



MATERIAL & DESIGN  
MAKE THE DIFFERENCE

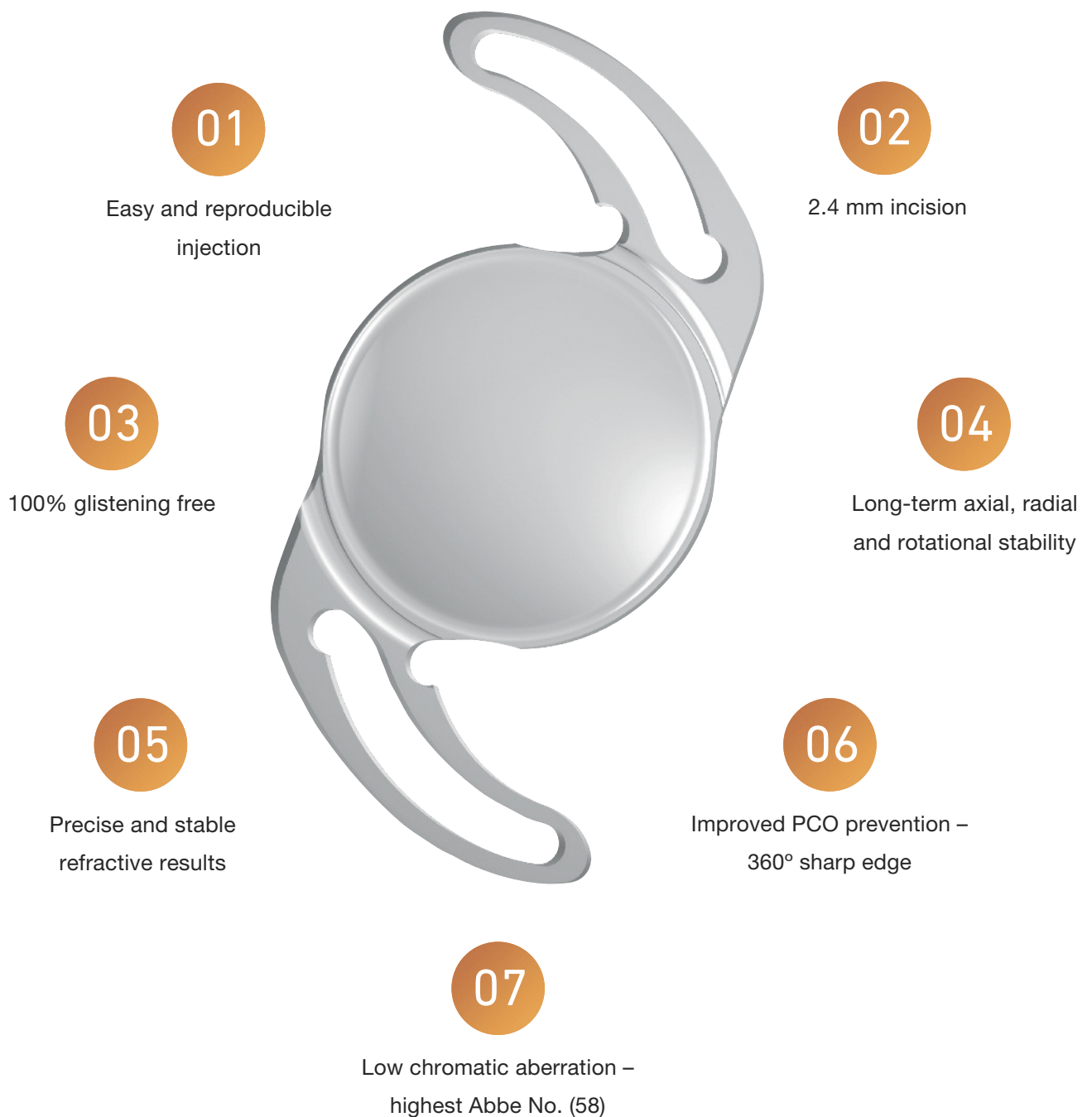
3! FLEX



MEDICENTUR



## Material & Design Make the Difference





## SEMTE – An exceptional innovative hydrophobic material

Bi-Flex HB is manufactured from a long-time proven SEMTE hydrophobic co-polymer material.



- A co-polymer with reduced tackiness compared to other hydrophobic materials
- Improved mechanical and rheological properties at room temperature – optimal glass transition temperature ( $T_g$ ) at 4°C
- Excellent pseudo-plasticity for quick centration and positioning of the injected lens
- Low rate of cell adhesion – enhanced PCO prevention

## Easy implantation - 2.4 mm incision

- Suitable for optimal 2.4 mm mini-incision surgery.



- MEDJET MX injector the suitable hydraulic injection system

### ELASTICITY · SOFTNESS · SHAPE MEMORY

- Smooth continuous gliding of the IOL inside the cartridge, low injection force
- Gentle but quick, symmetric and atraumatic unfolding in the capsular bag (“like hydrophilic IOLs”)



## Material Make the Difference

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### 100% glistening free

- Hydrophobic acrylic IOLs do not need to be packed & stored in water.
- SEMTE's refractive index (1.47) is close to the physiological refractive index of the aqueous humor.
- Medicontur hydrophobic IOLs are lathe cut – not molded.

