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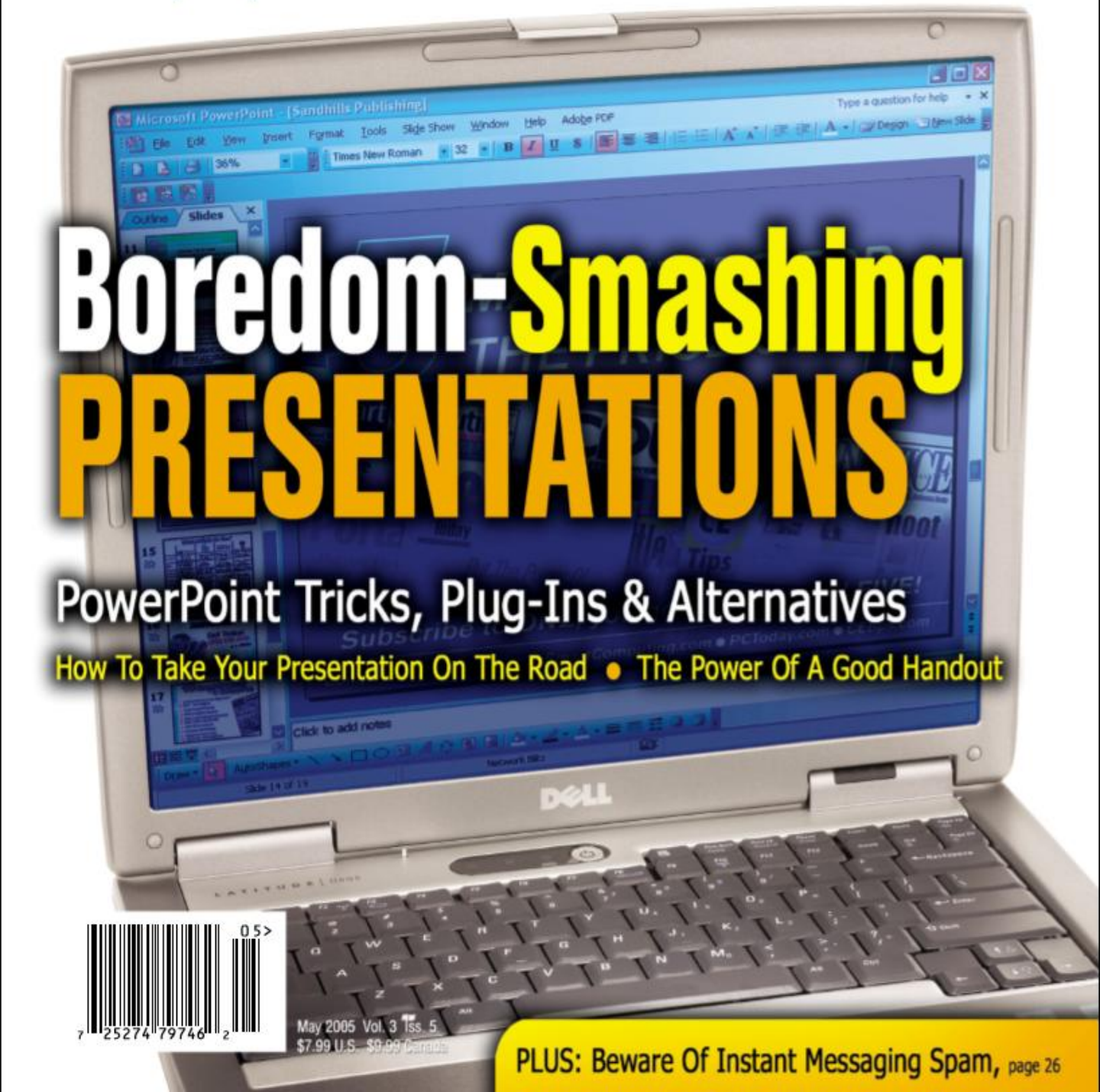

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Portable Digital Projectors

What To Look For Before You Buy

In our cover story earlier in this issue, we discuss the ins and outs on what you need to create stunning presentations. However, creating a presentation that gets your message across clearly with just the right amount of flashy graphics, animation, and background sound is only half the battle. The other half is played out in the conference room when you stand before your colleagues and superiors and your boss looks at you and says, "It's show time!"

