

The Particulars of Lenticular

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Abstract

Lenticular printing is not new, there have been lenticular printing products and processes for many years. Many of the leading wide format digital printing equipment suppliers have partnered with companies that specialize in lenticular software and lenses. High-quality lenticular printing is a process that requires technical expertise, but can represent a highly profitable niche service that wide format PSPs can offer to enhance the top and bottom line.

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Introduction

There are billions of wide format graphics printed every year, but those are static images. There are millions of wide format digital signage systems installed that add motion and sound to advertising messages, but there is no digital printing element to those displays. Lenticular prints, with the effect of motion or depth, represent a bridge between the static printed graphic and digital signage systems. Recently, InfoTrends visited BIGraphics of Nashua, New Hampshire, a wide format shop that has invested in the tools and developed the expertise to prepare professional wide format digitally printed lenticular graphics.

Lenticular is a bridge between static printed signage and digital signage systems

Types and Technology

Lenticular printing was demonstrated at a recent open house held at BIGraphics in Nashua New Hampshire, a high-quality wide format print service provider with a wide variety of production skills and equipment that has been in business for almost 15 years. None of the images used in this document will do justice to the precise production techniques that BIGraphics' highly skilled employees apply to lenticular printing. As the name implies, lenticular printing uses a lens and a set of images to create effects such as 3D, flip, and motion. The image is created using an interlacing process that is key to the software packages that companies like HumanEyes provide. The images are literally divided up line by line and ordered together such that when viewed one way, one of the images can be seen, when viewed another way another image can be seen, giving the effect of depth or movement. Lenticular prints can be produced in one of two ways. Either the image is reverse printed directly onto the lens, which is then applied to a surface, or the image is printed onto a sheet to which a lens is applied. A different lens is used based on the different effects that are being applied. The courser the lens, the more images can be interlaced. The way the graphic is printed, it looks like there are several images printed on top of one another until the lens is applied.

In addition to the preparation time for the images, BIGraphics noted that since there is a relatively thick lens involved, color management can be an issue, and cutting the lenses to the proper dimensions is a challenge. However, BIGraphics does get to charge for both the file prep time and cutting services they offer.

Figure 1 - BIGraphics' Joe Dumont Demonstrates Lenticular Printing



BIGraphics uses HumanEyes lenticular printing software. HumanEyes is clearly the market leader in terms of lenticular printing for the wide format digital market. HumanEyes has partnered with many of the leading wide format digital printing system manufacturers including Durst, EFI, Fujifilm, Gerber, HP, Mimaki, Océ and others. In addition to the lenticular prints, HumanEyes software also lets users create Flash graphics that BIGraphics customers integrate into their web sites. BIGraphics has multiple wide format roll-fed and flatbed inkjet printers, including HP DesignJet 9000s and Fujifilm Acuity printers. The quality of the printer is a key factor in the growth of lenticular printing, according to Jeff Miller from HumanEyes. “These printers that offer small droplet size printing create an opportunity to produce high quality lenticular prints that big drops just can’t produce” Miller says.

There may be a rise in the use of lenticular printing because of the popularity of the film Avatar, according to Joe Dumont from BIGraphics “the use of lenticular printing is trendy, it has been a round a long time” Dumont says “ it comes and goes, but with a film like that and all of the special effects, plus with all of the high-quality flatbed printers out there now, I think we’re going to see more of it..” HumanEyes’ Miller agrees, noting that Hollywood studios have announced more than 20 full-length feature films would use 3D technology over the next 18-24 months which should drive a lot of lenticular business. Miller also noted that shop owners that produce lenticular graphics likely have a lot of “everyday” opportunities to offer the service to their customers for trade show booths, point-of-purchase and airport signage, and interior décor. “We’re definitely seeing an increase in sales. But we’re seeing printing companies interest in lenticular grow as a way to differentiate, to offer some new service to their customers.”

"Lenticular is kind of trendy, it comes and goes, but ... I think we're going to see more of it."

Figure 2 - These Lenticular Eyeballs “shift” to Follow Viewers as they Pass



Economics

Miller from HumanEyes reported that the cost of the lens can range from between \$1.65 per square foot up to more than \$11 per square foot depending on the thickness of the lens. Miller went on to say that companies producing lenticular prints using wide format digital printing equipment are selling those prints for between \$45 and \$75 per square foot for typical small runs. BIGraphics indicated that a single 22” x 28” 3D lenticular print could sell for as much as \$400, but that the company typically offers volume discounts after three prints, depending on size. Since the lenses are expensive and every job requires a different kind of lens, it is not cost effective to stock lenses, so BIGraphics custom orders lenses for every

job which lengthens lead times. In addition to the output, there will likely be a service time for the development of the lenticular images. “Print shops should really try to work with their customers on a paid basis for developing these designs” says Miller “this is not like a lot of graphic poster or banner printing. There is a really valuable service required to create these images, shops have got to charge for that time and service.”

While BIGraphics turns typical wide format digital graphics jobs around in less than 5 days, lenticular jobs often take extra days in order to get the required lenses. High volumes and higher quality than can be achieved using the equipment that BIGraphics has in their shop are outsourced to lithographers.

Conclusion

Print service providers are often looking for a new type of product or service they can offer to their customers and lenticular printing can be exactly the type of capability customers are looking for. The components of the lenticular printing systems are widely available and the software to create these images has become much easier to use. It will likely take some time at the outset to become expert at both the selling and production of wide format lenticular prints, but then those skills can be leveraged into other products such as packages and novelty items.

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