

Digital Surfacing

HOW CAN WE ADOPT MORE SOPHISTICATED DISPENSING AND SALES TECHNIQUES CONSISTENT WITH THE BENEFITS OF DIGITALLY SURFACED PROGRESSIVES?

PART 5

To answer this, I can't help but begin this month's installment by talking about some comments I've read on Optiboard.com and ODwire.org. Both sites are terrific forums for getting a pulse of a segment of the marketplace. When searching "Digital Surfacing" it returns posts that describe it as – 'confusing, marketing hype, better vision in my personal glasses, requires a choice of a knowledgeable lab,' and 'we're fortunate to have so many choices.'

The optical industry tends to be cautious of change and initially skeptical of the "hype." So, the questions beg for some simplicity and agreement of language.

I'll use a part of an Optiboard post by Darryl Meister (Carl Zeiss Vision) where he states, "The real confusion here lies in the difference between mold making and lens making. A free-form or digitally surfaced lens is a lens surfaced using a free-form generator and polisher. It is not simply a lens that has been cast from a 'digitally surfaced' mold." Lenses made from digitally surfaced molds use this precision technique to create better molds. It depends on the manufacturer's science and the ability to deliver the designs consistently mold after mold and then through the lens casting or molding process. Depending on the material being cast or molded, material shrinkage during curing will change the curves so the mold has been iterated to be sure to deliver the final design. Examples are Varilux Physio, Zeiss GT2 and SOLAOne, etc. Digitally surfaced lenses have the design cut directly onto the lens surface and the design is reproduced exactly as we discussed in Part 4. See the description of how Schneider generators and polishers reproduce designs to 0.1 micron accuracy. Examples of digitally surfaced lenses are Varilux Physio 360°, Varilux Ellipse 360°, Zeiss Gradal Individual, SOLAOne HD and Compact Ultra HD.

He goes on to say, "It is equally important to note that a "free-form" lens doesn't really imply any greater level of optical performance or sophistication. Unless the lens has actually been customized for the wearer in "real time" by lens design software, prior to free-form surfacing, the performance of a free-form progressive lens is really (may be) no different than a comparable semi-finished lens. I think some manufacturers with limited lens design tools sometimes exploit this misunderstanding of the term

"free-form" by implying that, because their progressive lens came off a free-form generator, it is similar in technology to some of those premium, customized free-form lenses out there -- like Gradal Individual, Varilux Ipseo, etcetera."

So, to get the most out of Digital Surfacing you must understand the level of design customization offered by manufacturers and a basic understanding of the way the lenses are manufactured. Learn the actual benefits being delivered. Understanding the technology in detail requires more mathematics and physics knowledge than most of us have and is not essential to enjoying success with the products.

Some posts suggest that the claims are all "marketing hype" since these companies spend significant monies to develop products and technologies. I agree with those that are appreciative of the efforts of companies like Schneider, Carl Zeiss Vision and Essilor in bringing new technology that provides wearer benefit and business growth opportunities. It's now up to you.

Is the Wow 100%?

With that being said, nothing is 100%. Some patients won't experience a wow effect with a customized progressive. Sometimes, a conventional lens provides almost ideal vision because a chance combination of factors allows the maximum benefit of the design to be expressed. Patients who already have almost perfect correction may not see any improvement. But if you consistently use customized progressives you will realize a greater level of performance for a wider range of patients. By using the best products currently available you show your customers that you really care.

I am certain that wavefront-designed and digitally surfaced lenses will become the majority of the progressives sold and dispensed everyday. As we make this shift in technology, how do we sell these products most effectively? Do you and your colleagues know how to describe the benefits? Do you have all the tools that are needed? Do you know how to recognize whether you have received what you ordered?

Providing the best for patients

Using more digitally surfaced lenses raises the expectations of patients. We deliver better vision while we effectively replace older designs, their compromises and lesser profitable products that cannot fuel new research and industry growth.

One effective method to increase usage is to show patients how digitally surfaced lenses are the logical next step in design improvement along with a price discussion to better position and describe their benefits. If organized effectively, it simplifies the message for both dispenser as well as patient. It also helps reduce the progressive lens toolbox to a manageable number.