## Why accept materials with a low ABBE number?

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### Bi-Flex HB material & the Abbe number

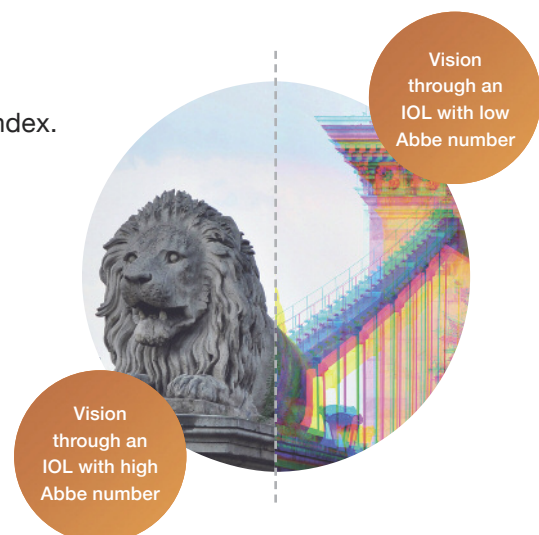
The Abbe number characterizes a transparent material's light dispersion in relation to the refractive index.

**The higher the Abbe number  
the lower the chromatic aberration.**

A major difficulty with diffractive optics is chromatic aberration, which is generally worse than with refractive optics. Chromatic aberration reduces image quality in normal white light because light rays with different wavelengths refract differently.

### Excellent optical performance

Bi-Flex HB benefits from a very high Abbe number value: 58.



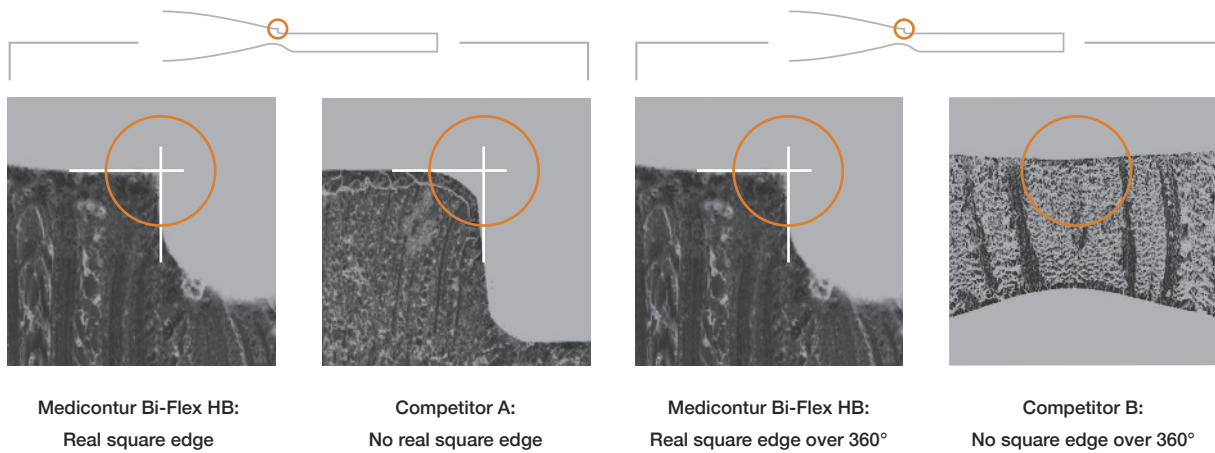


## Real 360° Square Edge

Many IOLs labeled "Sharp Edge" actually do NOT have a sharp edge. A sharp edge is defined by a radius smaller than 10µm.

Studies<sup>[1][2]</sup> have highlighted the essential role of the optic's profile design – especially the existence of a square edge all around the optic – to control cell migration.

### Comparative scanned images of IOLs marketed as having a "sharp edge" at the optic-haptic junction



Specific manufacturing process and patented design characterize all Bi-Flex IOLs, along with a sharp square edge all over 360° including the optic-haptic junction zone.

### Prospective comparative study with hydrophobic IOLs conducted between 2009–2012

70 eyes, 35 patients · Gábor Scharioth, MD, PhD, Recklinghausen, Germany

	Alcon AcrySof	Medicondur hydrophobic
<b>PCO inside optic</b>		
• 12 months	8	0
• 24 months	16	16
<b>YAG capsulotomy</b>		
• 12 months	1	0
• 24 months	5 (14%)	3 (8%)

By courtesy of Gábor Scharioth, MD (ESCRS 2012)

[1] Werner L, Mamalis N, Pandey SK, et al. Posterior capsule opacification in rabbit eyes implanted with hydrophilic acrylic IOLs with enhanced square edge. · J Cataract Refract Surg 2004; 30:2403-2409 · [2] Tetz M., Wildeck A. Evaluating and defining the sharpness of intraocular lenses. Part 1: Influence of optic design on the growth of the lens epithelial cells in vitro. · J Cataract Refract Surg 2005; 31:2172-2179



## Bi-Flex Platform · Design Makes the Difference

### A unique & patented design for ultimate centration & long-term stability

Only a specific design offering a large contact angle and adequate haptics resistance can provide long-term centration and stability.

