

TM

SCHERTLER[®]
ACOUSTIC FIDELITY

ARTHUR
FORMAT48 - MASTER X

USER MANUAL

INTRODUCTION

Thank you for choosing the **ART48-MASTER X** module. This high-end Class-A output unit offers all the essential features required in a smaller mixer configuration, along with six separately controllable AUX SENDS for greater output flexibility. Fully compatible with all existing Arthur 48 and X mixer modules, MASTER X is ideally suited to both live sound use and studio applications where more output options are required. The module can also be combined with another Arthur48 L/R Master unit. As a further option, any or all of the main L/R and AUX outputs can be equipped with transformers to customize the output sound.

Like all Arthur modules, MASTER X features circuits that are built using single, discrete Class-A electronic components and pure high-voltage DC-amps (without a single capacitor in the signal path), offering 30 dB headroom and low noise, as well as unparalleled stability, warmth and transparency.

To make the most of your MASTER X module and to ensure trouble-free operation, **please read this manual carefully** before using the unit for the first time. It's also advisable to retain the manual for future reference.

For instructions on installing and combining the various Arthur modules and advice on starting up the mixer, please read the separate ART48 ASSEMBLY manual.

IMPORTANT SAFETY INFORMATION

SAFETY FIRST!

Safety is of major importance when operating any electrical equipment, so please note the following:



On a product, a lightning flash within a triangle indicates the presence of uninsulated "dangerous voltage" within the product enclosure. This may be of sufficient magnitude to cause risk of electric shock.

ELECTRICAL SAFETY

This information applies to all modules and power supplies that form your ARTHUR mixer:

- Before connecting your mixer to the mains, make sure that the mains voltage does not exceed the voltage specified on the mixer/power supply.
- Do not use your mixer if its power supply, cable or plug are not in perfect condition. Replace these as necessary, using the exact models/types specified. If any fixed cables need replacing, this should be done by a suitably qualified professional.
- Your mixer should only be connected to a mains socket with a ground protection system.
- When setting up or installing your mixer, make sure that the mains socket and the power supply's mains cable and plug are easily accessible.
- Do not, under any circumstances, defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade and third prong are provided for your safety. If the supplied plug does not fit your mains socket, consult an electrician for replacement of the obsolete socket.
- Do not expose your mixer to rain or any other water (even in small amounts). Do not use the mixer near water.
- Avoid spilling drinks or any other liquids on the mixer.

IMPORTANT SAFETY INFORMATION

- ❑ Do not operate your mixer in excessively humid conditions. Avoid excessive heat from sunshine, fire or similar. If your mixer is being used in a dusty environment, make sure it is adequately protected.
- ❑ Avoid installing your mixer near any heat sources such as radiators, heat registers, stoves, or other heat-producing apparatus (including amplifiers).
- ❑ Do not put any sources of open flame (e.g. candles or pyrotechnics) on or near your mixer.
- ❑ Do not cover your mixer during use, or obstruct the ventilation flow in any way.
- ❑ Unplug your mixer during lightning storms, or if it is not going to be used for a while. (Remove the plug from the mains socket to completely disconnect the mixer.)
- ❑ Your mixer does not contain any "user serviceable" parts. Servicing and/or repairs should only be carried out by qualified personnel. See MAINTENANCE AND REPAIR (below).

