3.4. Gradal® Top 1.59 Polycarbonate

Product Specifications

Material

- Water Clear Polycarbonate
- n_d=1.586
- Abbe 30
- Specific Gravity 1.20 $^{g}/_{ccm}$
- 100% UV-A and UV-B Protection

Technical Processing Notes

- Gradal® Top 1.59 Polycarbonate lenses can be processed like any other quality polycarbonate progressive lens. Zeiss recommends a minimum center thickness of 1.2 mm. Gradal® Top 1.59 Polycarbonate lenses of this minimum thickness fulfill the FDA standards of impact resistance.
- After blocking wait 30 minutes to allow lenses to cool before generating.
- Zeiss recommends de-blocking by cold knock-off or block ejector, but not by hot water.
- To tint Gradal® Top 1.59 Polycarbonate lenses a tintable back side hard coating must be applied.

Hard Coating

Zeiss Gradal® Top 1.59 Polycarbonate semi-finished lens blanks feature a factory applied, scratch resistant hard coating. This hard coating is non-tintable.

Delivery Range

- Sph +4.50D to -6.00D
- Cyl up to -4.00D (total power not to exceed -6.00D)
- Adds 1.00D to 3.00D
- Prism up to 3.00D in addition to equithin

Lens Data Chart

Base Curve	Actual/Useable Diameter [mm]	Decentr. [mm]	True Curve [1.53]	CX Radius [mm]	Back Curve [1.53]	Center Thickness [mm]	Edge Thickness [mm]
3.70	75/80 round	2.5	3.37	157.27	5.75	8.3	11.5
4.70	75/80 round	2.5	4.26	124.41	5.75	8.3	10.3
5.50	75/80 round	2.5	4.89	108.38	5.75	13.3	13.8
6.30	75/80 round	2.5	5.51	96.19	5.75	13.0	13.1
7.10	75/80 round	2.5	6.32	83.86	8.00	10.7	12.7

Zeiss Gradal® lenses are designed to work perfectly with a thickness reducing prism. To achieve the thinnest and lightest lenses possible, Zeiss recommends a base down (270°) prism in the following graduation depending on the power of the addition.

Addition [D]	1.00	1.25	1.50 1.75	2.00	2.25 2.50	2.75	3.00
Prism [D]	0.50	0.75	1.00	1.25	1.50	1.75	2.00

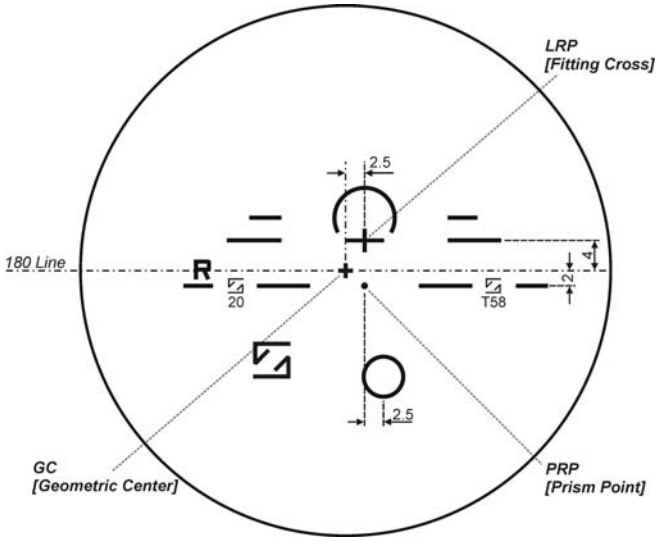
Permanent Engravings

	Nasal Engraving	Temple Engraving
Gradal® Top 1.59 Polycarbonate	T58	10-30

Markings of the Semi-Finished Lens

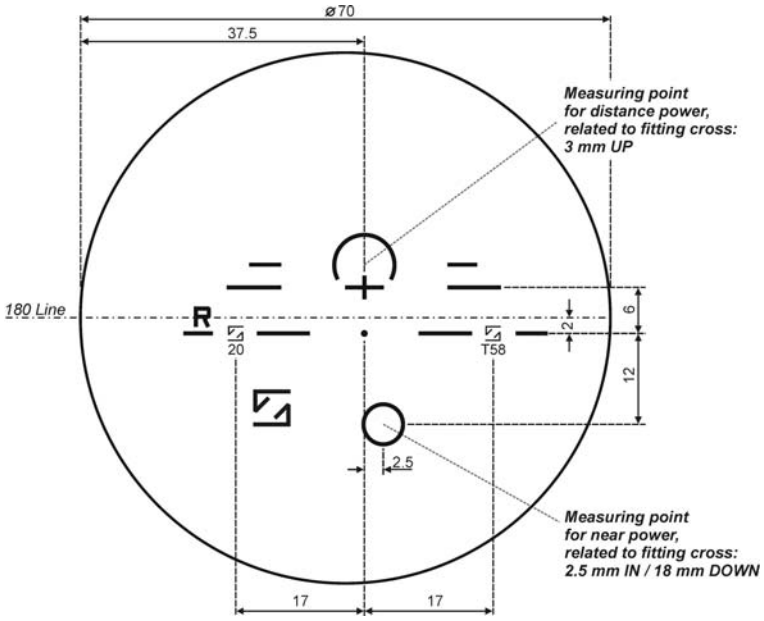
Gradal® Top 1.59 Polycarbonate features a round lens blank. For processing purposes the blank is marked with a cross at the geometric center.

Please note that Zeiss Gradal® Top 1.59 Polycarbonate lenses, if they are not to be cribbed at the generator, should be blocked on the geometric center to avoid producing unwanted prism during the fining operation.



Markings and Dimensions of the Finished Lens

Please note that Zeiss Gradal® Top finished lens markings differ slightly from the semi-finished lens markings in that the finished lenses are delivered to the customer without the geometric center cross. The markings are to be placed by the Zeiss partner lab using Zeiss Gradal® Top verification labels (Item #0000139.90270).



Base Curve Chart
Gradal® Top 1.59 Polycarbonate

sph/-cyl	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
4.50																	
4.25																	
4.00			7.10														
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-5.50																	
-5.75																	
-6.00																	

- Zeiss highly recommends conforming to the base curve for a specific R_x power as displayed in the Base Curve Chart for Gradal® Top1.59 Polycarbonate lenses. Picking another base curve for a certain power will decrease the imaging performance and may impact adaptation and patient satisfaction.
- Please be also aware that the base curve and the add power determine the nasal inset of the near portion. A base curve other then recommended restricts the usability of the intermediate zone and near portion due to a mismatch of distance power, add and required inset.