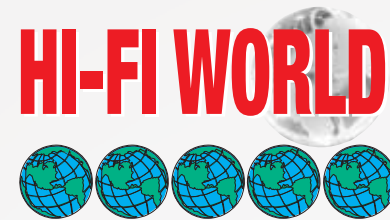


audiolab

Product Catalog





“A worthwhile update to a groundbreaking product... A great CD player, future-proofed DAC and preamp in one slim box. In terms of connectivity, sound quality and ease of use it’s hard to beat... Outstanding”

Audiolab 8300CD – Hi-Fi World, December 2015

“Superb, class-leading CD player/preamplifier... Beautifully engineered... Surely the best sounding silver disc spinner at the price right now”

Audiolab 8300CD – Hi-Fi Choice, December 2015

“Excellent do-it-all mid-price integrated amp... Powerful, clean, detailed sound... Excellent value and an ideal companion to the 8300CD”

Audiolab 8300A – Hi-Fi Choice, December 2015

8300 Series



Brilliance Evolved

Audiolab's new 8300 Series has big shoes to fill. After all, the preceding product generation has won more awards in the UK press during the last five years than any other range of high-performance audio electronics.

The 8300A integrated amplifier, with its radically redesigned circuitry and high performance phono stage is perfectly poised to build on foundations first laid in 1983 by the classic 8000A - one of the most influential British hi-fi components of all time.

We've worked long and hard to ensure that the 8300CD improves upon its illustrious predecessor in key areas, delivering even better performance as both a CD player and DAC/preamp for external digital sources. Built around the peerless ESS Sabre DAC, the 8300CD now extends resolution to 32-bit/384kHz and adds DSD compatibility via USB.









Control Where You Need It

The 8300CD adds full digital preamp functionality, with volume and source selection accessible via the player's front panel and remote handset. This means the 8300CD can be connected directly to a stereo power amp, or a pair of monoblocks like the 8300MB, as well as traditional integrated amplifiers such as the 8300A.

8300 Series also allows control of music playing from a PC /Mac / media device via USB. When connected to a computer, the 8300CD not only identifies itself as an asynchronous DAC, but also as a HID-compatible device (Human Interface device). This allows driverless control of the PC/MAC/media player (Play, Pause, Track Select etc).

Slot-Loading CD Mechanism

Our extensive research and development found that previous tray-style mechanisms sometimes produced a rare weak spot. The 8300CD sports a new mechanism that includes slot loading - much quicker and neater than inferior tray styles.

The new mechanism also reduces the occurrence of disc rejection, able to play CDs that other CD players may reject for being imperfect from dirt or damage. Its digital buffer circuit is a perfect mate to the asynchronous input of the DAC, improving even this area of performance. A final benefit is increased disc stability and reduced susceptibility to resonance, which additionally contributes to the overall improved sound quality.



8300CD



CD
Trk 8





The 8300CD DAC

The 32-bit ESS Sabre DAC as used inside the 8300CD continues to have a reputation as the best-sounding DAC chip available, and most CD players that use it are much more costly designs. In terms of the way it measures, its distortion figures are extraordinarily low. Around the DAC there are extensive measures to reduce jitter to vanishingly low levels, of a nature you'd expect to see only in much more expensive players.

The conversion process within Audiolab 8300CD results in the 512 DAC elements (256 DACs per channel) each operating at 84.672MHz – all digital audio sources, whatever the sample rate, are upsampled or oversampled to this frequency. This results in a conversion process that is switching 3840 times higher than the typical audio upper bandwidth of 22kHz. Without this Digital upsampling technology, the analogue filters would likely affect frequencies at or near the audible range, resulting in unwanted level and phase variation within the audio band.

The inclusion of the Hyperstream modulator means optimal transient response is achieved, thus eliminating dynamic response deficiencies and noise floor modulation artifacts typical of traditionally designed Delta-Sigma DACs.

Higher Resolution

The new 8300CD can accept and process data up to 32-bit/384kHz; this is a far higher specification than that required even by current hi-res music formats, ensuring the 8300CD is fully equipped for future advances in ultra-high-definition digital sound.

The USB input now also accepts DSD data, as well as PCM. This is a significant addition, as DSD has an important role to play in the developing high-res digital download scene. Accordingly, the filter section now includes four extra filters for DSD playback, allowing the user to optimise the noise floor to suit the performance of the source file and the bandwidth of associated equipment such as amplifiers and loudspeakers.

