

# Miru

1day Menicon Flat Pack



[ Product Guide ]

## ■ Miru 1day Menicon Flat Pack.

Barely 1mm thick. Designed for single use. Improves handling, hygiene and convenience.



### **Flat Pack:**

At first glance, the most striking thing about Miru 1day is its ultra-slim package, barely one millimeter thick.

But slimness is only part of the story. Miru 1day Menicon Flat Pack is specifically designed to minimize lens handling and contamination concerns. So contact lenses can be worn more comfortably and confidently.

When the package is opened, the lens presents on a unique dispensing platform with the outer surface (front curve) of the lens facing upwards.

This makes the lens easy to pick up in one smooth motion, without any confusion about its orientation, or any need to touch the inner surface.

That means that skin oils and harmful microorganisms are less likely to get trapped between the Miru lens and the eye compared to conventional contact lenses.

### **Miru 1day Menicon Flat Pack:**

Miru lenses are precision-formed from (HEMA-GMA) hioxifilcon A, and designed for maximum hydration and all-day comfort.

### **Good Start. Good Day.**

Taking its name from the Japanese verb that means “to see”, Miru 1day is here to give you a Good Start to another Good Day.

## ■ Package design



Thoughtfully designed storage case complements Miru 1day's slim package design.



## ■ 1mm Foil-wrapped package

The Miru 1day package is constructed with unique and soft foil on both sides, and features an easy-open seal.

### Lens package

- Package front (graphic design)



- Package back (lens specifications)

Lens specifications are printed in large, easy-to-read type.



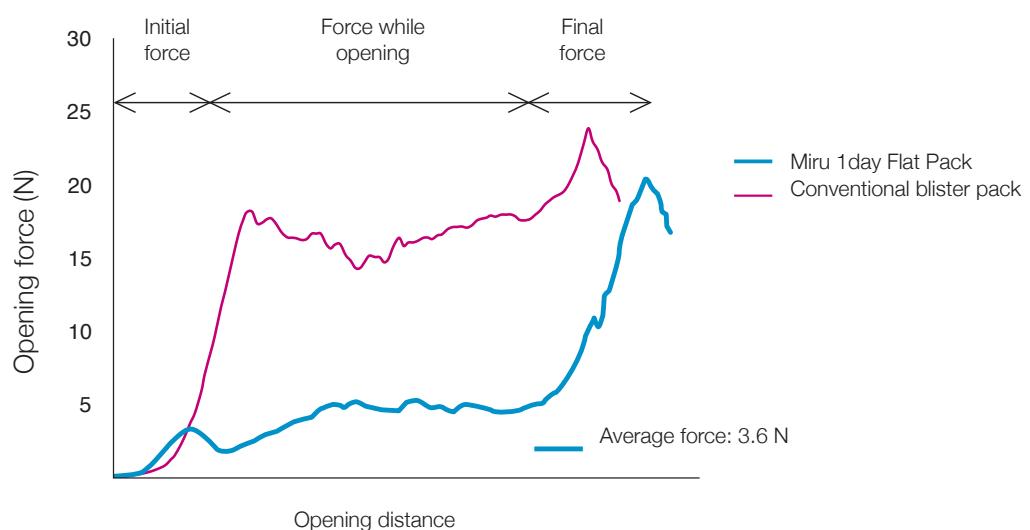
- An optimal solution volume maintains the lens in an equilibrated state and discourages lens reuse for better compliance.

