



TURNTABLE

Belt-driven turntable with electronic speed control
Made by: Claro Audio, North Yorkshire
Supplied by: Claro Audio
Telephone: 01423 799 933
Web: www.claro-audio.co.uk
Price: £6200 (with SME V tonearm)

AUDIO FILE

Claro Audio Clarity Dual

Claro Audio is relatively new to the world of turntable manufacturing, but well versed in quality mechanical engineering. Does the Clarity Dual turntable make the grade?

Review: **Adam Smith** Lab: **Paul Miller**

The idea of a precision engineering company turning its hands to turntable manufacture is not a new one, with well-known UK examples including the likes of SME and Avid. However, it would appear that a new contender is establishing itself in this little corner of the market: Claro Audio, an offshoot of Claro Precision Engineering, based in Harrogate, Yorks.

The tale of how a company more famous for its tool making abilities and meticulous machining of items such as medical instruments, laser parts and even beer pumps, came to be making vinyl spinners is worthy of an article in its own right. Suffice it to say it was largely as a result of a commission where an initial customer order foundered [see boxout]. Claro Audio was the result and it seems that designer Peter Curran has thereafter developed something of a fondness for the wonderful world of hi-fi!

UPDATED DESIGN

The Clarity Dual is the second turntable introduced by Claro and made its debut in 2012. However, it has undergone a recent raft of changes with the aims of performance improvement and design rationalisation. The basic recipe is unchanged in that the unit is formed from a billet of aluminium, carefully machined to a tolerance of $\pm 0.01\text{mm}$. This creates the main building block of the turntable, into which the bearing, main electronics PCB and twin motors are fitted.

The decision to use two motors dates back to Peter's original design, when he found it difficult to source an item that was quiet and smooth enough for his liking – when he did, it struggled to move the platter. Reasoning that if one motor was silent, then 'two times silence is still silence', he added a second and these drive the sub-platter via separate belts. As part of

the updates, the main motor circuit board has been tweaked, improving start-up torque further and so bringing the 95mm-thick Acetal platter up to speed more swiftly. The pulleys and sub-platter have also been lowered to improve stability and optimise torque transfer from the motors.

At the rear of the base are two arm mount locations (from which comes the deck's 'Dual' moniker). Arm pods consisting of an Acetal mounting flange topped by an aluminium spacer, machined to the user's desired arm base, are connected to these fixings. All standard mounting configurations are available so the Clarity Dual can accommodate two arms from 9in to 12in in length. Claro can also make up specials if your arm of choice has its own special fixing arrangement.

Most encouragingly, the fit of the arm mounts is superb – the pods locate on two

protruding dowels and are secured by two further bolts, but the dowels themselves are so finely machined that the pod feels perfectly secure once they have been pushed on. Finally, a Delrin record clamp is provided: the review sample was supplied with a smooth centre spindle and a collet type clamp, but a reverse-threaded spindle and an ingenious matching clamp is also available. This latter item is a two-part design and the halves separate when the optimum tightness is reached – it's a very neat solution.

FINE SPEED ADJUSTMENT

Leaving the biggest change until last, we come to the off-board power supply. Although the deck can be used without it, the convenience of not having to wrestle with the platter and two belts to change speed makes this a great convenience.



RIGHT: Removing the sizeable platter reveals the sub-platter, bearing and twin motors. These have dual-stepped pulleys so the deck can also be operated without the power supply



Previously, the Dual's PSU came in a machined aluminium case that would have easily doubled as a doorstop. Ultimately, it was a bit too deep to sit neatly beside the turntable and also only offered fixed 33 and 45rpm plus a third variable speed.

The new PSU is equally superbly machined but is smaller, neater and rather more swish in operation, being based around a microcontroller with a continuous stepped rotary encoder control on the front. In normal operation this selects 33 or 45rpm but, when a small 'set' switch is pressed, it allows fine adjustment of both speeds independently, which can then be stored.

The operation of this is a little counter-intuitive at first as the speed changes in small steps and needs a second

or so to stabilise after each step. Winding it enthusiastically merely has the control electronics wagging a virtual remonstrative finger in protest by bringing the platter to a complete halt. The key is to be patient

and take it steadily – once you get the hang of it, the speed control is actually very fine.



