

O W N E R S M A N U A L
Power Amplifiers



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1.0 Equipment installation

Normally your Naim equipment will have been installed by the dealer who sold it to you even if you live outside their immediate vicinity. Your dealer is responsible for making sure that the system sounds exactly as it should and information given here is not intended to reduce this responsibility in any way.

1.1 cables and connections

Please do not modify the standard interconnect cables supplied with your Naim equipment. This is important for safety as well as performance. One end of each cable is marked with a band to establish its correct orientation. The band always marks the end that connects to the signal source.

Loudspeaker leads are also very important. Naim loudspeaker cable is correct for your system and your dealer will make up leads to suit your equipment installation. The leads should each be at least 3.5 metres long and of equal length. The recommended maximum is 20 metres. Loudspeaker leads are, like interconnect leads, directional, and should be connected so that the printed arrow points towards the speakers. Using alternative loudspeaker cable will degrade performance, and may even damage your amplifier. An exception to these loudspeaker cable constraints is the nap 6-50 multi-room power amplifier. The nap 6-50 is designed to be tolerant of both a wide variety of cable types, and cable runs well in excess of 20m. The loudspeaker connectors supplied with all Naim amplifiers and loudspeakers have been specifically designed to make a robust mechanical connection. It is essential that these are used in order to comply with current European safety regulations.

All the plugs and sockets supplied with your Naim equipment have been chosen because they make the best possible connection for their purpose. A poor contact will degrade the signal substantially and plugs and sockets should look clean and free from corrosion. The easiest way to clean them is to switch off the equipment, pull the plugs out of their sockets, and push them back in again. Special contact cleaners and contact enhancers should not be used as they tend to deposit a film which is very difficult to remove and may degrade the sound.

2

2.0 Getting Started

2.1 switching on and off

Source components and power supplies for cd players, tuners, preamplifiers and crossovers should be switched on before switching on the amplifier(s). Always switch the amplifier(s) off and wait about a minute for its power supply capacitors to discharge before connecting or disconnecting any leads. Always use the power switch on the product rather than a mains outlet switch.

2.2 running in

Your Naim equipment will take a considerable time to run-in before it performs at its best. The duration varies, but under some conditions you will find that the sound continues to improve for as much as five weeks. Better and more consistent performance will be achieved if the system is left switched on for long periods. It is worth remembering however that all electronic equipment can be damaged by lightning. Please read the warnings section.

2.3 mains supply

Where fused plugs are used 13 amp fuses should be fitted. Fuses of a lower rating will fail after a period of use.

A hi-fi system usually shares a mains circuit with other household equipment some of which can cause distortion of the mains waveform. In some Naim equipment such distortion can lead to a mechanical hum from the transformers. The hum is not transmitted through the speakers and has no effect on the performance of the system but is purely local to the transformer itself. A separate fused mains circuit (like that reserved for electric cookers) may reduce transformer hum. Such a circuit (ideally with a 30 or 45 Amp rating) will also have a lower impedance, supply cleaner power, and consequently improve system performance.

Do not wire voltage dependent resistors or noise suppressors into mains plugs. They degrade the mains supply and the sound.

2.4 siting the equipment

Power supplies and amplifiers should be located a reasonable distance away from other equipment. This separation will stop transformer radiation causing hum audible from the loudspeakers. The minimum recommended distance is 300mm (12 inches), and that allowed by the standard interconnect lead is the maximum.

Some Naim equipment is extremely heavy. Ensure that your equipment rack or table can easily support the weight and is stable.

2.5 if you have a problem

Legal consumer protection varies from country to country. In most territories a dealer must be prepared to take back any Naim equipment he has sold you if he cannot make it work to your satisfaction in your own home. A problem may be due to a fault in any part of the system or its installation so it is essential to make full use of your local dealer's diagnostic skills on site. Please contact your local distributor, or Naim at the address in the back of this manual, if any difficulties cannot be resolved. Some Naim equipment is made in special versions for different territories and this makes it impracticable to arrange international guarantees. Please establish the guarantee arrangements with your own dealer at the time of sale. We are always available to offer help and advice.

