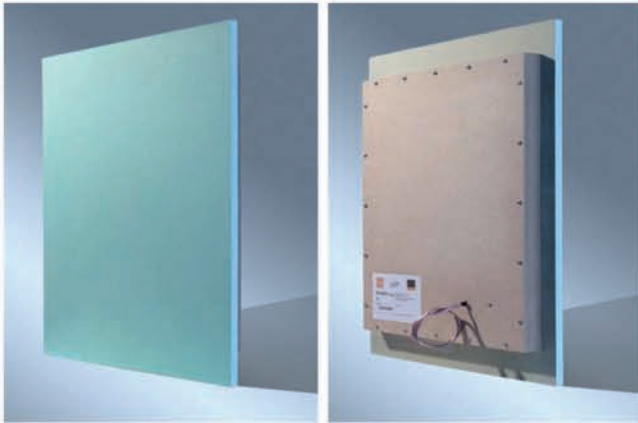


NOVASONAR DYNAMIC 60 / NOVASONAR DYNAMIC 120



Simply mind-boggling!

The new Novasonar DYNAMIC lives up to its name. DYNAMIC stands for extremely powerful, dynamic and precise HiFi sound, up to now known only from large, highpowered cone speakers hitherto. State-of-the-art technology makes it possible.

The engineering of the Novasonar DYNAMIC

It looks like a gypsum plaster board and fits invisibly into the wall or the ceiling.

The Novasonar DYNAMIC flat-panel loudspeaker works on the principle of an acoustic musical instrument. It is modelled on, for example, guitars and violins. In such musical instruments, the vibrations of the strings are initiated into the sounding board and cause it to vibrate. This vibration is dispersed from its surface as sound. The musical instruments are vibrating sounding bodies.

The Novasonar DYNAMIC flat-panel loudspeaker is also a vibrating sounding body.

It is caused to vibrate by an electro-magnetic voicecoil system, the so-called exciter, and disperses sound from its surface.

Dynamic sound, that really gets to you – coming from the hidden source in the wall or ceiling – the Novasonar DYNAMIC.

Novasonar DYNAMIC 60 specifications

Description:

Flat-panel loudspeaker for integration in dry mortarless construction.

Flat-panel loudspeaker on the principle of the bending-wave transducer. It has a flat-panel membrane caused to vibrate by an exciter mounted on the rear.

Simplest, non-visible integration in dry mortarless construction. The loudspeaker comprises a commercial gypsum plaster board reconstructed to form a flat-panel loudspeaker which is screwed to the existing substructure like a conventional gypsum plaster board. There is **no need** to fill or smooth the loudspeaker membrane.

The frame has a particularly robust design to minimise membrane vibrations to the surrounding structure.

Model Novasonar DYNAMIC 60

Make:	ML Audio+Carbons GmbH
Type:	Novasonar DYNAMIC 60
Dimensions:	500 mm x 625 mm x 12,5 (44) mm
Frequency response:	80 Hz – 18000 Hz
Dispersion angle:	180° x 180°
Power handling:	60 W / 6 Ohm
Sensitivity:	92 dB (1 W / 1 m)
Max. SPL:	108 dB (1 m)

Novasonar DYNAMIC 120 specifications

Description:

Flat-panel loudspeaker for integration in dry mortarless construction.

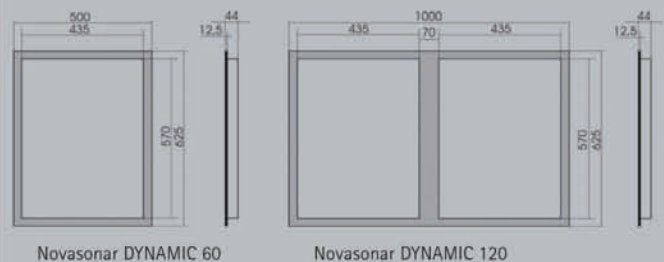
Flat-panel loudspeaker on the principle of the bending-wave transducer. It has a flat-panel membrane caused to vibrate by an exciter mounted on the rear.

Simplest, non-visible integration in dry mortarless construction. The loudspeaker comprises a commercial gypsum plaster board reconstructed to form a flat-panel loudspeaker which is screwed to the existing substructure like a conventional gypsum plaster board. There is **no need** to fill or smooth the loudspeaker membrane.

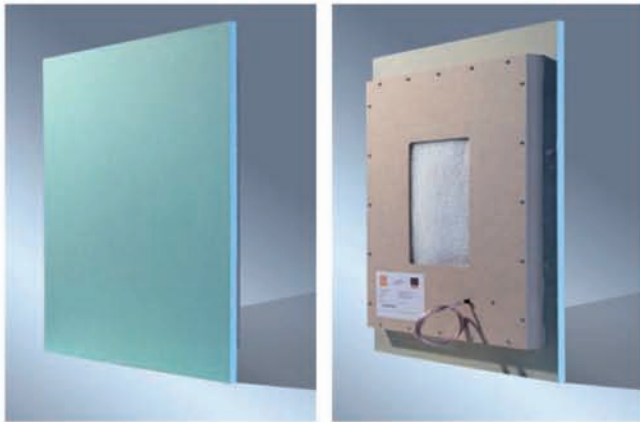
The frame has a particularly robust design to minimise membrane vibrations to the surrounding structure.

Model Novasonar DYNAMIC 120

Make:	ML Audio+Carbons GmbH
Type:	Novasonar DYNAMIC 120
Dimensions:	1000 mm x 625 mm x 12,5 (44) mm
Frequency response:	80 Hz – 18000 Hz
Dispersion angle:	180° x 180°
Power handling:	120 W / 12 (3) Ohm
Sensitivity:	95 dB (1 W / 1 m)
Max. SPL:	114 dB (1 m)



Novasonar GK 30 / Technical datasheet



Novasonar GK flat-panel loudspeakers can be easily integrated in dry mortarless construction (gypsum plaster or gypsum fiber boards).

This flat-panel loudspeaker is suitable for an easy integration in dry mortarless construction. The loudspeaker consists of a commercial gypsum plaster board which is reconstructed to a flat-panel loudspeaker. The model Novasonar GK can be – like a gypsum plaster board – easily into commercial construction of gypsum plaster boards without any effort integrated. A smoothing of the loudspeaker membrane is **not** necessary!