CAPTIVATED

With the supplied SME V arm aligned (a £6200 package) and

my Ortofon Kontrapunkt B MC cartridge in place, I was ready to begin listening. I remembered my last encounter with the Dual being very positive and was delighted that time and further changes have not diminished its considerable talents one bit. It didn't take me long to conclude that this is a captivating performer, particularly

'It became a different beast when drums joined in the fray'

ABOVE: The platter dominates the Clarity Dual but is lighter than it looks. The solid, spiked feet are adjustable for levelling and all metalwork is immaculately finished

in the way in which it sets up such a convincingly capacious soundstage. I am well used to the way in which my regular Michell Gyro SE throws images wider than most, but the Clarity Dual was more than a match for this and added in a pleasing amount of extra depth and height.

Showcasing this perfectly was 'Blue Train' from John Coltrane's eponymous album [Blue Note BST81577], with the whole performance benefiting from that useful amount of extra space around the players. Coltrane's tenor saxophone held the attention perfectly, and the Clarity Dual also brought Paul Chambers' bass very pleasingly to the fore, underpinning the track with a firm guiding hand. The tonal colour of each instrument was seemingly spot-on and the Clarity made the song come to life in a foot-tapping way.

I had no doubt that the Clarity Dual could 'hold a tune', thanks in no small part to its very enjoyable low end performance. Bass notes dug deep and emerged with plenty of fine detail intact, meaning that there was a good deal of impetus and weight behind the music. A fine example of this was offered by Frankie Rose's 'Know Me' [Interstellar – Memphis Industries MIO211LP] which is a modern slice of 1980s-style pop that bounces along with infectious enthusiasm. Here the Clarity ➞

ADOPTED CHILD

Claro's audio adventures started in 2009 with a commission from a customer to design him a turntable, of which he would buy 50 units. Sadly, much hard work and £30,000 later, the deal fell through. Managing Director Martin Doxey and designer Peter Curran bravely ploughed on with the new turntable, selling 20 units to John Jeffries of Lumley to market as the Heliosphere, smaller brother to the Lumley Stratosphere. The decision was taken to then market the remaining 30 decks themselves and the Clarity 09 was born. This could have been the end, however Peter requested feedback from buyers as to what could be changed or improved on the turntable. There were enough ideas for him to go back to the drawing board and come up with something new. The result was the original Clarity Dual, in 2012, subsequently updated in 2013 as reviewed here.



ABOVE: A very elegant machined enclosure houses the electronics for the deck's off-board power supply. One knob controls everything and LEDs show the unit's status

smoothly shifted up a gear and punched the track beautifully from my PMC loudspeakers. Drums were snappy, taut and precise and the bass line was tuneful and easy to follow. In absolute terms, it did lag a little behind the likes of the direct-drive Inspire Monarch and even the belt-drive SME10A in terms of absolute start/stop precision at the low end. The result of this was that the tail edge of low notes occasionally stayed around a fraction longer than they should have, but the deck's overall clarity ensured that nothing became sluggish or wallowy.

RISE TO THE CHALLENGE

In other areas, the gap between the Claro and the two competitors I've mentioned was very insignificant, and the Clarity Dual's main area of superiority was in its sheer dynamic range. Claro's careful selection and matching of materials, and fine engineering, mean that the player is very quiet when silent or very lightly modulated grooves are passing under the stylus but, when the action warms up, the Claro rises to the occasion with ease and a rush of joyous dynamism.

With The Damned's fine 12in single version of 'Eloise' [MCA Records GRIMT4], the Claro softly poured forth the quiet synthesiser-based introduction but became a different beast when drums and bass guitar joined the fray. Dave Vanian's rather over-dramatic vocals billowed around my room and by the time the marvellous onslaught was over, I felt rather like the man from the old 1980s Maxell tape advertisement: blown backwards in my chair, slightly breathless.

With the excitement dialled back to a sensible level once more, courtesy of Tanita Tikaram [*Ancient*

Heart – WEA WX210 243877-1], I was once more able to enjoy the Claro's more subtle abilities.

