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July 2007

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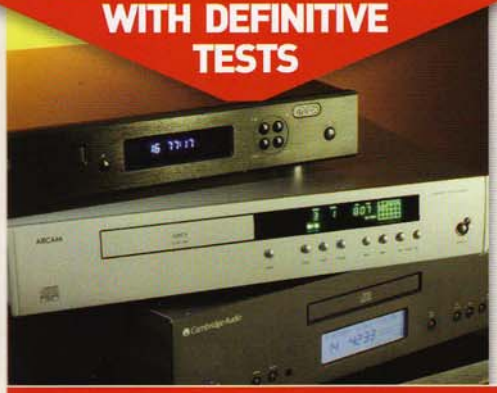

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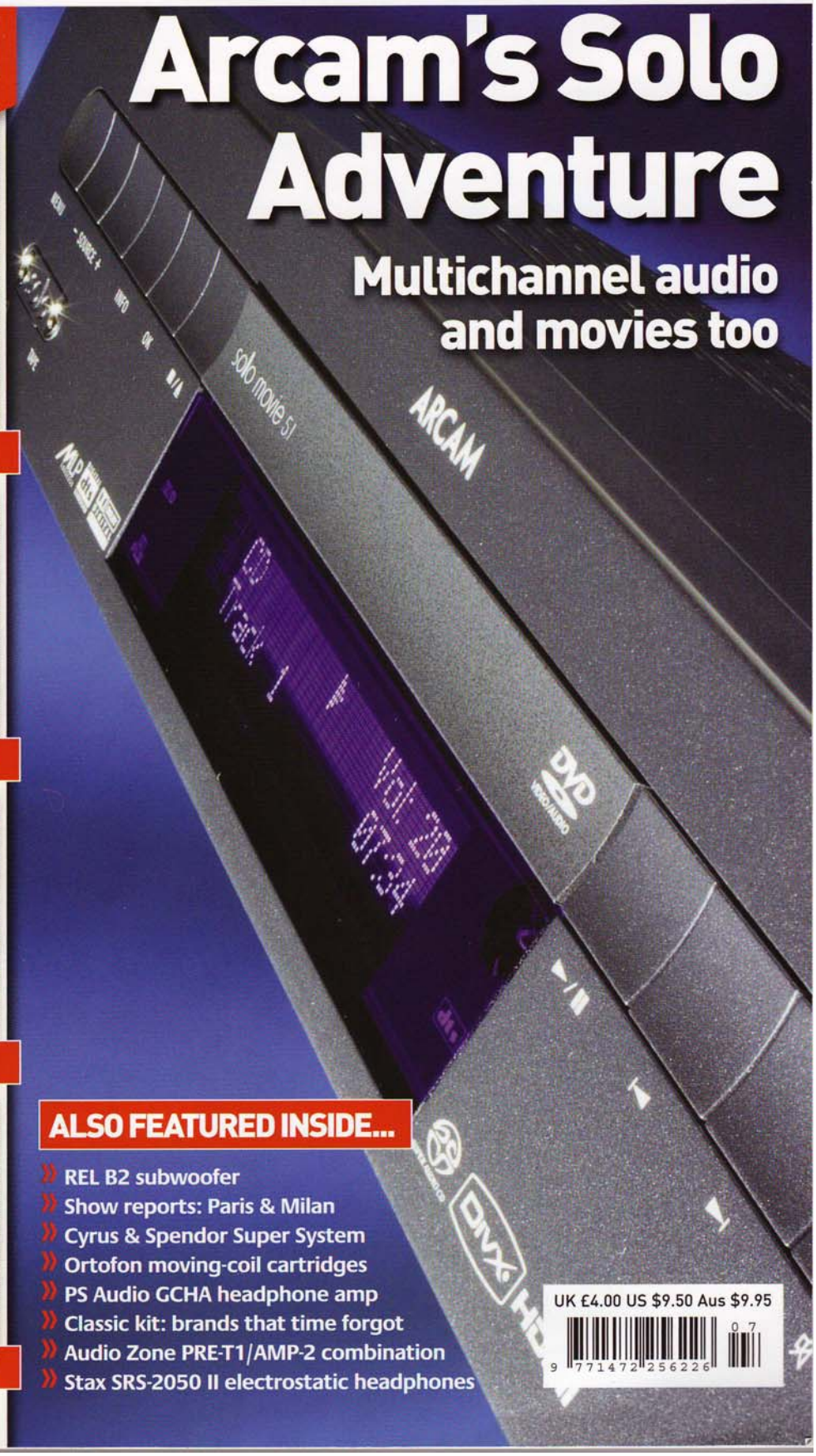

