



**VIOLA**  
AUDIO LABORATORIES

## REFERENCE PREAMPLIFIER

# SPIRITO II

The Viola Spirito offers a level of transparency and musicality that is truly state-of-the-art. It's modular design uses an open architecture to give the maximum flexibility for upgrading and expansion. To ensure the greatest isolation from mains borne noise, it employs a choke input filter type power supply, housed in a separate chassis.

### Spirito II Audio Design

The Spirito uses Class A discrete circuitry and is fully balanced throughout. The input impedance of the input module is unusually high at 1Mohm. This avoids the loading that can be imposed on source equipment when lower input impedance designs are used. The fully balanced topology ensures the maximum rejection of common mode noise, greatly contributing to the stunning clarity and silent backgrounds that the Spirito provides. The ability of audio equipment to reject noise is an important consideration in the increasing noisy modern domestic environment.

### Simple User Interface

Discrete volume and balance controls are located on the front panel. All other unit functions are controlled by a large touch sensitive display. This allows the unit to be easily configured and controlled in stereo, multi-channel and multi-room modes. It also provides the flexibility necessary to allow other types of modules to be easily added in the future. The user can assign alpha-numeric names of their choice to each input.

### Low Noise Power Supply

The Spirito's choke input filter power supply produces far less electromagnetic interference than the capacitor input designs most often used in preamplifiers. It also places less stress on the power supply components, leading to higher reliability and longer life. In addition it completely avoids the high frequency noise that occurs when switch mode power supplies are used.



The Spirito's choke input power supply virtually eliminates high peak ripple currents, minimizing intermodulation distortion on the power supply rails and ground returns. This further enhances the sound quality by reducing both noise and distortion.

### Modular Construction

The Spirito's main chassis has ten user accessible card slots. These are loaded from the rear of the unit and permit the Spirito to be configured to suit a wide range of applications.

### Viola Spirito Specifications

Spirito with V20 Reference Input Module and V30 Reference Output Module

Inputs per Channel	2 XLR	1 RCA
Input Impedance	1Mohm	
Frequency Response	20Hz to 20kHz +0, -0.2dB	
SN Ratio	< - 90 dBv	
THD	< 0.002 % @1kHz, 2v out, unity gain, 22kHz filter	
Outputs per Channel	Output 1	2 XLR in parallel
	Output 2	2 XLR in parallel
	Output 3	RCA (Tape)
Output Impedance	Main Out	100 Ohms
	Tape Out	620 Ohms
SSP Loop	Yes	
Maximum Gain	+16dB	
Frequency Response	20Hz to 20kHz ± 0.2dB	
SN Ratio	< - 90 dBv	
THD	< 0.002 % @ 1kHz, 2v out, unity gain, 22kHz filter	
Dimensions	Spirito 44.7cm W x 20cm H x 51cm D	
Power Supply	44.7cm W x 11cm H x 51cm D	
Weights	Spirito	21kg
	Power Supply	23kg

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# REFERENCE POWER PREAMPLIFIER

## BRAVO II

The Viola Bravo stereo power amplifier has been designed to be the last word in fidelity, musicality and dynamics. It will effortlessly deliver large amounts of power while preserving the delicate nuances in the music signal.

### Bravo Audio Design

The signal path in the Bravo is fully balanced throughout the voltage gain stages. This is essential to achieve the maximum immunity from external sources of noise. Soft clipping circuitry limits sonic degradation should the amplifier be overdriven. Bandwidth control results in nearly identical small signal and large signal frequency responses and avoids slew rate limiting. To ensure accuracy in the time domain, the bandwidth control has a flat group delay characteristic. Great efforts have been made to minimize distortion at lower frequencies, because the majority of energy is encountered at these frequencies in most music. To improve transparency and the resolution of low level signals, the output stage operates with a relatively high quiescent current. Heavy oxygen free copper bus bars enhance the efficiency of power distribution within the amplifier. Film capacitors are used on the individual circuit boards in the unit to provide the high frequency bypass for the power supply and ensure that all sections of the amplifier see a uniformly low power supply impedance. This is key to the Bravo's ability to deliver massive amounts of power while preserving all the subtle aspects of the music signal.

### Bravo Power Supply

The heart of a power amplifier is its power supply. The Bravo uses a choke input filter type power supply with a generously rated 2kVA mains transformer. Four 80,000  $\mu$ F filter capacitors are located in the power amplifier chassis, providing optimum decoupling for the audio power stages.