It has a very enduring way of cutting through to the heart of the music and presenting it in a highly appealing manner, but without ever glossing over any information that is present. Miss Tikaram's vocals poured forth into the room gloriously and although, as mentioned, the Clarity Dual sets up a surprisingly expansive image, everything within that presentation was crisply honed and placed to perfection. Even when a poorer recording found its way onto the platter, the Clarity Dual did a very fine job of making the best of what was available.

Yes, the voluminous scale was curtailed somewhat in cases like these, but the deck still managed to eke a cohesive and enjoyable performance from the material available. It was as a result of this that I found myself with several large boxes of 45rpm singles dating back to the early 1980s, all of which the Claro made more listenable than I had remembered. ☺

HI-FI NEWS VERDICT

Continuous development through listening to buyers' feedback means that Claro has kept the Clarity Dual turntable on top of its game. The deck is exquisitely engineered and finished, and recent improvements have only served to refine it further. Given that the initial production run comes with a remarkable price reduction of nearly £1000 over the older variant, the 'new' Clarity Dual is an essential audition.

Sound Quality: 82%



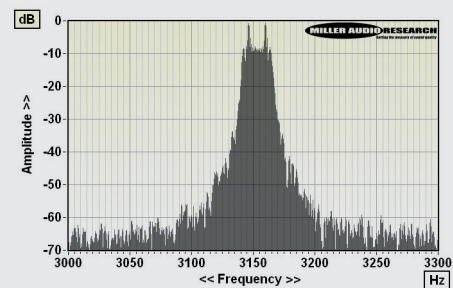
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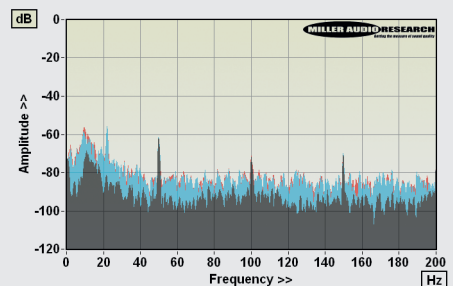
Recently updated with an improved, though not entirely flawless AC power supply, the Clarity Dual turntable is still an exquisitely machined and finished example of engineering art. The PSU's output remains at 240V but at variable frequency for 33.3 and 45rpm and to facilitate fine speed adjustment. Absolute speed accuracy can be achieved within $\pm 0.1\%$ provided you have the measurement tools available but there's still a deal of discrete $\pm 6-7\text{Hz}$ wow most probably linked to Claro's use of two closely-coupled motors [see Graph 1, below].

Taken on face value, two motors might seem better than one, especially in deriving the torque to overcome the inertia of this 9.2kg platter, but unless the two motors are absolutely identical in performance then it's not impossible for an intermodulation, or *difference* frequency to be excited. In practice, the two motors would require precise pair-matching for this effect to be reduced (there are also likely to be differences in how the motors drift with time). Nevertheless, higher rate flutter is usefully low at 0.04% (peak weighted) while hum and noise, thanks in part to the supremely well-screened SME Series V, is reduced to just -61dB (re. 1kHz, 5cm/sec).

Rumble is very consistent, with only a slight advantage recorded through the silent LP groove *without* the clamp in place [unweighted, blue trace, on Graph 2 below]. A figure of -68.3dB is a few dB off the very best decks, but still good, while the through-bearing figure of -68.7dB is also creditable. Readers are invited to view a full QC Suite report for Claro Audio's Clarity Dual turntable by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Wow and flutter re. 3150Hz tone at 5cm/sec (plotted $\pm 150\text{Hz}$, 5Hz per minor division). Good absolute speed accuracy but note the low-rate wow



ABOVE: Unweighted bearing rumble from DC-200Hz (black infill) versus silent LP groove (with clamp, blue; without clamp, red) re. 1kHz at 5cm/sec

HI-FI NEWS SPECIFICATIONS

Turntable speed error at 33.33rpm	33.37rpm (+0.12%)
Time to audible stabilisation	6sec
Peak Wow/Flutter	0.07% / 0.04%
Rumble (silent groove, DIN B wtd)	-68.3dB
Rumble (through bearing, DIN B wtd)	-68.7dB
Hum & Noise (unwtd, rel. to 5cm/sec)	-60.8dB
Power Consumption	12W
Dimensions (WHD)	390x250x360mm