If you're like most of us, just being in the spotlight will be enough to make you nervous. However, when it comes to making a winning presentation, having the right equipment to back you up will give you all the confidence you need. Of course, we're talking about the projector that you'll use to display your presentation as you deliver your carefully scripted speech.

We're all familiar with the behemoth projector's that are permanently mounted in many conference rooms. However, just like everything in the computer business these days, projectors are evolving and following the industry-wide trend to make computing devices smaller and more portable. As such, you can now find portable projectors in the range of 2 to 10 pounds. Among the key factors in this downsizing are enhancements in the display technology.

Display Technology

New digital display technologies are quickly replacing LCD (liquid-crystal display) technology in projectors. The digital technologies are based on optical semiconductor chips rather than the liquid crystal glass panels LCDs use. These new display technologies are DLP (Digital Light Processing) and LCOS (Liquid Crystal On Silicon).

Of these new display technologies, DLP definitely has a head start as scientists at Texas Instruments developed it in 1987, and the technology has been undergoing refinement ever since. Without getting too technical, DLP projectors use a single chip that consists of thousands of tiny mirrors, which represent pixels. These mirrors rotate back and forth to reflect light from the lamp through red, green, and blue filters mounted on a wheel that spins at high speed and alternates the filters to create 16.7 million colors. (You can learn more about DLP technology by visiting Texas Instruments' DLP Web site at www.dlp.com.)

LCOS projectors, on the other hand, typically consist of three chips: one for each of the primary color channels red, green, and blue. Each chip consists of thousands of tiny mirrors that are coated with liquid crystals. Again, the mirrors rotate back and forth to reflect light from the lamp, but because the mirrors are coated with colored liquid crystals, they can produce colors without the need of a spinning color wheel.

However, due to the fact that they use three chips rather than one, LCOS digital projectors are larger and heavier than their DLP counterparts. As such, DLP digital projectors are more predominate in the marketplace. Further influencing this trend is the fact that

At a mere 2.2 pounds, the HP SB21 is one of the most mobile digital projectors around.

DLP technology is not as expensive as LCOS.

Pulling on both these factors, it is very easy to shop around and find DLP digital projectors that weigh less than 10 pounds and that cost somewhere in the $1,000 to $5,000 range.

Although DLP is moving to the top of the hill, many manufactures are still focusing on LCD and working on ways to make it smaller and more efficient in order to stay competitive. In fact, many manufacturers are hedging their bets and offering LCD and DLP projectors.

As you can imagine, there are a vast number of portable DLP projectors on the market available from an array of manufacturers with names that you would immediately recognize, such as ViewSonic, Dell, Sony, and HP, to others that you may not be familiar with, such as BenQ and InFocus.

Other Features

When looking at digital projectors, there are many features that you want to focus, on including such things as portability, brightness, and resolution. Of course, the ultimate digital projector choice will typically fall in line with how big your budget is.

Portability. When it comes to your portability needs, you need to consider how and where you'll use the digital projector. Will you just be moving the digital projector between various conference rooms in the office, or will you be packing it with you as you travel to other locations to make sales presentations?

Brightness. In the area of brightness, you want to look at the digital projector's lumens specification, which can range anywhere from 1,000 to 4,000, and then consider what the lighting environment is at the location that you'll be giving your presentation. Will you be running the presentation in a darkened room, or will the lights be turned on but dimmed, so you can make eye contact with your audience? Does the room have windows where sunlight can change the conditions even when the shades are drawn, or is it an interior room with no windows? For brighter conditions, you want a digital projector capable of at least 1,500 to 2,500 lumens; for darker conditions, you can get by with a lower specification of 1,000 lumens.

This Dell 2200MP digital projector comes with a wireless remote control.

In addition, you need to consider the size of the audience when it comes to your digital projector's lumens specification. This is due to the fact that a larger audience will require a larger image, which in turn requires a higher lumens specification.

Resolution. Just like your computer's display, digital projectors also have display resolution specifications. The most common resolutions in digital projectors are SVGA (Super Video Graphics Array) and XGA (Extended Graphics Array).

