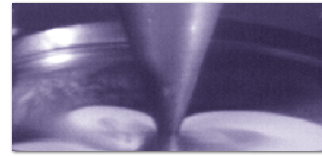
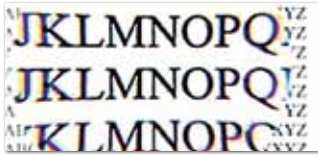


Processing & Edging



TRILOGY[®]
LENSES

Introduction

This processing and technical lens data guide applies to the Trilogy® Aspheric Single Vision and Image®, FT28, and Spherical Single Vision lenses.

Trilogy® Lens Designs

1. A superior Aspheric semi-finished Single Vision lens, available in 9 base curves
 - Flatter base curves yield a more appealing lens
 - Designed for widest viewing area with greatest lens thickness reduction
2. Award-winning Image® progressive lens in 4 base curves and +1.00 to +3.00 add range
3. FT28 for wide reading area.
4. Spherical semi-finished single vision available in 9 base curves including +8.25 BC for wrap designs.
5. All SF designs available in Transitions®.
6. Also available in finished SV lenses, with Hard Coating and with Hard Coating & AR.

| | |
|----------------------------|------------------------|
| Index of Refraction | 1.53 |
| Density | 1.11 g/cm ³ |
| Abbe Value | 45 |

Rx Support

Younger Optics offers a full range of technical support. We have a technical support hotline available at (888) 807-4950 or techsupport@youngeroptics.com. We are also able to offer on-site process evaluations and Rx level support. Please contact technical support or your sales representative for further details. Our website www.youngeroptics.com also has lens technical specifications, processing guides, product availabilities and VCA download information available.

Impact resistance

Trilogy lenses have been formulated to meet or exceed applicable impact resistance requirements when laboratory finished as set forth in FDA CFR 801.410, ANSI Z80.1 and ANSI Z87.1. Any modification of Trilogy lenses other than normal surfacing or edging may adversely affect impact performance characteristics. Additional coating of Trilogy lenses may adversely affect the impact resistance performance. "Impact Resistance" lenses are neither shatter proof nor unbreakable.

Chemical Resistance

Excellent. Unaffected by common chemicals and solvents. Note: when tinting it is important to clean lens surface with soapy water after using alcohol or acetone to remove marking.

UV Protection

Blocks 100% UVA and UVB.

Lens treatments

- Front side coating: Durable front side hard coat available.
- Back side coating: Trilogy lenses are regularly dispensed without a back coating. However, for maximum scratch resistance, a back side coating may be applied. Trilogy lenses readily accept most back surface hard coatings currently available.
- AR coatings: Trilogy® lenses are compatible with most AR coatings; please check with coating supplier for more details.
- Tinting: Please refer to "TINTING TIPS" on page 3 of this guide.
- Rolled and Polished edges: The unique molecular structure of Trilogy® lenses gives a superior jewel-like appearance to edges that are rolled and polished. For superior results, a small amount of surface polish may be used to give a higher gloss. Use light pressure when polishing with a buffing wheel.

ALTERNATE format for lens data

Lens Designs:

| PROPERTIES: | Aspheric semi-finished SV lenses | Spherical semi-finished SV lens | FT28 | IMAGE® Progressive |
|---------------------------------|---|--|---|---|
| Benefits: | <ul style="list-style-type: none"> • A superior aspheric design, available in 9 base curves • Flatter base curves yield a more appealing lens • Designed for widest viewing area with greatest lens thickness reduction • Also available in Transitions® Gray & Brown | <ul style="list-style-type: none"> • 9 base curves available • 8 base lens is “wrap” frame compatible • Designed for decentration by prism to allow cut out in “wrap” frames • Also available in Transitions® Gray & Brown | <ul style="list-style-type: none"> • Strong, light, good optics • Impact resistance* • Also available in Transitions® Gray & Brown | <ul style="list-style-type: none"> • Award-winning Image® progressive lens with wide distance zone and clear add region • Also available in Transitions® Gray |
| Base curves: | 0.50, 1.25, 2.25, 3.00, 3.50, 4.25, 5.00, 6.00, 7.00 | 0.50, 1.25, 2.25, 3.25, 4.25, 5.25, 6.25, 7.25, 8.25 | 2.25, 4.25, 6.25, 8.25 +1.00 to +3.50D adds in 0.25D increments | 2.00, 4.50, 6.50, 8.50 +1.00 to +3.00D adds in 0.25D increments |
| Rx range: | <ul style="list-style-type: none"> • Combined total sphere / cylinder power: +6.00D to -9.00D • Combined power may contain up to 5D cylinder | +7.50D to -8.75D | +7.00D to -9.00D | <ul style="list-style-type: none"> • Combined total sphere / cylinder power: +6.00D to -8.00D • Combined power may contain up to 3D cylinder |
| Fitting recommendations: | For best results, provide laboratory with distance PD and fit at center of pupil. | | | <ul style="list-style-type: none"> • Distance PD and fitting height of center of pupil are measured from deepest point of frame. • Incorporate standard 4 to 10° of pantoscopic tilt, and equal vertex distance. Use care to balance prism thinning, if used, for best optical performance. |

* Additional coatings may alter the impact resistance of any lens and will require impact testing to assure compliance with safety standards.

