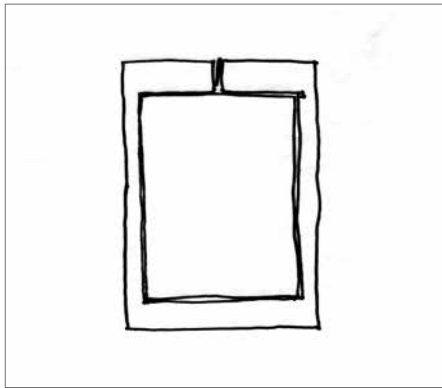
create recess and feed loudspeaker cable



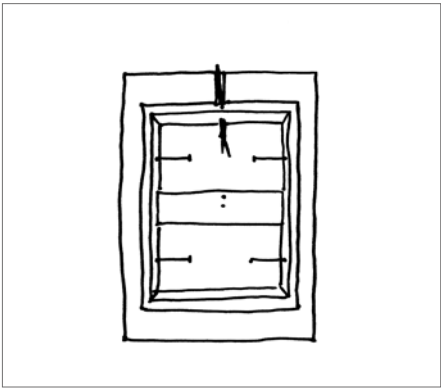
Inserting and aligning the installation frame



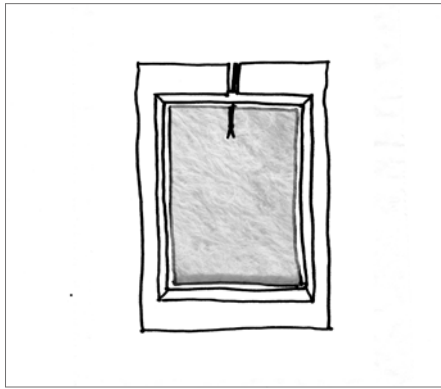
Fix with 2k expansion foam, e.g. 2K-Ponal Rapido PNR10



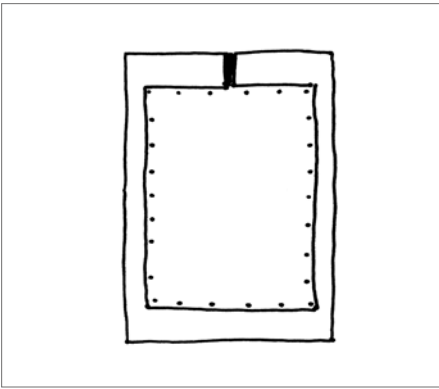
Remove auxiliary wood and auxiliary plate



Dowel frame (optional)



