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09/07

Vol. 29/No. 09



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## 2007 Projector Guide

New 1080p and short-throw models

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## The Best and Brightest

With competition from flat-panel displays, new projectors bring more to the table



# Looking Good, High, Wide + Short

By David English

Buying a projector used to be relatively simple. You selected the brightness level you needed, chose the features you wanted and hoped the price would fit your budget. Now the process is more complicated, in large part because there's a broader range of available product. It might seem unfair to lump a 50-lumen, pocket-sized projector, rear-projection television, 1080p home theater projector and 4K digital cinema projector into the same category, yet they perform essentially the same function. There is also competition coming from outside the projector market.

"Overall projector sales are increasing, though we're very cautious about forecasting something like 30- to 40-percent growth year-over-year because of the competition from flat-panel technology," explains Sanju Khatri, principal analyst with iSuppli, a market research firm based in El Segundo, CA. "I'm already seeing flat panels, especially LCDs, coming into environments such as conference rooms." There's less competition from flat panels in the education market, where buyers are more price sensitive. "Only a front projector can provide such a large screen image with a competitive price," says Khatri.

Tom Mainelli is a senior research analyst for IDC, a research and advisory firm based in Framingham, MA. He expects overall projector sales to grow about 10 to 15 percent annually. "Just a small percentage of this is home theater," he says. "A lot of it is companies adding new projectors, replacing old projectors and going into areas where projectors didn't used to go, such as houses of worship." Two years ago, the industry was excited about the potential for a large increase in home theater sales. Since then, flat panels have dropped in price much faster than expected. "The industry had thought, 'Wow, we can sell a few hundred thousand of these 1080p projectors at x price,' but now they're having to race to the bottom on prices," he explains.

### Go High

So what's the prognosis for 1080p projectors? Can they stand up to 52-inch LCD and 60-inch plasma displays that sell for less than \$3,000? Bill Coggshall surprised many attendees at the recent Projection Summit Conference (held in conjunction with InfoComm

in Anaheim, CA) when he argued that 1080p projector sales will be driven as much by professionals as they will be by consumers. Coggshall is the president of Pacific Media Associates, a market research firm based in Menlo Park, CA.

"We're bullish on the 1080p category," he explained at the conference. "I—and only I in the world—have speculated that over half of the units sold in 2011 will be to the professional market. People are horrified by that forecast, but I think that the price is going to come down close enough. It's a little too far from XGA now, but in the next few years, it's going to come down dramatically. There will still be a price premium over XGA, but it will be close enough so that the 1080p market will take off."

This year, Epson, Mitsubishi and Optoma broke through an important price point when each introduced a 1080p projector for \$3,000. Epson's LCD-based PowerLite Home Cinema 1080 has a 1000 ANSI lumen rating, an impressive 12,000:1 contrast ratio and expanded-color-gamut HDMI 1.3 connectivity. Mitsubishi's LCD-based HC4900 features a 7,500:1 contrast ratio and 19-decibel ultra-quiet mode, as well as both HDMI and DVI connectors. Optoma's DLP-based HD80 has a 1300 ANSI lumen rating, 10,000:1 contrast ratio and BrilliantColor technology. An optional anamorphic lens is available to convert the HD80's 16:9 native resolution to a 2.35:1 aspect ratio. These models would be excellent choices for budget-constrained home theaters with nominal ambient light and an 80-inch or larger screen.