The Bravo's power supply design completely avoids the generation of the high frequency noise that occurs with switch mode power supplies. It also places less stress on the power supply components, leading to higher reliability and longer life. An additional benefit is that high peak ripple currents are virtually eliminated, minimizing intermodulation distortion on the power supply rails and ground returns. This enhances sound quality by reducing noise and distortion levels.



### Viola Bravo Specifications

Output Power	Stereo Mode	350W per channel into 8 ohms 700W per channel into 4 ohms
	Half-Bridge Parallel Mode	1,000W into 4 ohms 1,200W into 2 ohms 1,600W into 1 ohm
	Full Bridge Mode	1,200W into 8 ohms 1,600W into 4 ohms

All power figures quoted are continuous average power

Inputs per channel	2 XLR	
Outputs per channel	3 pairs of WBT terminals	
Frequency Response	10Hz to 20kHz $\pm$ 0.15dB	10Hz to 100kHz, -3dB
Power Bandwidth	5Hz to 100kHz	
THD	Less than 0.1% @ 20kHz and 350W	
SN Ratio	-105dB referenced to 350W, C weighted	
Dimensions	Amplifier	44.7cm W x 23.5cm H x 66cm D
	Power Supply	44.7cm W x 23.5cm H x 66cm D
Weights	Amplifier	39kg
	Power Supply	57kg

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# MONO PREAMPLIFIER

## SOLO



The Solo preamplifier is comprised of separate chassis and power supplies for true monaural operation. The Solo uses discrete Class A circuitry and is fully balanced throughout the signal path. Like all Viola products the Solo input impedance is 1 million Ohms. This high input impedance provides a light load to source output stages which usually consist of amplifiers with limited drive current. Also the fully balanced topology provides maximum rejection of common noise. The Solo also features a choke input power supply. This helps avoid high peak charging currents that occur in capacitor input power supplies that can contaminate power supply and ground returns.

### Expandable

The Solo is expandable with up to 32 slave units controlled by a master. The master sends volume, balance; mute, remote trigger and input select commands to all slave units connected to the network for multichannel operation. Pairs and single units can be assigned to a group. This allows independent volume and balance control for up to 6 pairs of Solo.

### Baton Remote Control

The Baton provides remote operation of input switching, volume, balance, mute and the remote trigger control. The Baton will also control the volume and balance of groups of preamplifiers, so you can control the volume of center and surround channels independently.

### Viola Solo Specifications

Inputs	3 XLR balanced	3 RCA unbalanced
Outputs	1 RCA	
	1 XLR	
	1 Fixed (Tape)	
Input Impedance	1 M Ohms	
Output Impedance	Main Out	100 Ohms
	Tape Out	600 Ohms
Maximum Gain	16dB	
Maximum Output	15.5Vrms Balanced	
	7.75Vrms Single Ended	
Frequency Response	20Hz to 20kHz $\pm$ 0.2dB	
IMD	< 0.005% @ 1V input	
THD	< 0.01 % @ 20kHz, 1v input	
Noise	> -90dBv 10Hz - 22 kHz	
Power Consumption	Approximately 22W	
Dimensions	Preamplifier 44.7cm W x 5.3cm H x 48.3cm D	
Power Supply	22.3cm W x 9.1cm H x 40.6cm D	
Weights	Preamplifier	7.7kg
	Power Supply	7.3 kg

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# CLASS A MONO POWER AMPLIFIER LEGACY



The Viola Legacy mono power amplifier is capable of delivering 100 watts of Class A power into 16, 8, 4 and 2 ohms. The Legacy is fully balanced design with very low distortion, wide dynamics and reproduction of low level detail. Class A operation eliminates crossover distortion inherent in Class B and Class AB designs.

## Legacy Audio Design

The Legacy is a Class A biased push-pull amplifier that utilizes low global feedback. Two matched power amplifier modules that are driven into a center-tapped output transformer. This allows fully balanced operation from input to output. Soft clipping circuitry limits sonic degradation should the amplifier be overdriven. The Legacy is capable of switching to Class AB to deliver more power into demanding loads while still preserving subtle aspects of the music signal. The Legacy is protected against overvoltage, over temperature, excessive current and DC offset.

