The Projector Perspective

For the majority of video camera enthusiasts, the equipment used in video output is every bit as crucial as that used for video capture. We spoke to major projector manufacturer, Epson, to get the low down on projectors: are they as good as other forms of video output?

Over recent years, enormous investments have been made in developing projector-specific technologies. As a result, these technologies have proven instrumental in taking projectors from the 'dark days' of noisy, problematic units with washed-out projections to whisper-quiet and highly reliable systems that deliver brilliantly bright and colourful output.

As many may recall, it was only a few years ago when businesses were starting to introduce projectors to replace the ever faithful yet functionally limited overhead projectors (OHP) that the issues of brightness and colour really came to the fore. As soon as the projector was due to be turned on, there was the compulsory pre-use ritual of turning off lights, drawing curtains or blinds and closing doors – everything to ensure there was an absolute minimum of light entering the room, which would essentially wash-out the projected image.

In the home environment, for those who were well heeled enough to purchase a projector, colour and quality of image were two of the most notable failings. But times have changed and companies such as Epson have addressed quality, colour and brightness through nothing short of perseverance and innovation.

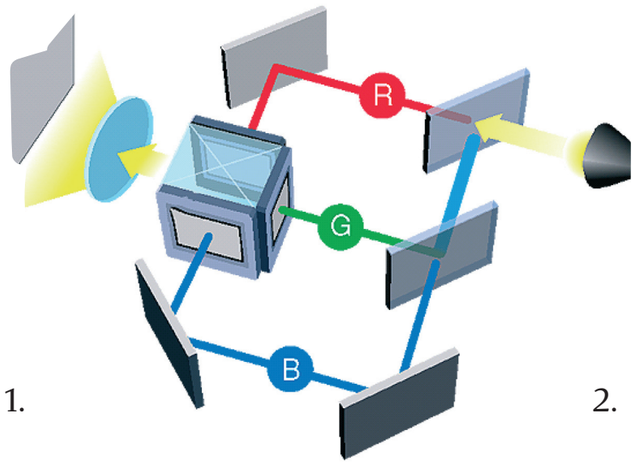
Brightness and Colour

One of the most notable innovations has been made at the very source of the projector's light – the lamp itself. In 2005, Epson launched the first of its projectors featuring a newly developed system called E-TORL (Epson Twin Optimised Reflection Lamp) technology. The design goal of E-TORL technology was to eliminate light leakage and minimise diffraction for a clearer and brighter image.

It achieves this by means of using an ellipse-type reflector and sub-mirror configuration. While the ellipse-type reflector is able to direct light accurately to a point, the sub-mirror effectively captures the 20-30 percent of light that is otherwise lost with traditional lamps, reflecting it back to the reflector and then through to the projector's three LCD panels. The result is greater use of light for much brighter output.

This then brings us to the next major component in the projector's internal workflow – the 3LCD system. As opposed to DLP (Digital Light Processing) technology which uses a spinning colour wheel to break an image into a sequence of red, green and blue, 3LCD uses three High Temperature Poly Silicon (HTPS) LCD panels to produce images. In these projectors light from the lamp is broken down into the three primary colours (red, green and blue), with each of the three colours of light then passed through a corresponding LCD panel to give form to moving images (see figure 1).

The three colours of light are then recombined through a prism to give 3LCD images their characteristically bright colours and very smooth animation while the projector's lens expands this minute detail on to the viewing surface (see figure 2).



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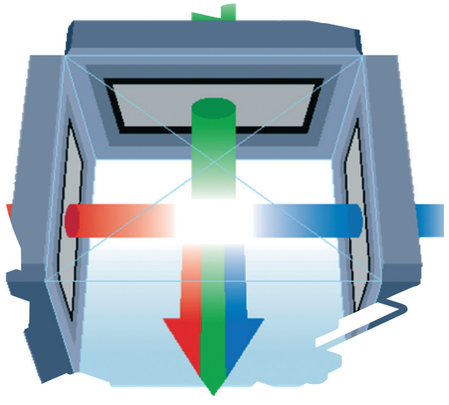

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Packing in the Features

While technologies such as 3LCD and E-TORL work quietly in the background, there's a lot more on offer for the video camera enthusiast on the outside of today's projectors. While some of the features we look at below are relatively new and yet to be implemented across entire ranges of projectors, their introduction is a stark and exciting indication of what is on the horizon.

- Inbuilt DVD players: Epson introduced this to its range in 2005 with the launch of its 'all-in-one' EMP-TWD1 projector. The inclusion of DVD players is of particular interest to the many amateur video camera enthusiasts who have taken to burning their video projects to DVD.

- HDMI Interface: Regarded widely as the next generation of audio-visual cabling and connectivity, HDMI (High Definition Multimedia Interface) provides a 5Gbps bandwidth capability. This means there is no longer any need to convert/compress video or sound data, which typically results in a drop in quality.

- USB Interface: Where would we be without the pervasive USB? Particularly in relation to data storage. Lots of data storage. From 256MB flash memories right up to portable hard drives weighing less than 200 grams and with 120GB storage capacities, USB storage devices are rapidly becoming the video camera enthusiast's best friend. And to meet this, companies such as Epson have been quick to incorporate USB connectivity into their projectors.

- S-Video: Absolutely essential connectivity requirements for the video camera enthusiast, S-Video (Super-Video) divides video data into colour and brightness signals. •

VideoCamera Speaks to Epson Australia's Bruce Bealby

Since 2002, Bruce Bealby, Epson Australia's projector business unit manager, has been instrumental in driving the remarkable success of Epson Australia in the local projector market. In this interview, we speak to him about the merits of projectors against LCD and plasma screens.

VideoCamera: Cost has long been regarded as one of the main obstacles confronting people looking to purchase a projector. We've seen the prices of LCD and Plasma screens come down; can we expect to see the same with projectors?

Bealby: Absolutely. In fact there has been almost a parallel drop in prices of LCD/Plasma screens and projectors over the past couple of years. So, even though the prices of LCD and plasma screens have been coming down, projectors are still significantly less expensive – and are more portable.

VideoCamera: There remains the question of which one to buy for the home environment. Regardless of the fact that you're Epson's projector evangelist, surely a projector isn't the best possible solution for every viewing situation?

Bealby: With the price of projectors where they are now and looking to drop further, I believe projectors are the best solution for most occasions. Projectors are also perfect for special events such as the upcoming Soccer World Cup, where they provide the biggest picture by far.

Added to this is that you have the immediate benefits of the projector's versatility. With a big plasma or LCD you're stuck with it. It isn't exactly the sort of product you pick up, throw in the car and take to a friend's house, after all. With the projector, though, that's precisely what people are doing. They're gaining from the advances made in brightness and colour as well as the mobility of the projector.

Interview | June 2006 | VC146