It is essential that repairs and updates are only carried out by an authorised Naim dealer, or at the factory by Naim itself. Many components are made, tested or matched specially for Naim and appropriate replacements are often unobtainable from non-specialist sources.

3.0 Warnings

Naim equipment is designed to offer the finest sound quality that can be achieved, avoiding compromise wherever possible. This can lead to circumstances that may be unfamiliar. The material that follows contains advice specifically related to Naim equipment as well as more general warnings about the use of domestic audio products. Please read it carefully.

The transformers in Naim power amplifiers and power supplies may sometimes make a mechanical noise caused by distortion of the mains waveform. Naim transformers are large in size and have heavy gauge secondary windings making them relatively sensitive to such distortion. A separate mains circuit for your hi-fi system may reduce the effect while also giving an overall improvement in sound quality. It may be necessary however to take account of mechanical transformer noise when siting your equipment.

In some circumstances, depending on where you live and the earthing arrangements in your home, you may experience radio frequency interference. Controls on broadcasting in some territories allow very high levels of radio frequency radiation and both the choice and exact siting of equipment may be critical. If there is a known problem in your locality it is advisable to arrange for a home demonstration before purchase to find out if Naim equipment is likely to be affected. Susceptibility to radio frequency interference is related to the wide internal bandwidth necessary for high sound quality. Systems incorporating moving coil phono preamplifiers and active crossovers are more likely to suffer. A radio frequency filter kit is available for some Naim equipment but sound quality will be progressively compromised as more elements of the kit are fitted. In situations of extreme radio interference Naim equipment may be unsuitable.

Your Naim hi-fi system can be damaged by lightning. Power amplifiers are particularly at risk and should be turned off when there is risk of lightning strike. For complete protection all mains plugs and any aerial cables should be disconnected when not in use.

Equipment must not be exposed to dripping or splashing and no objects filled with liquid, such as vases, should be placed on the equipment.



important

In order to comply with current European safety regulations it is essential that the Naim loudspeaker connectors supplied with amplifiers and loudspeakers are used.

Do not under any circumstances allow anyone to modify your Naim equipment without first checking with the factory, your dealer, or your distributor. Unauthorised modifications will invalidate your guarantee.

For your own safety do not under any circumstances open Naim equipment without first disconnecting the mains.

The following label is attached to all mains powered equipment:



4.0 Connection

4.1 mains lead

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured **GREEN-AND-YELLOW** must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol or coloured green or green-and-yellow.

The wire which is coloured **BLUE** must be connected to the terminal in the plug which is marked with the letter N or coloured black.

The wire which is coloured **BROWN** must be connected to the terminal in the plug which is marked with the letter L or coloured red.

4.2 non-rewireable mains plugs

If a non-rewireable plug is cut from a mains lead (for whatever purpose) the plug **MUST** be disposed of in a way to render it totally unusable. Considerable shock hazard exists if the cut-off plug is inserted into a mains outlet.

4.3 fuse carrier

Should the plug fuse carrier be damaged or lost, the correct replacement must be obtained from your dealer or from Naim direct. Do not use the plug until the fuse carrier is replaced.

4.4 plug fuses

Replace only with ASTA or BS 1362 approved fuses.

note



This equipment has been tested and found to comply with the relevant EMC and Safety Standards, and, where applicable, also complies with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult your Naim dealer or an experienced radio/TV technician for help.

nap 500 power amplifier

connections

The negative input and output connections are all common. The mains earth (ground) should always be connected regardless of what other equipment is used in conjunction with Naim power amplifiers. This only grounds the case and the electrostatic screen within the transformer, and is not connected to the signal negative. In order to avoid hum loops, the signal negative of the whole system should be connected to the mains earth (ground) in one place. This will normally be the turntable or cdplayer.