## Legacy Power Supply

As with all Viola amplifiers designs, the Legacy features a choke input power supply. The Legacy power supply reduces high charging currents that are prevalent in capacitor input supplies. This minimizes intermodulation distortion on the power supply rails and ground returns. This also has the benefit of reducing stress on the power supply components. Onboard decoupling capacitors eliminate wire inductance along with film capacitors provide a uniformly low power supply impedance.

## Viola Legacy Specifications

Class of Output Operation	A	
Power Rating	100W continuous average power into 16, 8, 4, and 2 ohms 20 Hz to 20 kHz at less than 0.25% THD	
IM Distortion (SMPTE)	1W to 100W <0.01%	
THD	<0.08% @ 20 kHz/100 watts	
Frequency Response	1W into 8 ohms (10Hz - 20kHz) +/-0.25 db; 100k <-3db	
Power Bandwidth	5 Hz to 100 kHz (-3dB points)	
SN Ratio	<110 db at 1 kHz / 100W; C weighted	
Gain	26 dB	
Input Impedance	1M Ohm / 1M Ohm balanced	
Inputs	2 x Balanced - XLR	
Output Connections	1 pair of binding posts for spade terminals for each impedance tap	
Power Consumption	Approximately 450W at idle	
Weight	Amplifier	168 lbs. (76.2kg)
Dimensions	Height w/feet	12 3/16" (31.0 cm)
	Width	17 9/16" (44.6 cm)
	Depth w/binding posts	26 1/2" (67.3cm)

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# STEREO PREAMPLIFIER

## CADENZA



The Viola Cadenza is a pure analog wide bandwidth preamplifier. It has six line inputs, plus one additional input for an optional plug-in module. A high quality phono module is in the final stages of development and other modules are under consideration. The Cadenza offers an extremely high level of transparency, which is essential if the emotion that is the essence of a musical performance is to be faithfully reproduced.

### Audio Design

All of the Cadenza's amplification stages are fully balanced and are constructed as modules using discrete components. High precision (0.1%) thin film resistors are used to minimize noise. The modules plug into the motherboard, which allows for easy upgrading should improved versions become available in the future and also facilitates servicing. The input section has been designed to have an input impedance of one Mohm. This has three major benefits:

- It preserves the balanced input's ability to reject interference if the output impedances of the signal source are not perfectly matched.
- Errors are reduced at connector contact junctions.
- It conserves the source unit's output drive current, so that more output current is available to drive the capacitance of the interconnecting cables, thus improving the high frequency performance and transient response.

Each channel has an 11 position stepped gain switch for controlling channel balance. These switches can also be used to "range" input sources with atypical output levels. They are located in the inverse feedback loop for minimum noise. The volume control is a custom made 59 position stepped attenuator with 1dB steps. It uses 0.1% Vishay film resistors and the contact material is a high gold content alloy, containing platinum, silver and copper. Careful design ensures that external vibrations do not modulate the wiper contact pressure, which would otherwise degrade the sound quality. To prevent ground loops between signal ended source units, all RCA inputs are completely isolated when not in use. Heavy oxygen free copper bus bars enhance the efficiency of power distribution within the preamplifier.

### Low Noise Power Supply

The Cadenza uses a separate choke input filter type power supply. This produces far less electromagnetic interference than the capacitor input designs most often used. It also places less stress on the power supply components, leading to higher reliability and longer life. In addition, the Cadenza's power supply design completely avoids the high frequency noise that occurs with switch mode power supplies. The Cadenza's power supply design also virtually eliminates high peak ripple currents, minimizing intermodulation distortion on the power supply rails and ground returns. This further enhances the sound quality by reducing both noise and distortion.

### Viola Cadenza Specifications

<b>Inputs</b>	1 Option Card 4 RCA 2 XLR	
<b>Outputs</b>	1 RCA 2 XLR 1 RCA (Tape)	
<b>SSP Loop</b>	Yes	
<b>Frequency Response</b>	20Hz to 20kHz ± 0.1 dB	
<b>IMD</b>	Less than 0.005% @ 1V input	
<b>THD</b>	Less than 0.01% @ 20kHz 1v input	
<b>Noise</b>	-95dB	
<b>Dimensions</b>	Preamplifier	44.7cm W x 9.1cm H x 40.6cm D
	Power Supply	22.3cm W x 9.1cm H x 40.6cm D
<b>Weights</b>	Preamplifier	7.3kg
	Power Supply	9.1kg

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# STEREO POWER AMPLIFIER SYMPHONY

The Viola Symphony is a 200W per channel stereo power amplifier with an integral choke input filter type power supply. It incorporates many of the technological advances that were made during the development of the Viola Bravo power amplifier. Like the Bravo, the Symphony is a virtuoso performer with excellent stereo imaging and reproduction of low level detail. The bottom end is extended and well controlled. A generously rated choke input power supply ensures that dynamics are reproduced without compression, even when driving difficult speakers.