Trilogy® Material Specific Processing Tips

The following should be used as a guideline as different equipment may require slightly different settings and times. These suggestions reflect most modern equipment and processes.

Minimum Thickness

Trilogy lenses can be processed to a minimum thickness of 1.0mm; however discretion should be used at point of manufacture. For Rx's between +/- 2.00D, we recommend a 1.5mm minimum thickness.

Trilogy lenses can meet industry standards' requirements at this thickness, but not all lenses should be processed to 1.0mm as some would be too thin for additional processing or frame retention.

Impact Resistance

See page 1 for information on the impact resistance of Trilogy lenses.

Blank Selection - This is most important

It is critical to select the recommended base curve from the chart on page 3 (**for Single Vision Aspheric only**). Selecting a base different from Younger's recommendation to achieve a desired finished lens may result in incorrect finished powers and limited field of view due to the lens' aspheric design.

Recommended Base Curve Selection Chart

| | Minus Cyls | | | | | | | | | | | | | | | | | | | | |
|--------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 0.00 | -0.25 | -0.50 | -0.75 | -1.00 | -1.25 | -1.50 | -1.75 | -2.00 | -2.25 | -2.50 | -2.75 | -3.00 | -3.25 | -3.50 | -3.75 | -4.00 | -4.25 | -4.50 | -4.75 | -5.00 |
| 6.00 | | | | | | | | | | | | | | | | | | | | | |
| 0.75 | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | | | | | | | | | | | 7.00 | | | | | | | | | | |
| 0.25 | | | | | | | | | | | | | | | | | | | | | |
| 5.00 | | | | | | | | | | | | | | | | | | | | | |
| 0.75 | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | | | | | | | | | | | 6.00 | | | | | | | | | | |
| 0.25 | | | | | | | | | | | | | | | | | | | | | |
| 4.00 | | | | | | | | | | | | | | | | | | | | | |
| 0.75 | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | | | | | | | | | | | 5.00 | | | | | | | | | | |
| 0.25 | | | | | | | | | | | | | | | | | | | | | |
| 3.00 | | | | | | | | | | | | | | | | | | | | | |
| 0.75 | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | | | | | | | | | | | 4.25 | | | | | | | | | | |
| 0.25 | | | | | | | | | | | | | | | | | | | | | |
| 2.00 | | | | | | | | | | | | | | | | | | | | | |
| 0.75 | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | | | | | | | | | | | | | | | | | | | | | |
| 0.25 | | | | | | | | | | | 3.50 | | | | | | | | | | |
| 1.00 | | | | | | | | | | | | | | | | | | | | | |
| 0.75 | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | | | | | | | | | | | | | | | | | | | | | |
| 0.25 | | | | | | | | | | | | | | | | | | | | | |
| Plano | | | | | | | | | | | | | | | | | | | | | |
| 0.25 | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | | | | | | | | | | | | | | | | | | | | | |
| 0.75 | | | | | | | | | | | | | | | | | | | | | |
| -1.00 | | | | | | | | | | | | | | | | | | | | | |
| 0.25 | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | | | | | | | | | | | | | | | | | | | | | |
| 0.75 | | | | | | | | | | | | | | | | | | | | | |
| -2.00 | | | | | | | | | | | | | | | | | | | | | |
| 0.25 | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | | | | | | | | | | | | | | | | | | | | | |
| 0.75 | | | | | | | | | | | | | | | | | | | | | |
| -3.00 | | | | | | | | | | | | | | | | | | | | | |
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| 0.50 | | | | | | | | | | | | | | | | | | | | | |
| 0.75 | | | | | | | | | | | | | | | | | | | | | |
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| 0.75 | | | | | | | | | | | | | | | | | | | | | |
| -5.00 | | | | | | | | | | | | | | | | | | | | | |
| 0.25 | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | | | | | | | | | | | | | | | | | | | | | |
| 0.75 | | | | | | | | | | | | | | | | | | | | | |
| -6.00 | | | | | | | | | | | | | | | | | | | | | |
| 0.25 | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | | | | | | | | | | | | | | | | | | | | | |
| 0.75 | | | | | | | | | | | | | | | | | | | | | |
| -7.00 | | | | | | | | | | | | | | | | | | | | | |
| 0.25 | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | | | | | | | | | | | | | | | | | | | | | |
| 0.75 | | | | | | | | | | | | | | | | | | | | | |
| -8.00 | | | | | | | | | | | | | | | | | | | | | |
| 0.25 | | | | | | | | | | | | | | | | | | | | | |
| 0.50 | | | | | | | | | | | | | | | | | | | | | |
| 0.75 | | | | | | | | | | | | | | | | | | | | | |
| -9.00 | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | 0.00 | -0.25 | -0.50 | -0.75 | -1.00 | -1.25 | -1.50 | -1.75 | -2.00 | -2.25 | -2.50 | -2.75 | -3.00 | -3.25 | -3.50 | -3.75 | -4.00 | -4.25 | -4.50 | -4.75 | -5.00 |