Versions and options

Surface gypsum plaster (12,5mm thickness),
different surfaces (e.g. gypsum fiber) on demand

Installation directions

Novasonar GK loudspeakers are mounted like commercial gypsum plaster boards.

DIMENSIONS (HxWxD)	500 mm x 700 mm x 44 mm
WEIGHT	4,8 kg
FREQUENCY RESPONSE	100 Hz – 18000 Hz
POWER HANDLING	30 watts RMS (HP 48 dB/oct 150 Hz)
SENSITIVITY	82 dB 1 watt / 1 metre
DISPERSION ANGLE HxV	180° x 180°
IMPEDANCE	8 ohms
CONNECTION	standard cable
DESIGN	Gypsum plaster

A & E Specifications

Description:

Flat-panel loudspeaker for integration in dry mortarless construction.

The loudspeaker system that works on the principle of a bending-wave transducer. It has a flat-panel membrane, which is set into vibration by an exciter that is mounted on the rear.

Easiest, non-visible integration in dry mortarless construction. The loudspeaker consists of a commercial gypsum plaster board, reconstructed to a flat-panel loudspeaker, which can be screwed together with the existing substructure. A smoothing of the loudspeaker membrane is **not** necessary.

The frame has a particularly robust design to reduce the transfer of the membrane vibrations to the surrounding ceiling structure, which could cause the ceiling to rattle. There are no annoying and visible intermediate damping layers. A 100-V transformer is also available as an option.

Dimensions: 500 mm x 700 mm x 12,5 (44mm)

Frequency response: 100 Hz – 18000 Hz

Dispersion angle: 180° x 180°

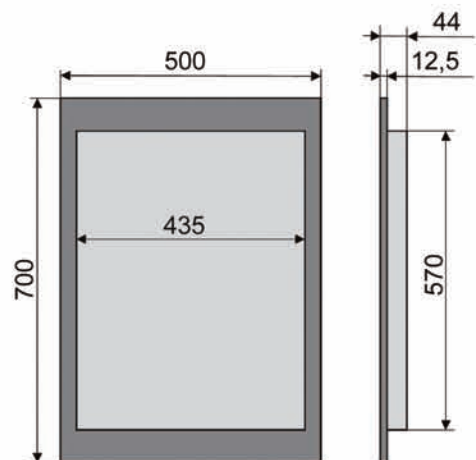
Power handling: 30 watts/ 8 ohms

Sensitivity: 82 dB (1 W / 1m)

Max. SPL: 97 dB (1 m)

Manufacturer: ML Audio+Carbons

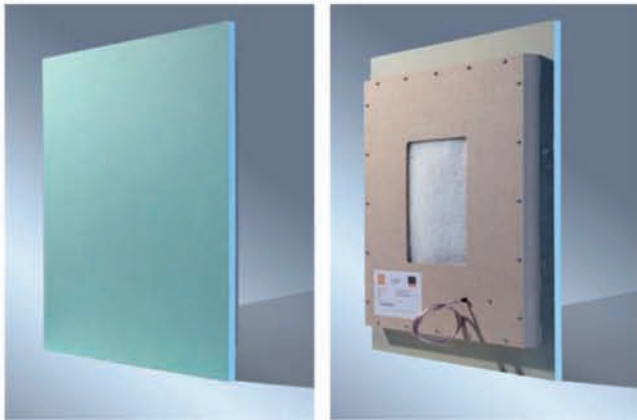
Model: Novasonar GK 30



Novasonar GK 60 / Technical datasheet

Novasonar GK 60 PN

PN version with integrated ML loudspeaker network even operatable with commercially available HiFi equipment.



Novasonar GK flat-panel loudspeakers can be easily integrated in dry mortarless construction (gypsum plaster or gypsum fiber boards).

This flat-panel loudspeaker is suitable for an easy integration in dry mortarless construction. The loudspeaker consists of a commercial gypsum plaster board which is reconstructed to a flat-panel loudspeaker. The model Novasonar GK can be – like a gypsum plaster board – easily into commercial construction of gypsum plaster boards without any effort integrated. A smoothing of the loudspeaker membrane is **not** necessary!

Versions and options

Surface gypsum plaster (12,5mm thickness), different surfaces (e.g. gypsum fiber) on demand

Installation directions

Novasonar GK loudspeakers are mounted like commercial gypsum plaster boards.

DIMENSIONS (HxWxD)	500 mm x 700 mm x 44 mm
WEIGHT	4,8 kg
FREQUENCY RESPONSE	100 Hz – 18000 Hz
POWER HANDLING	60 watts RMS (HP 48 dB/oct 150 Hz)
SENSITIVITY	85 dB 1 watt / 1 metre
DISPERSION ANGLE HxV	180° x 180°
IMPEDANCE	4 (16) Ohm
CONNECTION	standard cable
DESIGN	Gypsum plaster

A & E Specifications

Description:

Flat-panel loudspeaker for integration in dry mortarless construction.

The loudspeaker system that works on the principle of a bending-wave transducer. It has a flat-panel membrane, which is set into vibration by an exciter that is mounted on the rear.

Easiest, non-visible integration in dry mortarless construction. The loudspeaker consists of a commercial gypsum plaster board, reconstructed to a flat-panel loudspeaker, which can be screwed together with the existing substructure. A smoothing of the loudspeaker membrane is **not** necessary.

The frame has a particularly robust design to reduce the transfer of the membrane vibrations to the surrounding ceiling structure, which could cause the ceiling to rattle. There are no annoying and visible intermediate damping layers. A 100-V transformer and a passive crossover network is also available as an option.

Dimensions: 500 mm x 700 mm x 12,5 (44mm)

Frequency response: 100 Hz – 18000 Hz

Dispersion angle: 180° x 180°

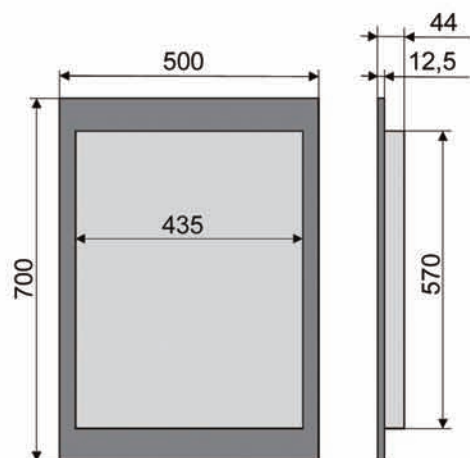
Power handling: 60 watts/ 4 (16) ohms

Sensitivity: 85 dB (1 W / 1m)

Max. SPL: 103 dB (1 m)

Manufacturer: ML Audio+Carbons

Model: Novasonar GK 60 (PN)



Novasonar GK 120 / Technical datasheet

Novasonar GK 120 PN

PN version with integrated ML loudspeaker network even operatable with commercially available HiFi equipment.



