

EYEART LABORATORIES

PRECISION CONTACT LENS AND OPTICS MANUFACTURE



Worldwide prosthetic innovation
by EYEART Laboratories

PROSTHETIC SCLERAL CONTACT LENSES



EPSILON PROSTHETIC

An ocular prostheses fitted as a scleral lens.

Combines the visual correction of a scleral lens and the multilayer
3D aesthetics of a custom ocular prostheses.

Epsilon prosthetic is a scleral lens that can simultaneously correct regular or irregular astigmatism, disfigured corneal or peri corneal region, partial phthisis as well as small to moderate angle strabismus.

Available Parameters:

Indications:

- Partial or total leucoma
- Aniridia
- Iris coloboma
- Aesthetic correction of moderate Strabismus
- Moderate phthisis
- Regular or irregular astigmatism combined with any ametropia

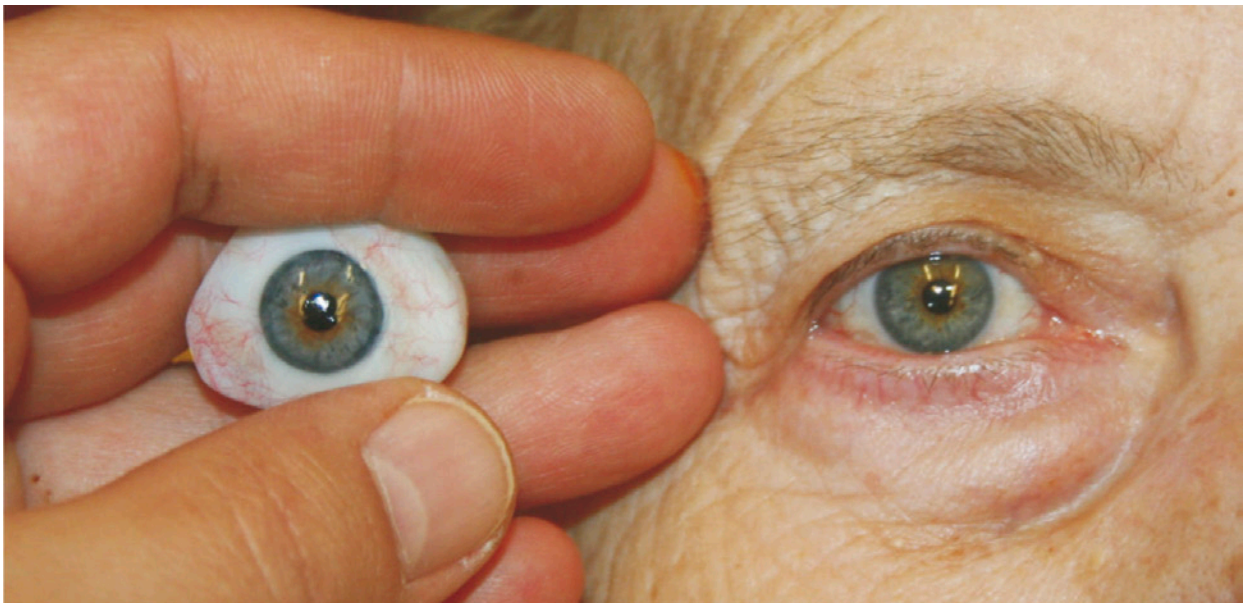
Sagittal height: 3900 to 6200 microns
Diopters: +25.00 to -35.00 in 0.25 D steps
Cylinder: up to 3.50 DC in 0.25 steps
Diameter: 18.50 mm
Center thickness: 800 microns (subject to variations due to lens power)
Geometry: Pentacurve toric aspheric (front toric available)
Material: PMMA
Iris/Scleral structure: Sandwich method, inside the material matrix

Contraindications: Corneal physiology that requires oxygen permeable material, strictly evaluated by the contact lens fitter.