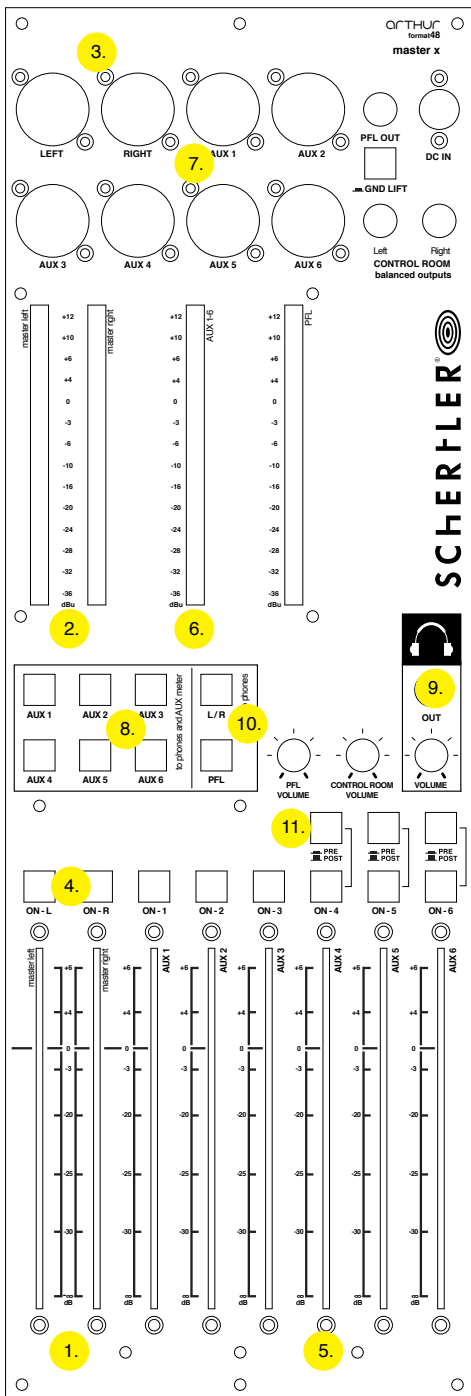
OPERATIONAL SAFETY

- ❑ During installation or live performances, make sure that your mixer's power supply cable cannot be walked on, tripped over or "pinched" – particularly at sockets, around waste bins etc. Also make sure that the power supply cable is not "stressed" at its point of connection to the mixer.
- ❑ To avoid interference, do not install your mixer near power transformers, TV sets, RF transmitters, electric motors, or any other sources of electrical energy.
- ❑ To avoid potential accidents, only use attachments, accessories and other equipment such as carts, stands, tripods, brackets or cases that are specified or recommended by the manufacturer, or sold with your mixer.
- ❑ Loud volume levels can cause irreparable damage to hearing, so avoid the following while using your mixer:
 - acoustic feedback (never point microphones directly at a loudspeaker)
 - high levels of distortion
 - impulse noises (loud "pops") that can occur when a device is switched on/off, connected to or disconnected from a system.

MAINTENANCE AND REPAIR

- ❑ Your mixer can be carefully cleaned, as necessary, using a dry cloth. No water must be used.
- ❑ When cleaning, do not use any solvents (such as acetone or alcohol). These could damage the mixer's finish and its labeling.
- ❑ Visually check your mixer on a regular basis for any signs of wear and tear or damage, but do not attempt any kind of servicing or repair.
- ❑ If your mixer malfunctions, or has been damaged, e.g. if the power supply/cable or plug is damaged, liquid has been spilled or objects have fallen inside, the mixer has been exposed to rain or moisture, does not operate normally, or has been dropped, please call your nearest Schertler technical assistance centre. (For more information, contact us at the address on the last page of this manual.)

ART48-MASTER X



1. L and R Master faders: Depending on their position, these faders attenuate or amplify the L and R signals from all the input units. The resulting signals can be seen on the L and R VU meters (see 2 below).

2. VU meters: These show the amount of signal being sent to the LEFT and RIGHT XLR output connectors (see 3 below). Note: Arthur features 30 dB of headroom, so its electronics and output amps are rarely likely to clip. The purpose of the VU meters is therefore to monitor the level of signal flow to successive audio devices.

3. LEFT and RIGHT XLR output connectors: These send the audio signal to a PA system or recorder etc.

4. ON/OFF buttons: The ON/OFF buttons connect the L/R and AUX faders with the output amps. They are similar to the MUTE buttons used on other mixers, but their functionality is reversed. When the ON/OFF buttons are depressed, the outputs are connected (whereas a MUTE button disconnects the output in its depressed position). These buttons can be useful in a live situation, to instantly disconnect "the stage from the PA" for example, without changing the position of the master faders.

5. AUX Master faders: This upgrade to the standard Arthur 48 L/R Master offers six AUX master faders that attenuate or amplify the AUX signals from all input units. The resulting signals can be seen on the AUX 1-6 meter (see 6 below).