Novasonar GK flat-panel loudspeakers can be easily integrated in dry mortarless construction (gypsum plaster or gypsum fiber boards).

This flat-panel loudspeaker is suitable for an easy integration in dry mortarless construction. The loudspeaker consists of a commercial gypsum plaster board which is reconstructed to a flat-panel loudspeaker. The model Novasonar GK can be – like a gypsum plaster board – easily integrated into commercial construction of gypsum plaster boards without any effort. A smoothing of the loudspeaker membrane is **not** necessary!

Versions and options

Surface gypsum plaster (12,5mm thickness), different surfaces (e.g. gypsum fiber) on demand

Installation directions

Novasonar GK loudspeakers are mounted like commercial gypsum plaster boards.

DIMENSIONS (HxWxD)	500 mm x 1400 mm x 44 mm
WEIGHT	9,5 kg
FREQUENCY RESPONSE	100 Hz – 18000 Hz
POWER HANDLING	120 watts RMS (HP 48 dB/oct 150 Hz)
SENSITIVITY	88 dB 1 watt / 1 metre
DISPERSION ANGLE HxV	180° x 180°
IMPEDANCE	8 ohms
CONNECTION	standard cable
DESIGN	Gypsum plaster

A & E Specifications

Description:

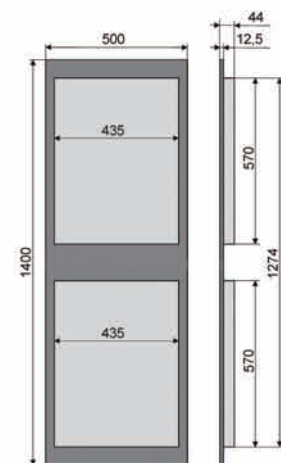
Flat-panel loudspeaker for integration in dry mortarless construction.

The loudspeaker system that works on the principle of a bending-wave transducer. It has a flat-panel membrane, which is set into vibration by an exciter that is mounted on the rear.

Easiest, nonvisible integration in dry mortarless construction. The loudspeaker consists of a commercial gypsum plaster board which is reconstructed to a flat-panel loudspeaker, which can be screwed together with the existing substructure. A smoothing of the loudspeaker membrane is **not** necessary.

The frame has a particularly robust design to reduce the transfer of the membrane vibrations to the surrounding ceiling structure, which could cause the ceiling to rattle. There are no annoying and visible intermediate damping layers. A 100-V transformer and a passive crossover network is also available as an option.

Dimensions:	500 mm x 1400 mm x 12,5 (44mm)
Frequency range:	100 Hz – 18000 Hz
Dispersion angle:	180° x 180°
Power Handling:	120 watts/ 8 ohms
Sensitivity:	88 dB (1 W / 1m)
Max. SPL:	112 dB (1 m)
Manufacturer:	ML Audio+Carbons
Model:	Novasonar GK 120 (PN)



Novasonar GK / Short description of installation

Remark: This is a short description of the installation procedure. Installers and Contractors must prepare and adapt the material and procedures for the requirements of the specific applications!

Please note that this description provides only an overview of the installation process. Before installing the Novasonar GK-loudspeakers please make sure to also read the detailed recommendation for the non-visible installation of in-wall mounted ML Novasonar GK loudspeakers in dry mortarless construction.



Step 1:

Prepare a cut-out within an existing gypsum plaster board planking or prepare a new gypsum plaster board planking, which offers a cut-out, allowing for a 5mm space between the edge of the Novasonar GK and the wall covering.



Step 2:

In case transport braces were mounted on the backside of the speaker, please remove these and test the speaker to make sure that it was not damaged during the transportation. After the speaker has been successfully tested and has been found to be fully functional, connect the speaker cables!!

Attach the loudspeaker to the subconstruction.



Step 3:

Screw the loudspeaker together with the metal profiles. Use preferably commercial screws for a fast mounting. The screws should not be further than 10 cm apart from each other.



Step 4:

Fill the gaps according to the specifications of the manufacturer of the gypsum boards or the spackle.

Make sure, that the provided substructure of the gypsum plaster planking does not rattle because of the vibrations caused by the flat-pane loudspeaker. Pay close attention to the fact that no loose parts lay within or upon the substructure or are in any contact with it. Pay also attention to the fact, that the loudspeaker is not tangented by anything on its rear.



Step 5:

Finished!

Novasonar KIT 60 / Technical datasheet

Novasonar KIT 60 PN

PN version with integrated ML loudspeaker network even operatable with commercially available HiFi equipment.



Novasonar KIT 60 installation kits blend invisibly in panel materials, e.g. medium density fiber boards (MDF), wood plates or chipboards.

In this case the panel materials, e.g. parts of wall or ceiling panellings are belaboured in a specified way, so that the Novasonar KIT 60 can be assembled on the rear side of the panel materials whereas the front acts as the membrane of the flat-panel loudspeaker.

Thus the ML Flat-panel loudspeaker is integrated invisibly and groovelessly e.g. in wooden panellings or furniture.

DIMENSIONS (HxWxD)	435 mm x 570 mm x 40 mm
WEIGHT	3,5 kg
FREQUENCY RANGE	100 Hz – 18000 Hz
POWER HANDLING	60 watts RMS (HP 48 dB/oct 150 Hz)
SENSITIVITY	85 dB 1 watt / 1 metre
DISPERSION ANGLE HxV	180° x 180°
IMPEDANCE	4 (16) ohms
CONNECTION	standard cable
DESIGN	Front adhesive

A & E Specifications

Description:

Flat-panel loudspeaker Novasonar KIT 60 for invisible integration in panel materials, e.g. medium density fiber boards (MDF), wood plates or chipboards.

The loudspeaker system Novasonar KIT 60 that works on the principle of a bending-wave transducer. It has a flat-panel membrane, which is set into vibration by an exciter that is mounted on the rear.

