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## CONSONANCE REF 2.2 LINEAR

*The latest player from Consonance has a few surprises up its sleeve*

**P**lenty of manufacturers use the word 'Reference' in relation to their product names. But what about 'Linear'? Well, it turns out that this appellation is Consonance's way of indicating that the player uses no oversampling or upsampling. In other words, there's no digital filtering of any kind and not much in the way of analogue filtering either. This approach has been used by only a few manufacturers in recent years (perhaps most notably by Audio Note) and is claimed to sound more natural despite measuring considerably worse.

In this case, you do actually get the option of upsampling to 88.2kHz, but Consonance's preference seems to be for non-upsampling. Conversion from digital to analogue is done by a quartet of rather antique DAC chips, which are followed by passive current-to-voltage conversion, some very simple filtering and a lone valve for the output stage. Construction is neat and surprisingly modern – a bit of a turn-up finding 1990s DAC chips, valves and surface-mount components all on one board!

As well as the all-black finish shown in the photo, silver front and natural wood top is an option. The Ref Linear, also shares the unusual control feature that we first experienced with the Ref 2.2 (tested back in *HFC* 270). These controls are actually joysticks which 'wobble' up, down and sideways and which are great fun to operate.

### SOUND QUALITY

Suggesting that Consonance may be on to something in its abandonment of technical perfection, this player was one of the best-liked players of the group. It conveyed to our listeners a consistently good impression of musical life and excitement, with a full-bodied bass that's always under control, plus lively and energetic upper frequencies. It has a slightly more 'broad brush' approach than some, but despite that manages to keep a good grip on detail.



That is nowhere more evident than in stereo imaging, which was felt to be the best of the bunch in terms of overall spread and reach. It's not the most precise, but not the least so either and it is generally very persuasive. One might say the same of midband tonality, which is not always absolutely neutral but nevertheless has a convincing ring to it. There's a little boost, it seems, in the presence band which just occasionally can make the sound a touch strident, but despite that the quality of each individual instrument shines through, giving highly believable character to sax, violin and Hammond organ alike.

Voices are particularly favoured, with natural timbre and good diction, thanks to a high degree of precision in the treble. A pleasantly 'airy' quality to the very high frequencies helps voices to sound distinct and completely clear of the instrumental backing.

We did feel that the sound can sometimes be a bit larger than life, but there is always enough of a rein kept on proceedings to prevent this sonic footprint from being oppressive. The lively quality to the sound seems equally apt across a wide range of musical styles and, perhaps most significantly, this is never a boring player. **HFC**

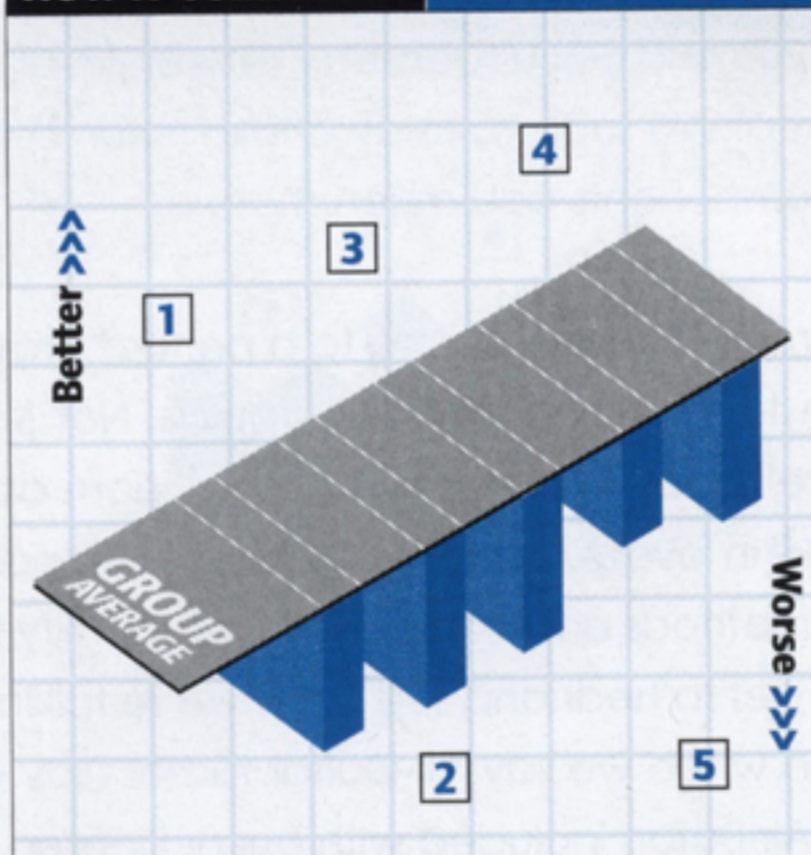
VERDICT	
<b>SOUND</b> ★★★★★	Despite (or because of) 'unusual' measured performance, this player has a lively, enthusiastic manner which gets stuck right in to the music. Never boring, it may prove a little boisterous for some.
<b>FEATURES</b> ★★★★★	
<b>BUILD</b> ★★★★★	
<b>VALUE</b> ★★★★★	
<b>HI-FI CHOICE OVERALL SCORE</b> ★★★★★	