Fill cavity with mineral wool



Put in the the speaker

from here the installation instructions of the specific models follow



cerasonar backbox 4062

cerasonar backbox 6062

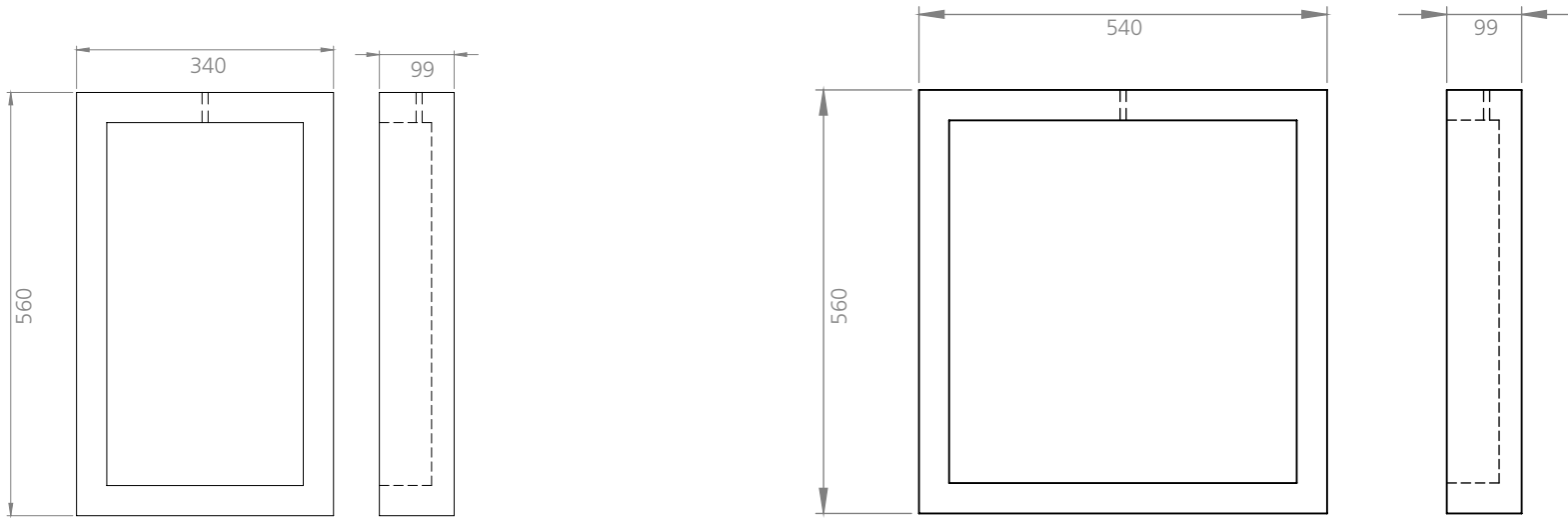
Product

the backbox, which is mounted on the back of the respective cerasonar panel, serves to reduce noise emissions in neighbouring rooms. the rear sound is decelerated by a sophisticated damping system and compression effects. it is screwed to the back of the loudspeaker.

Dimensions

Size	34,0 x 56,0 x 9,9 cm	54,0 x 56,0 x 9,9 cm
Delivery includes	template and screws	template and screws

CAD details



cerasonar protection unit pro
25 w / 50 w / 100 w

cerasonar protection
unit 25 w and 50 w

Product

this protection unit is at the same time an extended overload protection which also reacts to fast impulses. only with this protective circuit do we grant a 5-year warranty on the cerasonar panels. As a german manufacturer, we comply with the VOB warranty for dry walls.

this simplified protection unit can be used with the cerasonar 1520 fit and 2525 fit. only with this protective circuit do we grant a 5-year warranty on the cerasonar panels. as a german manufacturer, we comply with the VOB warranty for dry walls.



Dimensions

Size	150 x 80 x 47 mm	25 w version 100 x 40 x 40 mm / 50 w version 150 x 40 x 40 mm
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How can cracks
be avoided?

Like all built-in speakers, also the invisible speaker panels emit vibration noise into the adjacent areas. To ensure that no cracks occur at the butt joints, mesh tape must be applied before plastering. This kind of processing used for single-layer drywall constructions, which is mandatory according to the generally accepted rules of craftsmanship, is highly recommended also for installation work in solid walls and ceilings.

The plaster, whether decorative or non-decorative, which is applied to the panel should have a certain „flexibility“. So pure mineral plasters are not necessarily advisable. In order to minimise the risk of cracking, we recommend using products like Ardex (e.g. 828) or Knauf (Uniflott)

What is there to
know about sound
insulation?

The cerasonar panels emit structure-borne noise into the adjacent areas. It therefore is recommended – and this normally affects any builtin speaker – that the drywall shell is designed in a flexible way as it is very much common in acoustic construction. The rearward sound already is reduced by the mandatory cavity insulation. To furthermore reduce the rearward sound we offer specific backboxes.

Documentation of
installation positions!

It is strongly recommended to document the installation positions in the architectural plans. If at some point a defect occurs, the position of the defective panel can be accurately determined and the panel be replaced. Also future modifications to the interior design and room layout benefit from the documented positions of the speakers.

What happens in
case of a defect?

In any case, the panels must be removed. A repair or further use depends on the nature of the defect. We offer for the fit and reference series protection units that limit the max. power and protect the speakers from overload. The ultimate series already has the protection integrated. However, the max. power rating of the speaker should not be exceeded by the amplifier.

Warranty period

Ceratec grants a 5-year functional warranty on panels, if the installation and setup protocol has been signed and registered with us. Improper use or overloading may void the warranty.

What about the
durability?

If installation and operation is effected in accordance with our regulations a malfunction is almost impossible. A good example to compare is perhaps the „floor heating system“, which resembles a similar situation, and which also requires a careful execution. A trained retailer or installer meets these requirements due to the cerasonar installation and setup protocol. DIY is also possible if the manual and technical skills are given.

Installation and
setup protocol

The installer or reseller should document all installation steps, especially the functional test and have the correct function approved and signed by the customer. The final acceptance should go together with a corresponding protocol which is to be deposited for at least 5 years with the customer and the executing firms. A copy of the protocol should also be handed over to ceratec.

Installation and
setup protocol

Project:	Mr. & Mrs. Sample’s dreamhouse
Building owner:	Mr. Sam Sample
Architect:	„Name of company“
Drywall/masonry contractor:	„Name of company“
Painting contractor:	„Name of company“
Electroacoustic contractor:	„Name of company“

Here is an example for a room comprising a cerasonar speaker:

Room name:	Living room
Installation location:	Ceiling
Position:	Note in drawing/dimensionally correct draft
Construction type:	Suspended ceiling with metal substructure, single-layer plasterboard, Q4 type spackling
Surface finish:	Paint substrate, pure white
Speaker model:	9062 ultimate
Quantity:	4
Application:	Multiroom audio
Amplifier type:	cerasonar AMP
Circuitry type:	1x panel per amplifier channel



Plaster finish instruction

All our invisible speakers are already primed with Ardex P4. For further processing, we recommend a filler based on a gypsum-plastic base. We have tested the following plaster:

- Ardex 828
- Ardex R1
- Ardex 820 Superfinish
- Knauf Uniflott (available in most DIY stores)

(For the US market a pre mixed joint compound can be used with standard drying time)

Do not apply more than 2 mm of plaster. Less is more, otherwise the maximum volume will be affected.