Resolution is the number of individual pixels that a display uses to create an image. An SVGA display has 800 horizontal pixels and 600 vertical pixels, giving a total display resolution of 480,000 individual pixels that are used to compose the image. An XGA display has 1,020 horizontal pixels and 768 vertical pixels, giving a total display resolution of 783,360 individual pixels.

Throw distance. Along with the brightness and resolution of a digital projector, you'll want to know its

ViewSonic's PJ501 relies on enhanced LCD (liquid-crystal display) technology.

Digital Projector Models

We gathered some specs on some of the more popular portable digital projectors. Keep in mind that there are many more portable digital projectors on the market today than what we included in our chart. This is just a sample to give you an idea of what's currently available.

Brand	Model	Display Technology	Weight (lbs.)	Brightness (lumens)	Resolution	Throw Distance (feet)	Price
BenQ	PB2120	DLP	3.8	1,200	SVGA	4 to 32	$1,195
BenQ	PB6200	DLP	5.6	1,700	XGA	4 to 32	$1,795
Canon	LV-S3	LCD	4.9	1,250	SVGA	4.3 to 21.2	$1,299
Canon	LV-X4	LCD	6.4	1,500	XGA	5.3 to 25.3	$1,999
Dell	2200MP	DLP	4.7	1,200	SVGA	3.9 to 39.4	$ 899
Dell	3300MP	DLP	4.0	1,700	XGA	3.9 to 39.4	$1,988
Epson	PowerLite S1+	LCD	7.0	1,400	SVGA	4 to 30	$ 799
Epson	PowerLite 740C	LCD	3.8	2,500	XGA	3.9 to 33.1	$2,414
HP	sb21	DLP	2.2	1,000	SVGA	3.3 to 39.4	$1,299
HP	vp6111	DLP	6.7	1,500	SVGA	4 to 32	$1,199
InFocus	LP120	DLP	2.0	1,000	XGA	5.6 to 12.1	$1,799
InFocus	X2	DLP	6.8	1,600	SVGA	5 to 32.3	$ 949
LG Electronics	RD-JT50	DLP	5.5	2,000	XGA	3.6 to 36	$1,999*
Sanyo	PLC-XW20AR	LCD	6.2	1,100	XGA	5.3 to 26.6	$1,995
Sanyo	PLC-XU41	LCD	6.0	1,500	XGA	4.3 to 33	$1,895
Sony	VPL-DS100	LCD	6.3	1,200	SVGA	4.6 to 14.4	$1,179
Sony	VPL-EX1	LCD	5.9	1,500	XGA	6.2 to 19.4	$2,099
Toshiba	TDP-S20U	DLP	6.6	1,400	SVGA	4.6 to 27.3	$1,294
Toshiba	TDP-SW80U	DLP	6.4	2,000	SVGA	6.4 to 26.7	$1,999
ViewSonic	PJ255D	DLP	2.1	1,100	XGA	4 to 32.8	$2,349
ViewSonic	PJ 501	LCD	5.4	1,500	SVGA	5 to 20	$ 999

DLP=Digital Light Processing LCD=liquid-crystal display SVGA=Super Video Graphics Array XGA=Extended Graphics Array

For price listings we used the manufacturer's suggested retail price if available; otherwise we used the estimated street price at press time.

The BenQ PB6200 comes with special features such as Picture-In-Picture.

throw distance, which essentially equates to the range of distance between the projector and the screen that will produce the picture. The minimum throw distance is determined by the lower end of the lens' focus range. If the throw distance is less, the image will be out of focus.

On the other hand, the maximum throw distance is most often limited by the brightness of the projector, rather than the upper limit of the focus range. If you move the projector beyond the maximum throw distance, the projected image will be so large that it will not be sufficiently bright.

Price. The size of digital projectors isn't the only thing that has reduced over the years, prices have come down considerably, as well. In fact, just a few years ago it wasn't uncommon to find digital projectors in the $5,000 to $10,000 range. However, advances in technology have not only made the digital projectors smaller in size, but they have also brought the cost down to a more common price range of $900 to $5,000—not cheap by any means, but a little easier on the bottom line.

Take A Look

Before you run out and buy that digital projector, consider what you will use the device for and what type of presentations you will be giving. Make sure you find a projector with the specs that meet your needs. PCT

by Greg Shultz