The panel material provided by the customer in the form of chipboards, solid wooden boards or medium density boards, e.g. as parts of wall or ceiling panellings, is belaboured on its rear in a specified way (specifications are proposed by ML) by ML or the cabinet maker so that this panel material can act as membrane within the specified area after the assembly of the Novasonar KIT 60. Thus the front of the membrane of the flat-panel loudspeaker is invisibly and smoothly integrated in the panel material.

A 100-V transformer and a passive crossover network is also available as an option.

Dimensions: 435 mm x 570 mm x 40 mm

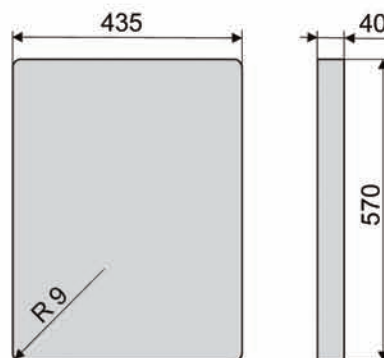
Front: Adhesive

Frequency range: 100 Hz – 18000 Hz

Dispersion angle: 180° x 180°
Power handling: 60 W / 4 (16) ohms
Sensitivity: 85 dB (1 W / 1m)

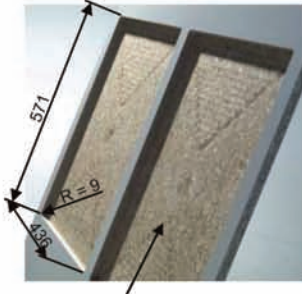
Max. SPL: 103 dB (1 m)

Manufacturer: ML Audio+Carbons
Model: Novasonar KIT 60 (PN)



Novasonar KIT / Description of installation

Remark: This is a short description of the installation procedure. Installers and Contractors must prepare and adapt the material and procedures for the requirements of the specific applications! If you have any questions please contact us.



The material thickness will be reduced on the rear side by milling to an absolute thickness of 4 mm

Step 1:

Reduce the thickness of the chipboard or MDF panel within the defined area of 436 mm x 571 mm (edge radius 9 mm) to an absolute thickness of 4 mm by milling. Thickness includes veneer, laminates, coatings and other.

The milled surface has to be even and varnished.



Step 2:

In case transport braces were mounted on the back of the speaker, please remove them and test the speaker to make sure that it was not damaged during the transportation.

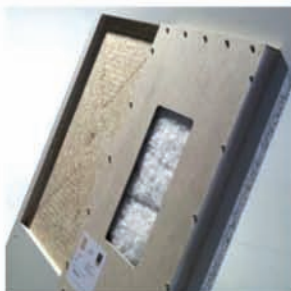
After the speaker has been successfully tested and has been found to be fully functional remove the silicone paper at the front of the speaker.



Step 3:

The adhesive and varnished surfaces have to be clean and dry.

Attach the self-adhesive front of the module to the prepared area on the back of the board material.



Schritt 4:

Connect the speaker cables!!

Finished!

Make sure, that the provided substructure does not rattle because of the vibrations caused by the flat-pane loudspeaker. Pay close attention to the fact that no loose parts lay within or upon the substructure or are in any contact with it. Pay also attention to the fact, that the loudspeaker is not tangented by anything on its rear.

Novasonar Ceiling 30 / Technical datasheet



Blends into the ceiling design ...

This flat-panel loudspeaker is suitable for the direct integration into ceiling grids. The loudspeaker consists of a commercial fiber board, reconstructed to a flat-panel loudspeaker.

Therefore Model Novasonar Ceiling can be delivered in nearly all **original surface designs** of commercial ceiling grids.

A & E Specifications

Description:

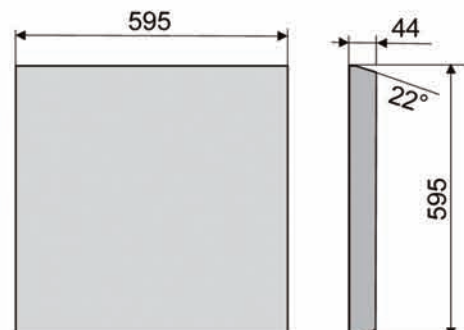
Flat-panel loudspeaker in modular ceiling format.

The loudspeaker system that works on the principle of a bending-wave transducer. It has a flat-panel membrane, which is set into vibration by an exciter that is mounted on the rear. This loudspeaker consists of a commercial fiber board reconstructed to a flat-panel diaphragm loudspeaker and matches the 60 cm x 60 cm modular ceiling format. The loudspeaker is already provided with the **original** surface design and material of the ceiling fiber board.

The frame has a particularly robust design to reduce the transfer of the membrane vibrations to the surrounding ceiling structure, which could cause the ceiling to rattle. There are no annoying and visible intermediate damping layers. A 100-V transformer is also available as an option.

Dimensions:	595 mm x 595 mm x 44 mm equiv. to ceiling grid format; other sizes upon request
Frequency range:	100 Hz – 18000 Hz
Dispersion angle:	180° x 180°
Power handling:	30 W / 8 ohms
Sensitivity:	82 dB (1 W / 1m)
Max. SPL:	97 dB (1 m)
Manufacturer:	ML Audio+Carbons
Model:	Novasonar Ceiling 30

DIMENSIONS (HxWxD)	595 mm x 595 mm x 44 mm equiv. to ceiling grid format other sizes upon request
WEIGHT	4,5 kg
FREQUENCY RANGE	100 Hz – 18000 Hz
POWER HANDLING	30 watts RMS (HP 48 dB/oct 150 Hz)
SENSITIVITY	82 dB 1 watt / 1 metre
DISPERSION ANGLE HxV	180° x 180°
IMPEDANCE	8 ohms
CONNECTION	standard cable
DESIGN	Original surface design on demand



Novasonar Ceiling 60 / Technical datasheet

Novasonar Ceiling 60 PN

PN version with integrated ML loudspeaker network even operatable with commercially available HiFi equipment.



Blends into the ceiling design ...

This flat-panel loudspeaker is suitable for the direct integration into ceiling grids. The loudspeaker consists of a commercial fiber board, reconstructed to a flat-panel loudspeaker.

Therefore Model Novasonar Ceiling can be delivered in nearly all **original surface designs** of commercial ceiling grids.

A & E Specifications

Description:

Flat-panel loudspeaker in modular ceiling format.

