

**Preloaded**  
Hydrophobic  
Acrylic IOLs

**MBI**

**PreciSAL™**

**Preloaded**  
Hydrophobic Acrylic IOLs

**MBI** has developed a revolutionary  
new proprietary technology

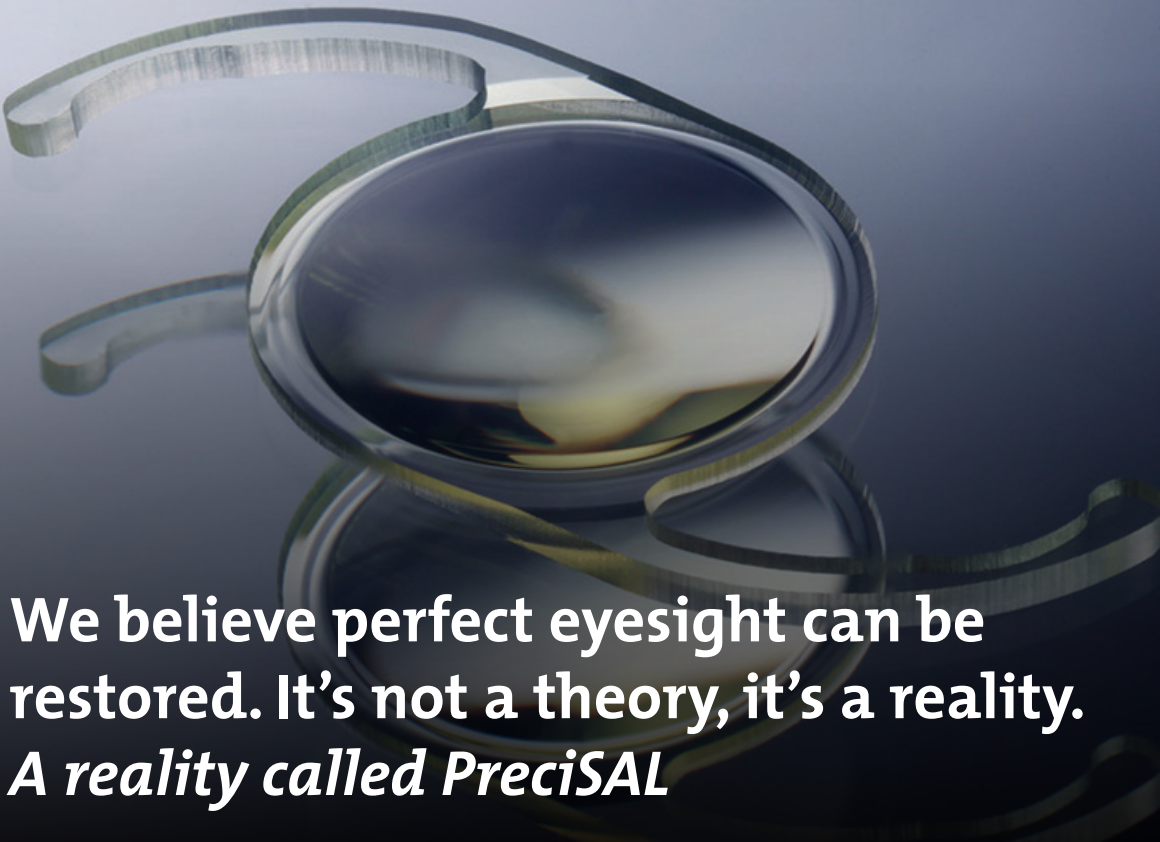


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**OPHTEC**  
focus on perfection