Note: Each channel of the nap 500 is a "bridged" amplifier, so none of the speaker outlet sockets (+ or -) is at earth potential. Avoid connecting mains powered equipment such as electrostatic speakers, sub-woofers and headphone energisers that do not have a floating earth. No plug which is connected directly or indirectly to earth potential should be attached to any speaker outlet (+ or -).

protection

In the nap 500 the fan speed is increased in response to an increase in amplifier dissipation. If the amplifier reaches 70°C due to prolonged running at high level or to airflow being blocked, the output will be interrupted and the fan will run at full speed until it has cooled down. This may take a few minutes.

It is not necessary to switch the amplifier off, but it may be advisable to mute the preamplifier or turn the volume down to avoid surprises when it comes back on.

siting

Care should be taken when siting the nap 500 to ensure that the top and bottom ventilation grids are not blocked i.e. by carpet if the unit is to be placed on the floor.

weight

The nap 500 is very heavy and care should be taken when lifting or moving it. Make sure that the surface it is to be placed on can support the full weight.

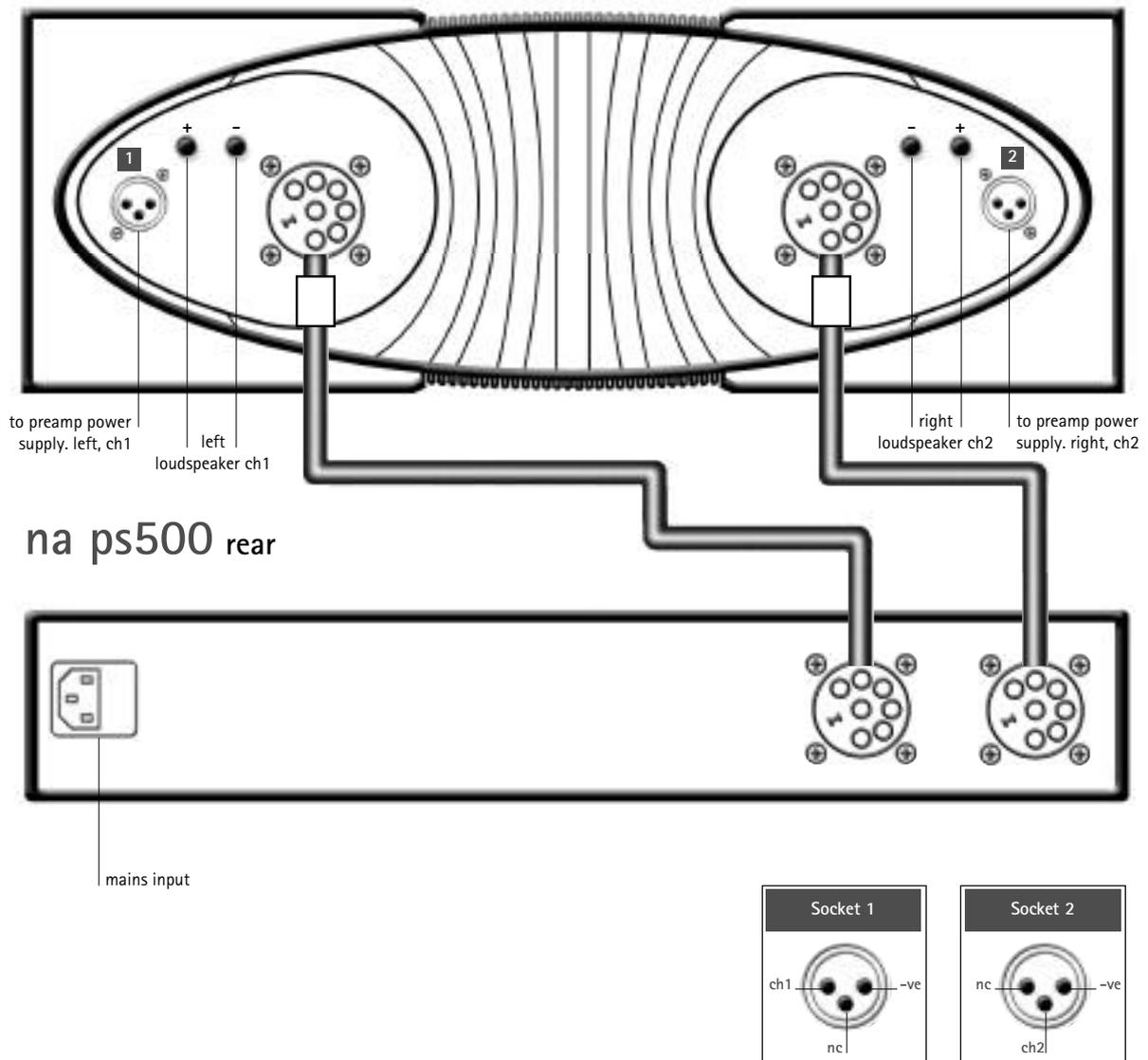
loudspeaker cable

For the best results Naim Audio's own speaker cable should be used to connect a loudspeaker to the output of the power amplifiers. Special Naim Audio loudspeaker connectors are supplied to make the connection to the power amplifier(s). **IT IS ESSENTIAL THAT THESE ARE USED, IN ORDER TO COMPLY WITH CURRENT SAFETY REGULATIONS.**

