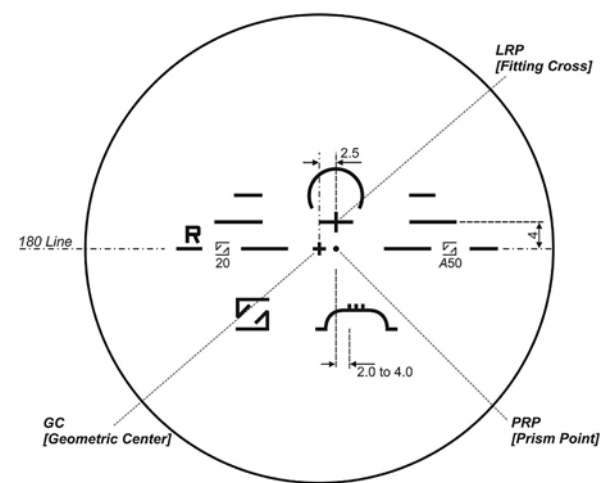


Lab Processing

What are the layout markings and locations for GT2 by ZEISS?



Are there any special processing requirements for GT2 by ZEISS?

No. GT2 can be processed like traditional premium progressive lenses.

Should prism-thinning be used with GT2 by ZEISS?

Yes. Prism-thinning reduces the overall weight and thickness of progressive lenses, particularly in Plus prescriptions and high Add powers. As a simple rule-of-thumb, ZEISS recommends surfacing 60% of the Add power in the form of base-down prism when the combined Distance Rx and Add

power exceeds +1.50 through the vertical meridian. However, optimum results will be achieved with a quality surfacing calculation program.

What are the lens thickness recommendations for GT2 by ZEISS?

The table below provides the minimum recommended center thickness guidelines for GT2 by ZEISS:

Lens Material	Power Range	Center
1.50 / 1.50 Transitions®	-10.00 D to -2.00 D	2.0 mm
1.59 / 1.59 Transitions®	-10.00 D to -2.00 D	1.5 mm
1.67 / 1.67 Transitions®	-16.00 D to -2.00 D	1.5 mm

Progressive lenses of this type that satisfy the thickness guidelines provided above have demonstrated the minimum level of impact resistance during performance testing. However, the ultimate impact strength of a lens depends upon several factors, including the particular combination of coatings and treatments applied to it, and conformance to the FDA regulation is the responsibility of subsequent processors. For additional thickness guidelines, please consult the GT2 by ZEISS processing guides.

Can GT2 by ZEISS be hard coated or AR coated?

Yes. GT2 by ZEISS is compatible with most Rx laboratory hard coating and AR coating processes. For the ultimate visual experience and cosmetic benefit, GT2 lenses by ZEISS are fully compatible in all materials with Teflon® Clear Coat Lenses and Carat® Advantage, which combine the best anti-reflection performance with the durability of a premium scratch coating. Please consult your laboratory for specific material compatibility details.

Availability

LENS AVAILABILITY	COLOR	BASE CURVES	RX RANGE	ADD POWERS
ZEISS GT2 1.50		2.00, 3.00, 4.00, 5.00, 6.10, 7.50	-10.00 to +6.00	+0.75 to +3.50
ZEISS GT2 1.50 Transitions®	Gray/Brown	2.00, 3.00, 4.00, 5.00, 6.10, 7.50	-10.00 to +6.00	+1.00 to +3.00
ZEISS GT2 1.50 Polarized*	NuPolar® Gray	2.00, 3.00, 4.00, 5.00, 6.10, 7.50	-10.00 to +6.00	+1.00 to +3.00
ZEISS GT2 1.59 Polycarbonate		1.70, 2.60, 3.50, 4.50, 5.60, 6.80	-10.00 to +6.00	+1.00 to +3.00
ZEISS GT2 1.59 Transitions® V	Gray/Brown	1.70, 2.60, 3.50, 4.50, 5.60, 6.80	-10.00 to +6.00	+1.00 to +3.00
ZEISS GT2 1.67*		0.70, 1.40, 2.10, 3.10, 4.00, 4.90, 6.00	-16.00 to +6.00	+1.00 to +3.00
ZEISS GT2 1.67 Transitions® V*	Gray/Brown	0.70, 1.40, 2.10, 3.10, 4.00, 4.90, 6.00	-16.00 to +6.00	+1.00 to +3.00

*Available early 2007.
Cylinder out to -4.00 for all materials except 1.50, which has cylinder out to -6.00. Ranges denote maximum powers (combined sphere and cylinder powers).
The Rx prism is up to 3.00D for all lenses listed above.

Carl Zeiss Vision
USA 800.338.2984
www.vision.zeiss.com



GT2™ by ZEISS – Frequently Asked Questions

How does GT2™ by ZEISS create a higher level of visual satisfaction?