### LAB REPORT

In almost every measured respect this player is a maverick. Output level is typical, though sourced from a rather high impedance. Distortion, as specified by the raw number below, is not alarmingly high and similar in upsampled and 44kHz modes, but its spectrum is very 'busy' with harmonics and hum modulation extending beyond 20kHz. It's hard to be sure about the jitter figure because the output spectrum, when playing the 20kHz test tone, is so full of spurious signals as to make their interpretation questionable: suffice to say that the figure given on the conclusions page is an estimate reflecting a lot of spurious output. It varies somewhat between the two sampling rates, as does linearity: the 2dB figure is at 88kHz and is better than the 4dB we obtained at 44kHz. Meanwhile the frequency response in 44kHz mode is distinctly shy in the high treble, -3dB at 20kHz. It seems we can enjoy a little imperfection!

### HOW IT COMPARES



- 1] Distortion >> -40%
- 2] Jitter >> -50%
- 3] Linearity >> -50%
- 4] Dynamic range >> -30%
- 5] Digital filter >> -40%

### SPECIFICATIONS

Measurement	Rated	Actual
Maximum output level	2.35V	2.28V
Total harmonic distortion	0.12%	0.025%
Signal-to-noise ratio	100dB	101dB

# CONCLUSIONS

So how did these half-dozen silver disc spinners fare in the final analysis?

**O**f the six CD players in this month's group test, it's no coincidence that were most enthusiastic about the three with valves. Yet why is it that, during the listening test, the most electronically sophisticated player in the group came out worst? It's hard to avoid a sneaking suspicion that it has something to do with human hearing; could it be that we all prefer a hint of 'imperfection' in the sound?

After our blind listening panel had left and we had read through their comments, we listened hard to each player, trying to pin down

some of the observations that surprised or puzzled us (there are always a few of those!).

As a result, although the main review page on each product is predominantly informed by the blind listening sessions, we feel inclined to add a couple of riders.

First, the Cambridge 840C is by any measure a very detailed player and on the whole, we feel its blandness is the result of a lack of added colour. It really depends on what you're looking for. As both CD player and DAC it seemed to give an unusually honest rendition of recordings with which we've

been closely involved, but pluck a CD (of unknown progeny) off the shelf and the Cambridge's version is unlikely to be the most gripping, at least on the first listen. That said, it's a very impressive amount of technology for the money and all things considered is badge-worthy, especially in the face of the (expensive) competition.

Cyrus and Denon have noticeably different ideas on how to implement a CD player, but the results are similar in many ways. Both the CD-8x and the DCD-2000AE are good players and are, therefore, unlikely to

disappoint listeners in any way. Neither sets the world on fire, but they combine insight and musicality in a rewarding fashion.