DO NOT, FOR ANY REASON, USE SO CALLED HIGH DEFINITION WIRE OR ANY OTHER SPECIAL CABLE BETWEEN POWER AMPLIFIER AND LOUDSPEAKER AS DAMAGE MAY RESULT.

nap
500

nap 500 rear, connection to na ps500



Specifications

nap 500

Standby power consumption (quiescent)	60VA
Working power consumption	signal dependent
Power output, continuous 8 ohms	140 watts per channel
Voltage gain	+29dB
Input impedance	18 kilohms
Frequency response	-3dB@ 1.5Hz & 100kHz
Mains supply	100V. 115V. 230V - 50/60Hz
Case size (H x W x D)	
nap 500	160 x 430 x 375mm
ps 500	76 x 430 x 300mm
Weight	
nap 500	25kg
ps 500	15.4kg

nap 135 mono power amplifier

connections

The negative input and output connections are all common. The mains earth (ground) should always be connected regardless of what other equipment is used in conjunction with Naim power amplifiers. This only grounds the case and the electrostatic screen within the transformer, and is not connected to the signal negative. In order to avoid hum loops, the signal negative of the whole system should be connected to the mains earth (ground) in ONE place. This will normally be in the turntable or cd player.

protection

In the nap135 power amplifier, fan speed is increased in response to an increase in amplifier dissipation. If the heatsink of the 135 reaches 70°C due to either prolonged running at very high dissipation, blocked airflow, or fan failure, the mains supply will be interrupted and the indicator light will go off until the amplifier has cooled down. This may take up to thirty minutes. The regulated power supply will shut down if more than 18amps is drawn for more than ten microseconds, but the indicator light will not go off. To reset, turn the amplifier off for two minutes.

