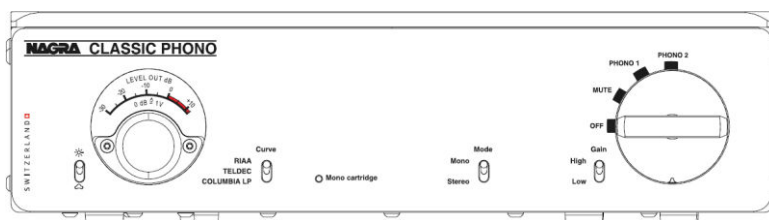




# CLASSIC PHONO



## User manual

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## Safety warning

- Read this manual carefully before operating the Nagra CLASSIC PHONO;
- Should you have any questions on how to setup or use your Nagra CLASSIC PHONO, please contact your Nagra dealer;
- Audio Technology Switzerland SA declines any responsibility in the event of an accident caused by the non-observance of these instructions or any other form of user negligence;
- The Nagra CLASSIC PHONO is a CLASS I equipment. It is essential that it is connected to a Mains socket outlet with a protective earthing connection when using the AC power supply;
- Never try to open your Nagra CLASSIC PHONO when it is powered to prevent the risk of electric shock and burns. Switch it OFF, remove the Mains or the external DC power supply cable from the back panel and wait at least 10 minutes before any intervention into your Nagra CLASSIC PHONO such as for tube exchange or input module adjustments. If you are unsure, please contact your Nagra dealer.

## Warranty

Audio Technology Switzerland SA certifies that this device has been inspected and tested before leaving the factory.

Every Nagra unit goes through our test laboratory. The result of the measurements is recorded in the "Protocol" documentation that comes with your device.

We guarantee our products against all manufacturing defects, for a period of three years for the Nagra CLASSIC PHONO and six months for the tubes, running from the date of delivery to the customer (validated by the serial number on the device casing and the invoice from an official Nagra dealer). This warranty is only valid for the original purchaser of new equipment.

This limited warranty covers the repair and replacement of defective parts, excluding any other remedy.

The absence of a serial number invalidates the warranty.

We decline any responsibility for damages resulting directly or indirectly from the use of our products and from the use of any components or spare parts other than those designated as original/approved parts by Audio Technology Switzerland SA.

As we constantly strive to improve our products, we reserve the right to modify them or change their specifications without notice.

## Congratulations

Congratulations! You have just acquired one of the best ever phono preamplifiers.

The Nagra CLASSIC PHONO was created by an engineering team with more than 60 years' experience designing world-class products for the professional audio, national security and military businesses.

Ever since its creation in 1951, Nagra builds devices that offer exceptional sonic performance. The company has received many awards for its technical innovations and the excellence of its products. Among the most prestigious, Nagra has been awarded two Oscars® and two Emmy®.

The professional and Hi-Fi ranges are designed by the same Research and Development department. Nagra has launched a Hi-Fi range to allow the wider public to benefit from technical advances that are often the privilege of the professionals.

This technology exists in the service of music, your music. This is why we already wish you some great moments of listening pleasure with your Nagra CLASSIC PHONO.

Thank you for your trust.

## Package contents

Besides the manual and the Nagra CLASSIC PHONO itself, the box contains:

- Mains cable\*;
- Record of measurements, response curve characteristics for your device, measured by the Nagra laboratory;
- Pair of "Haute Horlogerie" grade microfiber gloves;
- Allen key to open the top panel;
- 12 black plastic jumpers;
- 6 load circuits in their box;
- 2 spacer screws to secure the load circuit;

Please contact your Nagra dealer if anything should be missing.

\* Depending on the country of purchase, the cable supplied by Nagra will feature an European, Swiss or US plug.

# Installation

## Positioning

The Nagra CLASSIC PHONO must not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, should be placed on the machine. Use exclusively indoors in a moderate climate.

There must be enough space all around the chassis for adequate ventilation. Ventilation should not be impeded by covering the ventilation openings with items such as newspapers, table-cloths, curtains, etc.

The Nagra CLASSIC PHONO must rest on a stable support. We recommend that you use the anti-vibration support, the Nagra CLASSIC VFS FOR SOURCE, Vibration Free Support for source, developed by Nagra consisting of isolated solid aluminum plates using the same silicon base damping material as the Nagra CD mechanics.