Scleral lenses offer stable positioning which assures iris precise centration, especially in strabismic eyes, corrects all kind of astigmatism if present and the enhanced thickness, corrects mild eyeball phthisis.

Moreover, the micron precision CNC manufacture, ensures adequate fitting and absolute fitting reproducibility. Toric scleral landing zone, better stabilizes the lens to avoid rotation and allow tear passage, when necessary.

The iris, sclera and veining is manufactured the same way a BioEye (bioeye.eu) custom ocular prostheses is manufactured, using a true three dimensional, multilayer technique.



EPSILON PROSTHETIC BASIC FITTING INSTRUCTIONS

Consists of 16 lenses, of which 8 of them have a medium (-M) scleral landing zone geometry and the other 8 have a flat (-F) scleral landing zone. Each of the 8 lens group has been named with a letter, starting with B, for the lowest sagittal height lens, and reaching the H for the highest sagittal height lens (B-, D-, F-, H-).

The difference of vault between every two successive lenses/letters is 400 microns.

For every vault/letter and scleral zone geometry, two toric periphery lenses are included (TP2 and TP4).

DIAGNOSTIC SET STRUCTURE:																
CENTRAL ELEVATION	B				D				F				H			
LANDING ZONE	M		F		M		F		M		F		M		F	
TORIC PERIPHERY	TP2	TP4	TP2	TP4	TP2	TP4	TP2	TP4	TP2	TP4	TP2	TP4	TP2	TP4	TP2	TP4

Therefore the lenses are named with two letters and the toric periphery parameter, ie B-M TP2 or D-F TP4. The first letter indicates the central sagittal height, the second the scleral landing zone geometry.

FIT ASSESSMENT

STEP 1:
 Corneo limbal region
 Adjust clearance
 using B to H
 lens/letter sagittal
 increments

STEP 2:
 Scleral zone
 Adjust fit M or F
 Adjust toricity
 TP 2 to TP 4

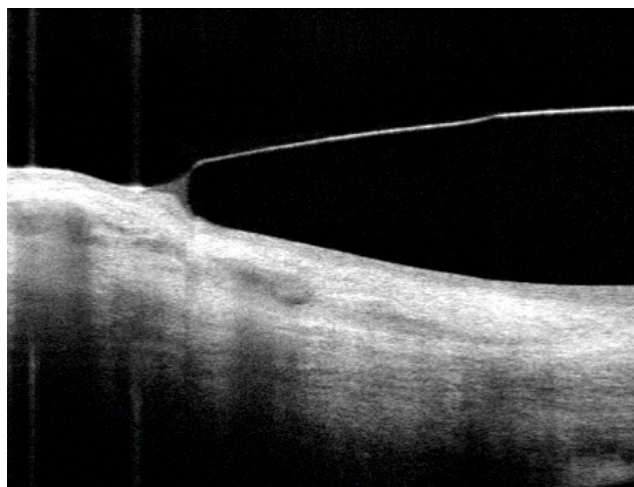
T.P. (Toric landing zone):

Toricity needed is referred by two parameters: The difference of sagittal height of the two meridians and the 'steepest' meridian.

Amplitude of toricity

Toric steps are available as follows:

- TP 1 50 microns
- TP 2 100 microns
- TP 3 150 microns
- TP 4 200 microns
- TP 5 250 microns



Ideal edge landing

The amplitude can be easily specified when OCT scans are available or empirically.

Definition of 'steepest' meridian

Default setting sets 'steeper' meridian at 12-6 o'clock .