# MONO POWER AMPLIFIER FORTE

The Viola Forte is a compact high quality mono power amplifier developed from the advanced circuitry used in the Viola Symphony, Bravo, and Legacy amplifiers. It is rated at 75W into 8 ohms, or 150W into 4 ohms. 2 units may be bridged to give 300W into 8 ohms, or 550W into 4 ohms. These ratings are conservative. The Forte will comfortably exceed them under most conditions.

Don't be deceived by the unit's compact dimensions. Like its big brothers, the Forte will effortlessly deliver large amounts of power without sacrificing the ability to accurately reproduce the subtle threads in a musical performance. Dynamics reproduced without compression; stereo images re-created with excellent focus, and accurate and well controlled bass, all contribute to portraying the emotion that is the essence of a musical performance. A generously rated choke input power supply allows the Forte to easily drive even difficult speakers.

## Viola Symphony Specifications

Output Power	<b>Stereo Mode</b>
	200W per channel into 8 ohms 20Hz to 20kHz, both channels driven, THD < 0.25% 400W per channel into 4 ohms 20Hz to 20kHz, both channels driven, THD < 0.5%
	<b>Bridge Mode</b>
	800W into 8 ohms 1600W into 4 ohms

All power figures quoted are continuous average power

Output Mode	AB2
Inputs per Channel	2 XLR
Outputs per Channel	2 pairs of WBT terminals
Frequency Response	10Hz to 20kHz $\pm$ 0.15dB at 1W into 8 ohms
	5Hz to 100kHz, -3dB at 1W into 8 ohms
Power Bandwidth	5Hz to 100kHz +0, -3dB
SN Ratio	-105dB referenced to 200W
Dimensions	44.7cm W x 44.7cm H x 19.6cm D
Weight	54kg

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## Viola Forte Specifications

Output Power	<b>Stereo Mode</b>
	75W into 8 ohms 20Hz to 20kHz, THD < 0.25% 150W into 4 ohms 20Hz to 20kHz, THD < 0.5%
	<b>Bridge Mode</b>
	300W into 8 ohms 550W into 4 ohms

All power figures quoted are continuous average power

Inputs	2 x XLR
Outputs	1 pair of WBT terminals
Frequency Response	10Hz to 20kHz $\pm$ 0.15dB at 1W into 8 ohms
	5Hz to 100kHz, -3dB at 1W into 8 ohms
Power Bandwidth	5Hz to 100kHz +0, -3dB
SN Ratio	-105dB @ 1kHz 75W, C weighted
Dimensions	22.5cm W x 11.0cm H x 42.3cm D
Weight	15.9kg

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# ACTIVE CROSSOVER QUARTET & DUET



## Viola Quartet Mono Electronic Crossover

The Quartet is a high quality mono electronic crossover intended for use with speaker systems with up to 4 bands. The Quartet uses linear phase filters with a cut-off rate of 12, 24, 36, or 48 db per octave. Other cut-off rates and filter alignments are available on special order.

Low noise hybrid type potentiometers are used for the output level controls. Each control is fitted with a 10 turn vernier dial allowing extremely accurate settings. The vernier is lockable for long term stability.

The Quartet uses the same precision class A amplifier modules as the Cadenza preamplifier. As with the Cadenza a separate choke input type power supply is used to provide a very clean and stable power source for the crossover.

The Viola Duet Stereo Electronic Crossover is a high quality 2 way version of the Quartet crossover intended for use with speaker systems with up to 2 bands.