Now available in Transitions® Gray & Brown

Blocking - Alloy

Follow manufacturer's recommendations. Allow lenses to cool for at least 30 minutes prior to generating. If chilling plate is available, let blocked lenses sit for 2 minutes to accelerate cooling process.

Blocking - Wax

Follow manufacturer's recommendations. Allow lenses to cool for 12 to 18 minutes prior to generating.

Generating

Follow manufacturer's recommendations for all Trilogy settings and wheel or cutter type. Most generators have a Trivex® macro. If not, use polycarbonate macro.

Fining

Trilogy can be processed effectively using either a 2-step fining method or a 1-step fining method. Please check with fining pad manufacturer for recommended pads and times. Be sure to accurately test each method to ensure proper stock removal rates and surface quality.

Polishing

Trilogy lenses should be polished with a premium polish pad for a minimum of 6 minutes. For best results, be sure to maintain polish temperatures of 60°F or cooler.

Back Surface Coating

A back surface hard coating may also be applied to increase the scratch resistance. Trilogy lenses readily accept most back surface coatings. Please follow your coating machine manufacturer's guidelines for normal back surface coating procedures.

Edging

Most edging machines now have a Trivex setting. Please follow the edger's manufacturer guidelines for edging Trilogy. If the particular edger does not have a Trivex setting, please check with the manufacturer for any updated guidelines or try edging on a "polycarbonate" setting.

Drilling

Trilogy lenses are ideal for drill mounting. Trilogy lenses are designed to withstand cracking and or chipping like most other lens materials when drilled. Ensure that drill bits used are sharp and drill a moderately high speed. Enter slowly, using an up-and-down motion. Clean swarf buildup as needed to avoid heat build up and stress.

Tinting Tips

1. Trilogy blocks 100% of UVA and UVB so no additional UV treatment is needed
2. Tinting should be done at approx. 170F to 175F.
3. Tint Trilogy in approximate 4 minute intervals, removing the lens each time and rinsing it in warm running water/ detergent bath. Allow lens to cool between insertions.
4. Repeat this process until desired color density is achieved.
5. Do not use acetone or alcohol to clean the lens prior to or after tinting. Clean with warm, soapy water.

Rx Verification of Aspheric Trilogy Lenses

Verify in the geometric center as with any other aspheric lens. Digital vertometers will give an incorrect power reading away from the geometric center due to the asphericity of the front curve.

GENERAL EDGING RECOMMENDATIONS FOR TRILOGY® LENSES

First, remember to check with your edger supplier to be sure your equipment is able to properly edge Trilogy lenses. Attempting to edge Trilogy lenses without the proper equipment or settings could damage the lenses and/or the edger. Be sure to properly follow the edger supplier's instructions.

- For most edgers, use your Trivex® setting or standard Polycarbonate setting. When using any cycle or new material or combination for the first time, be sure to check or adjust sizing with sample lenses first. Younger Optics Technical Support team can provide sample lenses for sizing purposes if necessary.
- Dry edgers or blade style edgers work great on Trilogy and generally require no different processing methods. If a Trivex setting is not available, check with the manufacturer first or try on a standard polycarbonate setting.
- If the dry edger has a vacuum, be sure to have it turned on. It will be needed to remove swarf and dust. This will prevent the edger from clogging.
- For better sizing results in high minus/ high plus lenses, increase cutting size by 2 to 3 mm and then cut down to size to ensure a proper fit. This generally applies to both wet and dry edging methods.

FOR WET EDGERS OR WHEEL-BASED EDGERS:

- If you are not sure what cycle is best, try rough edging dry & then using water on the bevel-finish cycles.
- If you have a choice, be sure to select the edger that has the most aggressive roughing wheel. If your edger generates a smoke like haze, it may be an indication that you need a more aggressive roughing wheel. Please check with your edger manufacturer for more information.
- Several edger manufacturers as well as after-market wheel suppliers have wheels and products specifically for Trivex (e.g., Inland Diamond, Super Abrasive and Salem Vision). Be sure to check with your edger manufacturer as well before using after-market products.
- If you have any questions about a specific process, feel free to contact Younger Optics Technical Support at (888) 807-4950 or techsupport@youngeroptics.com

Plano lenses are available from the technical support team if needed for setting up edging cycles. Call or email for details.

TECHNICAL SUPPORT
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