The updated digital processing associated with the increased resolution at the USB input delivers additional sonic benefits, for both CD replay and other connected digital sources, whatever the resolution of the file. In advancing the capability of the USB input to include files of up to 32-bit/384kHz, the processing of data preceding and within the Sabre DAC has increased the subjective resolution of musical detail and dynamics, resulting in a more energetic and transparent performance that sets a new standard for CD players at this price level.

DSD
Direct Stream Digital



Digital Filters

As digital audio reproduction technology has progressed, the importance of the characteristics of reconstruction digital filters has become more appreciated. The Audiolab 8300CD features user-selectable digital filters for optimal listening. These filter settings allow the user to tune the 8300CD's performance to suit his or her preference, depending on system configuration and musical taste. These filters are available for CD and PCM audio via digital inputs.

- Optimal Spectrum
- Optimal Transient
- Optimal Transient XD
- Optimal Transient DD
- Sharp Roll Off
- Slow Roll Off
- Minimum Phase



the 8300CD also adds four DSD filters that progressively attenuate the out of audio bandwidth noise floor. Given stable, wide-bandwidth amplification and loudspeakers that can handle high power ultrasonic output, the user can choose the widest bandwidth setting of 70K. More modest equipment will benefit from the lower bandwidth settings, as may files that contain little or no recorded ultrasonic musical detail.

The four DSD settings are:

- 70K
- 60K
- 50K
- Normal (47K)



Connections

Connectivity options have been further expanded on the 8300CD with the addition of an AES/EBU digital input and XLR digital output. These join a full complement of inputs/outputs retained from the 8200CD: 2 x coaxial digital inputs; 2 x optical digital inputs; 1x asynchronous USB input; 1x coaxial digital output; 1x optical digital output; single-ended RCA and balanced XLR analogue outputs.

For the 8300A, the inclusion of a phono stage is another important enhancement – the 8200A eschewed this facility, but the 8300A brings it back to capitalise on the current vinyl revival. Turntable users will appreciate the care with which this new stage has been designed, fed by its own power supply and delivering a high-quality, low- noise performance with both MM and MC cartridges, thus removing the need for an off-board phono stage.

12V remote trigger loop features on all units, so as one device is switched on, paired units are switched into or out of standby mode - working as one system for quick operation.

New Updated Aesthetic

The newly updated external structure of the 8300 series follows the new design aesthetic of Audiolab products going forward, incorporating softened lines and textures yet still maintaining Audiolab's instantly recognisable and contemporary style.

The 8300 series' blasted aluminium finish, CNC routed aluminium dials and display certainly look cutting-edge, yet with every Audiolab product, form follows function. The new display and controls enable a fast and intuitive access through the vast routing options and filter settings in both the A and CD.



8300A Design Q&A

The 8300A's all-new circuit design delivers all-new sound quality. The soundstage it produces is deeper and broader, with greater space and separation within. Instruments and voices are better defined, their character vividly portrayed. Dynamic range is greater and frequency response further extended, with greater bass definition and treble that is both crisper and sweeter. In short, it delivers an open window on the music being played, as all great hi-fi should, engaging the listener with natural, unforced energy that is fully reflective of the source material.

With a long working relationship with Audiolab and also extensive experience with other high-end hi-fi brands including Quad, World renowned audio designer Jan Ertner has headed up the design of the all new 8300A. We asked him a few questions of how he completely reevaluated the design, whilst maintaining Audiolab's core values on sound quality and ergonomics.

What did you want to achieve on designing the 8300A?

A versatile High End Integrated Amplifier, a worthy companion for Audiolab's excellent source products.

'Why is the 8300A such a radically new design?'

'In terms of the actual electronics circuitry it's all new, from the ground up. We wanted to create an "8000A" for the 21st century using the latest technology and components.'

How does the new display affect the overall usability of the 8300A?

'It improves the user interface. Having a display gives you more flexibility in terms of functionality, allowing the user to easily configure the amplifier. It gives clear visual feedback of the status of the amplifier.'

How does the output stage avoid the usual Class AB problems of unwanted crossover and harmonic distortion?

'Only by running the amplifier in pure class A can you completely eliminate cross over distortion. However by using an output topology with high inherent linearity, good thermal stability and setting the standing current for optimal linearity, it is possible to reduce the distortion to such low levels that the "crossover" no longer is a determining factor for the overall sound quality. This is exactly what we have done in the 8300A and its low level distortion performance (a good indicator of crossover distortion) is very good indeed, measuring less than 0.003% @ 1W.'