The loudspeaker system that works on the principle of a bending-wave transducer. It has a flat-panel membrane, which is set into vibration by an exciter that is mounted on the rear. This loudspeaker consists of a commercial fiber board reconstructed to a flat-panel diaphragm loudspeaker and matches the 60 cm x 60 cm modular ceiling format. The loudspeaker is already provided with the **original surface design** and material of the ceiling fiber board.

The frame has a particularly robust design to reduce the transfer of the membrane vibrations to the surrounding ceiling structure, which could cause the ceiling to rattle. There are no annoying and visible intermediate damping layers. A 100-V transformer and a passive crossover network is also available as an option.

Dimensions: 595 mm x 595 mm x 44 mm equiv. to ceiling grid format other sizes upon request

Frequency range: 100 Hz – 18000 Hz

Dispersion angle: 180° x 180°

Power handling: 60 W / 4 (16) ohms

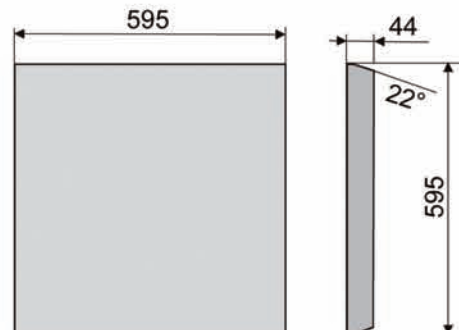
Sensitivity: 85 dB (1 W / 1m)

Max. SPL: 103 dB (1 m)

Manufacturer: ML Audio+Carbons

Model: Novasonar Ceiling 60 (PN)

DIMENSIONS (HxWxD)	595 mm x 595 mm x 44 mm equiv. to ceiling grid format other sizes upon request
WEIGHT	4,5 kg
FREQUENCY RANGE	100 Hz – 18000 Hz
POWER HANDLING	60 watts RMS (HP 48 dB/oct 150 Hz)
SENSITIVITY	85 dB 1 watt / 1 metre
DISPERSION ANGLE HxV	180° x 180°
IMPEDANCE	4 (16) ohms
CONNECTION	standard cable
DESIGN	Original surface design on demand



Novasonar High Gain 60 / Technical datasheet



Highest efficiency...

ML High Gain 60 loudspeakers offer you a perfect opportunity of acoustic irradiation. They can be applied wherever "a powerful sound" is needed, e.g. : in clubs, bars, cafés, pubs, boutiques etc.

Versions and options

High-Tech surface with honeycomb structure

Additional Cost:
Foamed surface for wall-mounting and integration into interior construction.

A & E Specifications

Description:

High-Gain-Design Flat-panel loudspeaker.

The loudspeaker system works on the principle of a bending-wave transducer. It has a flat-panel membrane, which is set into vibration by an exciter that is mounted on the rear. Suitable to fit flush with walls or ceilings in combination with a laminated foamed surface with special adhesion, suitable for smoothing and plastering.

The frame has a particularly robust design to reduce the transfer of the membrane vibrations to the surrounding structure. A 100-Volt-transformer is available as an option.

Dimensions: 435 mm x 570 mm x 40 mm

Frequency Range: 100 Hz – 18000 Hz

Dispersion Angle: 180° x 180°

Power Handling: 60 W / 4 (16) ohms

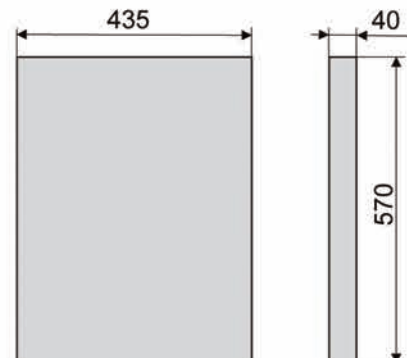
Sensitivity: 94 dB (1 W / 1m)

Max. SPL: 112 dB (1 m)

Manufacturer: ML Audio+Carbons

Model: Novasonar High Gain 60

DIMENSIONS (HxWxD)	435 mm x 570 mm x 44 mm
WEIGHT	3,0 kg
FREQUENCY RANGE	100 Hz – 18.000 Hz
POWER HANDLING	60 watts RMS (HP 48 dB/oct 150 Hz)
SENSITIVITY	94 dB 1 watt / 1 metre
MAXIMUM SPL	112 dB / 1 m
DISPERSION ANGLE	180° x 180°
IMPEDANCE	4 (16) ohms
CONNECTION	standard cable



Novasonar Standard 30 / Technical datasheet



As adaptable as a chameleon ...

ML installation loudspeakers simply merge into their surroundings.

Whether as plastered ceiling, wall-mounted loudspeaker or as part of a wall-to-wall cupboard crafted in fine wood, the design possibilities are virtually unlimited.

Versions and options

Surface wood

Additional cost:

Other surfaces available on request

Foamed surface (longterm elastic) for mounting in dry mortarless
Construction, concrete walls, brick walls

DIMENSIONS (HxWxD)	435 mm x 570 mm x 40 mm
WEIGHT	4,5 kg
FREQUENCY RANGE	100 Hz – 18.000 Hz
POWER HANDLING	30 watts RMS (HP 48 dB/oct 150 Hz)
SENSITIVITY	82 dB 1 watt / 1 metre
MAXIMUM SPL	95 dB / 1 m
DISPERSION ANGLE	180° x 180°
IMPEDANCE	8 ohms
CONNECTION	standard cable

A & E specifications

Description:

Flat-panel loudspeakers for integration into interior constructions and furniture.

The loudspeaker system that works on the principle of a bending-wave transducer. It has a flat-panel membrane, which is set into vibration by an exciter that is mounted on the rear. Suitable for rear installation or to fit flush with walls, ceilings, platforms, furniture, etc. The surface is suitable for the following designs:

Genuine wood veneers or laminates, can be smoothed over, varnished, covered with a thin layer of plaster or wallpaper or have a self-adhesive design for laminations.

The frame has a particularly robust design to reduce the transfer of the membrane vibrations to the surrounding structure. A 100-V is available as an option.