## ■ Easy-open seal design



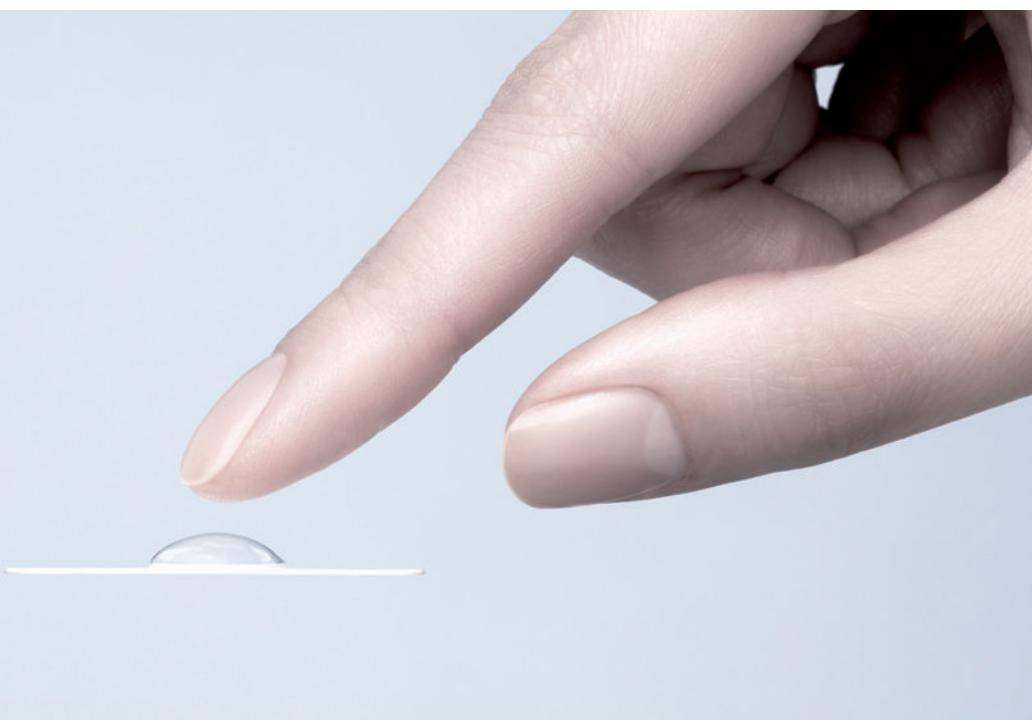
### Seal opening force

The Miru 1day Flat Pack requires significantly less force to open than a conventional blister pack\*.

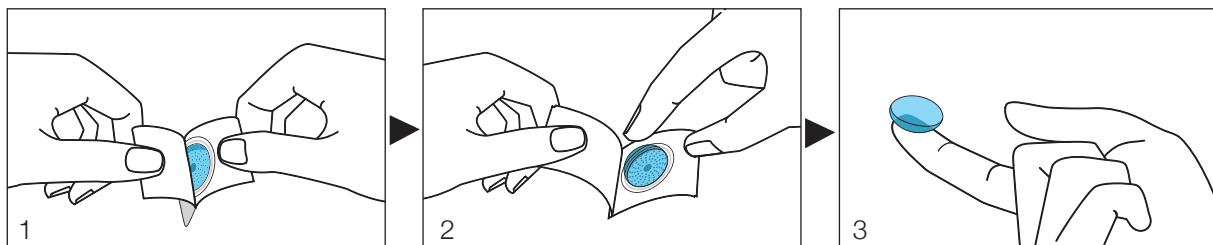


\*Menicon in-house test data

## ■ Hygienic package design



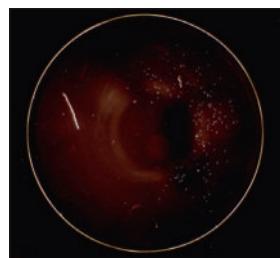
Miru 1day Flat Pack was specifically developed to reduce the chance of lens inner surface contamination. When opened, the outer surface of the lens is always facing up, ready to be picked up. This eliminates confusion about its orientation and reduces the chance of touching the inner surface of the lens. This makes it less likely that skin oil or harmful microorganisms will get trapped between the lens and the wearer's eye.



- 1- Slowly peel the foil sheet away from the package.
- 2- When the package is opened, the outer surface of the lens faces up.  
Simply pick it up with the thumb and forefinger of one hand.
- 3- Move your thumb away so the lens rests only on the tip of your forefinger, ready to be placed in your eye.