6. AUX 1-6 meter: This VU meter shows the amount of signal being sent to the AUX 1 - AUX 6 output connectors (see 7 below).

7. AUX XLR output connectors and 8. Selector buttons:

From these AUX outputs, signal is sent to external effects or stage monitors. You can choose which AUX signal is seen on the VU meter by selecting the relevant "AUX to phones and

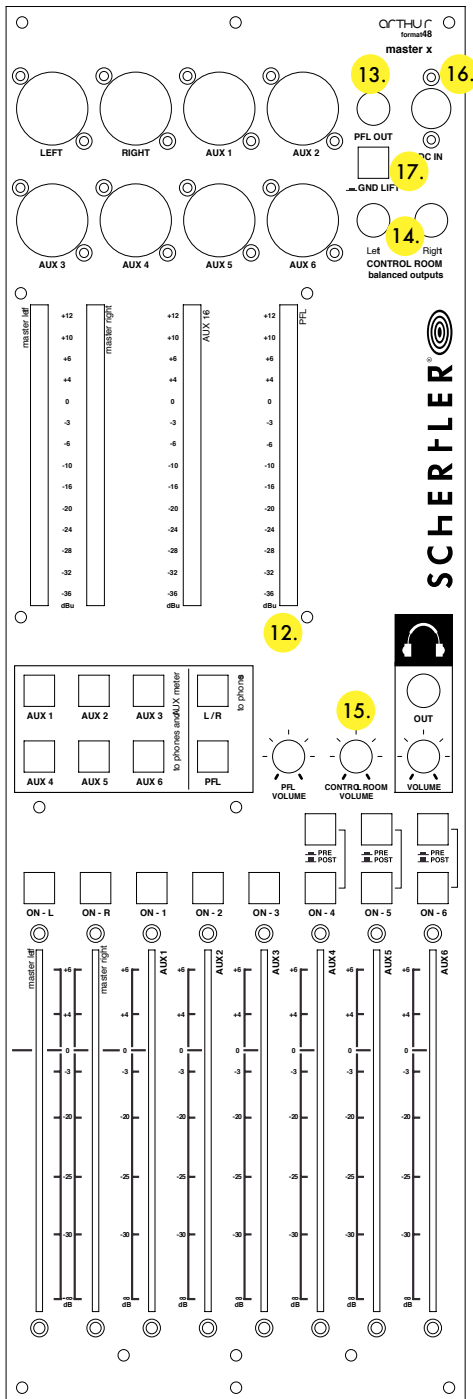
AUX meter" button. These buttons are also used to select which AUX signal can be sent to the Phones output (see 9 below). This enables more than one AUX signal to be selected at the same time.

9. Phones output: High-quality headphone preamp with 1/4-inch jack socket.

10. "To phones" buttons: The L/R and PFL "to phones" buttons activate the relevant audio signal to be sent to the Phones output.

11. AUX 4-6 PRE/POST buttons: These switch the pre/post fade positions of AUX 4-6. The pre/post fade status of AUX 1-3 depends on the input modules connected to the Master X:
 - using the standard Arthur 48 input modules (e.g. Microphone In, Yellow, Stereo In), the pre/post position can be selected on the input module itself.

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- using the MicLine X input module, AUX 1 is set post fade while AUX 2 and 3 are set pre fade. None of these can be switched.

The Master X unit features a switch (positioned on the circuit board) that deactivates the summing function of its AUX 1 section. If you change this switch from its default setting (AUX 1 on) to AUX 1 off, AUX 1 on the Master X unit will stop running and the Spring unit (analog spring reverb) will “take over” the AUX 1 signals from all channels. In this situation, you can however still pick up the summed AUX 1 signal from the reverb unit for external use.

The combination of these switches allows you to connect up to one Spring (post fade) with 5 stage monitors (pre fade), or up to one Spring with 3 other external effects (post fade) and two stage monitors (pre fade on AUX 2 and 3).

12. PFL VU meter: This shows the sum of the PFL signals activated on the input modules.

13. PFL Out: ¼-inch balanced jack output connector.

14. Control Room outputs: ¼-inch jack balanced L/R output connectors.

15. PFL, Control Room and Phones volume: These rotary controls respectively determine the output volume from the PFL Out (13), Control Room outputs (14) and Phones output.