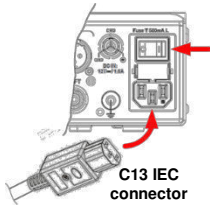
## Powering the Nagra CLASSIC PHONO

The Nagra CLASSIC PHONO can be powered either by its own internal power supply or by an external 12 V  $\text{---}$  with the Nagra CLASSIC PSU.

**The Nagra CLASSIC PHONO can not be powered by a Nagra MPS due to its power consumption.**

In the first case, simply use the AC Mains cable provided.

### Connecting the Mains



Place the Mains power switch on the rear panel of the unit in the OFF position, marked "O".

Insert the C13 IEC connector of the power cable into the C14 IEC Appliance inlet of the Nagra CLASSIC PHONO.

You may then push the Mains switch into the "I" position.

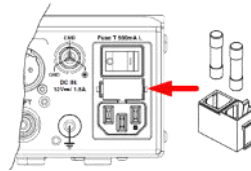
### Fuse replacement

The fuse holder includes a replacement fuse.

The fuse type is:

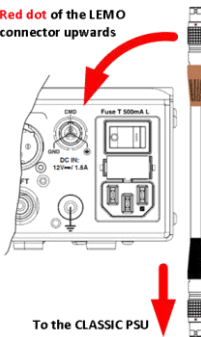
**FST 5x20mm 250V / T 500mA L.**

Should you need to replace it, only use the same fuse type.



### Connecting the Nagra CLASSIC PSU

Red dot of the LEMO connector upwards



Start by removing the IEC power cable from the IEC Appliance inlet of the Nagra CLASSIC PHONO. The Mains switch position is no longer relevant when an external power supply is connected.

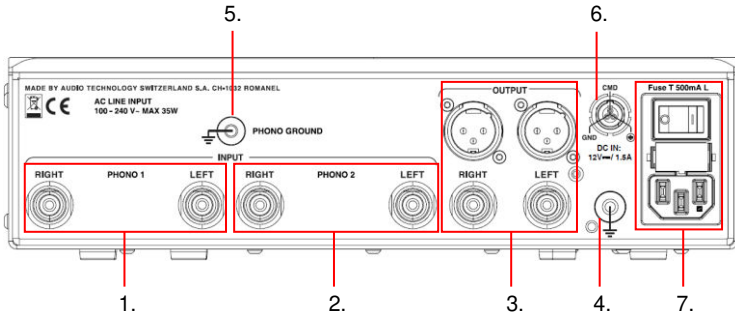
Place the front panel selector in the **OFF** position. Insert the LEMO connector from the external power supply cable into the DC socket as shown beside. You will hear a click that indicates the connector is securely locked in.

**Only use a LEMO cable with BLACK & BROWN sleeves to benefit from the best CLASSIC PSU features. The BLACK-sleeved LEMO plug should be connected to the Nagra CLASSIC PSU.**

To disconnect the LEMO plug, hold the fluted section of the connector and pull it backwards.



## Connection block on rear panel



1. Input PHONO 1
2. Input PHONO 2
3. Output block with 2x XLR and 2x RCA\*
4. Ground connector
5. Ground connector (phono)
6. DC input on LEMO socket
7. Mains connector, fuse & switch

***\*Use either RCA or XLR, but not both simultaneously.  
The XLR connectors are unbalanced.***

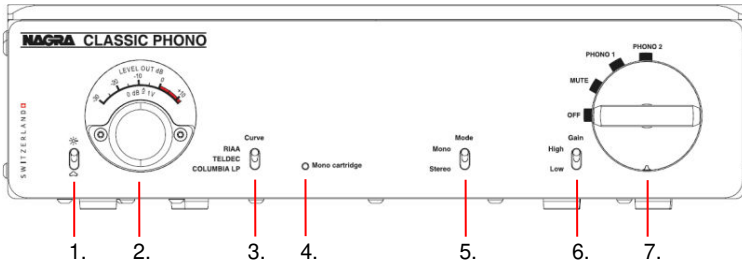
In order to obtain optimal performance from the Nagra CLASSIC PHONO, it is preferable to leave the device switched on for about 15 minutes before use, so that the internal components can reach their optimum operating temperature.