### Fiber contamination of lens surface

Even after thorough hand washing, fibers from towels used to dry the hands are a potential source of lens contamination. If a fiber adheres to the inner surface of the lens, tears alone are often unable to flush it out, resulting in lens discomfort and eye irritation. With Miru 1day lenses, such contamination is more likely to be limited to the outer surface, where fibers can be readily dislodged by blinking\*.

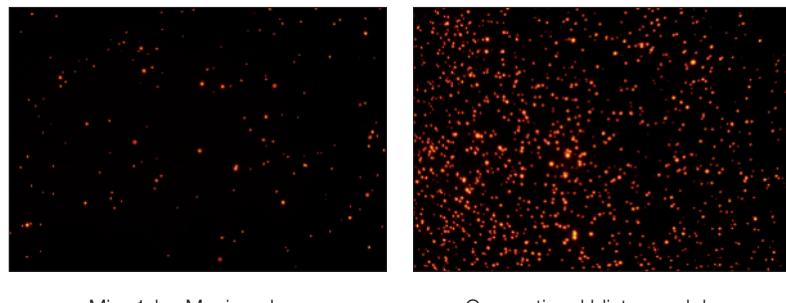


\*Menicon in-house research

## ■ Less microbial contamination

### Simulated microbial contamination

Microbial contamination was simulated by “contaminating” fingers with microbe-size fluorescent beads before removing lenses from the package, and then taking fluorescence microscope photos of the central portion of each type of lens\*.



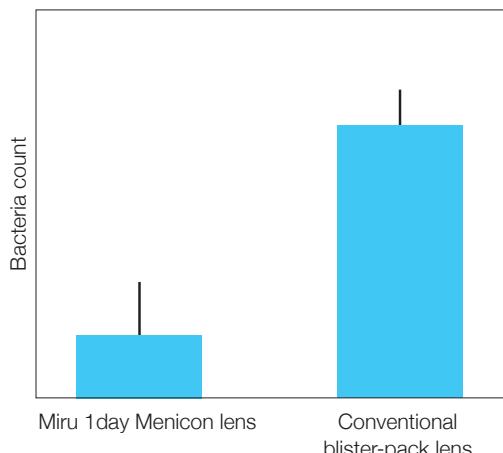
Miru 1day Menicon lens

Conventional blister-pack lens

When removed from their package as directed, Miru 1day lenses require less handling, reducing the risk of microbial contamination.

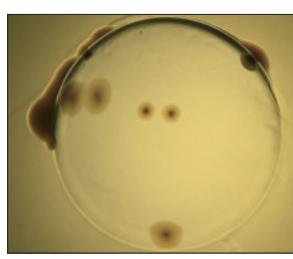
### Microbial contamination evaluation

Fingers were contaminated with staphylococcus aureus bacteria before removing lenses from the package. The lenses were then cultured and observed for bacterial growth\*.