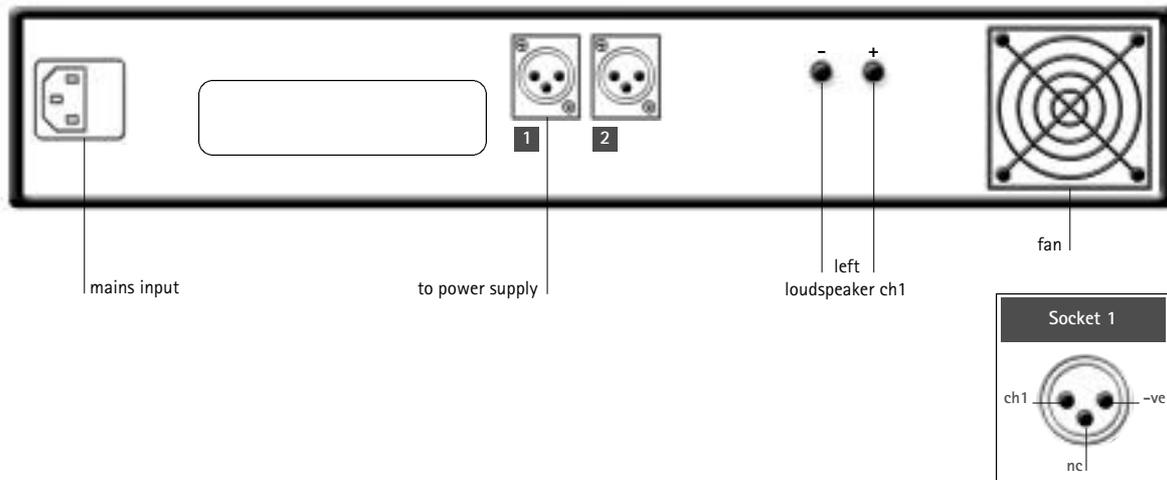
loudspeaker cable

For the best results Naim Audio's own speaker cable should be used to connect a loudspeaker to the output of the power amplifiers. Special Naim Audio loudspeaker connectors are supplied to make the connection to the power amplifier(s). **IT IS ESSENTIAL THAT THESE ARE USED, IN ORDER TO COMPLY WITH CURRENT SAFETY REGULATIONS.**

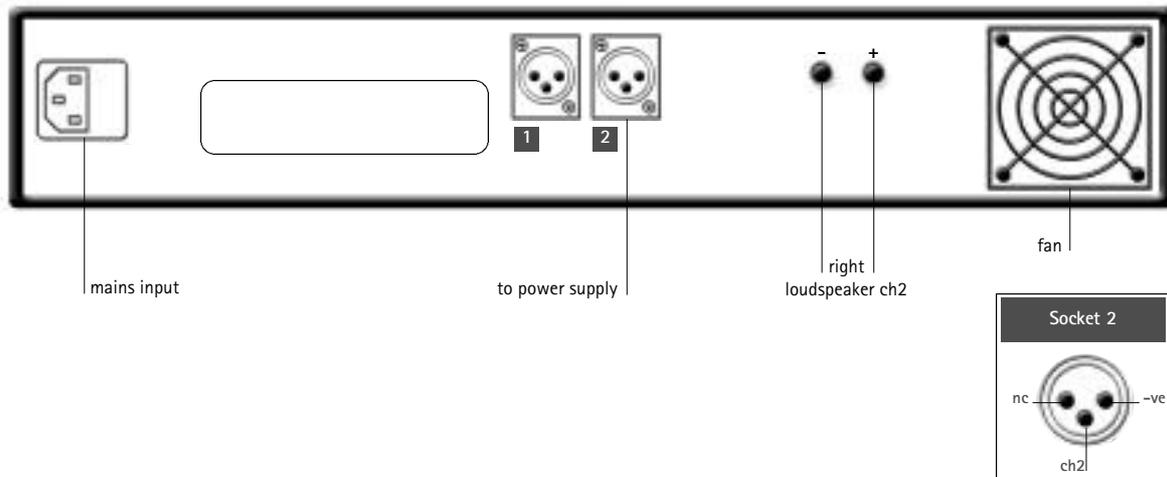
DO NOT, FOR ANY REASON, USE SO CALLED HIGH DEFINITION WIRE OR ANY OTHER SPECIAL CABLE BETWEEN POWER AMPLIFIER AND LOUDSPEAKER AS DAMAGE MAY RESULT.

nap
135

nap 135 rear, channel one - left



nap 135 rear, channel two - right



Specifications

nap 135

Power output	
Continuous, 8 ohms	75 watts
Transient	500VA
Voltage gain	+29dB
Input impedance	18 kilohms
Frequency response	-3dB @ 3Hz Et 50kHz
Mains supply	100V. 115V. 230V - 50/60Hz
Case size (H x W x D)	76 x 430 x 300mm

nap 140, 150, 180, 250 power amplifiers

connections

The negative input and output connections are all common. The mains earth (ground) should always be connected regardless of what other equipment is used in conjunction with Naim power amplifiers. This only grounds the case and the electrostatic screen within the transformer, and is not connected to the signal negative. In order to avoid hum loops, the signal negative of the whole system should be connected to the mains earth (ground) in ONE place. This will normally be in the turntable or cd player.

protection

If the case of a nap 140, 150, 180 or 250 reaches 70°C due to prolonged running at high dissipation, the mains supply will be interrupted and the indicator light will go off until the amplifier has cooled down. This may take up to thirty minutes.