Like all tube electronic devices, the Nagra CLASSIC PHONO needs a running-in period. It will reach peak performance after a few hundred hours operation.

### **Note about the Ground connectors**

This feature is seldom used but often handy to solve specific setup issues. Your Nagra dealer will assist you on when and how to use these connectors.

## Front panel



1. Modulometer intensity switch, pushed up will increase the intensity, down will reduce it, there are 7 intensity levels
2. Nagra Modulometer indicates the output level in dB, reference 0 dB = 1 V
3. De-emphasis curve selection
4. Mono cartridge LED
5. Mono/stereo mode selection
6. Gain selection:  
Low position MM 38 dB / MC 54 dB,  
High position +10 dB (MM 48 dB / MC 64 dB)
7. Front rotary selector

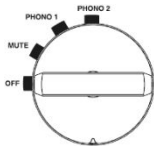
When turned **ON**, the CLASSIC PHONO will go through a 2 minutes preheating phase with the Mono cartridge LED blinking. This is in order to optimize the warming-up of tubes and critical components. This will allow your CLASSIC PHONO to offer excellent performance for a longer period, the components managed gently.

**Note:** In case of an accidental return to the **OFF** position for less than 2 seconds, the preheating is not reapplied.



# Operations

## Basic operations



The typical Nagra front rotary selector offers 4 positions.

The OFF is equivalent to STANDBY. The unit is still powered but with very little power consumption.

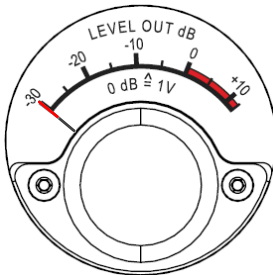
MUTE, the unit is ON but the audio signal is muted.

PHONO 1, the unit is fully operational on the input PHONO 1.

PHONO 2, the unit is fully operational on the input PHONO 2.

WITH AC POWER	WITH DC POWER		
Rear Mains switch	CLASSIC PSU output	Front rotary selector	Action
0	OFF	Any	The unit is totally off
I	ON	OFF	The unit is in standby
I	ON	MUTE	The unit is on and muted (warming-up for instance)
I	ON	PHONO 1	The unit is fully operational on the input PHONO 1
I	ON	PHONO 2	The unit is fully operational on the input PHONO 2

## Nagra Modulometer



Nagra Modulometer is inherited from the second recorder developed by Nagra back in 1952, the Nagra II. The Modulometer is a typical Nagra precision instrument that displays the necessary information to perform the best possible listening. In the case of the Nagra CLASSIC PHONO, the Modulometer displays the output level. The 0 dB corresponds to a 1 V rms signal on the output.

Left channel - black needle

Right channel - red needle

The Modulometer allows you to make sure you select the input setting in a consistent manner with the source/cartridge you are using.

## Light intensity adjustment



This two-way toggle switch allows you to adjust the Modulometer backlight intensity. Pushing the toggle up will increase the intensity, pushing it down will lower the intensity all the way to complete extinction. In total there are 7 different levels.

## Curve selection



This 3 positions switch allows you to select the desired de-emphasis curve.

## Mono cartridge LED



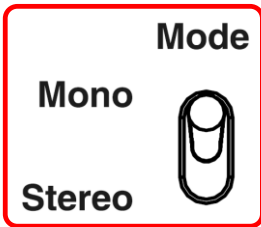
This LED switches ON when the switch (7) on the cartridge setting board of the selected input is set on position A.

**Note:**

*Only use this setting with a monoral cartridge installed on the turntable.*

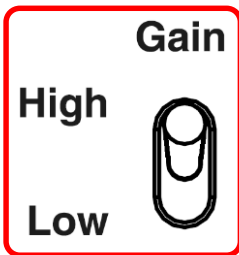
*The LED is blinking during the preheating phase.*

## Mono/stereo mode selection



This 2 positions switch allows you to select the desired type of output.

## Gain selection



This 2 positions switch allows you to select the desired gain on the output.