## Viola Quartet and Duet Specifications

Inputs	1xRCA 1xXLR
Outputs per band	1xRCA 1xXLR
Input Impedance	1M ohm
Frequency Response	20Hz to 20kHz + 0.1 dB
IMD	Less than 0.005% @ 1V input
THD	Less than 0.01% @ 20kHz 1v input
Noise	-95dB
Dimensions	Crossover 44.7cm W x 9.1cm H x 40.6cm D Power Supply 22.3cm W x 9.1cm H x 40.6cm D
Weights	Crossover 7.3kg Power Supply 9.1kg

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# STEREO PREAMPLIFIER CRESCENDO



The Viola Crescendo preamplifier is a single chassis stereo preamplifier. The Crescendo chassis is milled from a solid billet of aircraft grade Aluminum. This results in a very rigid chassis with very low resonance. The Crescendo has a prism cut machine finish and a custom Viola anodize finish.

### Crescendo Audio Design

The OPA-1 module used in the Crescendo preamplifier is a discrete Class A operational amplifier. The first stage employs a low noise FET input. This is followed by a differential voltage gain section. The output is a high current, low output impedance voltage follower which is capable of driving the most demanding load. This results in a very open, fast and transparent sound stage.

### Features

The Crescendo features a high resolution USB DAC input capable of data streams up to 192 kHz/24 Bits. This allows connection from a computer USB to stream music without the need to purchase additional hardware.

The Crescendo uses Wi-Fi remote control on Apple devices. This eliminates the line of site problems associated with IR remote controls.

### Crescendo Specifications

Inputs: Analog	3 XLR balanced 3 RCA unbalanced
Digital	1 USB Audio 1 SPDIF
Outputs	1 RCA 1 XLR 1 FIXED (Tape)
Input Impedance	1 Million Ohms (Single Ended) 40k Ohms (Balanced)
Output Impedance	Main Output 100 Ohms Tape Output 600 Ohms
Maximum Gain	16dB, 26dB Switchable
Maximum Output	14.6Vrms Balanced 7.3Vrms Single Ended
Frequency Response	20Hz to 20kHz ± 0.2dB
IMD	Less than 0.005% @ 1V input
THD	Less than 0.01% @ 20n kHz 1V input
Noise	> -90dBv 10Hz - 22 kHz
Power Consumption	Approximately 37W
Weight	25.0 lbs. (11.3kg)
Dimensions	17.5" W x 3.5" H x 15" D 44.5cm W x 8.9cm H x 38.1cm D

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# STEREO POWER AMPLIFIER

## CONCERTO



Housed in the same size billet Aluminum chassis as the Crescendo, the Concerto delivers 125W into 8 ohms and 225W into 4 ohms. Like all Viola power amplifiers the Concerto uses a choke input power supply. This reduces peak charging currents that are prevalent in capacitor input supplies. This minimizes intermodulation distortion on the power supply rails on ground returns.

### Concerto Audio Design

The Concerto is a Class AB biased push-pull amplifier design. The Concerto incorporates Motorola ThermalTrak™ into the bias network. This provides fast thermal feedback information without the thermal lag of other bias topologies. A center chassis Venturi style heat sink provides cooling for the amplifier. Connections to loudspeakers are provided by a pair of WBT nextgen™ connectors per channel.

### Network

The Concerto can be connected to the Crescendo preamplifier via the CAN (Controller Area Network) connector. When this is done Concerto status information including temperature and line voltage are transmitted to the Wi-Fi remote application. This also provides synchronization of the color displays and standby modes.

### Viola Concerto Specifications

Output Power	<b>Stereo Mode</b>
	125W into 8 ohms 20Hz to 20kHz, THD < 0.25% 225W into 4 ohms 20Hz to 20kHz, THD < 0.5%
	<b>Bridge Mode</b>
	450W into 8 ohms 650W into 4 ohms

All power figures quoted are continuous average power

Inputs	2 x XLR
Outputs	1 pair of WBT terminals
Frequency Response	10Hz to 20kHz ± 0.15dB at 1W into 8 ohms 5Hz to 100kHz, -3dB at 1W into 8 ohms
Power Bandwidth	5Hz to 100kHz +0, -3dB
SN Ratio	>85dB @ 1kHz 125W, C weighted
Dimensions	17.5"W x 3.5"H x 15"D 44.5cm W x 8.9cm H x 38.1cm D
Weight	35 lbs. (15.9kg)

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(Preliminary Specifications)

### Warranty

Products of Viola Audio Labs are warranted to be free of defects if used under normal conditions for a period of five years from the date of manufacture.

All specifications are subject to change without notice.

### Viola Audio Laboratories

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