Category	Good (\$\$)	Better (\$\$\$)	Best (\$\$\$\$)
General Purpose	Varilux Comfort SOLAMax	Varilux Physio SOLAOne + Transitions + Poalrized + Polycarbonate + 1.6, +1.67, +1.74	Varilux Physio 360° SOLAOne HD Gradal Individual Varilux Ipseo + Transitions + Poalrized + Polycarbonate + 1.6, +1.67, +1.74
Small Frame	AO Compact Zeiss Bervity	Varilux Eclipse SOLA Compact Ultra + Transitions + Poalrized + Polycarbonate + 1.6, +1.67, +1.74	Varilux Eclipse 360° SOLA Compact Ultra HD + Transitions + Poalrized + Polycarbonate + 1.6, +1.67, +1.74

For example, create a chart for your office like the chart shown. Add the digitally surfaced lenses you use and it's easy to show patients the benefits and the cost of an upgrade from Varilux Comfort or Varilux Panamic to Varilux Physio. The increased cost to the patient is when the lens "delivers sharper vision because up to 30% increased contrast sensitivity makes colors brighter and details sharper." Further improve it by using 1.67 high index for "lenses that are up to 40% thinner and lighter for better looks and comfort; each for x dollars or bundled together at y dollars." Upgrade from Varilux Physio to Varilux Physio 360° or from SOLAOne to SOLAOne HD to provide your patient optimal vision better customized to their prescription. Once your patient understands the benefits, they will better understand the difference in pricing for more advanced technology. If it's clear to the dispenser, it will be clear to the patient.

Know What to Say

As a professional, digitally surfaced lenses can be tantalizingly technical. After all, they are precision designed and cut, uniquely polished and deliv-

ered. However, most patients only want to know that the confidence you have in them is complete. Putting the technical into consumer terms that resonates with every individual is critical. From www.thinkaboutyoureyes.com, . . . to get to 20/20 and beyond...



Every eye is unique, like your fingerprints. With today's technology, customized solutions can be created like never before.

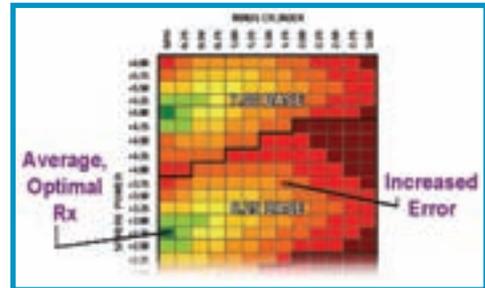
Sharper, more vivid, detailed vision is possible with the latest eyeglass lens innovations—advances with names such as digital lens design, wavefront technology, 360° digital surfacing technology, state-of-the-art, anti-reflective, and visible light transmission technologies.

Imagine the first time you saw a DVD versus a VHS tape . . . or HiDef versus regular TV. The difference in sharpness, color, clarity, and contrast was incredible. You can experience the same improvement in your vision. Let me show you how.

Without base curve limitations

Digitally surfaced lenses allow for the customization of the lens to the wearer's individual needs. To review, a lens like Zeiss GT2, SOLAOne or Varilux Physio delivers increased surface design precision in a front surface progressive i.e., digitally created molds. Using the patient's prescription and fitting requirements, the product can be further optimized to better adapt to the patient. Cutting the progressive and the prescription on the lens' concave surface can further optimize a progressive as in Varilux Ipseo, SOLAOne HD or Compact Ultra HD. Or, use the progressive front of Varilux Physio and add a complex surface to the back to further optimize the prescription. This is Varilux Physio 360°. Another lens that uses dual surface optimization is DEFINITY. How does this customization make a difference?

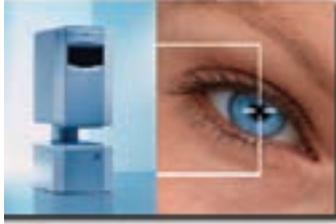
Prescription optimized lenses deliver crisper vision and wider fields of clear view. That's better vision overall, especially for those patients whose prescriptions were farthest from the average optimal Rx for that base curve. When digital surfacing the lens as well as the mold, the prescription can be optimized for every power. Refine the prescription further by compensating for vertex and tilt.



The Right Tools

If new precision is delivered in the lens, new fitting precision is also logical. At the very least, demand all PD's from Pupillometers. For height, vertex and tilt consider more technically precise measuring devices. The iTerminal by Zeiss is an example of a new and unique dispensary system that combines advanced fitting and measurement precision with enhanced patient consultation ability. Using a precision digital camera and

computerized measuring system, it delivers measurements to 0.1mm accuracy for monocular PD's, fitting heights and vertex distance. It also measures pantoscopic angle and frame wrap for complete prescription customization. For patient consultation, review chosen frames or show interactive demonstrations of lens enhancements like AR, polarized and photochromics.