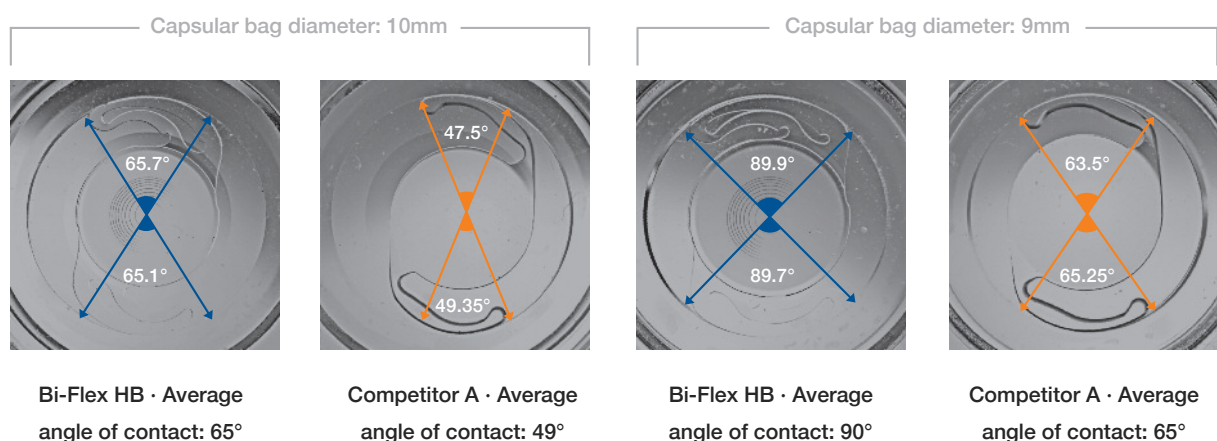
### Bi-Flex HB benefits from all assets of the Bi-Flex platform design characteristics

- for reproducible centration of the IOL
- for axial, radial and rotational stability.

### These unique characteristics are

- the largest contact angle between haptics and capsular bag equator among all IOLs  
 **$2 \times 90^\circ = \text{Total } 180^\circ \text{ contact angle}$**
- the Dolphin zone & the specific double haptics design
  - for immediate and symmetric unfolding
  - for optimized compressibility & resistance against capsular bag compression force.

### Experimental simulation of different capsular bag diameters



Bi-Flex HB angle of contact with the capsular bag equator is by far larger.



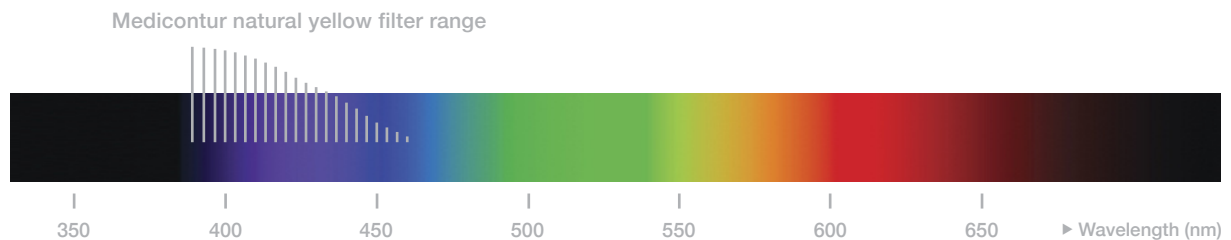
## Medicontur Natural Yellow Filter

**Only a natural yellow filter can offer the required protection while preserving the quality of vision.**

Violet and blue light corresponds to visible light wavelengths between 390 and 495 nanometers. It is known that short wavelengths are potentially harmful to the macula. On the other hand we know that blue light is important for the scotopic night vision.

**Medicontur natural yellow filter cuts from 390 nm to approx. 450 nm**

- Cutting the most critical “high energy” portion of visible light.
- Preserving some of the “low energy” portion of blue light to maintain scotopic vision capacity, colour and contrast sensitivity.



### Medicontur natural yellow filter



No yellow filter at all



Bi-Flex HB natural yellow filter



Non-natural yellow filter

**Medicontur natural yellow filter: Filtering as much as necessary, preserving as much as possible.**



MC-BIFLEX-IL\_DBR\_EN v001

## Vision of expertise

Medicontur is an independent European company founded in 1989, with a reputation for innovation and constant growing.

Our consistently high quality products have been implanted in over 4 million eyes and thus have helped millions of patients to restore their vision.

We have a diverse product portfolio that includes monofocal, multifocal and toric solutions in a broad diopter range. Our products are available in several designs, in hydrophilic or hydrophobic, and preloaded versions as well.

The company has international offices in Geneva (Switzerland), near Lyon (France), and in Brno (Czech Republic). The head office and production plant is located near Budapest (Hungary).

Medicontur products are distributed in more than 60 countries, with a growing share worldwide.