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Dream Cinema

DREAMVISION DREAMBEE *(£6999)*

Three-chip 1080p display technology is substantially more affordable with JVC's D-ILA technology. DreamVision sheds some light on the subject

Tested by Paul Miller

There's a distinctly European flavour emerging at the apex of home cinema projection. The core technologies, including Texas Instruments' DLP and Sony/JVC's individual pursuit of LCoS (see boxout) might still reside at either end of the globe, but their implementation is being furthered by the likes of SIM2 in Italy, Projectiondesign in Norway and also DreamVision, another 'technology partner' and one that hails from France.

DreamVision has utilised TI's DLP solutions in the past but its top model, the £6999 DreamBee, plays host to a three-chip D-ILA light engine (one for red, green and blue), each 0.7in slice of silicon supporting 1920x1080 pixels. This adds up to a genuine, three-chip Full HD projector at a fraction of the price demanded by the DLP behemoths. Not that the sweeping curves of the DreamBee are exactly subtle, its stylish wrap extending to some 585mm in width and 470mm in depth, even if the overall bulk is rather less than you might expect at 11kg. Neither are you limited to the 'coconut' white finish illustrated here, as DreamVision offers its flagship in midnight black, blue sky, sunflower and hibiscus which, for the horticulturally challenged, means yellow and red, respectively.

VISUAL EXCELLENCE

Conventional analogue video connections are provided alongside a pair of HDMI v1.2 sockets, the latter supporting any video standard from 480i to 1080p. Video DSP, including scaling, de-interlacing and contrast/colour management is achieved using a built-in Gennum GF9351 VXP (Visual Excellence Processing) LSI. This offers 8-bit greyscale processing, rather than the 10-bit resolution more typical with high-end projection solutions, so it's perhaps not surprising to discover DreamVision offering a 'Pro' package for the DreamBee that includes a outboard processor with extra HDMI inputs, film-grade de-interlacing and other features.

The on-board video processing solution supports a comprehensive menu of contrast, brightness, sharpness, DNR (Digital Noise Reduction) and colour management options. There's even a brief palette of test patterns available to help adjust the image geometry and colour balance.

'DreamVision offers a "Pro" package - an outboard 10-bit processor with extra HDMI inputs'

LOCATION, LOCATION...

Finding the optimum location for a DreamBee is also made easier by its 2x optical zoom, amounting to a 1.4:1 to 2.8:1 throw ratio. Two controls situated under the body of the projector offer a combination of ±80% vertical screen offset and ±34% horizontal screen offset. However, with all this convenience on offer, together with a highly versatile remote control, you might be surprised to discover that both zoom and focus must be adjusted manually. No standing eyeball-to-eyeball with the screen in an effort to precisely focus the image via remote control. ⇨

AUDIO FILE

Three-chip Full-HD projector with 3x0.7in D-ILA panels and a 200W NUP lamp. Contrast rated at 20,000:1