16. DC IN connector: The mixer’s power supply is connected here. From this 48-volt DC input, all other units attached to the Master X will also be served via the power supply. (For more information, please see the Schertler website (Arthur48/ Accessories).

17. Ground lift button: Sometimes the shielding of the audio cables can be connected to ground through the other devices connected to the mixer. However, to avoid any possible ground loop noises, the GND LIFT button

disconnects the ground from all audio output ground connector contacts (XLR and jacks). If you have customized your Master X with transformers on the outputs (see the section on Customization), it is better to always keep the ground connection lifted, in order to get the most “noiseless” audio signal.

CUSTOMIZATION

Thanks to its innovative ground connection system, Master X’s default configuration has electronically balanced outputs. However, as an optional extra, it is also possible to customize the output sound by equipping each of the L/R Master and AUX 1-6 XLR outputs with a Lundahl transformer.

If you have bought your Master X without any transformers, or perhaps with just a few, you can always send the module back to Schertler and upgrade it with as many transformers as you need. For example, if you know that some of your stage monitors require the transformers and others don’t, you may just want to equip selected AUX lines with the transformers, as opposed to all six.

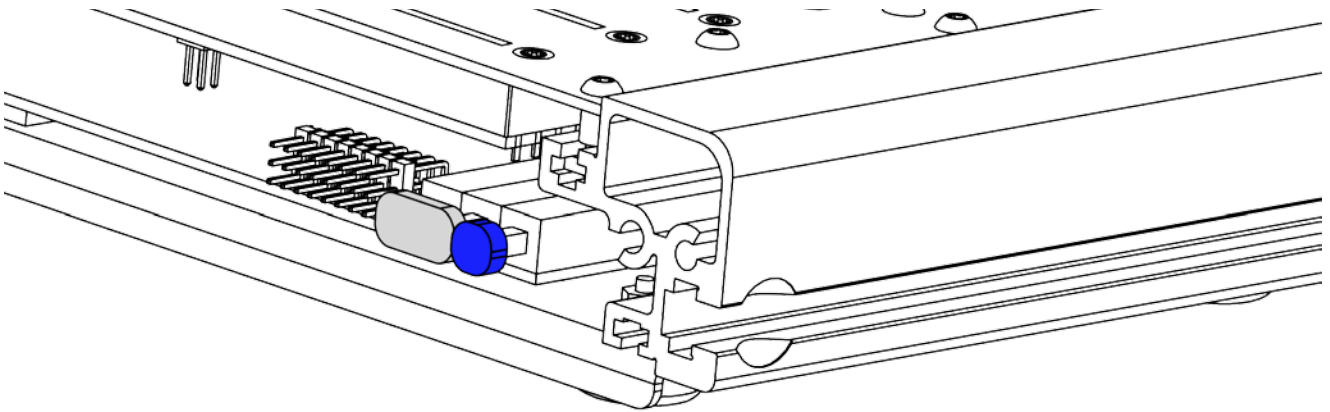
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COMBINING MASTER MODULES (MASTER X and L/R MASTER)

A standard mixer used for live and recording applications only needs one master L/R for connection to a PA system, or a recording device etc. There are however numerous situations in which more than one L/R output is not only useful, but essential.

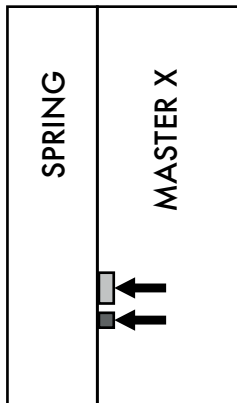
The Arthur concept, which offers total flexibility, enables the combination of a quasi-infinite number of outputs. In a hotel audio installation for example, a microphone and a stereo input might be sufficient for inputting the sound source, but more outputs would be needed for it to be independently controllable in different areas such as the bar, restaurant or hotel lobby. Another example could be a "splitter mixer" for audio demonstration, requiring only one stereo input module (for the audio source), but numerous master modules for sending the music signal to different loudspeakers for A/B comparison. Even on a standard mixer, a second master output could be helpful for controlling a subsidiary part of the PA system, or side fills for example.