High = +10 dB (MM 47.7 dB / MC 63.9 dB)

Low = MM 37.7 dB / MC 53.9 dB

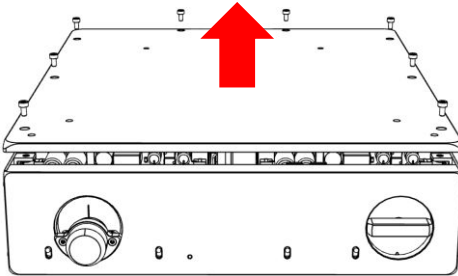
## Input setting

The Nagra CLASSIC PHONO is supplied with a Phono stage for Moving Magnet (MM) cartridges positioned on the input PHONO 2 and a Phono stage for Moving Coil (MC) cartridges positioned on the input PHONO 1.

Optionally, you can obtain an other MM or MC Phono module to place on the desired input. Please contact your Nagra dealer for more information.

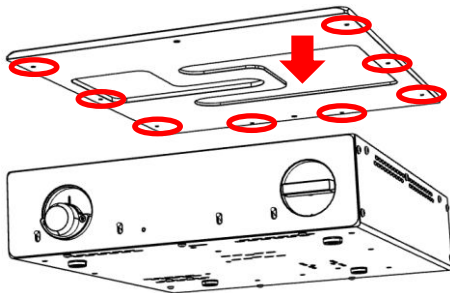
**Note:** Please switch off (front rotary selector & Mains switch) your Nagra CLASSIC PHONO and disconnect its power cable (Mains or external DC power supply), at least 10 minutes, before opening the top panel to perform any changes or adjustments on the input modules.

## Open/close the Nagra CLASSIC PHONO



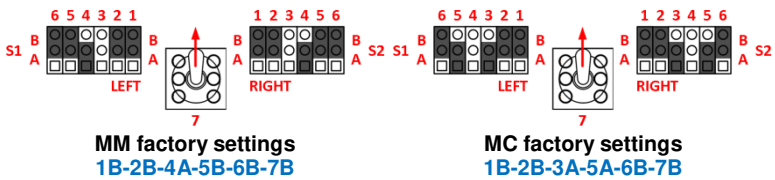
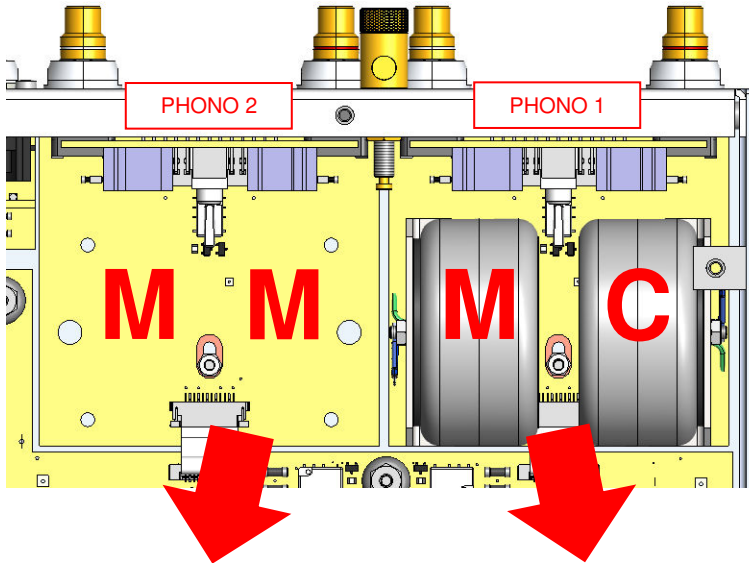
Remove the eight screws from the top panel of the Nagra CLASSIC PHONO with the supplied Allen key (2.5 mm). Then vertically lift up the top panel to open the device.

When closing the device, make sure you place the top panel correctly, so that the eight fixing screws can be tightened (no screws above the front panel). The two hollowed out internal parts of the top panel will be in the right positions to avoid any damages to the tubes and the electronic components.



## Factory settings

The factory settings are indicated on the figure below.