Why use a microprocessor to control the maximum transient power 'clipping' level?

'It allows the protection circuit to be voltage independent and therefore much simpler, using just a current limiting circuit. The output current is limited to 15A and a signal is sent to the micro processor indicating when the limiting is taking place. The microprocessor can then analyse the nature of the overload and determine whether to carry on playing (passage of loud music) or enter protection mode (continuous overload). The real benefit in terms of audio performance comes from the amplifiers ability to deliver its full maximum current into any load regardless of it's complexity.'

What is so special about the two channel power supply?

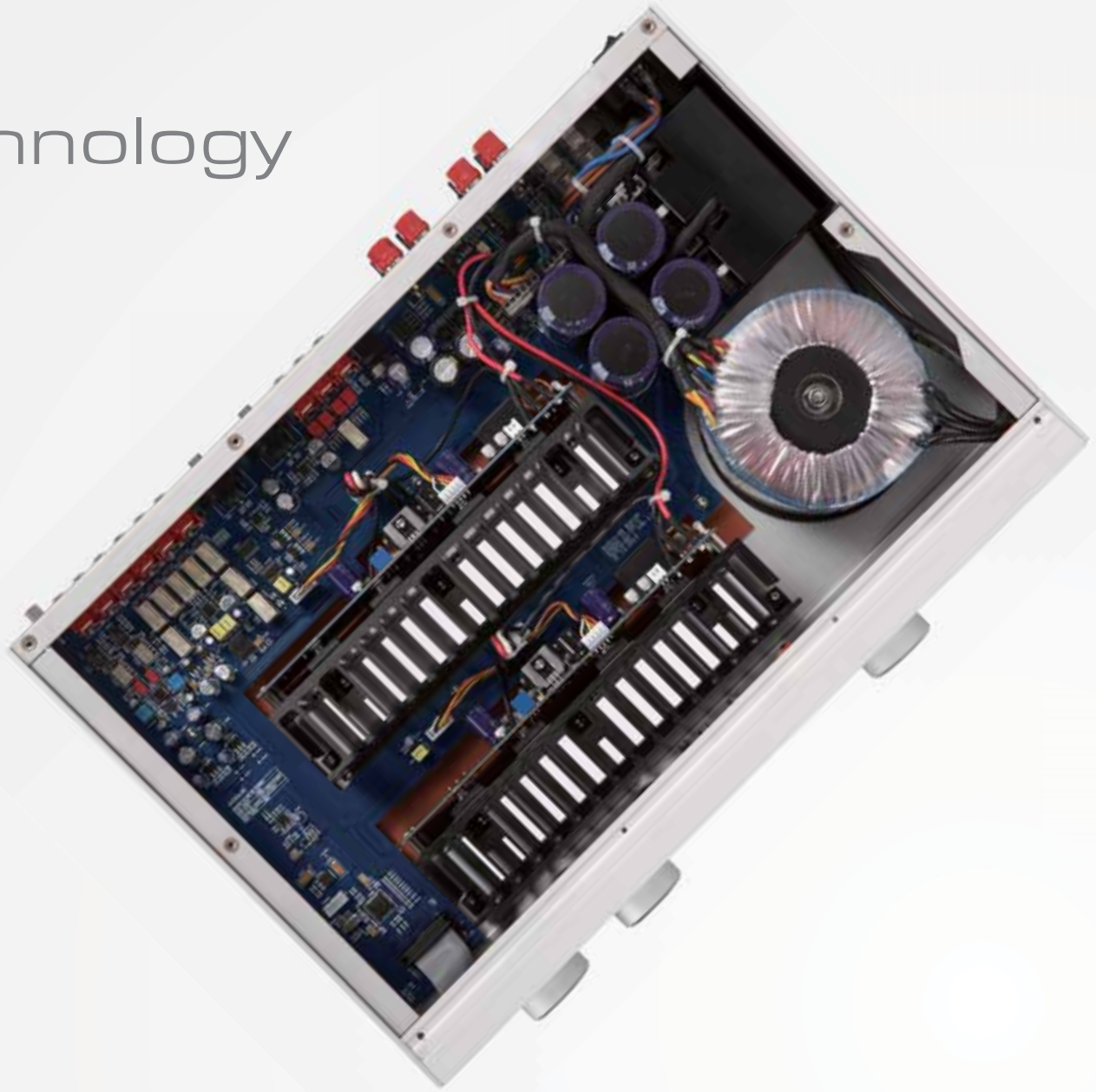
'An integral part of the dual mono power amplifier design is the use separate power supplies for left and right channel. Each channel has its own separate transformer winding, rectifiers and reservoir capacitors, featuring 2x15000uF per channel. This coupled with the use of a powerful 300VA transformer gives each channel ideal working conditions and allows the amplifier to handle the most demanding loads without sounding strained.'