For a step up in image quality (and price), you might consider an LCoS-based 1080p projector such as JVC's DLA-RS1 (\$6,295). It has a new three-chip D-ILA optical engine that provides a native



From the top:  
Canon's LV-7575,  
Mitsubishi's HC4900,  
JVC's DLA-RS1,  
Optoma's HD80,  
and Sony's VPL-VW50

PICTURE BY  
**DLP**  
TEXAS INSTRUMENTS

# 2007 Projector Guide

Panasonic's PT-DW5100 projector

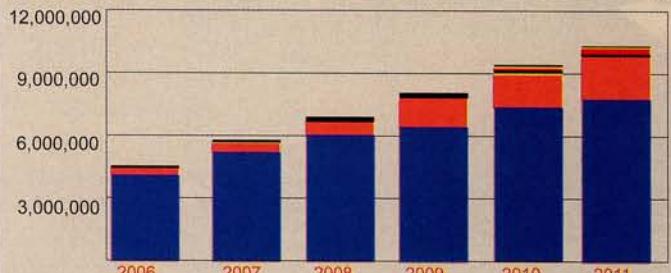


15:000:1 contrast ratio without relying on a dynamic iris. That's the best contrast ratio currently available in a sub-\$10,000 home theater projector. Sony's VPL-VW50 (\$5,000), also known as the "Pearl," uses Sony's three-chip SXRD technology. Unlike other SXRD projectors, the VPL-VW50 uses a \$379 UHP mercury lamp, as opposed to the \$3,000 Xenon lamp found in Sony's previous Qualia 004.

But even a \$3,000 1080p projector may be a stretch for the corporate market, given that you can buy a surprisingly good quality XGA projector for less than \$700. "Let's get a few more lumens and a bit less price [for the 1080p projectors]—maybe 1500 or 2000 lumens and \$2,000—then it will be a different story," says Coggsall. He urges the industry to promote the idea that 4:3 projectors are old fashioned and need to be replaced. "The average projector in the office is well over three years old. In our end-user surveys, we always find that people intend to replace them after three years."

*continued on page 28*

## TOP-LINE CLASSIC (500+ L) FRONT PROJECTOR MARKET: WORLDWIDE UNIT SHIPMENTS



	2006	2007	2008	2009	2010	2011
Short Throw	25,000	50,000	96,000	160,000	250,000	345,000
Cinema	14,300	22,500	33,300	47,600	65,700	77,700
Widescreen*	309,013	397,805	653,607	1,268,523	1,924,834	2,588,483
Rest of Market	4,622,703	5,246,536	5,993,370	6,528,449	7,096,195	7,798,159

\* Includes 720p, WXGA, and 1080p except cinema

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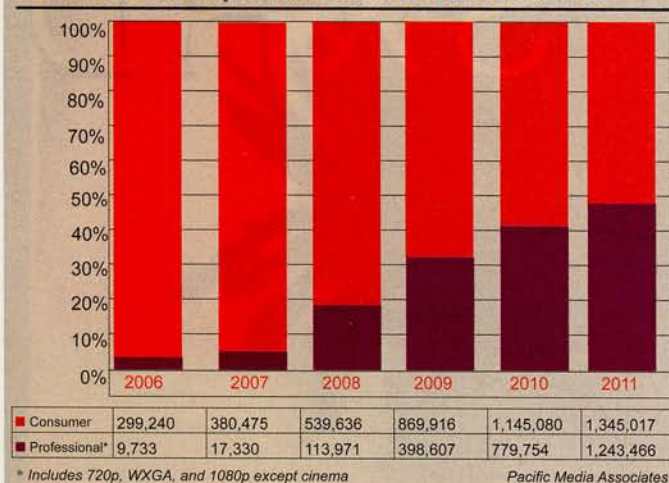
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## WIDESCREEN PROJECTORS

