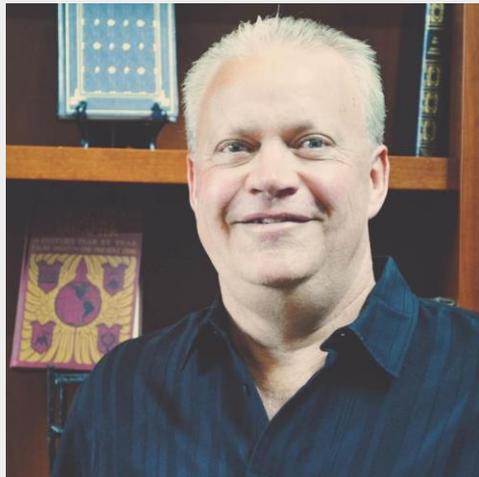


OPTICAL LENS TECHNOLOGY

<http://www.jacotech.com/lenticular-lens.php>



By Gary A. Jacobsen, Chief Engineer & Founder

The "**LentiClear Elliptical Lenticular Lens**" is the world's most advanced, optically-correct and clear printable various gauge lense developed for high quality and cost efficient lenticular printing. They are also used for non-imaging display viewing products and structured lighting elements.

In recent years we have worked with a world-renowned optical expert and scientist, who researched and analyzed the lenticular industry's most common standard and independent custom lenses currently available on the market. After careful optical laboratory analysis, it was apparent that these various lenticular lenses have limited optical performance properties and are similar variations of prior art lens designs dating back over 40 years.

BENEFITS OF USE >>

LENTICLEAR LENS PRE-PRESS PROOFING REQUIREMENTS AND ADVANTAGES FOR PRINTERS AND END USERS:

Most lenticular lens materials are general in design and intended to accommodate both proofing and printing stages. The LentiClear Elliptical Lenticular Lens, on the other hand, is purposely designed to be printed and proofed directly onto the smooth backside of the lens, a real advantage in lenticular print production.

LentiClear Lens pre-press proofing delivers a much sharper and accurate proof image of what you can expect to view during actual press production. There are no surprises (such as radical color changes, non-functioning animations or 3D images) when the customer is standing at the pressroom color table. The LentiClear "direct-to-



**Jacobsen Lenticular Tool &
Cylinder Engraving Tech Co.**

Manufacturing of Microstructured Optical Roll Mold Parts Used for the Management of Light

- Optical Lens Designs & 4 Meter Wide CNC Diamond Turning/Milling/Drilling/Laser Cylinder Engraving Experts of Unique Geometric Patterns
- Plastic Processing Molds: Extrusion/Embossing/Casting/Calendaring
- Roll Materials Used for Lighting Structures & Optical Lenses: Lenticular, Diffusers, Illumination, Reflective

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lens" style proof provides precise flip actions, 3D and in-focus field of views because the artwork is positioned at the nearest possible critical focal point on the back of the lens.

CURRENT INDUSTRY STANDARD PROOFING SYSTEM (USING "NON-DIRECT-TO-LENS" METHOD):

The most commonly used proofing system within the lenticular print industry consists of a four-color matchprint proof, which is laminated (using an adhesive) to a standard cylindrical lenticular lens material. The 4-ply sandwiched lenticular images are displaced at various distances from each other throughout the proof and are stepped too far away from the critical proper focal point of the lens. There are several reasons why this "non-direct-to-lens" proofing method is not accurate and will not replicate well when printed on press:

First, the matchprint is built up with 4-ply layers of thin transparent interlaced imaged membranes (one of each color - CMYK) that are then heat laminated on top of each other one at a time on top of the white opaque matchprint back carrier. This 4-ply membrane construction measures approximately 0.002 mil thick. Next, the 4-ply sandwiched membrane must be aligned properly to the smooth lens side of the lenticular material. If this 4-ply membrane is not carefully aligned to the proper starting individual lenticule, the proof will not work as designed due to registration problems.

Secondly, another optical problem arises when the matchprint is then laminated to the lenticular lens material. This adhesive adds an additional 0.002 mil (approximate) thickness, which increases the total displacement of image to the proper focal point.

The combined 0.004-mil (approx.) thick spacing from the back of the lens creates a false and unreliable proof image. Plus, the adhesive lamination glue adds another optical interference. The press cannot match the proof which can lead to lost production time on press, more lenticular waste, lost profit for the printer, and worst of all – an unhappy client and possible job rejection.

LENTICLEAR LENS PROOFING SYSTEM (USING THE "DIRECT-TO-LENS" METHOD)

The best solution for preventing the mentioned scenario is using the simple LentiClear Lens proofing method:

Simply proof directly to the smooth back surface of the LentiClear Lens by using your standard proofing system. This eliminates the adhesive mounting step by heat laminating the 4-ply membranes direct to the lens using a variable heat controlled transfer laminator.

Using our proofing method your LentiClear proof should look and function well (3D & flip action) but it will look even better on press when the colors are added simultaneously and the ink lies direct to the back of the lens at the exact critical focal point which was designed for best possible optical performance.

LentiClear Elliptical Lenticular Lens was designed for one thing - to be totally optically correct and accurate in both the proofing and printing processes.



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