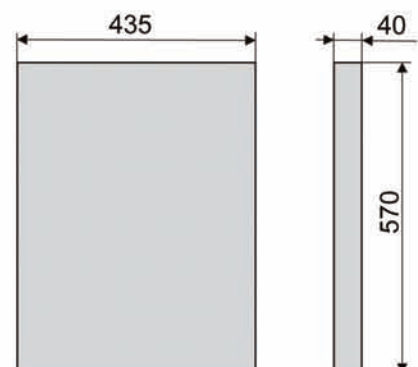
Dimensions: 435 mm x 570 mm x 40 mm

Frequency Range: 100 Hz –18000 Hz

Dispersion Angle: 180° x 180°

Power Handling: 30 W / 8 ohms
Sensitivity: 82 dB (1 W / 1m)
Max. SPL: 95 dB (1 m)

Manufacturer: ML Audio+Carbons
Model: Novasonar Standard 30



Novasonar Standard 60 / Technical datasheet



As adaptable as a chameleon ...

ML installation loudspeakers simply merge into their surroundings.

Whether as plastered ceiling, wall-mounted loudspeaker or as part of a wall-to-wall cupboard crafted in fine wood, the design possibilities are virtually unlimited.

Versions and options

Surface wood

Additional cost:

Other surfaces available on request

Foamed surface (longterm elastic) for mounting in dry mortarless

Construction, concrete walls, brick walls

DIMENSIONS (HxWxD)	435 mm x 570 mm x 40 mm
WEIGHT	4,5 kg
FREQUENCY RANGE	100 Hz – 18.000 Hz
POWER HANDLING	60 watts RMS (HP 48 dB/oct 150 Hz)
SENSITIVITY	85 dB 1 watt / 1 metre
MAXIMUM SPL	101 dB / 1 m
DISPERSION ANGLE	180° x 180°
IMPEDANCE	4 (16) ohms
CONNECTION	standard cable

A & E specifications

Description:

Flat-panel loudspeakers for integration into interior constructions and furniture.

The loudspeaker system that works on the principle of a bending-wave transducer. It has a flat-panel membrane, which is set into vibration by an exciter that is mounted on the rear. Suitable for rear installation or to fit flush with walls, ceilings, platforms, furniture, etc. The surface is suitable for the following designs:

Genuine wood veneers or laminates, can be smoothed over, varnished, covered with a thin layer of plaster or wallpaper or have a self-adhesive design for laminations.

The frame has a particularly robust design to reduce the transfer of the membrane vibrations to the surrounding structure. A 100-V is available as an option.

Dimensions: 435 mm x 570 mm x 40 mm

Frequency Range: 100 Hz – 18000 Hz

Dispersion Angle: 180° x 180°

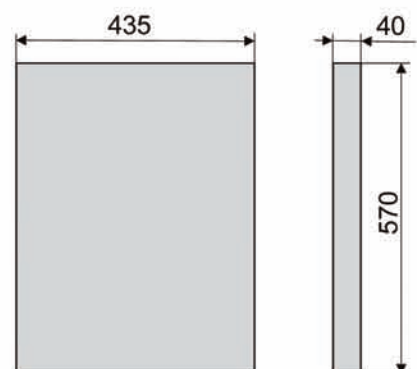
Power Handling: 60 W / 4 (16) ohms

Sensitivity: 85 dB (1 W / 1m)

Max. SPL: 101 dB (1 m)

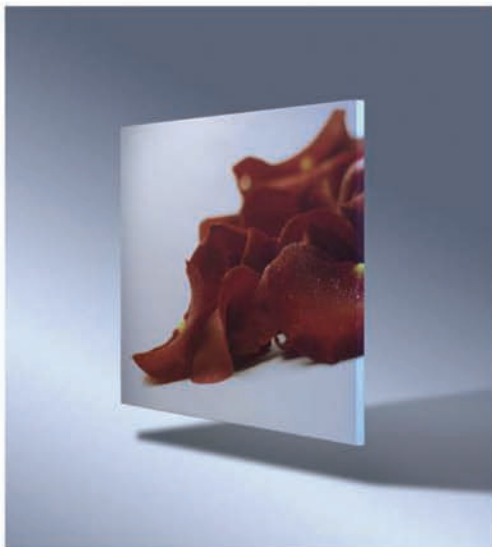
Manufacturer: ML Audio+Carbons

Model: Novasonar Standard 60



Novasonar Picture 30 / Technical datasheet

Novasonar Picture 60 (PN), Picture Stereo (PN)



They hang on the wall and look like quite ordinary pictures.

These flat-panel picture loudspeakers offer you an exclusive opportunity for acoustic irradiation and can be used wherever architecture requires special solutions.

Versions and options

Surface white, frame natural aluminium

Additional cost:
Surface in various RAL colours
Frame in various colours
Frameless on request

Installation directions

ML flat-panel picture loudspeakers can be wall-mounted like ordinary pictures.

DIMENSIONS (HxWxD)	500 mm x 700 mm x 44 mm other sizes on request
WEIGHT	Subject to size
FREQUENCY RANGE	100 Hz – 18000 Hz
POWER HANDLING	30 (60) (90) watts RMS (HP 48 dB/oct 150 Hz)
SENSITIVITY	82 (85) (85) dB 1 watt / 1 metre
DISPERSION ANGLE HxV	180° x 180°
IMPEDANCE	8 (4 / 16) (12) Ω

A & E Specifications

Description:

Flat-panel loudspeaker in picture design.

The loudspeaker system that works on the principle of a bending-wave transducer. It has a flat-panel membrane in an aluminium frame, which is set into vibration by an exciter that is mounted on the rear. This flat-panel diaphragm loudspeaker hangs on the wall and looks like any ordinary picture. It has a white surface. A 100-V transformer is also available as an option.

Dimensions: ... mm x mm x 44 mm
Frequency range: 100 Hz –18,000 Hz
Dispersion angle: 180° x 180°

Power handling:

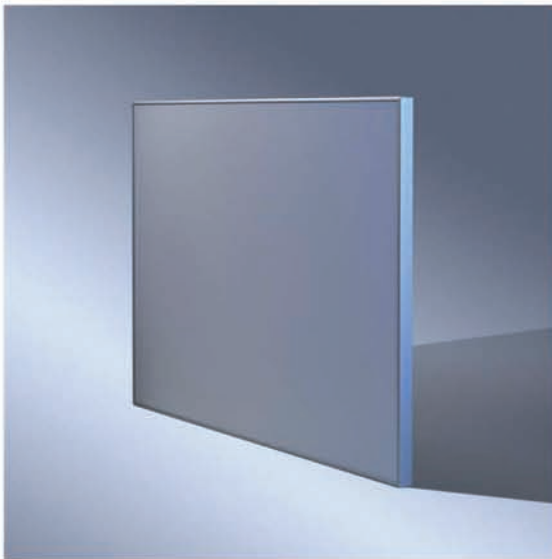
30-Watt version	30 W / 8 ohms Sensitivity: 82 dB (1 W / 1m) Max. SPL: 95 dB (1 m)
60-Watt version	60 W / 4 (16) ohms Sensitivity: 85 dB (1 W / 1m) Max. SPL: 101 dB (1 m)
Stereo version	2 x 45 W / 12 ohms Sensitivity: 85 dB (1 W / 1m) Max. SPL: 101 dB (1 m)

Exciters connected via a patented stereo matrix for extension of stereo basis.