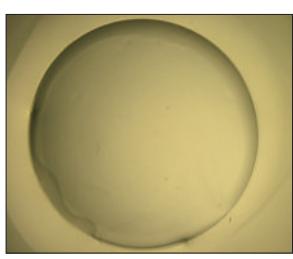
### Microbial contamination observation

Miru 1day Menicon lens

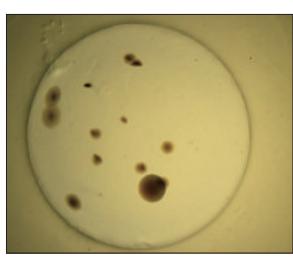


Outer surface

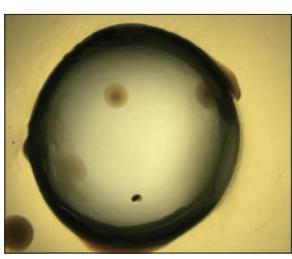
Conventional blister pack lens



Inner surface



Outer surface



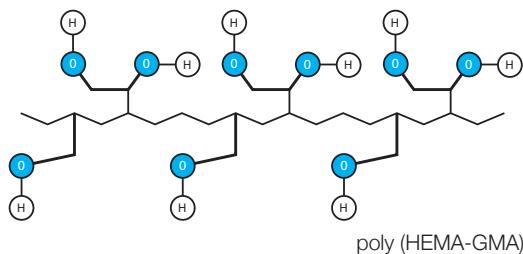
Inner surface

Fingers were contaminated with a standard sample of staphylococcus aureus bacteria before removing lenses from the package. Inner and outer surfaces of the lenses were then cultured separately so that bacterial growth could be observed for each surface individually. On the inner surface of the Miru 1day lens, no bacterial growth was observed\*.

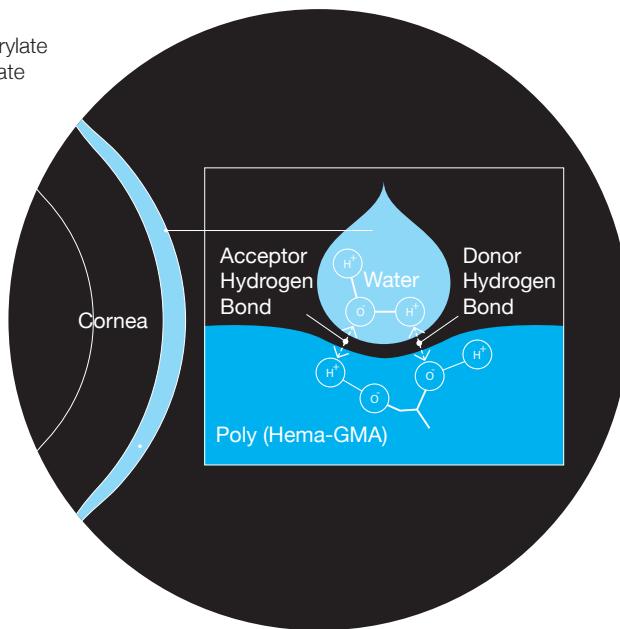
\*Menicon in-house test data

## ■ Poly (HEMA-GMA) lens material

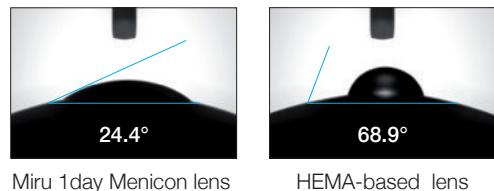
Miru lenses are made from (HEMA-GMA) hioxifilcon A, a polymer with numerous free hydroxyl radicals that naturally attract and bond with water molecules to ensure maximum wettability and moisture retention.



HEMA: 2-Hydroxyethyl methacrylate  
GMA: Glycerol monomethacrylate



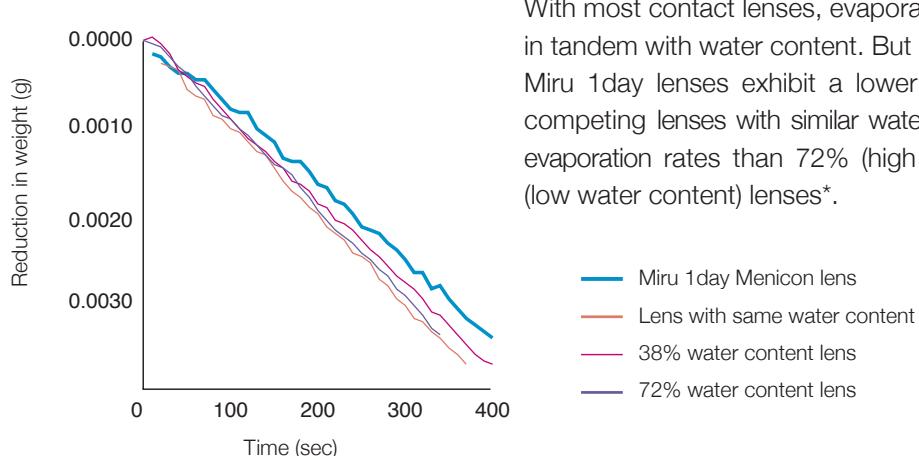
### Wettability tests



(HEMA-GMA) hioxifilcon A has more free hydroxyl radicals than Menicon's HEMA-based polymers, ensuring greater wettability.

