

ELEMENT 302 Power amplifier

HDCA™ technology equipped

MCU processor inside

Eam Lab _ *elettroacustica Milano*

ELEMENT series

A New frontier of amplifier

philosophy

Preserve the naturalness of an instrument in its entirety is a challenge that every component must achieve high fidelity .

During the development of our products we Eam Lab we never wanted to leave this challenge outside of our point of view

The Element series was created to allow modern acoustic systems to better express their full potential by qualifying only and exclusively the music without affecting in any way the initial sound message .

Each component that is the Element series is carefully chosen based on electrical and mechanical characteristics of excellence with the reliability in the time for us Eam Lab, is of primary importance.

New materials and finishes of the chassis has allowed a significant improvement of the aesthetic factor considering getting a staple of the design philosophy Eam Lab

The mechanical robustness is guaranteed by 3mm thick steel panels attached directly to the heat sinks that make shoulder -bearing considerably reducing vibrations and vibrations .

Are linear amplifiers , extremely powerful and reliable while maintaining a compact design that can be installed in any environment.

Power amplifier ELEMENT 302



Per decenni le valvole sono state capaci di sorpassare le prestazioni musicali della concorrenza "transistorizzata".

La verità è che la tecnologia moderna dovrebbe essere superiore ai tubi a vuoto.

Gli amplificatori Eam Lab sono in grado di unire i pregi di entrambe le tecnologie.

ELEMENT 302

In this power amplifier we have brought together all the experience gained in the field of electroacoustic over twenty years.

Power output stages, stages preamplificatori, components and protections are made of this amplifier to provide absolutely outstanding performance in any environment, condition, load.

600 watts per channel into 4ohm and 1000 on 20hm leave no doubt. ELEMENT 302 interface better with more demanding speakers providing unlimited power in every situation.

This model has been adopted a new philosophy of approach circuit, starting from the stage of power until you get to that output. Without compromise, without reservation. As the microprocessor that controls the entire operation of all parameters

HDCA™ preamplifier stage is the new concept designed and developed in laboratories Eam Lab and literally means High Dynamic Current Amplifier which allows amplification of the current signal before being subjected to amplification real pilot stage, driver and output .



Tecnologia



This stage is fully discrete, is seen similar to un'OpAmp sonic superiority and allows you to amplify the current signal. The HDCA circuit has a bandwidth of 1MHz, next to a distortion 0.00001%, linearity within 0.1 dB between 1hz and 250.000hz always ensuring a perfect interface with any source.

That is not all. HDCA is armored in an aluminum container and resin with special polymers coupling the heat. All this translates into a more perfect and smooth operation with temperatures ranging between -30 and +150 ° c. to the untrained eye may seem like a pointless job like that. instead it is essential not to allow the early stages of signal amplification, which are the most delicate and most frequent fluctuations due to external agents (noise AC, RF, vibration), to "get dirty" and inevitably contaminate the signal to be transmitted to the next stages . Thanks to the stadium HDCA similar disadvantages do not exist anymore.

Power supply detail's

To ensure a consistently high output current transformers are huge and clean. But most large transformers are more they tend to vibrate. ELEMENT 302 is equipped with 2 1000VA toroidal transformers each. We solved the problem resinando processors in a nonmagnetic container re-isolating all with an aluminum crankcase 3mm thick which protects the sensitive amplification circuits.

Attention to detail

The aluminum housing also acts as a heat sink for the rectifier diodes, in this case two, one for the branch, capable of handling currents of forward over 500A each. All this power obviously needs to be dissipated.

In this case, an area of more than 80cm square radiant dissipates optimally and escape any kind of problem.

Output current

The output current is provided by Sanken bipolar devices of last generation. ELEMENT 302 it mounts 16 for each channel with peak power arriving at 272 Amps. The media can reach to 140 amps constant.

To ensure effective heat dissipation we opted for direct mounting transistor / heat sink without additional plates and electrical isolation is provided by a special mica military production that decreases the ratio W / C° .

Protection

The importance of protecting the best electronics and the connected load is of primary importance to us Eam Lab For this reason we have developed effective protection but that do not alter in any way the music signal. Specifically for this model were also integrated by a microprocessor which increases measuring the effectiveness and accuracy of intervention.

IDCL™ (Impedance Detecting & Current Limiting) is a protection circuit that constantly monitors the output current of the power output by comparing it with the load impedance. the circuit IDCL intervenes in the case in which the output current were to increase for several reasons. With this method you can also use ELEMENT302 with the next short-circuit impedance loads without the slightest hint of failure.

SVCS™ (Servo Controlled Current State) The impressive power of the amplifier needs to be treated properly and its management is entrusted to this circuit. The currents in the game, often very high, are kept under control even when the amplifier is turned on to begin work. To prolong the life of exceedingly transformers and capacitors, the power supply voltage is brought to the system only after a few seconds and not all at once. You go from a 30% to 100% in about 3 seconds after. In addition to this useful function the SVCS controls the power delivered by the transformer and limits the operation only in the event of excessive thermal dissipation gradually lowering the yield up to 70% of its capacity.