How is the phono stage superior to the usual circuitry included in integrated amplifiers?

'It gives the user the choice of using either a MM or MC cartridge which most integrated amplifiers don't. The phono stage, employing miniature SMD relays, can easily be switched between MM and MC using the front panel controlled Menu. The high gain input stage of the RIAA circuit features an amplifier which manages the difficult task of giving great signal to noise performance for both systems in spite of their very different mode of operation.'



8300A Technology





Having the emitter follower deliver additional current only when needed allows for a simpler current-limiting arrangement, which can be voltage independent. Audiolab calls this ACD or 'Active Current Drive', where the current limiting is under microprocessor control and programmed to allow the amplifier to supply high currents (+- 15A) into complex loads on par with amplifiers that are bigger and more powerful on paper. A 300VA toroidal transformer supplies the two mono amplifiers using separate secondary windings, followed by 2x15000uF reservoir capacity per channel (60000uF in total).

The preamp section is kept as simple as possible to maintain signal purity, with line input signals simply passing through a unity gain buffer and a precision analogue volume stage. The latter covers the range from -80dB to +8dB in steps of 2dB, 1dB and 0.5dB (step resolution increasing with volume position). Much effort has gone into the physical layout of the 8300A's circuitry, keeping the sensitive preamp section as free from noise interference as possible. This, plus the use of independent power supplies for critical circuit stages, helps to deliver performance on par with high-quality two-box pre/power amp systems.



At the amp's heart is a powerful dual-mono power amp section, delivering 75W per channel into eight ohms, with a maximum current delivery of 15 Amps into difficult loads. This is significantly more powerful than the outgoing 8200A, which was rated at 60W into eight ohms, but greater power delivery is only part of the story.

The output stage of the discrete power amp circuits uses a CFB (Complementary Feedback) topology in combination with conventional emitter follower circuitry. The CFB stage offers superior linearity and ensures excellent thermal stability, as the idle current is kept independent of the temperature of the output transistors.

Using an emitter follower in combination with the CFB stage is an efficient way of increasing the current ability of the amplifier without compromising the advantages of the CFB circuit.





Pure Power

The 8300MB is quite possibly the perfect example of Audiolab's goal to effortlessly reproduce music with exquisite detail. Not only is 8300MB an extremely powerful amplifier, offering 250W of pure power with high current drive capability, but it also features a fully balanced power stage.

Internally the 8300MB is arranged as two complete power amplifiers which are bridge coupled to the loudspeaker terminals. Each power amplification stage is fed from one of the terminals of the balanced input, therefore the 8300MB operates as a fully balanced amplifier right through to the speaker output. The benefits are a high level of noise rejection and lower transient distortion plus the ability of the amplifier to draw maximum current from the power supply as required to follow the musical waveform accurately.

This all adds up to a startlingly vivid and highly impactful musical performance that will put more energy into your loudspeakers as well as control them like never before.



USB A -20dB
Unlocked

audiobbb

DAC

M-DAC+

Redefining a Classic

The new M-DAC+ is a high-performance, multi-purpose audio DAC (Digital-to-Analogue Converter) for home use, designed to sit on a desk or table, or integrate into a hi-fi system. It incorporates a highly specified, audiophile-quality digital preamplifier and Class A output stage for connection to a power amp and speakers (the output can be fixed for those who wish to use an existing preamp or integrated amp), in addition to a high-quality output for headphone use.

The new M-DAC+ is based firmly on the classic M-DAC, with carefully targeted improvements in key areas – a logical move, given the original model's sustained popularity over the last four years. The M-DAC built a peerless reputation with press and public alike since its launch in the autumn of 2011, scooping multiple Product of the Year Awards from the likes of What Hi-Fi?, Hi-Fi Choice and EISA to make it arguably the most critically acclaimed DAC component ever made.



