NOW YOU SEE IT The picture looks sharp and clear through special 3D glasses, but without them you'll see double images that look out of focus.

First look at 3D TVs

Pop-off-the-screen images impress, but there's little to watch

A FEW MONTHS AGO, 3D TVs burst onto the market, promising to bring the excitement of movies like "Avatar" and "Alice in Wonderland" right into your living room. We immediately bought several of the new sets and put them through their paces in our labs—the first hands-on evaluation outside the manufacturers' facilities—to see whether they live up to their advance billing.

They do indeed. The results of our preliminary tests of two Samsung LCD sets and a Panasonic plasma TV with 3D capability are impressive. The 3D images on those sets have excellent depth, color, and high-definition detail, creating a compelling three-dimensional picture as good as you might have seen in a movie theater. You'll be ducking when that Frisbee comes flying toward you!

Though 3D technology is still in its infancy, we believe it represents a significant advance in TV capability.

What we tested

We evaluated two 46-inch Samsung LCD sets with edge LED backlighting, the UN46C7000, $2,600, and the UN46C8000, $2,800, and the 50-inch Panasonic TC-P50VT20 plasma set, $2,500. (The VT20 is sold in Best Buy Magnolia stores. A similar VT25 set will be sold in other stores.)

We connected the TVs to each company's new 3D Blu-ray player, the Samsung BD-C6900 and Panasonic DMP-BDT300, each $400. We then switched them to see whether the Samsung Blu-ray player would work with the Panasonic TV and vice versa. They did. The glasses, however, are brand-specific and don't work with other TVs.

We played on both players the first and only Blu-ray 3D disc available at the time of our tests, "Monsters vs. Aliens," and watched it on all three TVs. On the Panasonic set, we also viewed a 3D demo disc that came with the TV; it played only on the Panasonic player. It contained some live-action travel and nature sequences, including the one shown above. (Note that 3D-enabled players can play regular Blu-ray discs and DVDs.)

What we found

All three sets delivered eye-catching three-dimensional effects in full 1080p resolution. They also provided an acceptably bright picture, important because 3D glasses can make images appear dimmer. However, there were differences.

The Samsung LCD TVs. Our expert viewers detected subtle ghosting of 3D images in some scenes. Such ghosting, technically called "crosstalk," indicates that the images for each eye aren't being kept completely separate, as they should be.

PHOTOGRAPH BY MICHAEL SMITH

(See sidebar on this page.) When visible, the ghosting was distracting, and the 3D effect was less than perfect. We also noticed that if you tilted your head, as if you were lying on a couch, the picture dimmed a bit on both Samsungs.

Some cloudiness caused by uneven blackness on the Samsung 7000 model was also a bit distracting in dark scenes. On the 8000, we were able to minimize cloudiness by lowering the backlight and using the "smart dimming" feature (the first time we've seen local dimming on an edge-lit LED set). With both TVs, the viewing angle was rather narrow, so picture quality degraded as we moved off center.

Despite our quibbles, the Samsung sets provided excellent picture detail and satisfying colors and contrast with 3D and regular HD content. In addition, the glasses were lighter and more comfortable than the Panasonic's.

The Panasonic plasma TV. We saw negligible crosstalk, so the 3D effect had consistent clarity, with no distracting ghosts, adding to the realism of the 3D. The TV's virtually unlimited viewing angle for regular HD programs held true for 3D content, so even those viewing the screen from an angle could see a great picture. We saw no change in image brightness when we tilted our heads, as we did with the LCD sets.

With both 3D and regular HD content, picture detail on the Panasonic was excellent, as were black levels, which came close to the best we've seen, on Pioneer's Kuro plasmas. Also, the Panasonic might have the best motion resolution of any flat-panel TV we've ever tested. Detail remained sharp and crystal-clear even in test patterns designed to reveal blur in fast-moving images.

Bottom line. All three TVs provided an enjoyable 3D experience—bright, colorful, and compelling. We give the Panasonic the edge based on our preliminary tests. Its great black levels and crisp edges made three-dimensional images pop, and like any plasma TV, it doesn't suffer from cloudiness due to backlighting or a limited viewing angle. Still, we haven't seen enough 3D sets to make any judgments about whether plasma or LCD is inherently a better technology for displaying 3D.