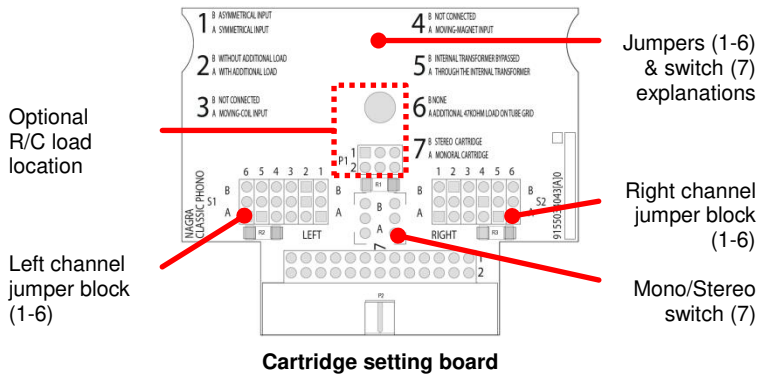


## Jumpers & switch functions

In order to maximize the Nagra CLASSIC PHONO's performance, the path of the phono signal (very low and therefore sensitive) has been shortened as much as possible. This is why the jumpers are very tight and close to the inputs.

We hope you will find that the manipulation difficulties are far outweighed by the Nagra CLASSIC PHONO's quality.

Remove the cartridge setting board from the Nagra CLASSIC PHONO when setting the jumpers (use both recesses on the circuit sides to lift it up vertically, there is no screw or anything else to secure the circuit), in order to have good access and a good view of the serigraphy.



<b>1</b>	<b>B</b>	<b>Asymmetrical input</b>
	<b>A</b>	<b>Symmetrical input</b>
<b>2</b>	<b>B</b>	<b>Without additional load</b>
	<b>A</b>	<b>With additional load</b>
<b>3</b>	<b>B</b>	<b>Not connected</b>
	<b>A</b>	<b>Moving-Coil input</b>
<b>4</b>	<b>B</b>	<b>Not connected</b>
	<b>A</b>	<b>Moving-Magnet input</b>
<b>5</b>	<b>B</b>	<b>Internal transformer bypassed</b>
	<b>A</b>	<b>Through the internal transformer</b>
<b>6</b>	<b>B</b>	<b>None</b>
	<b>A</b>	<b>Additional 47k Ohm load on tube grid</b>
<b>7</b>	<b>B</b>	<b>STEREO cartridge</b>
	<b>A</b>	<b>MONORAL cartridge</b>

## Load circuits

The Nagra CLASSIC PHONO is supplied with 6 standard load circuits, 5 resistive loads (R) and 1 capacitive load (C), allowing the settings of your Nagra CLASSIC PHONO to most closely match the specifications of your cartridge manufacturer.

For each input module, Nagra offers you three free optional\* load circuits individually tailored according to your wishes. Please contact your Nagra dealer for more information.

\*Offer valid for a limited period following your purchase, please contact your Nagra dealer.



Each load circuit is numbered and matches precise load values:

### 1-6 standard loads

- 1= 100 $\Omega$
- 2= 180 $\Omega$
- 3= 270 $\Omega$
- 4= 470 $\Omega$
- 5= 1k $\Omega$
- 6= 100pF

### 7-9 optional tailored loads

- 7= your wish
- 8= your wish
- 9= your wish

You can choose the load circuit to be installed according to the technical characteristics of your cartridge. (Please refer to the relevant manufacturer's data).

While waiting for the custom circuits, you can use the closest load value to that specified by the cartridge manufacturer.

## Load circuit installation

Remove the cartridge setting board from the Nagra CLASSIC PHONO before inserting the load circuit into the designated slot. (Use the recesses on the board to lift it up, **no tools are needed**).

Tighten the supplied spacer screw by hand to secure it. Reinstall the cartridge setting board into the Nagra CLASSIC PHONO.



## External transformer usage

You can use the Nagra CLASSIC PHONO with an external transformer. In this case, you must set the jumpers to disconnect the internal transformer (on a MC module).

Here is the required setting for a MC module:

1 B, 3 B (or not installed), 4 A, 5 B (2, 6 & 7 are up to you).

On a MM module, you can connect the transformer directly to the input connectors. The jumpers must be in the factory setting positions.



## Maintenance

### Tube ageing

The Nagra CLASSIC PHONO tubes are selected by Nagra according to exacting criteria. Their theoretical minimum useful life is 5'000 hours. Actually, some tubes operate consistently for more than 10'000 hours.

Thus, the useful life of the tubes is somewhat unpredictable. Rather than replacing the tubes arbitrarily after 5'000 hours, we suggest that you identify the signs of ageing:

- The distortion gently increases to an audible level;
- Presence of clicks (dry and short noise, like breaking dead wood);
- Presence of pops, short noise in the low frequencies;
- Presence of hiss, higher background noise.