Enhanced Sonic Performance

Like the M-DAC, the M-DAC+ incorporates the ES9018 Sabre Reference 32-bit DAC chipset, still widely regarded as the finest available. This is surrounded by exceptionally well-specified circuitry that puts other similarly priced DACs to shame, including a proprietary, discrete master clock to minimise jitter, coupled with extensive time domain isolation. A JFET Class A output stage ensures that the audio signal, following conversion from the digital domain to analogue, is of the highest quality.

A important change improving performance relates to the power supply, which has been upgraded and is now incorporated within the M-DAC+'s chassis (hence its slightly taller and deeper case compared to the classic M-DAC). A precision-wound toroidal transformer uses multiple windings to feed separate analogue and digital rectification stages. From there, multiple power supply sections feed the necessary voltages to each area of the DAC, keeping any crossover interference to a minimum. The result is the highest performance power supply Audiolab engineers have yet specified for a DAC, and its contribution to the M-DAC+'s enhanced sonic performance is significant.







Ultra-high-definition digital sound

The M-DAC+ now processes audio data up to 32-bit/384kHz via USB; this is a far higher specification than that required by current hi-res music formats, ensuring this new, premium-quality addition to the M-DAC family is fully equipped for future advances in ultra-high-definition digital sound.

The USB input now also accepts DSD files (the digital audio system originally developed for Super Audio CD), offering compatibility with DSD64, DSD128 and DSD256. This is a significant addition, as DSD has an important role to play in the developing high-resolution digital download scene.

As digital audio technology has progressed, the importance of the characteristics of reconstruction digital filters has become more appreciated. Like the classic M-DAC, the M-DAC+ features user-selectable filters for optimal listening and measurement modes, in addition to more conventional types for easy comparison. These filter settings allow the user to tune performance to suit his or her preference, depending on system configuration, digital file quality and musical taste. The M-DAC+ inherits seven filter settings from the M-DAC for PCM files and adds four more for DSD playback, allowing the user to optimise the noise floor to suit the performance of the source file and the bandwidth of associated equipment such as amps and speakers. These filters are the same as used the new 8300CD.



Specifications



Model	8300A
General Description	Integrated Amplifier
Design philosophy and core technology	Dual Mono Power Amp Design
Display	OLED 128x64 pixels 2.7"
Controls	Logarithmic Ladder Volume Circuit
Finish	Fine Textured Aluminium (Black / Silver)
Standby Features	Yes
12V Trigger	Yes
Phono	Yes (MM/MC)
Balanced XLR Input	Yes
Pre-amplifier Section	
Inputs	CD, Video, Tuner, Aux 1, Aux 2, XLR (Balanced) & Phono
Outputs	2 x RCA
Input sensitivity (Phono RIAA)	3.4mV (MM) , 340uV (MC)
Input impedance (line inputs)	50K // 100pF
Input impedance (phono inputs)	47K // 100pF (MM) , 100R // 1.5nF (MC)
Input Voltage (Line)	3.5V max. (< 0.02% THD)
Output voltage	2.3V max. (< 0.02% THD)
Output impedance	120 ohm
Frequency response (Line)	10Hz - 20kHz (+/- 0.1dB)
Frequency response (Line)	1Hz - 100kHz (+/- 3.0dB)
Frequency response (Phono RIAA)	20Hz - 20kHz (+/- 1.0dB)

Channel Imbalance	< 0.2dB (10Hz - 20kHz)
Total harmonic distortion (THD) Line	<0.001%
Total harmonic distortion (THD) Phono	<0.002%
Signal-to-noise ratio (Line)	> 107dB > 109dB (A-weighted)
Signal-to-noise ratio Phono (MM)	> 73dB > 78dB (A-weighted)
Signal-to-noise ratio Phono (MC) (Volume = 0dB , Vin=300uV , Rs=0R, BW=20-20KHz)	> 68dB > 73dB(A-weighted)
Crosstalk	< 80dB (L-> R & R->L @10KHz)
Power amplifier Section	
Gain	29dB (20Hz-20KHz)
Input Sensitivity	840mV (Power Out = 70W into 8ohm)
Input impedance	15K // 100pF
Rated max power output , THD < 1%	2 x 75W RMS (8 ohm) , 2 x 115W (4 ohm) (Ref. Power Supply= 230V AC)
Peak output current	+/- 15A
Frequency response	+/- 0.1dB (10Hz – 20KHz) +/- 3.0dB (1Hz – 100KHz)
Channel Imbalance	< 0.2dB (10Hz – 20kHz)
Total harmonic distortion (THD)	< 0.002% (Power Out = 50W @ 1KHz, BW = 20Hz – 20kHz)
Signal-to-noise ratio	> 107dB (BW = 20 – 20KHz) > 109dB(A-weighted BW = 20 – 20KHz)
Damping factor	>100 (8ohm Load @ 1kHz)
Inputs	1 x RCA
Outputs	2 x Speaker Binding Post Terminals
Dimensions	80 x 444 x 330.3mm
Weight	7.8kg