Exciting as 3D is, it's only one attribute to consider. You'll almost certainly be watching normal two-dimensional content most of the time, so we're putting those TVs through our standard tests to see how they do. We'll publish full test results soon.

Your top questions about 3D TV

How does 3D TV work?

Normally, your left and right eyes see slightly different perspectives of a scene, which the brain combines into one image with depth and dimension. Special 3D dual-lens cameras or computer animations simulate that real-world experience by providing two different views of an image. (Note that watching 3D over a period of time, or even for a short while, can cause certain viewers to develop eyestrain or a headache.)

Do I have to wear special 3D glasses?

Yes, to watch 3D programs. Without glasses, those left/right views appear as blurry double images. The high-speed shutter glasses you use with 3D TVs provide each eye with a separate, distinct image, creating a realistic sense of depth. The glasses are battery-powered. Some can be recharged by connecting a USB cable to the TV or Blu-ray player; others use replaceable batteries. You can wear the glasses over prescription eyewear, though that can be uncomfortable. Some 3D TV sets come with one or two pairs of glasses, or glasses might be included in a bundle with a TV and Blu-ray player. If no glasses are provided, or if you need more, you can buy them separately. A pair of glasses costs about $150 now, but lower- priced versions might be available at some point.

How much does a 3D TV cost?

The premium isn't as steep as we expected, in some cases several hundred dollars more than regular sets with similar features (aside from 3D). Samsung was expected to have eight LCD sets and six plasma TVs with 3D capability in stores by May, ranging in size from 40 to 65 inches and priced from $1,700 to $7,000. Panasonic has one 50-inch 3D plasma set on the market for $2,500, and additional models (54-, 58-, and 65-inch screens) are due out shortly. LG, Sony, Toshiba, and Vizio are expected to introduce 3D LCD sets in the next few months.

Do I need to buy anything else?

To watch prerecorded 3D movies at home, you'll need a 3D Blu-ray player. Two were available at the time we wrote this: the Panasonic DMP-BDT300 and the Samsung BD-C6900, each $400.

Is there any 3D content to watch?

There isn't much at this point, but there should be more soon. "Monsters vs. Aliens" and "Ice Age: Dawn of the Dinosaurs" are two of the first 3D Blu-ray discs available, and the "Shrek" series is expected later this year. (Older 3D movies such as "Polar Express" on DVD or Blu-ray are completely different from the new 3D, and you must watch them with cardboard anaglyph glasses with colored lenses.) Cablevision offered a hockey game in March. Comcast planned to broadcast 2 hours per day of the Masters Golf Tournament in 3D in April. TV channels in 3D from ESPN and DirecTV are expected in June, and the Discovery Channel plans to launch a 3D network. Some TVs, such as those from Samsung, can render regular two-dimensional content in 3D on the fly, a feature we're testing. Sony and Toshiba have also announced upcoming sets that will have this capability.

Can I watch regular shows on a 3D TV?

Yes. A 3D-capable set functions like any standard HDTV with regular programs; 3D is a new feature, not a new type of TV. The set shifts into 3D mode only when it detects 3D content. You'll probably watch mostly regular video on those sets, at least in the near future. You don't have to wear glasses to watch regular programming.

Should I buy a 3D TV now?

That depends on your situation.

YES—If you're an early adopter willing to pay for a hot new technology, go for it. The 3D effects can be eye-popping and just plain fun. Just remember there's not much 3D content to watch yet.

MAYBE—If you're planning to buy a fairly high-end new TV anyway, this could be a way of future-proofing your purchase. The TV will cost more than a traditional set, but you won't have to spring for yet another new TV in a year or two when DirecTV, ESPN, and cable stations start offering 3D programming and more 3D movie discs are available.

NO—If you're happy with your current HDTV, don't need a new set, and aren't burning to have the latest technology, don't buy now. The price of 3D TVs and Blu-ray players should drop, so you'll save money by waiting. And there should be more 3D to watch by the time you're ready to buy.

NOT JUST FOR 3D **Sets like this 3D-capable Samsung LCD model also display regular programming, which doesn't require glasses.**