



Above: Audiolab 8300CDQ paired with 8300A in black finish

Discerning CD users: form an orderly Q

The latest addition to Audiolab's top-of-the-range 8300 Series is a new CD player brimming with flexible facilities as well as sensational sound

Cambridgeshire, England – Iconic British audio company Audiolab has added a second CD player to its flagship 8300 component series. The 8300CDQ joins the existing, highly acclaimed 8300CD and adds the following facilities:

- Analogue preamp functionality with three analogue inputs
- Dedicated direct-coupled headphone amplifier
- Full decoding of MQA – the audio codec developed for high-resolution digital streaming

The existing 8300CD already offers digital preamplification, with six inputs allowing external digital sources to benefit from the player's excellent DAC circuitry, alongside digital volume control. Thus, as well as performing as a traditional CD player, the 8300CD can function as an external DAC/preamp.

To this specification the new 8300CDQ adds high-quality analogue preamp circuitry, coupled to three stereo pairs of line-level RCA inputs to connect analogue sources. The preamp circuitry is kept as simple as possible using high-quality components to maintain signal purity, with line input signals passing to a precision analogue volume stage. Much effort has gone into the physical layout of the 8300CDQ's circuitry, protecting the sensitive preamp section from noise interference.

The 8300CDQ adds further flexibility by incorporating a dedicated direct-coupled headphone amp with current-feedback circuitry. Accessed via a front-mounted 6.35mm socket, its gain bandwidth and high slew rate ensure a dynamic, detailed and engaging performance with all manner of headphone types.

The final key feature introduced in the 8300CDQ is decoding of MQA (Master Quality Authenticated). The brainchild of Meridian Audio co-founder Bob Stuart, MQA is a digital audio format designed for high-resolution music streaming and is available via subscription to Tidal's 'HiFi' tier (among other sources). The 8300CDQ unpacks MQA data – received via the USB input – at the original file's full resolution and passes the signal through its DAC and preamp stages, ready to feed a power amp or active speakers.

Audiolab's MQA decoding solution was developed by John Westlake, one of Britain's foremost digital audio experts. There are various ways to enable MQA playback on audio devices, and not all are equal sonically. Westlake's solution maximises the format's potential, just as the 8300CDQ's design draws the best sound quality from other audio codecs and, of course, CDs.

Building on the classics



Launched in 2010, the original Westlake-designed Audiolab CD players – the 8200CD and 8200CDQ – were universally acclaimed for their superb sound quality and flexible facilities. In 2015, the 8300 Series arrived and both 8200 Series players were replaced by the 8300CD, building upon its predecessors' formidable reputation. It has taken until now for this player to be joined by the enhanced 8300CDQ, further developing Audiolab's classic line of CD players to reach still greater heights.

Aside from the additional functionality outlined above, the 8300CDQ draws upon the exemplary circuitry contained with the existing 8300CD, including:

- **Slot-loading CD transport mechanism**

Fast in operation and neat in design, the 8300CDQ's slot-loading CD transport delivers excellent reliability. A read-ahead digital buffer reduces disc-reading errors, enabling scratched CDs that are unreadable by conventional mechanisms to be played. High disc stability and low susceptibility to resonance contribute to the 8300CDQ's superb CD sound quality.

- **High-resolution digital inputs**

Five digital inputs comprise 1x asynchronous USB and 4x S/PDIF (2x coaxial and 2x optical). Hi-res digital audio is supported up to 32-bit/384kHz PCM and DSD256, and USB HID compatibility enables driverless control of a connected PC, Mac or media player.

• 32-bit ESS Sabre DAC

The CD transport and digital inputs feed a DAC section with an ESS Sabre32 Reference chip nestling at its heart, utilising HyperStream architecture and ESS Technology's Time Domain Jitter Eliminator to deliver ultra-low noise and high dynamic range. No company knows more about making the most of this 32-bit, eight-channel hybrid multi-bit Delta-Sigma DAC technology than Audiolab; the 8200CD and 8200CDQ were among the first audio components to use it and the company has been honing its implementation ever since. The conversion process involves 512 DAC elements (256 per channel) each operating at 84.672MHz – all digital audio sources, whatever the sample rate, are upsampled or oversampled to this frequency.

• Exemplary jitter reduction

Around the DAC chip are extensive measures to reduce jitter (digital distortion) to vanishingly low levels. Careful circuit layout and low-noise power supplies complement the DAC's patented Sabre32 sample rate converter and clever DPLL (Digital Phase Locked Loop) circuit, radically reducing time domain errors from all digital input sources.

• Time domain isolation

While the Sabre32 sample rate converter virtually eliminates jitter within the digital domain, external 'analogue domain' induced artefacts caused by RF breakthrough, PSU coupling and so on will affect the DAC's sonic performance. Audiolab resolves this issue via its CATDA (Cascaded Asynchronous Time Domain Attenuator) circuit. This circuit isolates the DAC substrate from sonically deleterious artefacts that affect non-synchronous digital input data. To achieve the best possible performance, three identical cascaded stages are used – each individual stage provides increased isolation, thereby maximising timing performance, even at higher RF frequencies.

• Selectable digital filters

As digital audio reproduction technology has progressed, the importance of the characteristics of reconstruction digital filters has become more appreciated. The Audiolab 8300CDQ features seven user-selectable filters for PCM audio data (including CD) and four ultrasonic filters for DSD data. These settings allow the user to tune the 8300CD's performance according to system configuration, digital file quality and personal taste.

• Discrete Class A analogue stages and sophisticated power supply

The 8300CDQ's analogue output stages and power supply are exceptionally well specified in the pursuit of sonic excellence. The circuitry includes a large, low-noise toroidal transformer, a plethora of reservoir/smoothing capacitors, an impressive number of regulator chips and discrete transistor (instead of op-amp) analogue stages at the output with ultra-low impedance to drive any cable and any load. The power supply incorporates 29 regulated supply rails including multiple ultra-low-noise regulators, with extensive measures against power supply contamination and cross-coupling.



8300CDQ connectivity – at a glance

Inputs – Digital

To utilise the DAC/preamp with external digital sources

1x asynchronous USB

2x S/PDIF coaxial

2x S/PDIF optical

Inputs – Analogue

To utilise the preamp with external analogue sources

3x stereo RCA

Outputs – Digital

To enable connection to an AV processor or external DAC

1x S/PDIF coaxial

1x S/PDIF optical

Outputs – Analogue

To feed a stereo power amplifier, a pair of monoblocks, an integrated amplifier or active speakers

1x stereo XLR (balanced)

1x stereo RCA (single-ended)

Product images



black finish



silver finish