As soon as one of these signs appears, please contact your Nagra dealer to order a Nagra CLASSIC PHONO replacement tube kit, reference 7055034030.

### Case cleaning

Clean the Nagra CLASSIC PHONO casing using a soft, non-fluffy, slightly damp cloth. Do not use any cleaning products which could have a corrosive effect.

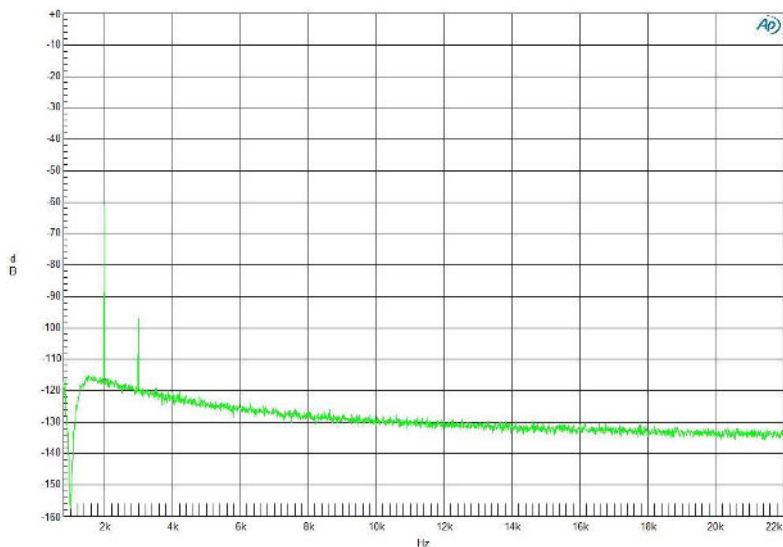
## Technical specifications

<b>Transformers ratio</b>	16 dB	
<b>Tube stage gain</b>	MM Gain switch LOW = 37.7 dB Gain switch HIGH = 47.7 dB MC Gain switch LOW = 53.9 dB Gain switch HIGH = 63.9 dB	@ 1 kHz, no load
<b>Frequency response</b>	20 Hz - 50 kHz 100 Hz - 50 kHz	+0.6 dB -0.2 dB ±0.2 dB RIAA, TELDEC, COLUMBIA LP
<b>Signal to noise ratio</b>	> -82 dB (ASA A)	With dummy loads connected to the inputs
<b>Total harmonic distortion (THD + N)</b>	Please refer to the graph on next page	
<b>Crosstalk</b>	> -75 dB (typically > -82 dB)	
<b>Interchannel phase</b>	< 4° (typically 0.35°)	@ 20 kHz
<b>Output level</b>	1 V <sub>RMS</sub> for 0 dB	Large tolerance to give easily 2 V <sub>RMS</sub>
<b>Output impedance</b>	< 500 Ω (typically 470 Ω)	
<b>Vacuum tubes</b>	2x E88CC/6922 1x ECC81/B739 1x ECC83/B759	Selected by Nagra Laboratory
<b>Power supply</b>	1x 12.6 V <sub>---</sub> / 1.5 A or 100 - 240 V~ ±10% 50-60 Hz	With CLASSIC PSU only Standby <1 W  With Mains
<b>Power consumption</b>	P <sub>MAX</sub> 35 W	
<b>Mains fuse</b>	T 500 mA L	FST 5x20 mm 250 V