It's to the Consonance, Edgar and, above all, Shanling players that we bow down to in absolute terms, though. The Consonance is a lot of fun, the Edgar beautiful to behold (from the front!), and all three offer good and enthralling sounds. But the Shanling seems to be the one that really ticks all the boxes. It looks suitably aspirational too and is good to use, so we're happy to acclaim it the top scorer of this fascinating group. **HFC**

## TRY THEM WITH THESE

### AMPLIFIERS

**PATHOS CLASSIC ONE MK3** £1,535  
A valve-transistor hybrid that offers beautifully rich bass and plenty of detail.

**RUSS ANDREWS HP1/PA1** £1,198  
Pre/power combo with outstanding performance and plenty of enthusiasm.

### LOUDSPEAKERS

**ATC SCM19** £1,499  
Mid-size speaker with large-size sound: highly informative and gripping.

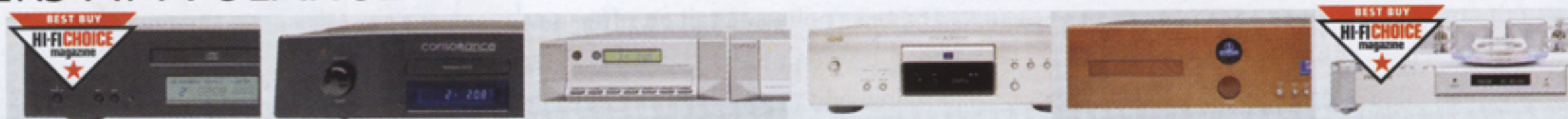
**QUAD ESL2805** £4,500  
Expensive, but stunningly revealing with astonishing levels of imaging.

## HINTS AND TIPS

- >> If your CD player has switchable oversampling, don't automatically assume that it sounds better on one setting for all discs.
- >> Many CD players emit a just-audible whistle. The easiest 'cure' is not to place it too close to your listening seat.

- >> While most players aren't microphonic as such, resonances in their casework can be minimised with suitable feet and/or damping material.
- >> Buy a CD lens cleaner and use it every month or so. A little preventive maintenance never hurt anyone.

## CD PLAYERS AT A GLANCE



MAKE MODEL	Cambridge Audio Azur 840C	Consonance Reference 2.2 Linear	Cyrus CD-8x/ PSX-R	Denon DCD-2000AE	Edgar CD-1	Shanling CD-T1000se
PRICE	£750	£1,495	£1,400	£1,200	£1,350	£1,600
SOUND	★★★★☆	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
FEATURES	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
BUILD	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
VALUE	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
OVERALL	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
CONCLUSION	Ultra-civilised sound is not to every taste, but overall, this £750 player remains a solid proposition.	Its manner is lively and enthusiastic: gets stuck right in to the music. Poor measurements seem no bar to enjoyment.	A good all-rounder which doesn't show off – may seem unimpressive at first, but sound is precise and energetic.	Mild lack of bass weight and lacks a bit of grunt on rock and pop. Very good detail and articulation.	Balance slightly favours bass and presence regions. Danceable and fun: detail and imaging good too.	Commendably committed player which gets right to the heart of a wide variety of musical styles.
<b>KEY FEATURES</b>						
ELEC DIG O/P	Yes	Yes	Yes	Yes	No	Yes
OPT DIG O/P	Yes	No	Yes	Yes	No	No
CD R-W	Yes	Yes	No	No	No	Yes
CD TEXT	No	No	No	No	No	No
BALANCED O/P	Yes	No	No	No	No	No
OTHER FORMATS	-	-	-	SACD	-	-
<b>LAB CONCLUSIONS</b> E = EXCELLENT • G = GOOD • A = AVERAGE • P = POOR						
DISTORTION	0.0007% <b>E</b>	0.025% <b>A</b>	0.001% <b>G</b>	0.0015% <b>G</b>	0.02% <b>A</b>	0.009% <b>G</b>
JITTER	<0.1ns <b>E</b>	1.3ns <b>P</b>	<0.1ns <b>E</b>	<0.1ns <b>E</b>	<0.1ns <b>E</b>	<0.1ns <b>E</b>
LINEARITY	<0.1dB <b>E</b>	2dB <b>P</b>	<0.1dB <b>E</b>	<0.1dB <b>E</b>	<0.1dB <b>E</b>	<0.1dB <b>E</b>
S/N RATIO	106dB <b>G</b>	101dB <b>A</b>	105dB <b>G</b>	107dB <b>E</b>	108dB <b>E</b>	106dB <b>G</b>
STOPBAND REJECTION	100dB <b>E</b>	30dB <b>P</b>	80dB <b>G</b>	70dB <b>G</b>	70dB <b>G</b>	80dB <b>G</b>