// Make a difference every time



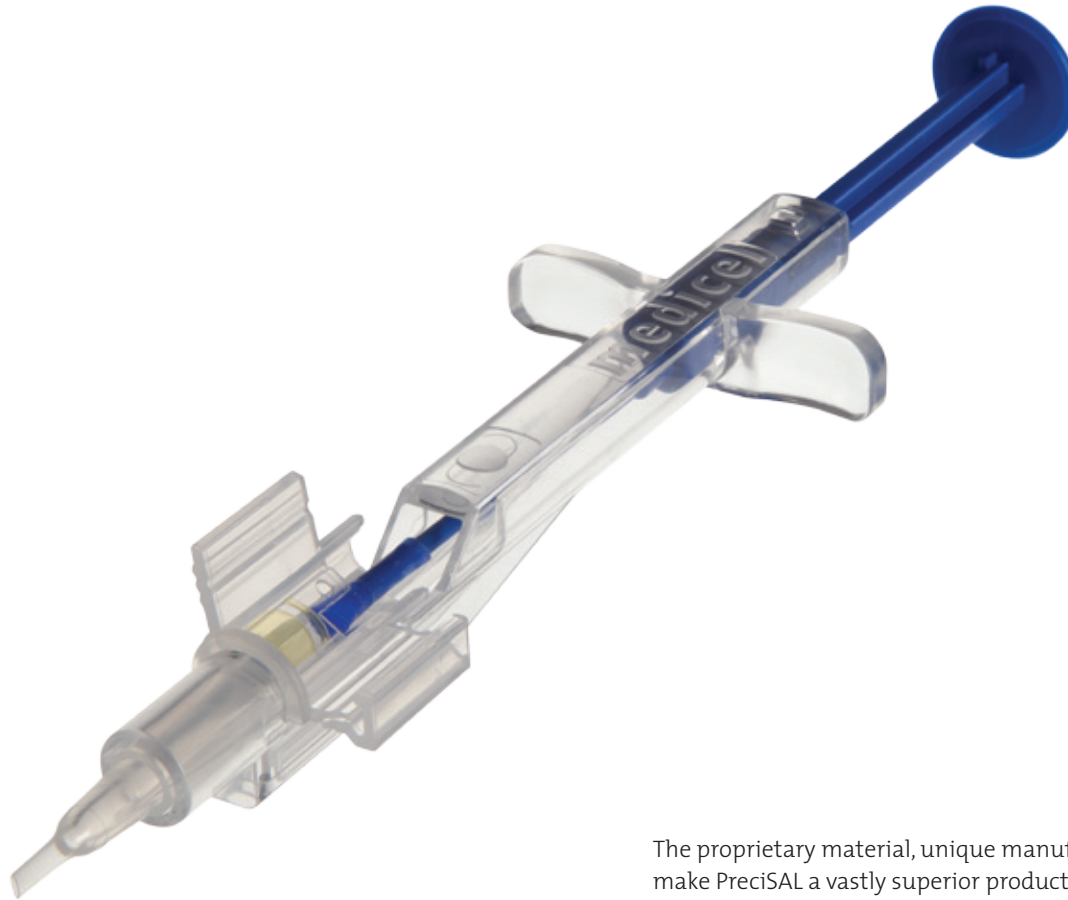
**We believe perfect eyesight can be restored. It's not a theory, it's a reality.**  
*A reality called PreciSAL*

PreciSAL is an aspheric intraocular lens with negative spherical aberration. It will transform patients' lives by giving them back what they thought was lost forever – clear, sharp vision. PreciSAL is revolutionary new technology, proprietary to MBI.

As people who care about eyesight, we want to see optimum results, and to see them consistently. We want the products we use to be reliable and of the highest quality. We want to be certain we are helping you make a difference every time you treat someone.

While some are content to use current technology, MBI embraces the forward thinkers of this world - the people who are developing tomorrow's technology.

// Our vision is clear



The proprietary material, unique manufacturing processes make PreciSAL a vastly superior product. In every way - quality, precision, performance, usability and repeatability - PreciSAL out-performs all other IOLs, and represents a significant advancement in ophthalmic surgery.

By using the preloaded injector from Mediceal, MBI offers an excellent and optimized system

## // PreciSAL quality



PreciSAL Clear IOLs are made from a unique, soft, hydrophobic acrylic material, with less than 0.5% water content that incorporates the most desirable UV blocking properties. PreciSAL Yellow IOLs have the same benefits, with the addition of a proprietary blue-light filter.