Manufacturer: ML Audio+Carbons
Model: Novasonar Picture 30, 60 (PN), Stereo (PN)



Novasonar Multimedia / Technical datasheet



...and please keep all the technical equipment behind the scenes! ...

...says your architect...

Whether mono, stereo or Dolby-Surround, our flat panel loudspeakers place the sound where it belongs. It comes from within the picture and the whole thing is completely invisible...

... and leaves everyone believing your architect is a magician.

Versions and options

Reflecting or matt white surface, frame natural aluminium

Installation directions

ML multimedia screens can be wall-mounted.

A & E Specifications

Description:

Flat-panel loudspeaker as projection screen, mono or stereo.

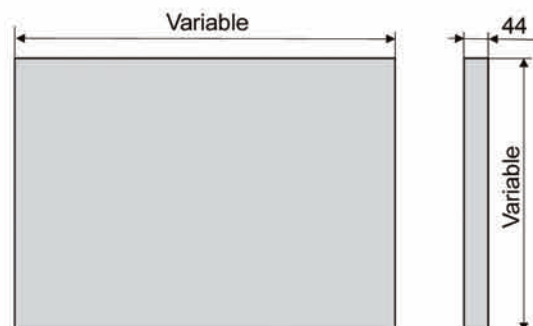
The loudspeaker system that works on the principle of a bending-wave transducer. The flat-panel membrane in an aluminium frame is set into vibration by an exciter that is mounted on the rear and, with the appropriate coating, also serves simultaneously as surface for front projections. Exciters connected via a patented stereo matrix for extension of stereo basis.

Dimensions: mm x mm x 44 mm
 Frequency range: 100 Hz – 18000 Hz
 Dispersion angle: 180° x 180°

Power handling: upon request

Manufacturer: ML Audio+Carbons
 Model: Multimedia

DIMENSIONS (HxWxD)	Sizes upon request
WEIGHT	subject to model
FREQUENCY RANGE	100 Hz – 18000 Hz
POWER HANDLING	subject to model
SENSITIVITY	subject to model
DISPERSION ANGLE HxV	180° x 180°
IMPEDANCE	subject to model



Novasonar Creative 60 / Technical datasheet

Novasonar Creative 60 PN



Example: Elliptical shape

Custom-made shape, colour and surface - according to your requirements on design and function!

You want your flatpanel-loudspeaker to be an element in your concept of interior decoration?

We will manufacture your flatpanel-loudspeaker according to your wishes. You can choose exactly the shape, surface and colour you need to make your interior design just perfect.

DIMENSIONS (HxWxD)	Sizes and shapes upon request
WEIGHT	Subject to size
FREQUENCY RANGE	100 Hz – 18000 Hz
POWER HANDLING	60 watts RMS (HP 48 dB/oct 150 Hz)
SENSITIVITY	85 dB 1 watt / 1 metre
DISPERSION ANGLE HxV	180° x 180°
IMPEDANCE	4 (16) ohms
CONNECTION	standard cable
DESIGN	Shapes and surfaces upon request

A & E Specifications

Description:

The loudspeaker system that works on the principle of a bending-wave transducer. It has a flat-panel membrane, which is set into vibration by an exciter that is mounted on the rear.

The Novasonar kreativ as decorative element can be manufactured in any geometrical shape and designed with any of the following surfaces:

Genuine wood veneers or laminates, can be smoothed over, varnished, covered with a thin layer of plaster or wallpaper or have a self-adhesive design for laminations.

The frame has a particularly robust design to reduce the transfer of the membrane vibrations to the surrounding structure. A 100-V transformer and a passive crossover network is also available as an option.

Dimensions: ... mm x ... mm x 40 mm

Frequency Range: 100 Hz –18000 Hz

Dispersion Angle: 180° x 180°

Power Handling: 60 W / 4 (16) ohms

Sensitivity: 85 dB (1 W / 1m)

Max. SPL: 101 dB (1 m)

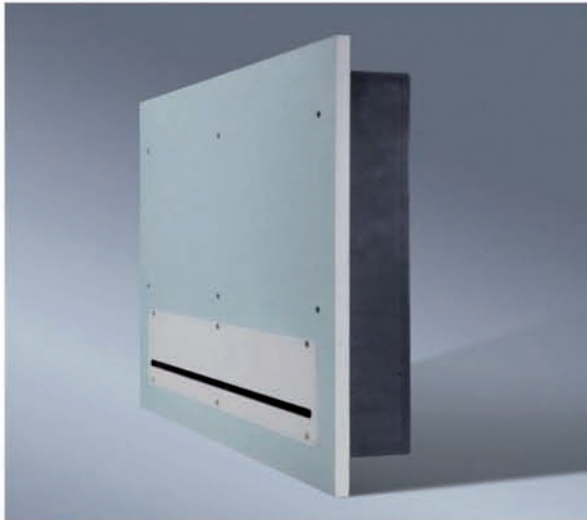
Manufacturer: ML Audio+Carbons

Model: Novasonar Kreativ 60 (PN)



Example: Elliptical shape

Novasonar Boxer 50-2 / Technical datasheet



The Novasonar Boxer 50-2 Subwoofer is especially designed for drywall installations which always demand the performance of a vibration-free design.

This subwoofer loudspeaker constructed for direct integration in the drywall comprises, on the front, a commercial gypsum plaster board and, on the back, a stable multiplex housing, in which the loudspeaker chassis are mounted.

The Novasonar Boxer 50-2 is the ideal subwoofer extension for all Novasonar flat-panel loudspeakers. It can be directly screwed to the substructure of the drywalls or ceilings without any difficulties and without any additional retaining brackets, and can then be smoothed flush with it.

The special ML Boxer technology means there are almost no vibrations on the loudspeaker housing. It is therefore not necessary to decouple the loudspeaker from the drywall construction because of distracting structure-borne vibrations.