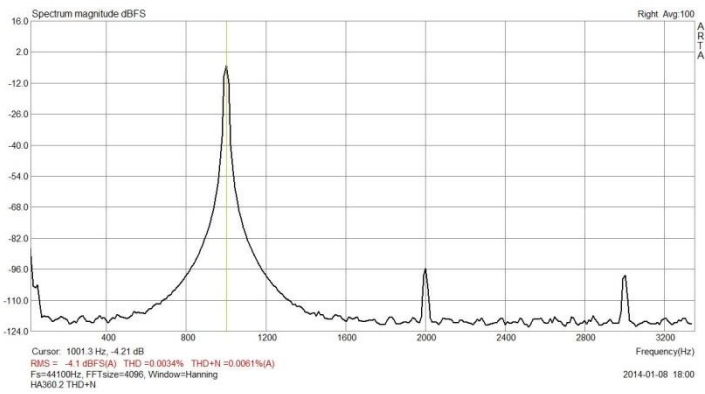
Sicurezza

THL™ (Thermal Heat Limiting) The temperature of the end devices is handled by this circuit which always guarantees the correct operation even in the event of excessive thermal stress. The circuit operates when the heatsink temperature reaches the threshold of the 75th c. and makes sure to keep it stable within a tolerance of 10% by acting on micro-variations of the polarization of the final stages. The two LEDs on the front panel indicate the operation of the circuit THL. this is a condition that occurs after a few hours of operation (in some cases after a few minutes, depending on the load connected) and the amplifier in this condition can work continuously without any problem for several hours yet.

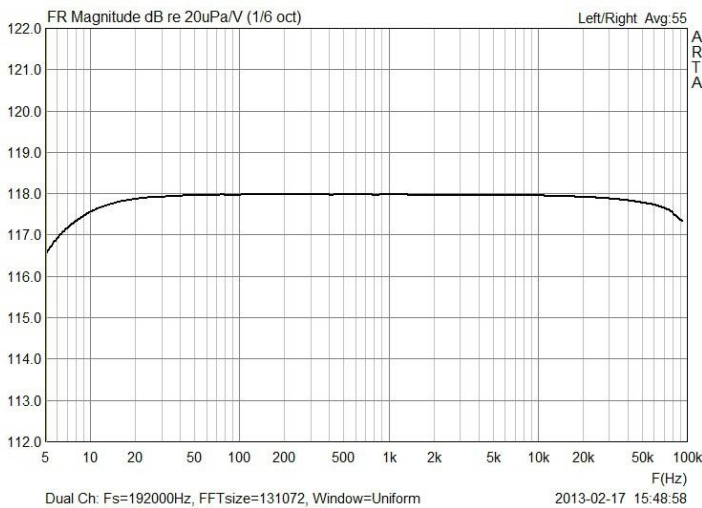
ILP™ (Intelligent Lock Power) the protections of gaming into a single circuit ILP contains 3 different functions. detects any DC currents present on the end devices, blocking the exits and disconnecting the connected load. In this regard, the task is assigned to 2 relay 30A contact with more than 500,000 cycles. ILP is not a simple DC detector but a system of protections more complex able to warn each minimum variation of DC output voltage. even in case of prolonged clipping circuit intervenes. Working in tandem with IDCL these two devices are able to provide unmatched reliability for this amplifier.

*The inputs feature balanced XLR and single ended RCA.
The selection is made by moving the switch.
Correspondent. The amplifier can also be connected to the bridge by using the positive terminals outside. + The speaker becomes the right channel. The negative is connected to the positive of the left channel*





THD . infinitely small for a 'amplifier of these powers is an indication of a well mixed in all its components



Risposta in Frequenza

Extended and very flat remains within the parameters of loss of 0.2 dB up to 80kHz. This is indicative of detail and precision speed transient response

Finally, there is only one test that really matters when you make a decision. Listening! Listen with an amplifier series ELEMENT is an experience that few other amplifiers will provide. You will be amazed of how much control the top and bottom of each speaker is able to give their best thanks to this technology. Do not fear comparisons with other amps try it and you'll understand why we firmly believe that our amplifiers are among the best still exist.

For a long time the power was seen at the center of attention for quality amps , subsequently followed by the factors of total harmonic distortion.

However, these isolated observations are not sufficient to explain the characteristics of a sound emitted by a ' amplifier .

Only a global vision that considers the load of a real speaker leads to valid results. An ' ideal amplifier is stable regardless of the load seen and must provide an amplification constant with zero phase shifts of all frequencies.

This should be done without excessive signal paths or "tricks" that are often used in transistor technology as excessive negative feedback and high earnings , or worse, with the correction of the signal. These amplifiers are perfect for measuring benches but then, almost always , they behave worse than listening tube .

The purpose is to ensure amplification Eam Lab very linear and fast, with no alterations , providing high - current supply that can not be minimally realized with vacuum tubes .

Your Eam Lab Dealers :



Eam Lab

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Datasheet

Power Wrms	300 + 300	8ohm
	600 + 600	4Ohm
	1000 + 1000	2 ohm (impulsive)
Frequency response	5 to 100Khz +/- 0,8db	
Damping factor	>200 @ 250hz 8ohm	
THD	0,005% @ 300Watt 8 ohm	
Input impedance	47Kohm xlr – 22Kohm single ended	
Mains	230 Vac	8,69 A. full power
	115 Vac	17,39 A. full power
Dimension	402 * 420 * 250 mm (P*L*H)	
Weight	41 Kg.	
Chassis	steel stainless 30/10	
Finish	Scratch-resistant black powder paint magnetized	
protection circuitry	THL , ILP , SVCS , IDCL, MCU processor	
Features	HDCA preamplifier stage input	