They behave much like hydrophilic lenses. They unfold and centre perfectly, and sit in the bag exactly where you want them, making them easy to implant. In fact, there is no need to change your implant technique – PreciSAL lenses can be inserted through a 2.2mm incision Pre-loaded Injector.

## They are simply beautiful to use

## // PreciSAL design



Since the launch of PreciSAL IOL process in 2008  
no glistenings have been reported

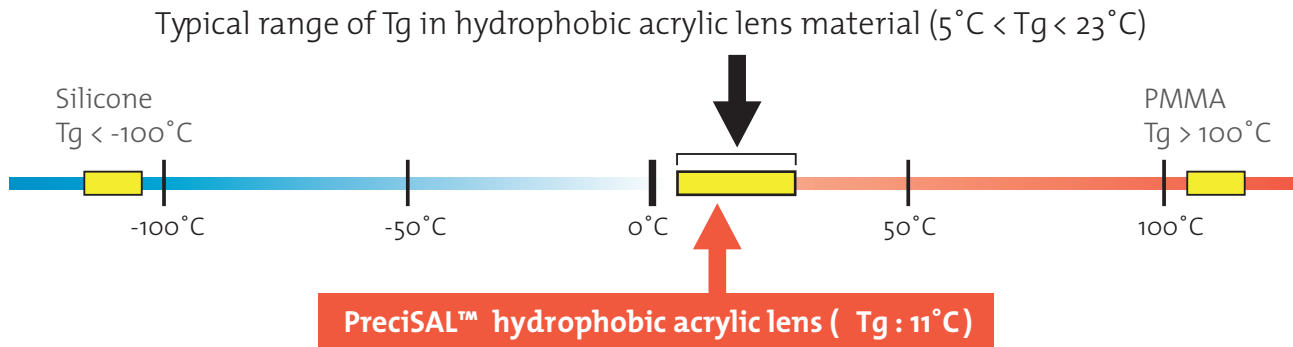
**The way an IOL performs is defined  
by how it is made.**

The general way - Injection Moulding  
is used to make hydrophobic IOLs.

This process can create micro cracks  
and spaces between the lens material  
polymer chains. Over time, water in  
the material, along with aqueous,  
may condense into these spaces,  
forming fluid-filled micro vacuoles.  
These glistenings may then create  
mie-scatter within the eye, causing  
a significant loss of contrast and a  
decline in visual acuity.

**It's the MBI process, material and  
ultimate precision of their lathing  
technique which makes PreciSAL  
exceptional.**

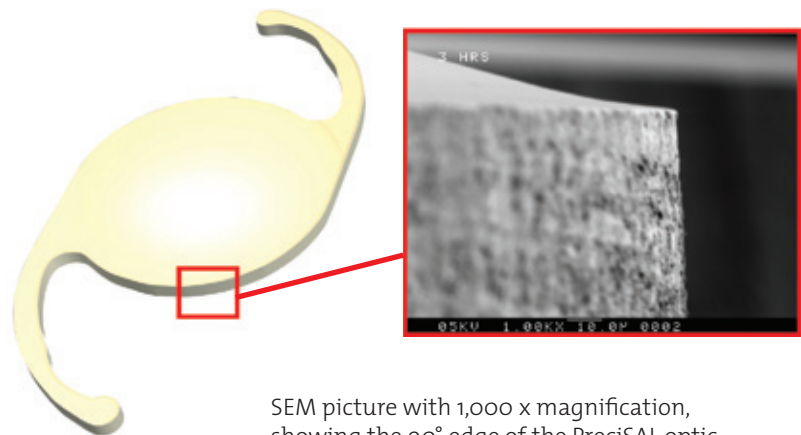
## // It's also about finesse



The MBI innovative manufacturing process delivers a square edge all around the optic and the haptic areas. We believe that this square edge contributes to blocking cell migration and minimizing PCO.

Engineered with a low glass transition temperature ( $T_g$ ), PreciSAL is also designed for the operating room: from  $11^{\circ}\text{C}$ , the material becomes soft and easy to inject. No waiting, no pressure – just simple smooth unfolding.