The regulated power supplies in the nap 250 will shut down if more than 17 amps is drawn for more than 10 microseconds but the indicator light will not go off. To reset, turn the amplifier off for one minute.

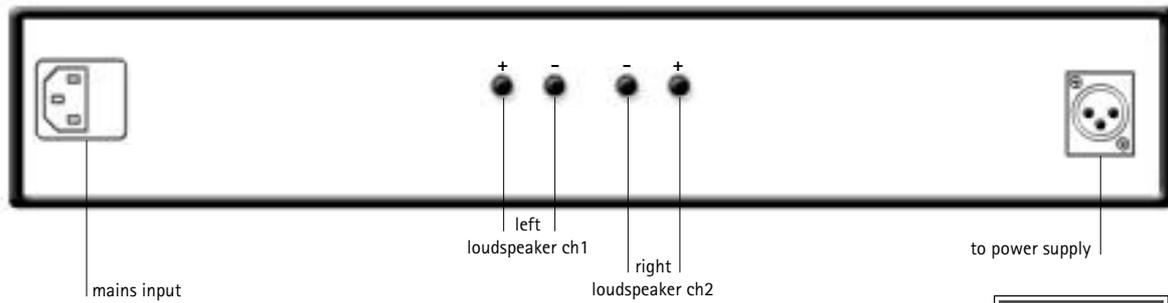
loudspeaker cable

For the best results Naim Audio's own speaker cable should be used to connect a loudspeaker to the output of the power amplifiers. Special Naim Audio loudspeaker connectors are supplied to make the connection to the power amplifier(s). **IT IS ESSENTIAL THAT THESE ARE USED, IN ORDER TO COMPLY WITH CURRENT SAFETY REGULATIONS.**

DO NOT, FOR ANY REASON, USE SO CALLED HIGH DEFINITION WIRE OR ANY OTHER SPECIAL CABLE BETWEEN POWER AMPLIFIER AND LOUDSPEAKER AS DAMAGE MAY RESULT.

140-250

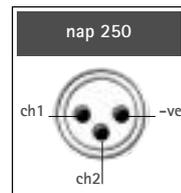
nap 250 rear



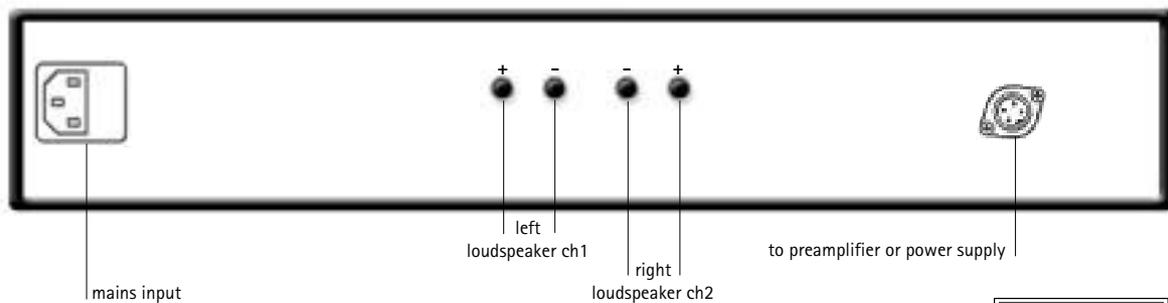
Specifications

nap 250

Power output	
Continuous, 8 ohms	70 watts per channel
Transient	400VA
Voltage gain	+29dB
Input impedance	18 kilohms
Frequency response	-3dB @ 3Hz & 50kHz
Mains supply	100V. 115V. 230V - 50/60Hz
Case size (H x W x D)	76 x 430 x 300mm