Price: £6999

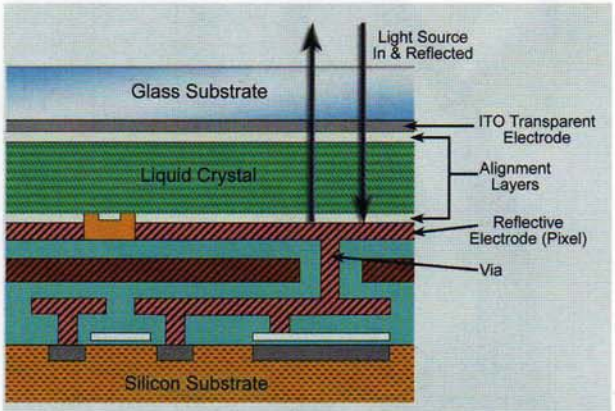
Made by: DreamVision

Supplied by: Absolute Sounds

Telephone: 020 8971 3909

Web: www.dreamvision.net

ABOVE: DreamVision's cooling fans for the substantial light engine exhaust either side of the central lens and yet, despite its bulk, the DreamBee remains one of the quietest projectors in its class. Light leakage from the front vents is also minimal.



DIRECT-DRIVE IMAGE LIGHT AMPLIFIER...

...0r D-ILA for short is one of the LCoS (Liquid Crystal on Silicon) family, a liquid crystal (LC) device that's reflective rather than transmissive like a conventional LCD display. Both LCD and LCoS devices rely on two principles: that light may be filtered into one plane of polarisation and, secondly, that the orientation of liquid crystals may be controlled by the application of an electric field.

The image, above, shows polarised light passing through an LC layer before being reflected off the mirrored pixel. Unlike DLP systems, this pixel surface is fixed rather than tilting, which simplifies the microscopic engineering. Instead, the LC layer is the filling of a 'charged sandwich' with both the reflective pixel and transparent Indium/Tin Oxide (ITO) layers acting as the electrodes. The applied charge twists the orientation of the liquid crystals and moderates the amount of polarised light allowed to escape.

Pixel-by-pixel, black is represented by blocking the light completely while full white is achieved by allowing the polarised light to pass in and out unhindered. The original D-ILA engines would use a continuously variable voltage (charge) to render a smooth, analogue grey scale but more recent systems use a digital PWM signal, not unlike DLP and plasma panels.

INSIDE THE DREAMBEE

So what of the D-ILA engine at its heart? LCoS (see boxout, p55) was originally conceived for projection displays, rather than direct view screens, and began life in the R&D labs of the Hughes Aircraft Company in the 1970s. JVC had been conducting similar research and eventually formed a partnership – the Hughes-JVC Technology Corporation – that began selling ILA Super-Projectors in the early 1990s.

LCoS is not exclusive to JVC, but with the patents on early technology principles expired there are now more than twenty companies researching and developing their own reflective liquid crystal devices, in both three- and single-chip implementations. Hitachi sells its version to Toshiba for RPTVs just as Sony has utilised LCoS in its highly-regarded Qualia projector. Nevertheless, in all likelihood, it's a JVC D-ILA engine quietly buzzing away inside the DreamVision DreamBee.

TECHNICOLOR

I was first exposed to the DreamBee earlier in the year at CES and was struck by the supremely colourful images on display, even if they were perhaps a little too 'Technicolor' for my tastes. Nevertheless, almost all high-end projectors, regardless of their technology, have the capacity to be tuned from a bright, cold and very dynamic image to one that's typically very warm, rich and over-saturated.

This versatility is quite distinct from the 'flavour' of high-end audio components which, on the whole, are purchased specifically because they offer a sound that's a 'hallmark' of a particular brand. So while the facility to squeeze the sound of a Krell from an Audio Research is the stuff of audiophile fantasy, the ability to tune the colour gamut, saturation, contrast and gamma of a projected image is taken as read by the cinephile.

Simply by spending a few minutes plugging in the Recommended Settings offered on page 58, the default and rather hard image quality of the DreamBee is massaged into something altogether warmer and more natural. The freedom from rainbow flicker, caused by the spinning colour wheel of single-chip solutions, is a blessed relief and just part-and-parcel of this projector's very relaxed, easy-on-the-eye presentation.