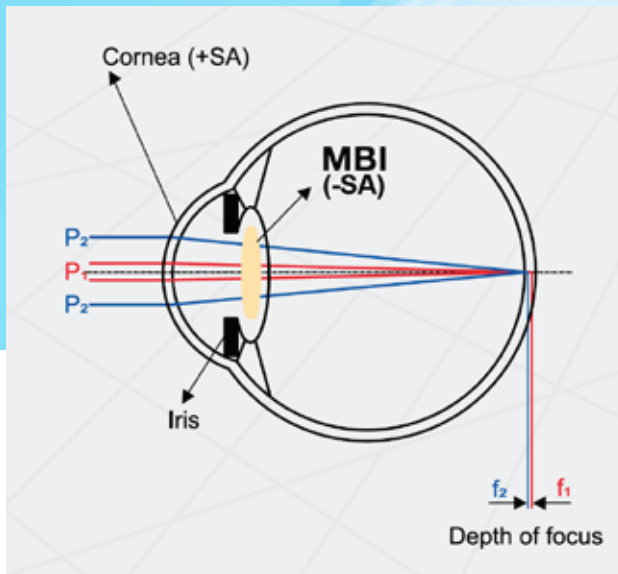
The unique PreciSAL proprietary material has less than half the water content of most other hydrophobic acrylic materials, yet it remains soft and pliable for ease of implantation.



SEM picture with 1,000 x magnification, showing the  $90^{\circ}$  edge of the PreciSAL optic under the electron microscope.



## // PreciSAL asphericity



Contrast sensitivity is particularly important in environments such as driving at night or dining in a dimly lit restaurant. Negative spherical aberration (-SA) improves vision in these situations, producing the best visual acuity and contrast sensitivity with a modest depth of focus.

PreciSAL lenses have negative spherical aberration (-SA) in both clear (P302AC) and yellow (P302A) models. The residual SA is  $0.21\mu\text{m}$  at a 6mm corneal diameter.

Your patients want clear, crisp sight in all conditions - day, night, dim or bright. They get it with PreciSAL

## // Chromatic aberration

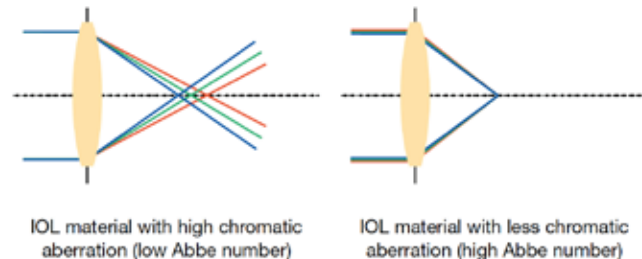
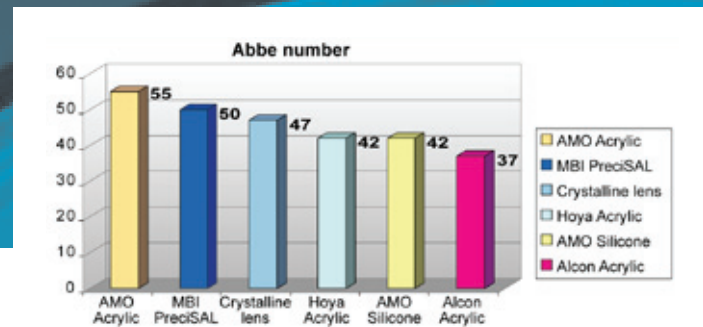
PreciSAL lenses have a high Abbe number.

That's a good thing

The Abbe number, also known as the V number, is a measure of a transparent material's dispersion in relation to the refractive index, with high values of V indicating low dispersion (or low chromatic aberration).

