

Shamir  
Element™

# TECHNICAL INFORMATION



Cylinder: 0.00 to -6.00 [D]

	Index	Power Range	Add Power	VSP Codes /Other	16mm Invisible Markings	19mm Invisible Markings
Hard Resin	1.49	-7.00 to +4.00	+0.75 to +3.50	Hard Coated/Uncoated		
Hard Resin Transitions Signature7™	1.49	-7.00 to +4.00	+0.75 to +3.50	Gray/Brown		
Hard Resin Polarized	1.49	-7.00 to +4.00	+0.75 to +3.50	Gray/Brown/G-15		

Cylinder: 0.00 to -7.00 [D]

Superlite™ 1.60	1.60	-10.00 to +6.00	+0.75 to +3.50	Hard Coated/Uncoated		
Superlite™ 1.60 Transitions Signature7™	1.60	-10.00 to +6.00	+0.75 to +3.50	Gray/Brown		

Cylinder: 0.00 to -8.00 [D]

Superlite™ 1.67	1.67	-12.50 to +8.00	+0.75 to +3.50	Hard Coated/Uncoated		
Superlite™ 1.67 Transitions Signature7™	1.67	-12.50 to +8.00	+0.75 to +3.50	Gray/Brown		
Superlite™ 1.67 Transitions XTRActive	1.67	-12.50 to +8.00	+0.75 to +3.50	Gray		
Superlite™ 1.67 Blue Zero™	1.67	-12.50 to +8.00	+0.75 to +3.50	Hard Coated/Uncoated		

Cylinder: 0.00 to -6.50 [D]

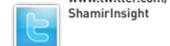
TRIVEX™	1.53	-13.25 to +6.00	+0.75 to +3.50			
TRIVEX™ Transitions Signature7™	1.53	-13.25 to +6.00	+0.75 to +3.50	Gray/Brown		
TRIVEX™ Transitions XTRActive	1.53	-13.25 to +6.00	+0.75 to +3.50	Gray		
TRIVEX™ BLUE ZERO™	1.53	-13.25 to +6.00	+0.75 to +3.50			

Cylinder: 0.00 to -7.00 [D]

Polycarbonate	1.59	-10.00 to +6.00	+0.75 to +3.50			
Polycarbonate Transitions Signature7™	1.59	-10.00 to +6.00	+0.75 to +3.50	Gray/Brown		
Polycarbonate Transitions XTRActive	1.59	-10.00 to +6.00	+0.75 to +3.50	Gray		
Polycarbonate Polarized	1.59	-10.00 to +6.00	+0.75 to +3.50	Gray/Brown/G-15		
Polycarbonate Blue Zero™	1.59	-10.00 to +6.00	+0.75 to +3.50			

WARNING: Polycarbonate contains a chemical known to the state of California to cause birth defects or other reproductive harm.

Technical Inquiries: 888.370.0736



ReCreating Perfect Vision®

www.shamir.com 877.514.8330



ReCreating Perfect Vision®

ELE-TEC-4PA-020118





## Let's start at square one... the manufacturing process

Cast semi-finished progressive lenses (PALs) are produced by injecting a specific monomer (i.e. CR39) into a mold that's been shaped with a progressive design on the front curve. Once the monomer sets, the lens is ready to be shipped off to the lab to be warehoused and surfaced with the patient's Rx. This is what's known as a semi-finished progressive lens and there are many different progressive designs that are mass-produced in this manner.

If your Rx and measurement parameters happen to fall into the exact middle of the ranges in the mold, you will have a better visual experience. If your Rx and measurement parameters do not happen to fall into the exact middle of the ranges in the mold, your visual experience is not as perfect as it could be.

Additionally, by duplicating from ceramic-to-glass and then using the glass mold multiple times, the integrity of the original design can suffer. This is a normal expectation of duplication.

With a Freeform® lens, the process begins with a single vision lens blank which will serve as the blank canvas upon which the progressive design and Rx will be ground onto the back surface. The lab needs this single vision lens blank PLUS a software file that contains the progressive design they wish to cut onto the lens. The lab takes the single vision blank and puts it in the digital surfacing equipment (the Freeform® equipment) which will choose the correct base curve for the lens design that has been selected. Then the equipment cuts the progressive lens design chosen (i.e. Shamir Element™) and the patient's Rx on the back (internal) side of the lens. This is the most accurate a lens can get because the digital lens design is transferred onto the lens blank with accuracy never seen before in the optical industry. With the old method, using molds that wore out over time was not as accurate and was prone to errors.