ABOVE: DV's versatile optical assembly comprises 16 full glass elements, offering a 1.4:1 to 2.8:1 throw and a physical lens shift amounting to ±80° vertical and ±34° horizontal. Nevertheless there's no remote-controlled zoom or focus adjustment

ABOVE: The video inputs could not be more straightforward – composite, component and S-video support older analogue sources while a choice of two HDMI sockets is available for digital video from modern DVD/HD DVD/Blu-ray players and set-top boxes

IRIDESCENT GLOW

The measurements tell us that the DreamBee's contrast is wide and that details in dark or shadowy areas of the picture are uniformly resolved, which they are. However, what they don't predict is the slight lack of punchiness or drama these images have compared to those delivered by some DLP projectors.

Boldly animated movies including *The Incredibles* and *Madagascar* have an enticing, almost gentle smoothness but there's not the verdant vibrancy to rich, green foliage or the iridescent glow to vermilion reds that I've enjoyed from the likes of SIM2's C3X. Instead, the DreamVision, as its name suggests, delivers an image quality that's almost 'dreamy' in tone and outlook.

> 'As its name suggests, the DreamBee delivers a quality of image that's almost "dreamy" in tone'

Even the most rapidly moving detail has the capacity to ease itself across the screen, like a ballerina floating effortlessly but with purpose across the stage.

This is just another reason why its pictures are so easy to assimilate, to sit back and absorb with no stress or strain. Perhaps this is why I found myself turning away from the cut and thrust of CGI-dominated movies to period delights such as *Chocolat* and *Gosford Park*. Movies shot in natural light and filled with the textures of ornate fabrics, fabulous architecture and landscapes are what the DreamBee craves, along with fleshtones free of Botox, silicone or other artefacts of plastic living. Its pictures are detailed but not invasively so, just as its smooth delivery has a velvety quality rather than one that's strictly filmic or cinematic in appearance. ⇨

ABOVE: The 200W NUP lamp is rated for 2000 hours continuous use. The lamp assembly is accessed through a side panel for easy replacement

PURITY

I should also make some mention of the DreamBee's colour purity which, on the whole, is first rate unless you select a disc with sequences containing sustained bright, white images. Snow is a bit of a giveaway, whether viewed from the likes of *The Thing* or the dazzling brilliance of FilmFour's *Touching the Void*, there's just a hint of off-white, almost a slight yellowing, towards the centre of the image. If you really want to demonstrate it for yourself, then throw up a 90 or 100IRE window from a calibration DVD.

It's also worth noting that this latest D-ILA engine, while more stable than previous generations I've encountered, still shifts in colour temperature as, presumably, the three LCoS panels heat up. In this instance, the blue level would alter by nearly 10% over a two hour viewing period. Not noticeable, unless you are a stickler for precise and consistent image calibration.

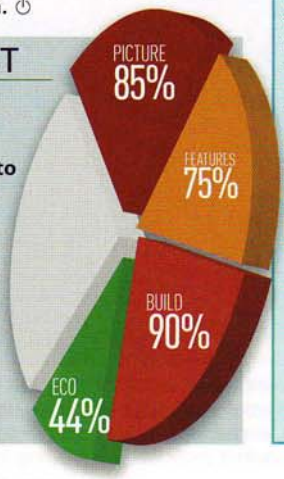
ROLL WITH THE PUNCHES

Nevertheless, and despite the various cavaets, I still found myself returning to watch movie after movie from DVD, HD DVD and from Sky's HD broadcast service. Sure enough, there is some lack of punch and depth to its presentation, but the DreamBee's images are just so *watchable*, so enticing and undemanding that it becomes a struggle to roll off the sofa.

Just like the new CD player that has you rifling through old and treasured discs, the DreamBee will find you settling back to rediscover movies you thought you'd already watched to death.