Droplet-impact contact angle measurement tests show that Miru 1day Menicon lenses have a smaller contact angle than Menicon's HEMA-based lenses, further contributing to high wettability\*.

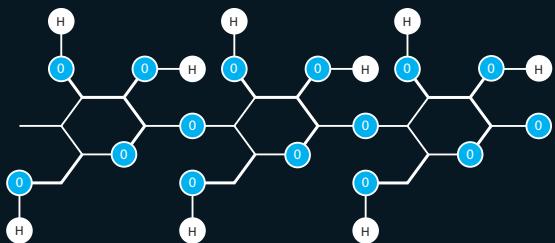
### Moisture retention comparison tests



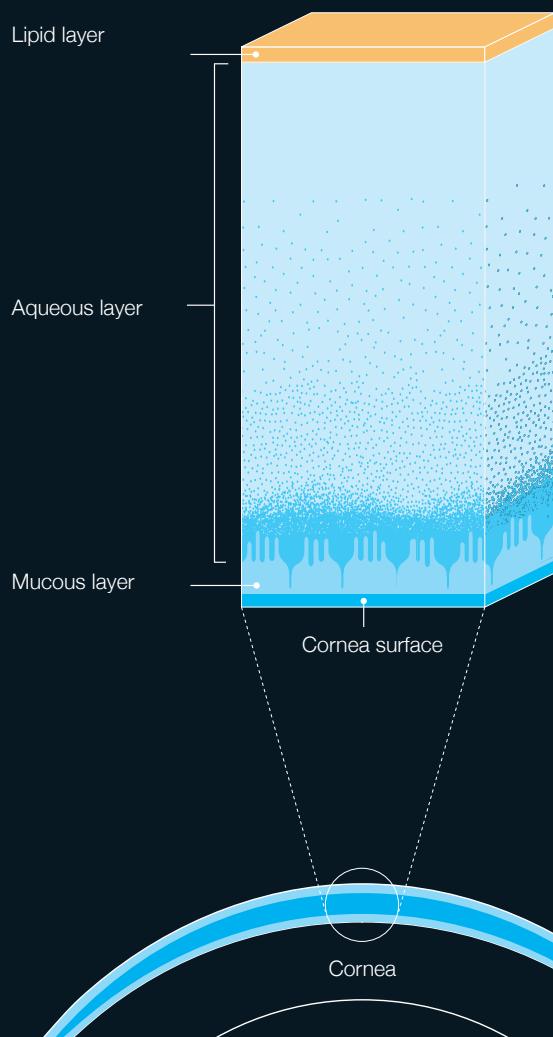
With most contact lenses, evaporation rates tend to increase in tandem with water content. But not with Miru 1day. In fact, Miru 1day lenses exhibit a lower rate of evaporation than competing lenses with similar water content, as well as lower evaporation rates than 72% (high water content) and 38% (low water content) lenses\*.

\*Menicon in-house test data

Miru lenses bond naturally with tears because their molecular structure closely mimics the structure of oligosaccharides found in the mucous layer of the tear film.