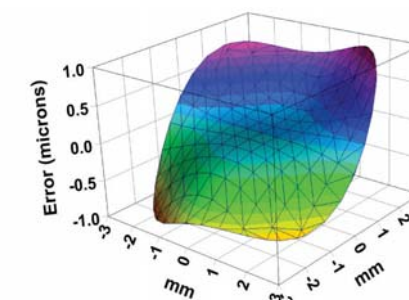
By combining the most advanced design techniques and precision control of optics with new information about wearer ergonomics, in a process known as ZEISS Optical Optimization & Management. This process is an integrated approach to lens design that maximizes both the physiological and optical interaction of the lens design with the wearer's visual system to ensure the most natural viewing experience possible. This includes matching the configuration of the viewing zones with the presbyope's ergonomic interaction with the lens, manipulating the distribution of optics on a point-by-point basis to minimize wavefront aberrations in those viewing zones, and balancing the optical performance between the two lenses to ensure maximum binocular utility and visual comfort.



lower-order wavefront aberrations. The progression of power and astigmatism is carefully managed in all Gradal progressive lenses for excellent control of higher-order wavefront aberrations as well.

What are wavefront aberrations?

Wavefront aberrations are one of several ways to characterize the optical errors produced by a lens or optical system. These errors are commonly categorized as either *higher-order* or *lower-order* aberrations. Higher-order aberrations, including *coma* and *trefoil*, are associated with variations in *power* and *astigmatism* across the lens surface. Lower-order aberrations, including *defocus* and *astigmatism*, are associated with excess Add power and unwanted astigmatism over the lens surface. Lower-order aberrations are similar to unwanted errors in sphere and cylinder power, and are generally the most detrimental to the quality of vision.



How does GT2 by ZEISS control aberrations?

ZEISS was an early innovator of enabling technologies to reduce unwanted aberrations, including point-by-point optical optimization for the position of wear. Gradal progressive lenses provide clear viewing zones free of the unwanted power errors associated with

How is GT2 by ZEISS different from Gradal® Top?

Gradal Top was designed with an exceptionally wide progressive corridor, smooth transitions in power, and unparalleled distance utility in order to deliver a "single-vision-like" viewing experience. While GT2 by ZEISS retains the excellent distance, intermediate, and peripheral utility of Gradal Top, several important improvements have been made. GT2 by ZEISS features an optimally designed corridor length that is 2mm shorter than Gradal Top's, and a larger, more accessible near zone. This combination results in considerably better overall reading vision and up to 50% more near utility in small frames.

What does ZEISS mean by optimal corridor length?

From extensive head-tracking research, our vision scientists were able to calculate the average angle of downward eye rotation (depression) for spectacle wearers during typical mid-range and reading tasks. These findings allowed Carl Zeiss Vision's lens designers to more carefully design the corridor length, Add power profile, and near zone height for the new GT2 lens design, without unnecessarily compromising optics. The top of the near zone has now been precisely aligned to match the average range of eye rotations during near vision, significantly minimizing unnatural or awkward postural adjustments compared to many other progressive lens designs.



Lens Design

Is GT2 by ZEISS optimized for the as-worn position?

Yes. The *as-worn optimization* approach used for GT2 takes into account the influence that oblique aberrations, reading distance, lens tilt, and vertex distance have on the final optical powers of the lens. This ensures that wearers receive the largest possible zones of clear vision.

Is GT2 by ZEISS a hard or soft design?

As with all modern ZEISS progressive lenses, GT2 incorporates the best features of both hard and soft designs. GT2 lenses combine a soft periphery around the distance and intermediate zones, to ensure smooth transitions in power, with a somewhat harder boundary around the near zone to maximize reading utility. Vision studies have shown that this creates a superior balance between the reading utility of the near zone and the dynamic vision utility of the distance and intermediate zones, allowing equal comfort for both types of vision.



Is GT2 by ZEISS an aspheric design?

Yes. While all progressive lenses must be aspheric *globally* across the entire surface in order to produce a progression of Add power, GT2 by ZEISS has additional asphericity incorporated *locally* in the distance and near zones to reduce oblique power errors associated with the as-worn position and peripheral vision. This added design sophistication provides outstanding optics and larger fields of clear vision at both distance and near compared to conventional progressive lenses, along with thinner, flatter lens profiles.

Does the design of GT2 by ZEISS change based on the Rx?

Yes. The optical asphericity of the viewing zones has been precisely calculated for each base curve in order to ensure consistent performance in the as-worn position across the entire prescription range. Additionally, the near zone inset has been calculated for each base curve and Add power combination to ensure maximum binocular alignment.

What is the corridor length of GT2 by ZEISS?