In addition, mesh tape should be used, this is especially important with our full-range speakers and subwoofers to strictly prevent cracking in the wall and ceiling.

We can recommend the following jointtapes:

- Knauf Easy-Tape

Cavity insulation

Our invisible loudspeakers are already equipped with acoustic foam on the back. In order to guarantee perfect sound reproduction, however, the use of rockwool in the wall or ceiling cavity is indispensable. It must be ensured that there is enough space for the loudspeaker so that the insulation does not squeeze against the loudspeaker. We recommend to remove approx. 5 cm / 2 inch from the rockwool behind the loudspeaker*.

Exemplary product:



Cable selection

We recommend to use high quality speaker cables and to pay attention to OFC or CU when selecting them. This means that the cable is 99% copper instead of copper coated aluminium. The following rule of thumb should be observed when dimensioning the cable:

4 ohms loudspeaker, e.g. cerasonar 4062 reference:

- 10 meter cable length, at least 0.75 mm² cross-section
- 20 meter cable length, at least 1.50 mm² cross-section
- 50 meter cable length, at least 4.00 mm² cross section

or:

8 ohms loudspeaker, e.g. cerasonar 1520 fit:

- 10 meter cable length, at least 0.50 mm² cross section
- 20 meter cable length, at least 0.75 mm² cross-section
- 50 meter cable length, at least 2.50 mm² cross-section

Vibration prevention (speaker mounting)

Our invisible loudspeakers are provided with pre-drilled holes for the screw connection. It is necessary to mount a screw in each hole in order to avoid cracking or disturbing resonances.

Vibration prevention (cable laying)

Particularly in the ceiling (but also in the wall), care should be taken to ensure that the speaker cables do not bump into the invisible speakers. The reason for this is that the loudspeakers produce vibrations which can cause unwanted noises on the cables or other components. To avoid this, the last meter of speaker cable has to pass through the mineral wool.

Vibration prevention (ceiling and wall installations)

Similar to loudspeaker cables, other devices are installed in the wall or ceiling. We recommend that built-in devices, such as LED spots, should not be placed near the speakers. If this is not possible, we recommend installing higher quality devices, as these often have the advantage that they are not so easily prone to vibrate. If disturbing resonances should occur, the built-in devices can be damped with anti-vibration tape.

Vibration prevention (Detection of disturbing resonances)

A tone generator, for iOS or Android, is suitable for easy detection of disturbing resonances. For this the frequency range from 20 – 20,000 Hz is swept through. In order to detect errors, the volume should be approx. 75%. Please note that the invisible loudspeakers must already be installed and plastered over.

Vibration prevention (Elimination of disturbing resonances)

First the position of the disturbing resonances should be determined. The knuckles can be used to check the wall or ceiling for “rattling”. After detection an additional screwing or gluing can solve the problem.

Single stereo mode

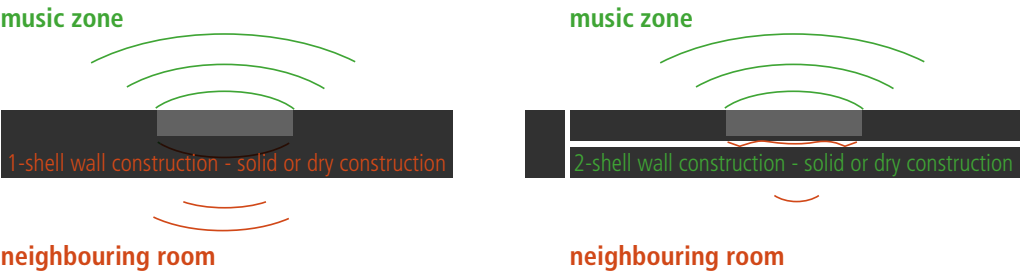
For smaller rooms or for background sound, the single stereo mode is ideal. In this mode, both stereo channels (left and right) are connected to a single loudspeaker. The advantages are the saving of one loudspeaker as well as a more homogeneous sound image when used for background sound (e.g. restaurants, meeting rooms or long corridors).

Soundproofing

About sound insulation, we would like to clarify the terms relating to our loudspeakers. As the invisible loud-speaker is connected to the adjacent wall and/or ceiling surface with screws and filler transmission of structure-borne sound takes place in any case. With some cerasonar models this is even desirable. since the larger area increases the frequency range in the lower region.

It is therefore highly recommended for multi-family buildings to install the invisible loudspeakers in a decoupled level – for example in a suspended ceiling.

With a separate wall construction, the sound remains in the music zone:





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