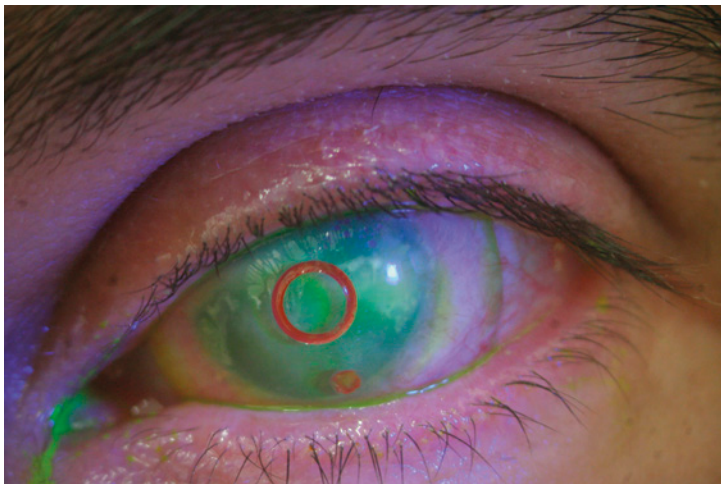
Further options could be as 7 o'clock, 4 o'clock etc

Basic key points, fitting EPSILON PROSTHETIC lenses:

- Corneal clearance should be achieved (Img 1)
- Toric periphery parameters and fit is very important to ensure, lens stabilization and tear passage, when possible
- Use fluorescein also after lens insertion and observe tear dynamics. Thus tears passing under the lens
- When strabismic position is present, evaluate the entity. In some cases the strabismus cannot be fully corrected, because of lens diameter limit. (Aesthetic parts can be manufactured approximately 0.5mm from lens edge)
- Sometimes, sclera geometry is extremely irregular, due to trauma, raptures or other surgical procedures. If the fitting set parameters are not sufficient, custom trial lenses can be designed, in collaboration with our technical consultants.
- If light perception of the eye is present, but no useful vision, black pupil is advised to be semi transparent, to help maintain the iris position in longterm.

Photos for the lens manufacture

- Always use the calibration ruler provided by EYEART Laboratories
- Place the ruler on the forehead of the patient, horizontally
- Have the ruler bended inwards
- Take photos only with flash
- Ensure that the photos chosen have no reflection on the ruler
- Ensure that iris is well focused
- The ambient illumination should be bright
- The dot at 6 o'clock should be evident (if not, take a photo with the lid holded down by the patient, Img 2)
- Any high resolution photos could be used, taken with camera or smart phone devices