The corridor length from the fitting cross to 85% of the specified Add power is approximately 13mm.

What is the minimum recommended fitting height for GT2 by ZEISS?

Although it was not designed exclusively as a "short-corridor progressive," GT2 by ZEISS uses advanced design techniques to allow a minimum fitting height of 17mm. Because the near zone is higher in the lens than that of Gradal Top, GT2 provides a generous reading area even in smaller frames. GT2 performs equally well in both smaller and larger frame styles.

Is GT2 by ZEISS a symmetrical or asymmetrical design?

GT2 by ZEISS employs an advanced asymmetrical design that maximizes the alignment between the viewing zones of the right and left lenses during binocular vision, which ensures that wearers get the widest possible binocular field of view at all viewing distances. This unique asymmetrical design also uses Horizontal Symmetry to minimize the differences in power, prism, and magnification between the right and left lenses across the entire lens surface.

What is Horizontal Symmetry?

Horizontal Symmetry is a patented ZEISS technology that extends the notion of an asymmetrical lens design. Horizontal Symmetry minimizes the differences in power between points at equal lateral distances to the right and left of the progressive eyepath, essentially "mirroring" the optics of the surface to either side of the progressive corridor. As a result, the eyes perceive similar optical powers through each lens when viewing the same object, even in the periphery. This ensures more accurate and more comfortable binocular vision by reducing the differences in blur, prism, and magnification between the right and left lenses for corresponding points.

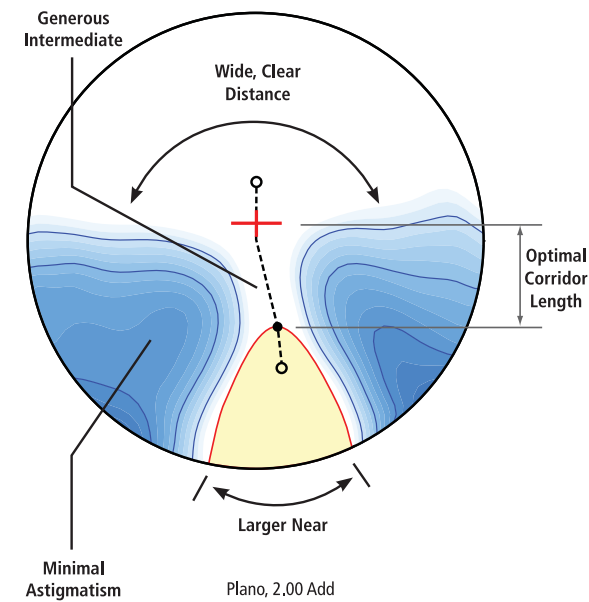
What is the near inset of GT2 by ZEISS?

The inset of the near zone is precisely computed for each base curve and Add power combination in order to compensate for the effect of prism induced by the distance correction, and for the effect of the reading distance on ocular convergence during near vision. This ensures that the centers of the near zones are properly aligned with the lines of sight during near vision. The range of insets varies from 2.0 to 4.5mm.

Fitting and Dispensing

Does GT2 by ZEISS require Measurement Values?

No. GT2 by ZEISS has been optically optimized for the "as-worn" position to ensure the widest possible zones of clear vision. However, in order to ensure ease of verification and dispensing, the powers at the distance and near checking circles have been constrained to provide the prescribed values as measured with a traditional focimeter. Therefore, the Measurement Values used with other ZEISS progressive lenses are not necessary, and GT2 by ZEISS can be verified normally.



GT2™ progressive lenses combine wide clear distance, smooth transitions and exceptional clarity in all directions with a corridor and near zone optimized for wearer ergonomics.

Do I need to follow any special procedures when fitting and dispensing GT2 by ZEISS?

No. GT2 by ZEISS should be fitted and dispensed like all ZEISS general-purpose progressive lenses. Always pre-adjust the frame before taking any measurements. Take monocular interpupillary measurements for distance vision and monocular fitting height measurements to pupil center. Fit and adjust the lenses carefully upon dispensing, with a minimal vertex distance and 8° to 12° of pantoscopic tilt. Finally, make sure the wearer is adequately trained in the use of his or her new progressive lenses.

What is the adaptation rate for GT2 by ZEISS?

All ZEISS progressive lenses enjoy an exceptionally high adaptation rate among both new and existing progressive lens wearers.

Can I switch bifocal wearers to GT2 by ZEISS?

Yes. Bifocal wearers should find GT2 by ZEISS easier to adapt to than most progressive lenses. Compared to other progressive lens designs, GT2's shorter corridor and larger near zone, combined with its wide, clear distance zone, will provide a more familiar viewing experience for former bifocal wearers. Additionally, peripheral astigmatism and distortion, a leading cause of progressive lens non-adapt, has been kept to an absolute minimum.