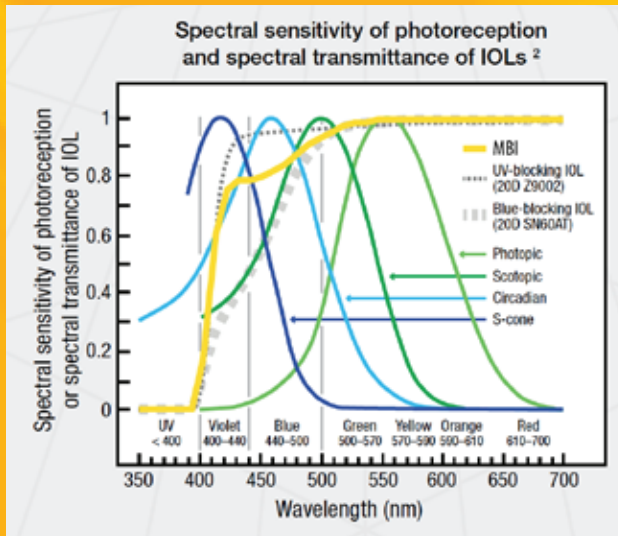
In optics, the Abbe number indicates material quality and the capacity of an IOL to focus all colours to the same point. A high Abbe number not only means less chromatic aberration, it means better contrast and optical performance.

We are proud of our V number: PreciSAL lenses have an Abbe number of 50.





## // PreciSAL Yellow



S-cone (Imax z 420 nm), circadian (Imax z 460 nm), aphakic scotopic (Imax z 500 nm) and photopic (Imax z 555 nm) spectral sensitivities, where Imax is the wavelength of peak spectral sensitivity... The spectral transmittances of [PreciSAL 302A (20D)], a UV-blocking (AMO Tecnis Z900z 20D), and a blueblocking (Alcon AcrySof Natural SN60AT 20D) IOL are also shown.

## PreciSAL Yellow is not the yellow lens you think it is. It looks different because it is different

PreciSAL Yellow gives your patients the clarity and filtering properties equivalent to the lens of a 4.5 year old. They will see in all kinds of light - clearer, crisper and more colourfully. And they will sleep better.

The high-energy filter protects the macula from cytotoxic violet light. However, it doesn't block all the benign blue wavelengths (440nm-500nm) that contribute significantly to the body's sense of diurnal rhythm, effective dim-light

vision, colour perception and circadian photoreception.<sup>1</sup> With PreciSAL Yellow, PreciSAL achieves this with transmission values of 78%-94% (440nm-500nm) compared to the industry standard of 32%-81%.

Therefore, PreciSAL Yellow more accurately replicates the spectral transmission of a normal, healthy eye.

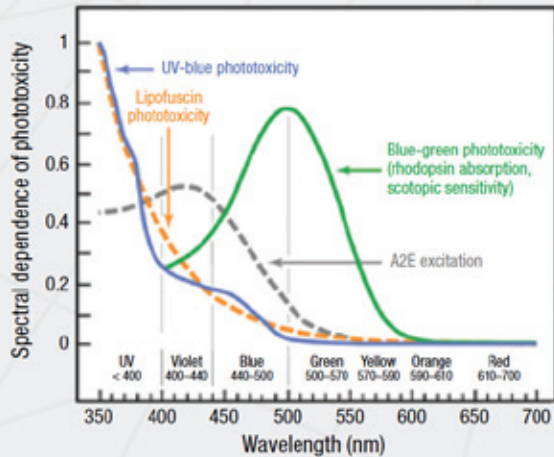
**We believe your patients will see better and sleep better - their lives will be transformed. >>**

<sup>1</sup> Mainster M.A., Turner P.L.: 'Blue-blocking IOLs Decrease Photoreception Without Providing Significant Photoprotection', Table 1. Surv. Ophthalmol. 55(3) May-June 2010 p 273, 2010

<sup>2,3,4</sup> Reprinted from Survey of Ophthalmology, Vol 55, Number 3, May-June 2010, Mainster M.A., Turner P.L.: 'Blue-blocking IOLs Decrease Photoreception Without Providing Significant Photoprotection', pp 274-275. Copyright 2010, with permission from Elsevier.