The sound outlet in the form of a very narrow slot is located on the periphery of the loudspeaker front and can thus be positioned unobtrusively just above the skirting board or on the ceiling edge.

Versions and options.

Front: Gypsum plaster board (12,5 mm thickness), different materials on demand.

DIMENSIONS (HxWxD)	500 mm x 625 mm x 12,5 (86) mm
WEIGHT	9 kg
FREQUENCY RESPONSE	38 Hz – 200 Hz
POWER HANDLING	100 watt RMS
SENSITIVITY	82 dB 1 watt / 1 meter
IMPEDANCE	4 Ohms
CONNECTION	Standard cable
DESIGN	Gypsum plaster board

A & E Specifications

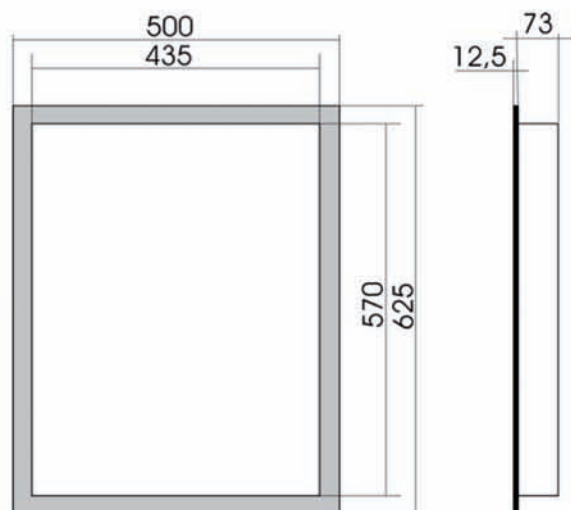
Description:

Subwoofer system on the ML Boxer principle for flush and seamless drywall mounting. The front of the subwoofer system comprises a gypsum plaster board screwed directly to the already existing drywall substructure. Special mounting material is not necessary. The front of the subwoofer and the transition of the wall or ceiling covering can be filled and smoothed with a conventional gypsum fibre filler for filling the joints to make them flush.

Worked into the front is a sound outlet in the form of a 10 mm narrow slot that runs along the loudspeaker front at a distance of some 75 mm. This enables the sound outlet to be positioned, for example, just above the skirting board or on the ceiling edge.

The very small installation depth of 73 mm on the back enables installation in a 75 mm deep substructure. Through the special configuration of the loudspeaker chassis on the ML Boxer principle there are hardly any distracting structure-borne vibrations on the loudspeaker housing. This is why it is not necessary to decouple the subwoofer from the surrounding drywall construction.

Dimensions:	500 mm x 625 mm x 12,5 (86) mm
Frequency response:	38 Hz – 200 Hz
Power handling :	100 watts RMS / 8 ohms
Sensitivity:	82 dB (1 w / 1m)
Max. SPL:	100 dB (1 m)
DSP settings:	1 x Hp, 1 x Lp and 1 x parametric EQ
Manufacturer:	ML Audio+Carbons
Model:	Novasonar Boxer 50-2



Active Sub Compact / Technical datasheet



We have the power

This active subwoofer was specially featured by ML for bending wave transducers and can thus be combined to optimum effect with Novasonar flat-panel loudspeakers. The Active-Sub Compact can be used wherever either technical or visual sophistication is required and is a suitable component in numerous applications.

A & E Specifications

Description:

Active subwoofer with crossover and volume control.

Active 200-mm sub-bass, bass-reflex casing, integrated amplifier with active crossover. Black housing, varnished.

Dimensions: 420 mm x 275 mm x 430 mm

Frequency range: 30 Hz to 300 Hz
Adjustment range: 40 Hz to 180 Hz

Power handling: 55 W / 8 ohms
Sensitivity: 84 dB (1 W / 1m)

Max. SPL: 101 dB (1 m)

Manufacturer: ML Audio+Carbons
Model: Active Sub Compact

DIMENSIONS (HxWxD)	420 mm x 275mm x 430 mm
WEIGHT	12,2 kg
FREQUENCY RANGE	30 Hz – 300 Hz
POWER HANDLING	55 watts RMS
SENSITIVITY	84 dB 1 watt / 1 metre
CROSSOVER	40 Hz – 180 Hz
IMPEDANCE	8 ohms

Novasonar special features



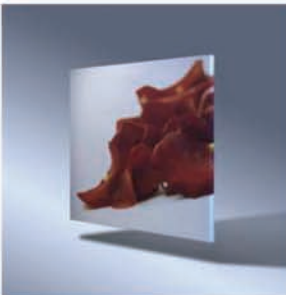
Passive crossover network (PN)

With the ML loudspeaker network, the loudspeaker can be operated with excellent sound quality using a conventional HiFi amplifier without additional expensive electronics being necessary.



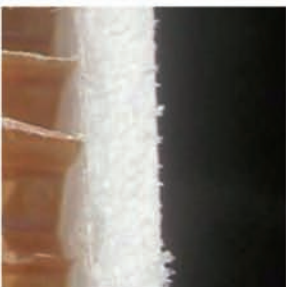
High quality 100-V transformer

On demand we provide Novasonar loudspeakers with high quality customized 100-V transformers mounted on the inside of the loudspeaker, so the loudspeakers can be used with conventional 100 V systems.



Digital prints

For the Novasonar picture loudspeaker we laminate digital prints on canvas on the surface of the loudspeaker. Together with the designers of "Nachbar Fotografie" we create Novasonar picture loudspeakers with any of your favourite paintings or photographs.



Foamed surface

The special foamed surface makes it possible to spackle the Novasonar loudspeaker with gypsum plaster, so it can be build into massive concrete and brick walls or ceilings etc.

Which Novasonar meets my requirements?

Novasonar GK:

For gypsum plaster or gypsum fiber boards, expanded glass granulate boards, etc.

Novasonar KIT:

Chipboards, MDF boards or solid wood etc.

Novasonar Ceiling:

For grid ceilings

Novasonar High Gain:

With foamed surface for concrete and brick walls or ceilings

Novasonar Standard:

With foamed surface for concrete and brick walls or ceilings

Novasonar Picture:

Picture loudspeaker with digital prints on canvas

Novasonar Multimedia:

Projectionscreens with screen coatings

Novasonar Kreativ:

Special shapes and surfaces upon your request