## Freeform® Technology: THE "ELEMENT" OF SHAMIR ELEMENT™

Freeform® Technology utilizes an advanced digital X, Y, Z file point system that produces lenses in an entirely different way.

Instead of traditional manufacture, where we begin with a pre-determined front-surface mold and surface the sphere and cylinder toric base curves and cross curves on the back surface, Freeform® Technology brings the entire process, design and Rx to the back surface of the lens.

Freeform® Technology is a method of manufacture... NOT a design! A poor design on the front surface will not magically turn into a great design on the back surface through Freeform® Technology. However, if a design is excellent on the front surface via a molded PAL lens, bringing it to the back surface makes it better than ever.

Freeform® Technology incorporates something known as "X,Y,Z File Point Systems".

### WHAT THIS MEANS IS:

- X is the back and forth axis, in the spherical plane
- Y is the up and down axis, in the spherical plane
- Z is an in-and-out cut...this is what revolutionizes its application to producing PAL lenses with the full Rx on a single surface. By adding the 'Z' component, it allows the equipment to cut in and out, depth and curvature. If we can add depth and curvature, we can produce a PAL plot. The added 'Z' file allows us to consider much more than the sphere and cylinder powers, but the actual design in accordance with the patient's position of wear.

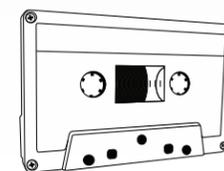


## Putting it all together

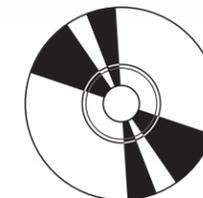
The concept of what we're doing has been done before in different industries. The music industry holds the best example. In the old days, a recording artist sang into a recording device and then that recording was replicated onto different mediums. First there were vinyl records, then 8-track tapes, then cassette tapes, then CD's. CD quality was the best quality that anyone could imagine because it was a digitally transferred file (the song) directly onto a CD. With the invention of the MP3 player, the iPod and others, now we are able to cut out all the middlemen and get the digital file directly into our ears. Talk about sound quality!

The problem still remains, however, in the design. A terrible singer in the 1970's, recorded on a vinyl record won't be any better today just because they can be recorded on a CD or played directly on an MP3 player. You will just be able to hear how terrible they are, that much better. For this whole system of Freeform® to work, not only do you have to have the equipment to manufacture the designs accurately, you also have to have a good lens design to begin with. Yes, bad lens designs can be made on Freeform® equipment. The bad design is just transferred to the lens with more precision.

**Like a CassetteTape vs. Compact Discs, Shamir Element™ brings you vision that is crisp and sharper than the other guys.**



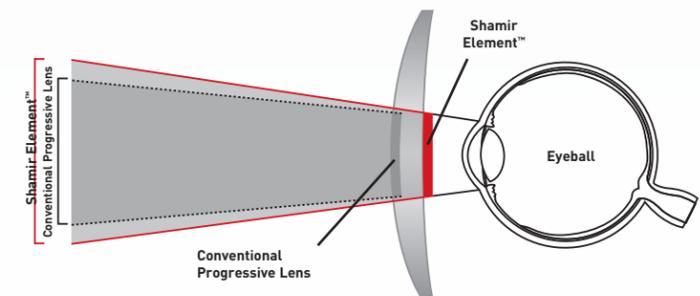
vs.



## Back surface design

Shamir Element™ is a Freeform® design, which means the design and the patient's Rx are on the back of the lens, ultimately providing wider fields of vision. Our easy access diagram below explains everything.

### Back surface design widens patient's field of view.



While semi-finished molds suffer from slight degradations resulting in a loss of optical design, the same isn't true for Shamir Element™. Each Shamir Element™ lens is created from a Freeform® machine, right on the spot and not from a 20th century mold. The lens is also personalized to fit the patient's needs and both the patient's Rx and the optical design are on the back of the lens which opens up the fields of vision by up to 20% for the patient. Want more benefits? Element™ virtually eliminates unwanted astigmatism, swim and peripheral distortions providing maximized fields of vision. If you ask us, there's no competition here.