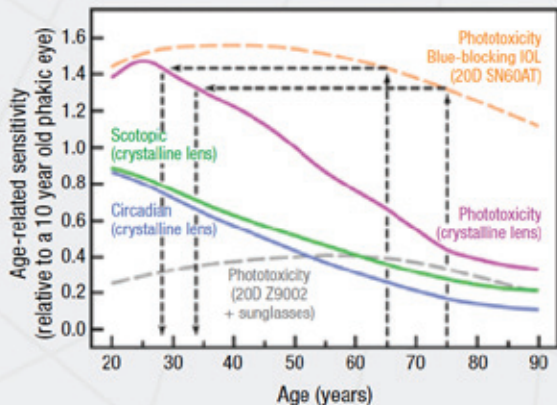
# // PreciSAL Yellow

Spectral dependence of phototoxicity<sup>3</sup>



The action spectra for UV-blue phototoxicity and RPE lipofuscin phototoxicity are quite similar. Both increase rapidly with decreasing wavelength. Thus, UV-radiation is much more hazardous than violet light, which in turn is more hazardous than blue light. Acute blue-green retinal phototoxicity has an action spectrum similar to scotopic sensitivity...[where it]...peaks around 500 nm (blue-green) and decreases at shorter and longer wavelengths, as depicted in this figure by the absorption spectrum of rhodopsin.

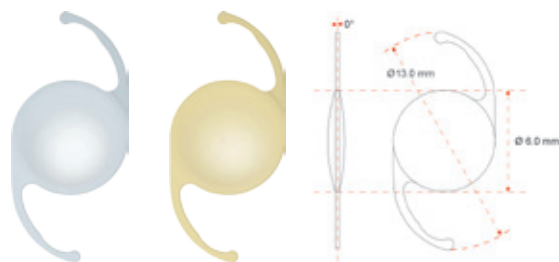
Age-related sensitivity (relative to a 10 year old phakic eye)<sup>4</sup>



Acute retinal phototoxicity risk (UV-blue phototoxicity), scotopic sensitivity (rod photoreception) and circadian photoreception (melatonin suppression) for phakic eyes (“crystalline lens”) relative to a 10-year-old phakic eye, taking into consideration age-related decreases in crystalline lens transmittance and pupil area and increases in RPE cell phototoxicity consistent with the age-related accumulation of lipofuscin.

## // Believing is seeing

We believe PreciSAL will change the way you think about cataracts and give you the confidence to perform lifechanging surgery, to believe in seeing, and restore what was thought lost.



P302AC

P302A

## // PreciSAL Preloaded Monofocal Specifications

PreciSAL P302AC | PreciSAL P302A

<b>IOL design</b>	Aspheric single piece posterior chamber lens
<b>Material</b>	Hydrophobic Acrylic with UV absorber Preloaded: Models P302AC, P302A (blue filter)
<b>Material water content</b>	<0.5%
<b>Refractive index</b>	1.5
<b>Abbe number</b>	50
<b>Optic design</b>	Biconvex, square edged optic and haptic
<b>Haptic design</b>	Modified C-Loop
<b>Optic diameter</b>	6.0 mm
<b>Overall length</b>	13.0mm
<b>Haptic angle</b>	0°
<b>Dioptre range</b>	Available in powers from 0.0 D to 30.0 D: 0.0 D to 10.0D in 1.0 D increments 10.0 D to 30.0D in 0.5 D increments
<b>Manufacturer's A-constant</b>	118.7
<b>Recommended A-constant *</b>	•SRK II: 119.2 •SRK-T: 118.9 •sf: 1.75 [Holladay I] •HAIGIS: [a0: 1.32, a1: 0.40, a2: 0.10]
<b>ACD*</b>	5.337 [Holladay II]; 5.51 [Hoffer Q]; 5.51 [Manufacturer]
<b>Method of sterilisation</b>	Ethylene Oxide (ETO)
<b>Insertion instrument</b>	Preloaded Injector (Medcel)

\* These values are shown as guidelines only for use with optical biometry for calculation of implant power. OPHTEC and MBI recommend that surgeons develop their own values based on individual technique, measuring equipment and desired post-operative results. In no way are these values meant to be definitive.



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