*Specifications may change without notice*

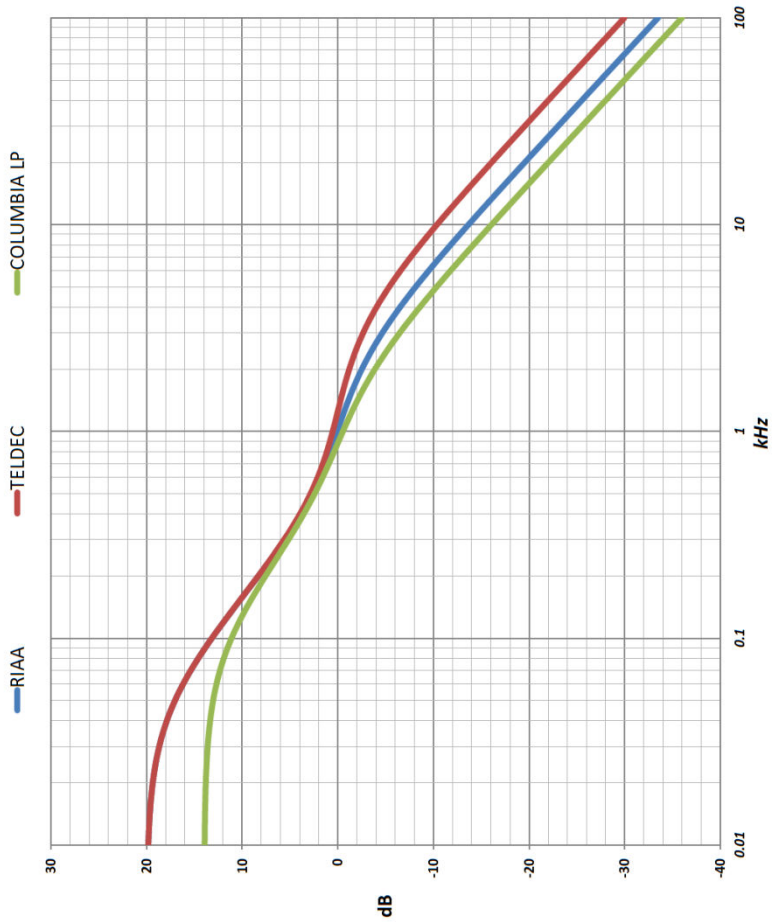
<b>Operating temperature</b>	+15 °C to +35 °C +59 °F to +95 °F	Moderate climate
<b>Operating environment</b>	Indoor only	IP30
<b>Dimensions</b>	310 x 254 x 76 mm 12.2 x 10 x 3 inches	
<b>Weight</b>	5.4 kg - 11.9 lbs	CLASSIC PHONO unit alone with 1x MM input and 1x MC input

### FFT of THD + N (A weighting)



***Specifications may change without notice***

## De-emphasis curves



**Note:** Below 1kHz the RIAA curve is almost overlaid by the TELDEC curve.

# Declaration of conformity

## EU declaration of conformity



Apparatus model / Product	Nagra Classic PHONO
Type / Batch / Serial number	80550340xx

Company name: AUDIO TECHNOLOGY SWITZERLAND SA  
 Postal address: Chemin de l'Orio 30A  
 Postcode & city: 1032 ROMANEL-SUR-LAUSANNE  
 Country: SWITZERLAND  
 Phone number: +41 21 643 72 40  
 E-mail address: info@nagraaudio.com

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Object of the declaration (identification of apparatus allowing traceability; it may include a color image of sufficient clarity where necessary for the identification of the apparatus):

The Nagra Classic PHONO is a stereo valve phono preamplifier with AC (Mains) and DC (+12V) power supplies.

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

<input checked="" type="checkbox"/> EMC Directive 2014/30/EU	<input checked="" type="checkbox"/> Low Voltage Directive 2014/35/EU	<input checked="" type="checkbox"/> RoHS 2 Directive 2011/65/EU + C.D. Directive (EU) 2015/863
<input type="checkbox"/> [Redacted]	<input type="checkbox"/> [Redacted]	<input type="checkbox"/> [Redacted]

References to the relevant harmonised standards used, including the date of the specification, or references to the other technical specifications, including the date of the specification, in relation to which conformity is declared:

EN 55032:2015/AC:2016/AMD1:2019	EN 60065:2014+COR1:2015+COR2:2016+A11:2017
EN 61000-4-2	
EN 61000-4-3	
EN 61000-4-4 level 1 (500V)	
EN 61000-4-4 level 2 (1000V)	
EN 61000-4-5 level 2 (1000V)	

The notified body (where applicable): [Redacted] Number [Redacted]

performed: [Redacted]  
 and issued the certificate.

Signed for and on behalf of:  
 Romanel [Redacted] 2020/05/26 [Redacted] T. Frank / R&D Manager  
 Place of issue Date of issue Name / Function / Signature



Disposal of old electrical & electronic equipment (Applicable in the European Union and other European countries with separate collection systems).

This symbol on the product or on its packaging indicates that it should be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local authority, your household waste disposal service or the shop where you purchased the product.

Applicable to the following devices:  
Nagra CLASSIC PHONO and all the package contents