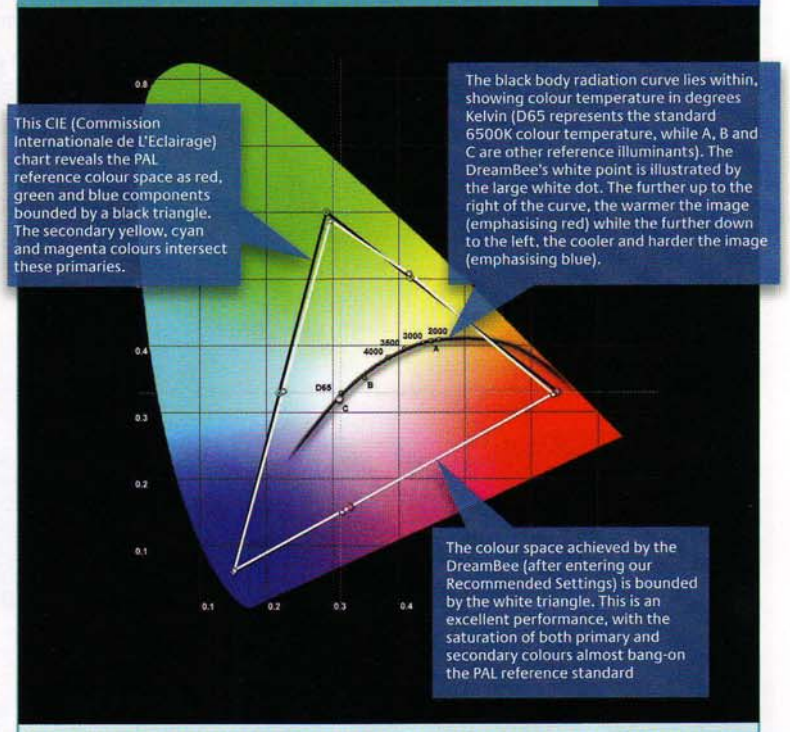
HI-FI NEWS VERDICT

If you own a Full HD Blu-ray or HD DVD player then you'll be hankering for a 1080p display to match. And if a three-chipper is the only solution to finally banish all hint of rainbow-flicker, then there are very few options available. Of those, the DreamBee is available at a fraction the price of its DLP cousins. Which, perversely, makes it almost affordable!



DREAMVISION
DREAMBEE PROJECTOR / £6999

Hi-fi news LAB RESULTS



HI-FI NEWS RECOMMENDED SETTINGS

Image Menu				
	Image Adjust	**Contrast**	**2**	
		Brightness	**–6**	
		Sharpness/DNR	**0**	
	Colour Temp	**User 1**	**Red**	**0**
			Green	**–7**
			Blue	**–50**
	Gamma	**Normal**		

HI-FI NEWS LAB REPORT

Despite DreamVision's use of a three-chip engine, with its freedom from light-sucking colour wheels, there are still sufficient losses through the glass optics and filters to reduce the maximum brightness off a 10ft white screen down to 9.3fL. Increasing the lamp power from 170W to 200W brings this up to 11.8fL which is plenty bright enough in a blacked-out viewing room. Out of the box, the DreamBee is also far too 'blue', registering about +140% blue relative to green and red. This pushes the colour temperature up to ~9000K which gives its images a less sympathetic, harder and slightly washed-out appearance.

Fortunately, the setup menu is sufficiently versatile to allow the blue level to be reduced closer to 100%, yielding a colour temperature of 6650K (see Recommended Settings, above). This is only fractionally higher than the reference 6500K white point but, importantly, remains on the black body curve (see large white dot on the CIE chart above).

DreamVision suggests a native contrast of 20,000:1 although the practical contrast off a 3m white screen at 5m distance is closer to 1100:1 which is perfectly respectable and on a par with DLP projectors at this price. The through-lens contrast is rather better, however, with an impressively low 0.52fL black level helping achieve an overall contrast of over 4000:1.

The projector's greyscale uniformity is excellent with a variation of <200K over a 10-90IRE range, showing no premature loss of black detail from 20IRE down to 0IRE nor crushing of white from 80-100IRE. A full QC Suite Report is available at *www.milleraudioresearch.com/avtech*. **PM**

HI-FI NEWS SPECIFICATIONS

Colour Temperature (Uncalibrated/calibrated)	9000K / 6650K
Reflected brightness @ 5m	9.3fL (170W lamp) / 11.8fL (200W lamp)
Reflected contrast (0-100IRE window)	1100:1
Direct contrast through-the-lens @ 1m	4350:1
Gamma	2.2
Fan Noise (A-wtd, 20Hz-20kHz @ 1m)	32dBA