The mixer's structure only allows for one summing amp, which will sum all L and R signals coming from the BUS. The Master X unit features a white switch - positioned on the circuit board - to deactivate that summing function. If you are using more than one master module, only one of these should be left with its default setting (i.e. with summing on); all the other master modules must have both the blue and white switch depressed.

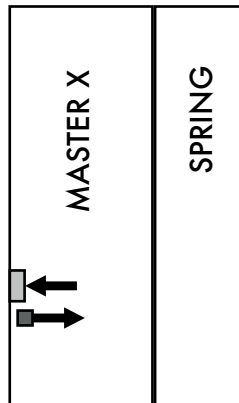


Note: If you want to position an Arthur SPRING reverb to the right of the Master (forming the final unit on the right of the mixer as many users prefer), you must first deactivate the summing amp on the Master X. Do this by depressing the blue button on the Master X circuit board.

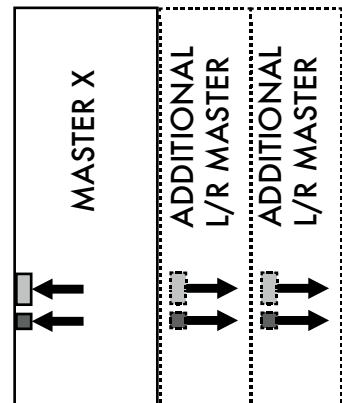
Spring on the left side of the Master



Spring on the right side of the Master



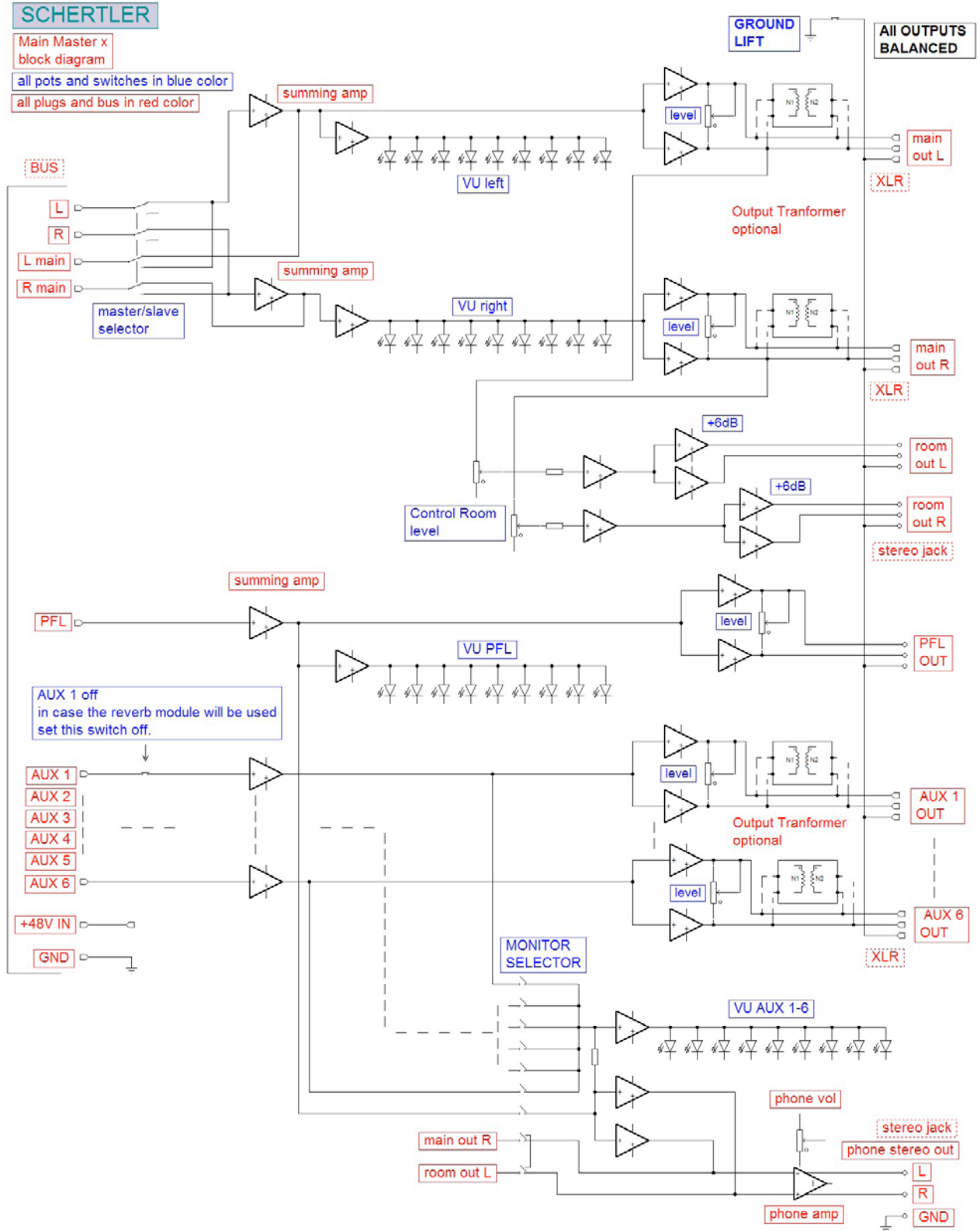
Multiple Masters setup



➡ Released
➡ Depressed

TECHNICAL INFORMATION

ART48 - MASTER X: SIGNAL FLOW



TECHNICAL INFORMATION

L/R and AUX 1 to 6 balanced XLR outputs

	With transformer	Without transformer
Output impedance	150 ohm	153 ohm
Maximum output level	+30 dBu	+30 dBu
Frequency response (-3 dB)	<10 Hz - 50 kHz	<10 Hz - 50 kHz
Distortion (THD+N; @1 kHz)	0.075% (Total)	0.136% (Total)
-30 dBu input level	0.08% (2nd harm.)	0.032% (2nd harm.)
0 dBu output level	0.005% (3rd harm.)	0.126% (3rd harm.)
with MICLINE-X module	0.0008% (4th harm.)	0.003% (4th harm.)
	0.001% (5th harm.)	0.019% (5th harm.)

CTRL room L/R balanced 1/4" jack output

Output impedance	180 ohm
Maximum output level	+30 dBu
Maximum Gain	+10 dB