Img 1 - Corneal clearance

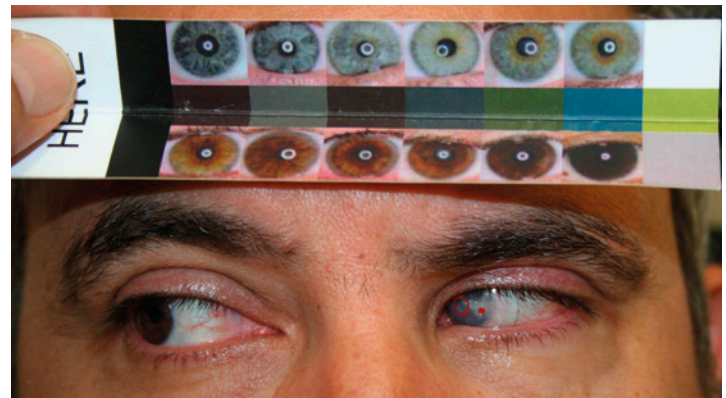
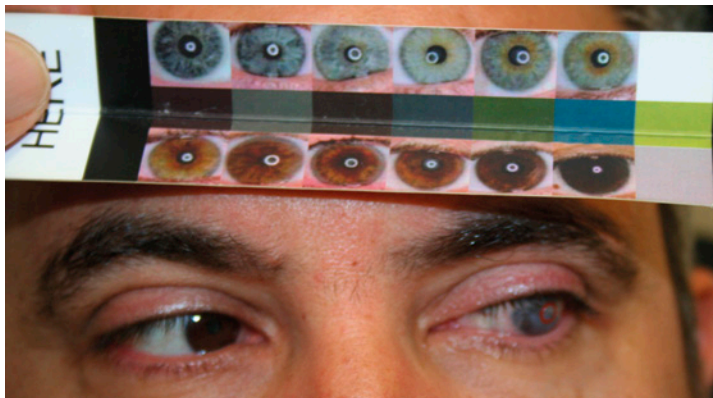
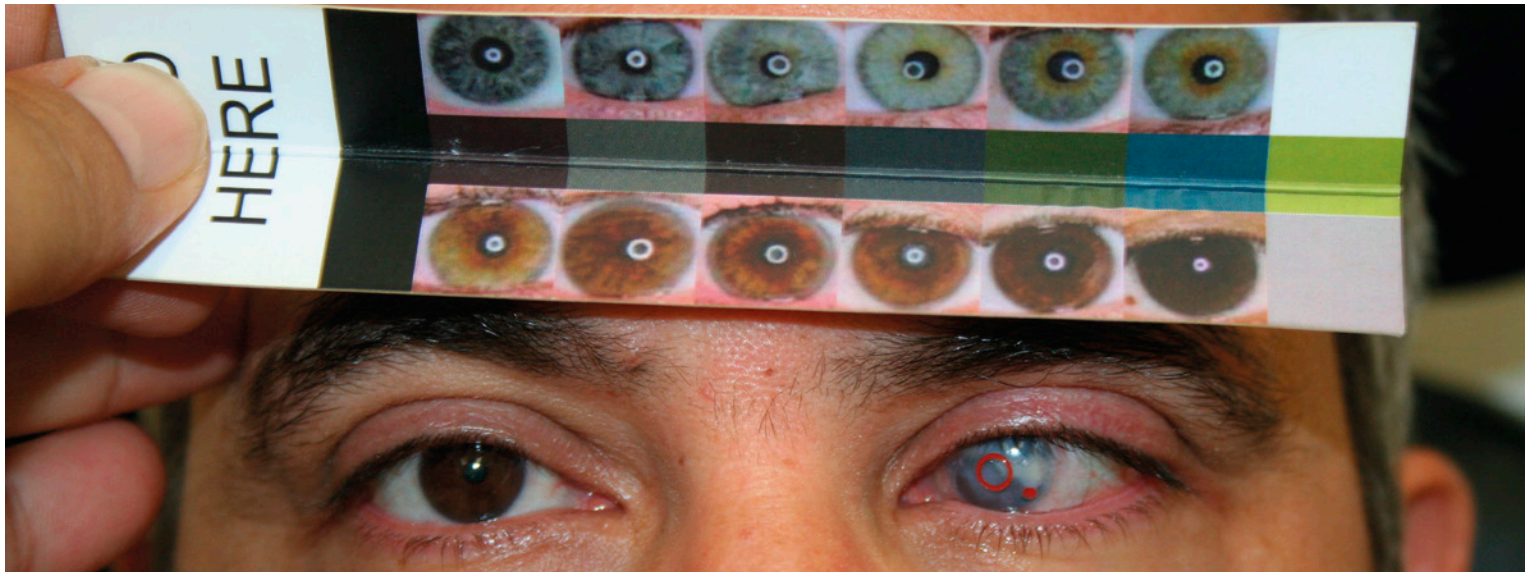


Img 2 - Lens markings must be evident

ESSENTIAL PHOTOS FOR EPSILON PROSTHETIC

3 photos are essential for the manufacture.

- One with the patient straight ahead (important for the iris positining)
- One looking left
- One looking right



Lens order example

Epsilon Prosthetic
D-F TP4
Sph -1.00 Cyl -1.00 Axis 90
Iris 12.00 mm
Pupil 4.00 mm CLEAR
3 photos

Lens order must include the following:

- Fitting lens parameters
- Optical correction lens parameters (when applicable)
- Iris diameter
- Pupil diameter (specify BLACK or TRANSPARENT)
- The 3 photos as described