Implementing a dispensing technology like iTerminal will improve staff capabilities by simplifying complicated fitting measurements and deliver greater accuracy. It takes the uncertainty out of progressive fitting by new staffers or across the variety of capabilities in a large staff. Not only will it improve progressive performance, but it will reduce remakes and increase patient satisfaction.



Lastly, adding new technology in the dispensary that all patients can see sets your practice apart. It provides a sophisticated and engaging patient experience. Moreover, it is more consistent with the cost and identity of digitally surfaced lenses. Would you purchase a \$1200 suit without individual measurements and tailoring? It's the same when a \$400 progressive gets dotted using a felt tip pen. The felt tip pen is inconsistent with the presentation of precision and the expense of the design.

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Got What You Wanted?

One of the lab's concerns and one that certainly should also be the ECP's is whether the lens was received as designed. Semi-finished progressive lens manufacturing allows the caster the opportunity to verify the production for consistency of design from lens to lens, both daily and over a period of time. In Digital Surfacing the lab is responsible and therefore must have a verification system available. It must be able to read the surfaces or



Surface height measurements

through power and compile the data into a map of the lens that can be compared to the intended design. Then the delta of the two maps can be used as a go/no go test for accuracy.

Schneider offers the PMD100 in a floor standing or table top unit that uses Phase Measuring Deflectometry. This is an optical device that uses a CCD camera to capture a light source and grating bounced off a reflective surface. The data received is processed into a map of the lens.

Measurements of local curvatures of total surfaces are possible in a wink of an eye. For the lab it provides measurements of progressive front

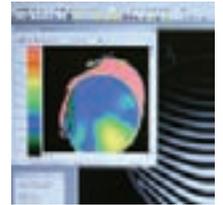
and back surfaces, direct measurement of optical power and gradients, monitoring of lens cosmetics and cleanliness, measurement of lenses while still blocked and is robust since there are no moving parts.



PMD 100-T

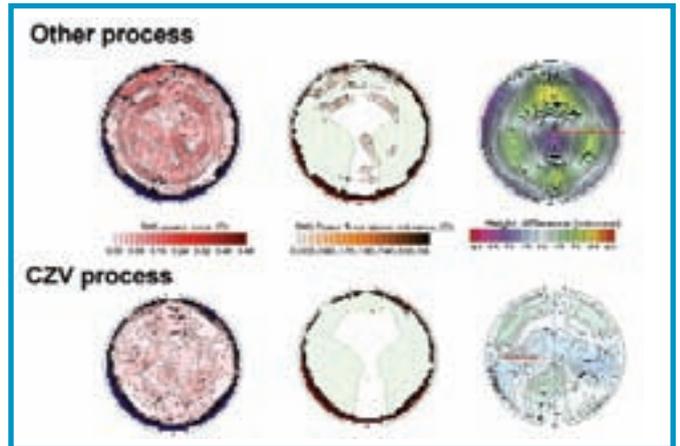


Reflecting Grating



Illustrated Map

The illustration below (source, Carl Zeiss Vision) shows lenses created using two different production systems from the same set of design files. One process did not produce the design with sufficient precision, leaving small areas of localized power errors that were the result of surface height differences from the intended design. The other process produced a lens that complied with the design specification to a high level of precision. To reiterate, the digital surfacing process is a manufacturing technology that can be used correctly or incorrectly. The rigor of precision and the guarantee of design are not easy and require a significant investment in the science. Laboratories making these lenses must invest in technology to ensure that the lenses they make are delivering the desired results.



Seen at VEW

Varilux Comfort 360° - New Varilux Comfort 360° lens delivers the patient adaptation of Varilux Comfort lenses and the unsurpassed ease of fitting that ECP's have appreciated. Patients will now receive wider fields of vision through reduced peripheral distortion when upgraded from Varilux Comfort to Varilux Comfort 360°

Hoyalux iD Lifestyle – HOYA added to their digitally surfaced library with Hoyalux iD Lifestyle. With Hoyalux iD LifeStyle, the vertical progressive component is standardized on the front surface – in other words, it is molded at the factory. The customized horizontal progression on the back surface is digitally surfaced.

Advanced surfacing with Schneider's blocker CB Bond and generator HSC Smart - SCHNEIDER showed two of their surfacing machines for small and medium-size labs – the manual blocker CB Bond and the gen-

erator HSC Smart. The two machines bring full Rx and freeform surfacing capability to small production facilities.