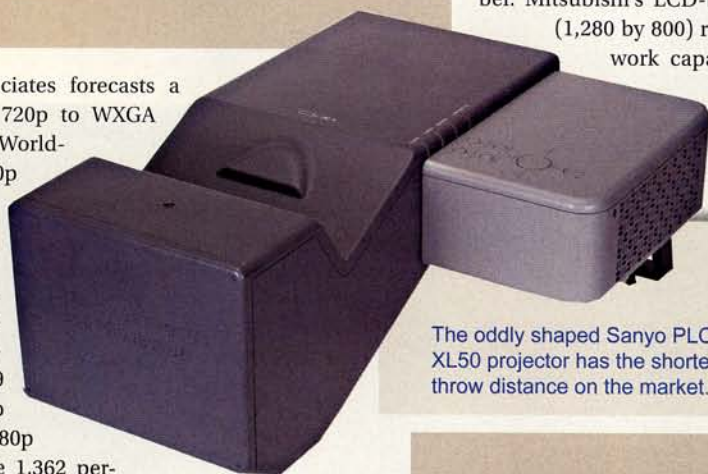
### Worldwide Unit Shipments: Consumer vs. Professional



\* Includes 720p, WXGA, and 1080p except cinema

Pacific Media Associates

Pacific Media Associates forecasts a substantial shift from 720p to WXGA (Wide XGA) and 1080p. Worldwide shipments of 720p projectors will increase 285 percent from 2007 to 2011—from 269,487 units to 768,234 units. During that same time period, WXGA projectors will increase 1,249 percent, from 70,504 to 880,701 units. And 1080p projectors will increase 1,362 percent, from 74,714 to 1,017,248 units.



The oddly shaped Sanyo PLC-XL50 projector has the shortest throw distance on the market.

ward will be the synergy between widescreen laptops and native widescreen projectors."

Widescreen projectors don't have to match the exact 16:9 or 16:10 aspect ratio of the notebook. "So long as you get close to that aspect ratio by using a wide-aspect-ratio chip, such as 1,366 x 768, that's fine," says Haruki. "That size chip is available in inexpensive home theater projectors. Optoma's HD70 is under \$800. Its brightness isn't up to snuff for a corporate unit, but it's a cheap wide-aspect-ratio projector. If they could only make it brighter, it would be an ideal widescreen business projector."

The education market is demanding widescreen projectors so teachers can show more content. "They prefer going wider rather than higher because you can generally only go so much higher in a classroom," says Khatri.

Newly introduced widescreen projectors include Sharp's DLP-based PG-F320W (price to be determined) with a WXGA (1,280 x 800) resolution, 3000 ANSI lumens, 2,000:1 contrast ratio and network capabilities. It will be available in October. Mitsubishi's LCD-based WL639U (\$4,995) has a WXGA (1,280 by 800) resolution, 3500 ANSI lumens and network capabilities. And Panasonic's DLP-based PT-DW5100U (\$11,500) has a WXGA (1,280 x 768) resolution, 5500 ANSI lumens when both of its dual lamps are lit, built-in multi-screen support and a liquid cooling system.

### Go Short

Coggsall expects about a 15-percent annual growth rate for classic front projectors, which he defines as front projectors hav-

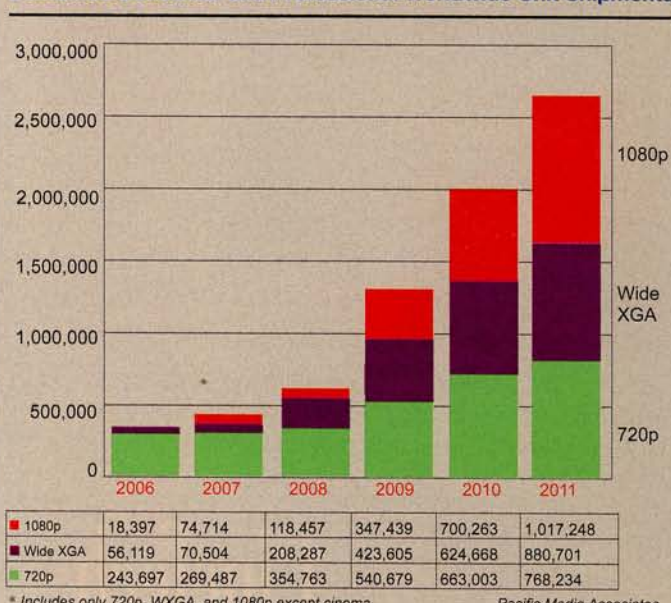
### Go Wide

Potential growth in widescreen projection isn't limited to home theater. "We're bullish on the overall widescreen market," says Coggsall. "We see a growth bulge coming in a couple of years and then continued growth that exceeds the average growth of the classic category by a substantial margin." Currently, nearly all widescreen projector sales are consumer-based. "We think this is going to change dramatically over the next few years," he says.