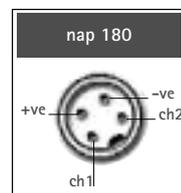
nap 180 rear



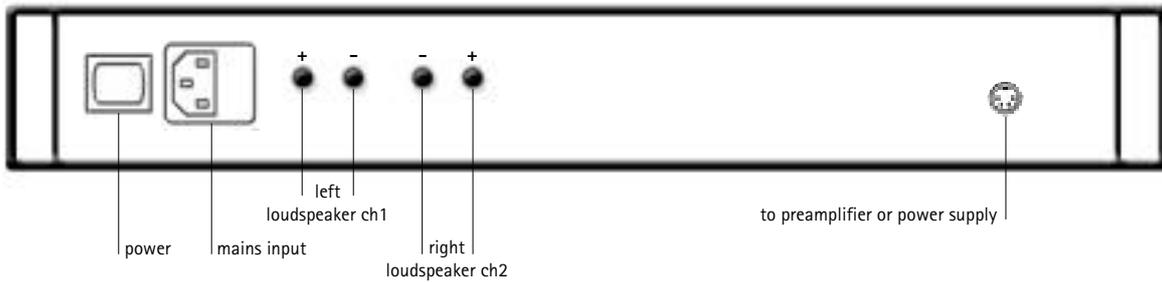
Specifications

nap 180

Power output	
Continuous, 8 ohms	60 watts per channel
Transient	300VA
Voltage gain	+29dB
Input impedance	18 kilohms
Frequency response	-3dB @ 3Hz & 50kHz
Mains supply	100V. 115V. 230V - 50/60Hz
Case size (H x W x D)	76 x 430 x 300mm



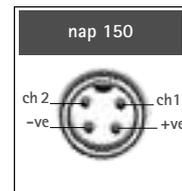
nap 150 rear



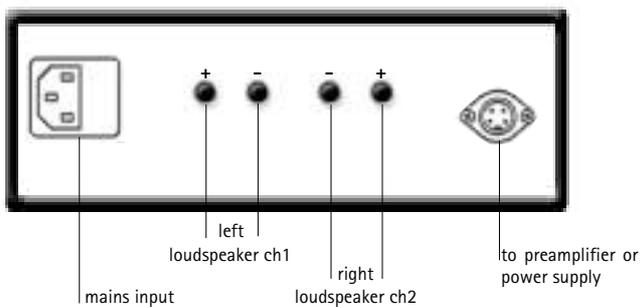
Specifications

nap 150

Power output	Continuous, 8 ohms	50 watts per channel
	Transient	250VA
Voltage gain		+29dB
Input impedance		18 kilohms
Frequency response		-3dB @ 3Hz & 50kHz
Mains supply		100V. 115V. 230V - 50/60Hz
Case size (H x W x D)		76 x 430 x 300mm



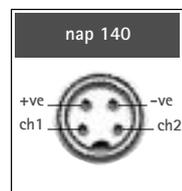
nap 140 rear



Specifications

nap 140

Power output	Continuous, 8 ohms	45 watts per channel
	Transient	200VA
Voltage gain		+29dB
Input impedance		18 kilohms
Frequency response		-3dB @ 3Hz & 50kHz
Mains supply		100V. 115V. 230V - 50/60Hz
Case size (H x W x D)		76 x 205 x 300mm



EC Declaration of Conformity to Appropriate Standards

Manufacturer

Naim Audio Limited
Southampton Road
Salisbury England
SP1 2LN

Products

nap 500, 135, 250, 180, 150 and 140 power amplifiers

Safety

HD 195-S6
EN 60 065

EMC

Emissions Tested to EN 55013
Sound and television broadcast receivers and associated equipment

Immunity Tested to EN55020
Electromagnetic immunity of broadcast receivers and associated equipment

In accordance with CISPR 16-1
Radio disturbance and immunity measuring apparatus

CISPR 16-2
Methods of measurement of disturbances and immunity

IEC 801-2 8KV (air gap)
4KV (contact)
(performance criterion B)

IEC 801-3 3V/m 20dB
(performance criterion A)

IEC 801-4 1KV (AC lines)
0.5KV (signal lines)
(performance criterion B)

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