Frequency response (-3 dB)	<10 Hz - 50 kHz
Distortion (THD+N; @1 kHz)	0.05%
-30 dBu input level	
0 dBu output level	

PFL balanced 1/4" jack output

Output impedance	180 ohm
Maximum output level	+24 dBu
Maximum Gain	+9 dB
Frequency response (-3 dB)	<10 Hz - 50 kHz
Distortion (THD+N; @1 kHz)	0.05%
-30 dBu input level	
0 dBu output level	

TECHNICAL INFORMATION

Phones 1/4" jack output:

Output impedance	6 ohm
Maximum output level	+14.5 dBu
Maximum Gain	+9 dB
Frequency response (-3 dB)	<10 Hz - 55 kHz
Distortion (THD+N; @1 kHz) -30 dBu input level 0 dBu output level	0.05%
Power consumption	380 mA (Transformerless) 460 mA (Full transformers)
Size & weight	143x58x475mm 1.65 kg (Transformerless) 2.4 kg (Full Transformers)

Optional Transformers (Lundahl)

Turns ratio	1+1 : 1+1
No load impedance	>700 ohm @ 50 Hz, +20 dBu
Frequency response (@10 dBu)	20 Hz - 80 kHz +/- 0.3 dB

NOTES

APPENDIX

WARRANTY

All Schertler products are covered by a limited two-year factory warranty (from the date of purchase) in respect of manufacturer defects. Details can be obtained from your local dealer / representative.

Schertler S.A. strongly believes in "common sense". Therefore, misuse of our products is not covered under rights obtained through our warranty policy, or through internationally recognised terms and conditions. For more information on warranty, please visit the Schertler website.

PRODUCT DISPOSAL

This product must not be disposed of in general household waste. It should be taken to a disposal centre for electrical / electronic waste. Please note any local or national regulations that may be applicable here.

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