Wide-aspect-ratio projectors are beginning to find traction among corporate and education buyers. Khatri expects to see more introductions of widescreen projectors for business use. "There's more demand than product available," she says. "Front projector manufacturers have been slow in realizing that trend." Business users are moving to widescreen because their notebook computers are increasingly available with a widescreen display. "The resolution race has stalled for the most part because XGA is good enough for PowerPoint," says Eric Haruki, research director for IDC's TV Markets and Technologies service. "The thing that will be interesting going for-

## ALL WIDESCREEN PROJECTORS

### Combined Consumer and Professional Worldwide Unit Shipments



\* Includes only 720p, WXGA, and 1080p except cinema

Pacific Media Associates

ing more than 500 lumens. His high-growth subcategories, which he expects to grow well above the 15 percent average, include widescreen, cinema and short-throw. At the Projection Summit Conference, Cogshall predicted that shipments of cinema projectors will increase 345 percent worldwide over the period from 2007 to 2011—from 22,500 to 77,700 units. He cautioned, however, that his cinema projector forecasts are highly speculative at this point. Short-throw projector shipments will grow even faster over the same time period. He sees them increasing 690 percent, from 50,000 to 345,000 units.

What will push short-throw projectors to such rapid growth? One factor may be increasingly shorter distances between the projector and screen. Sanyo's upcoming LCD-based PLC-XL50 (target price: \$5,000) has the shortest throw distance so far. Shipping in December, it can project an 80-inch image with the projector placed just three inches from the screen. Sanyo combined a new large diameter aspheric (non-spherical) lens with a high-precision aspheric mirror to perform this seemingly impossible feat. The PLC-XL50 has an XGA resolution, a 2000 ANSI lumen rating and weighs 17.25 pounds.

Other short-throw projectors include NEC's DLP-based WT610E (\$2,999), which can project a 100-inch image from as close as 26 inches from the screen. It has an XGA resolution, 2000 ANSI lumen rating and 3,500:1 contrast ratio. Toshiba's DLP-based TDP-ET20U (\$1,399) is targeted more to consumers. It has a built-in DVD player, as well as a futuristic design that helps distinguish it from other home-theater-in-a-box products. It can project a 100-inch image from 3.9 feet, has a 2,000:1 contrast ratio, a 1100 ANSI lumen rating and native 854 x 480 progressive resolution.

Canon has taken a different approach to short-throw projection. The company's standard projector lenses tend to have a wider angle than standard projector lenses from other manufacturers. For example, the 2500-lumen LV-7265 (\$1,499) can project a 100-inch image from as close as 9.2 feet from the screen. And Canon's 5500-lumen LV-7575 (\$8,999) can be configured with an optional ultra-wide-angle LV-IL01 lens (\$2,500) that can project a 70-inch image from as close as 3.7 feet from the screen.

Can the new high-definition, wide-aspect-ratio and short-throw projectors

invigorate what is rapidly becoming a maturing industry? "It has been a struggle for some vendors because the average selling prices continue to drop," says Mainelli. "That's bad news for the vendors, but that's great news for consumers. Whether you're replacing a projector or buying a new one, you can probably find a model that's less

expensive, is brighter and smaller, and has a higher resolution than a similar model from a year before." ■

*In addition to his reviews for Studio/monthly magazine, contributing editor David English evaluates software and hardware for CNET.com and Computer Shopper magazine*

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