The blocking stations of the CB Bond have been specifically designed for higher precision in manual alloy blocking. Blocked lenses are perfectly prepared for high-performance generating on the HSC Smart, the only compact generator which comes with a separate generating spindle for fast stock removal of all materials including polycarbonate.

AIT "Center" - Developed by INDO, this sophisticated measuring sys-

tem automatically measures patient PD and height, vertex distance and most pantoscopic frame angles. Three built-in cameras and infrared LED record three-dimensional patient measurements making dispensing easier and more accurate.

In Error

In Part 4, the throughput table on page 3 listed the Schneider polishing machines as CP102. It should have been listed as CCP102.

My View

Carl Bracy, Vice President of Marketing, Essilor of America, Inc.

Digital Surfacing is definitely the buzzword. When surveyed by Essilor and in the 2007 Lab Usage Survey conducted by Jobson, more than 75% of ECP's were aware of the term *Digital Surfacing*. However, fewer are sure that they've used these lenses and very few can articulate the features or benefits of this technology. When asked if they expect to use lenses created by digital surfacing, they said yes and were definitely enthusiastic. Virtually all thought that they would sell more digitally surfaced lenses in the future.

Therefore, the opportunity for more education about digital surfacing is key to the success of the ECP and the satisfaction of the patient.

After talking with ECP's, Essilor staff and our labs, I believe that the main confusion lies in mixing or confusing the technology necessary to design lenses versus the technology of manufacturing. Essilor believes design concepts and technology drives performance while manufacturing technology delivers it. Here's what I mean.

Think of Digital Surfacing as 3 parts

1. Design Concepts – Evolving Performance

New technology offers an opportunity to provide each patient a more customized product. It is an evolving process as technology improves and designers are given new tools. In our view, success starts with the right semi-finished progressive design. It's a complex surface already and the result of significant research. It can be further enhanced when combined with digital surfacing techniques. For example, the final design of a Varilux Physio 360° lens is the result of the front surface design of Varilux Physio, the patient's prescription and an optimization of the back surface beyond a simple toric surface. By using two surfaces to personalize the prescription we can achieve improved optics and vision.

Digital surfacing also allows customization of a lens' design to fit the frame chosen and fitting height required. In Accolade Freedom, only the frame dimensions and fitting height are required. The back surface is digitally constructed to deliver the prescription and modify the design for the frame.

DEFINITY uses an innovative approach by splitting the add power between the front and the back of the lens. The result is lower overall distortion when compared to the distortion of a progressive of equivalent total add. Again, the back surface is designed with the front design, prescription and fitting characteristics required.

These have been breakthrough concepts and have significantly improved visual performance for wearers and created opportuni-

ties for the professional. It will not end – look forward to these same types of improvements to now be applied to more designs, from single vision to bifocals, clear and sunlenses.

2. Manufacturing Technology – Revolutionizing Delivery

Digital designing demands an integration of the latest calculation software and cutting techniques to be able to calculate a complete PAL design for each individual prescription. To create the lens, Essilor have created a proprietary calculation, surfacing and verification that guarantees performance.

In addition, a seamless transfer from ECP to lab and its equipment is critical. As a result, lens manufacturing must employ a complete IT integrated package that translates data from Practice Management Systems directly to the Lab Management System. This system then drives each machine and instrument with precision.

3. Technology Transfer – Broaden the Opportunity to Broaden the Benefits Experienced

As the market leader, Essilor is committed to make these advanced products available to everyone. Therefore, a critical step is to transfer these technologies (delivery) and license designs (performance) to allow all ECP's to benefit from these advancements.

For example, the ability to create the variety of Varilux 360° designs is in process with Lab Italee (Los Angeles, CA). More transfers are intended.

What About the Near Future?

There will continue to be an overwhelming quantity of new products introduced. As a result, each ECP must ensure that the products delivered provide meaningful benefits for their patients. Therefore, learn about and teach staff to match product with each customer segment as defined by patient need. Try the new products and share results.

Understanding the lab technology is not a requirement to provide the best-designed products for patients. But you must be able to rely on your lab to have the latest manufacturing technology to produce more accurate and reliable designs.

Lastly, new, sophisticated products require strong marketing support. Essilor promotional programs help practitioners consistently grow their practice through trial and training. Technical support and dispenser education increases patient satisfaction and customer retention. We are pleased to be able to support technical supplements like this one as a forum to share opinion and information.

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