Model	8300CD
General Description	CD Player, Digital-to-Analogue Converter
Finish	Fine Textured Aluminium (Black / Silver)
Display	OLED 128x64 pixels 2.7"
Standby Feature	Yes
12V Trigger	Yes
CD Mechanism	Slot-Loading
DSD Compatible	Yes (DSD64 / DSD128 / DSD256)
Disc Compatibility	CD/CDR
DAC	ESS Sabre32 9018 chip
Resolution	32 bits
Sampling Compatability	Optical,Coaxial, AES: 32kHz - 192kHz USB:32kHz - 384kHz(PCM) / DSD64, DSD128, DSD256
Maximum Sampling Frequency	Optical,Coaxial, AES: 192kHz USB: 384kHz (PCM) / 11.2M (DSD256)
Digital Input	2 x Coaxial, 2 x Toslink Optical, 1xAES/EBU, 1 x USB for PC / Mac
Digital Output	1 x Coaxial, 1 x Toslink Optical,1 x AES
Output Voltage	4.2Vrms ±0.1 (Balanced) 2.1Vrms ±0.1 (Unbalanced)
Output Impedance	10Ω
Total harmonic distortion (THD)	<0.002%
Frequency Response +/-0.2dB	20Hz - 20KHz (± 0.2dB)
Signal-to-Noise Ratio (S/N) A wtd	RCA: < 98dB ,XLR< 110dB
Dynamic Range (A wtd.)	RCA:>98dB ,XLR>110dB
Crosstalk @1K	RCA:<-120dB , XLR <-130dB
Dimensions (H x W x D)	80 x 444 x 317mm
Weight	6kg



Model	8300MB
General Description	Mono Power Amplifier
Finish	Fine Textured Aluminium (Black / Silver)
Standby Feature	Yes
12V Trigger	Yes
Power Amplifier Section	
Power Output	250W RMS (8Ω,<1% THD,1kHz)
Gain	29dB (8Ω)
Inputs	RCA, XLR
Outputs	Speaker Binding Post Terminal
Input Sensitivity	1500mV
Input Impedance	44kohm (balanced)
Outputs	22Kkohm (unbalanced)
Power Bandwidth	5Hz - 60kHz
Frequency Response	20Hz -20kHz (ref. 1kHz 0.1dB) 20Hz- 60kHz (ref. 1kHz -3dB)
Total Harmonic Distortion (THD)	0.003% (30W, ref. 1kHz)
Intermodulation Distortion (IM)	0.03% (30W,ref. 7kHz+60Hz)
Signal-to-Noise Ratio (S/N)	110dB (A Weighted, ref. 250W)
Damping Factor	200
Dimensions	150 x 216 x 370mm
Weight	9.5kg



Model	M-DAC+
General description	Digital-to-Analogue Converter
DAC	ESS Sabre32 9018 chip
Sampling Rate	24-bit / 192kHz (Optical, Coaxial, AES) 32-bit / 384kHz (USB) 2.8MHz (DSD64), 5.6MHz (DSD128), 11.2MHz (DSD256)
Digital Input	2 x Coaxial, 2 x Toslink Optical, 1 x AES/EBU, 1 x USB for PC USB, 1x USB for iPod/iPhone/iPad
Digital Output	1x Coaxial, 1 x Toslink Optical
Output Voltage	Balanced: 4.5Vrms ±0.1 Unbalanced: 2.25Vrms ±0.1
Output Impedance	10Ω
THD (1kHz 0dB 20Hz - 20kHz A wtd)	<0.002%
Frequency Response	20Hz - 20KHz (± 0.2dB)
Signal-to-Noise ratio A wtd	RCA: >115dB, XLR: >120dB
Dynamic Range A wtd	RCA: > 115dB, XLR: > 120dB
Crosstalk @ 1k	RCA: <-120dB , XLR: <-130dB
Dimensions (mm)	114mm x 247mm x 292mm
Net Weight	3.7kg



audiolab

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