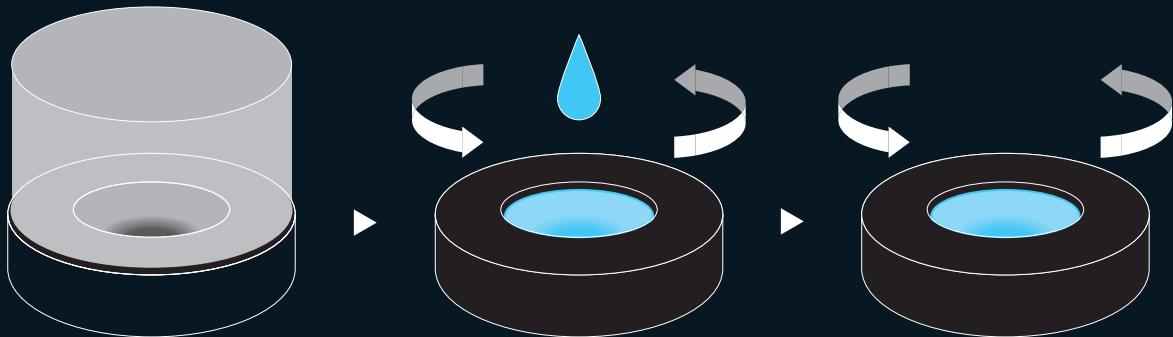


Oligosaccharide molecule



## ■ CENTRAFORM™ process

Miru 1 day lenses are created using Menicon's proprietary CENTRAFORM™ spin casting and polymerization process.



Spin casting molds are created for each contact lens specification

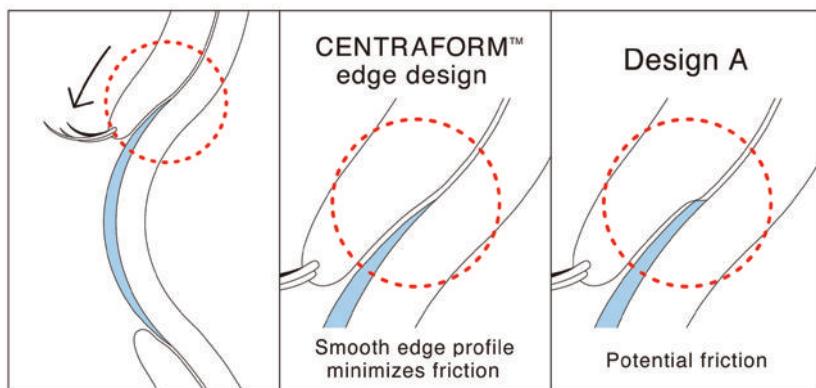
Lens material is injected into mold—  
injection and rotation are precisely controlled

Lens polymerization

Careful control of injection volume and rotation speed enables spin-casting production efficiency, with precision and reproducibility equivalent to cast molding.

## ■ Edge profile

The CENTRAFORM™ process results in a smooth edge profile that helps reduce friction when the wearer blinks.

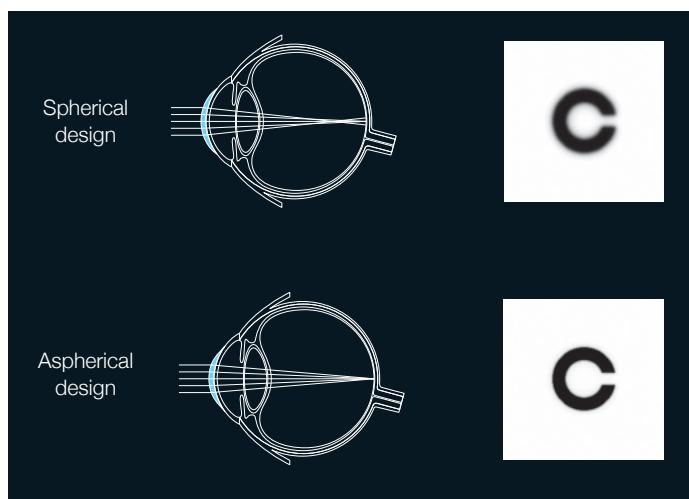


## ■ Aspherical design for clearer vision

The CENTRAFORM™ process makes it possible to manufacture aspherical lenses of extremely high quality.

With spherical lenses, spherical aberration can cause blurriness because the focal point of light rays passing through the lens varies according to the ray's distance from the lens center.

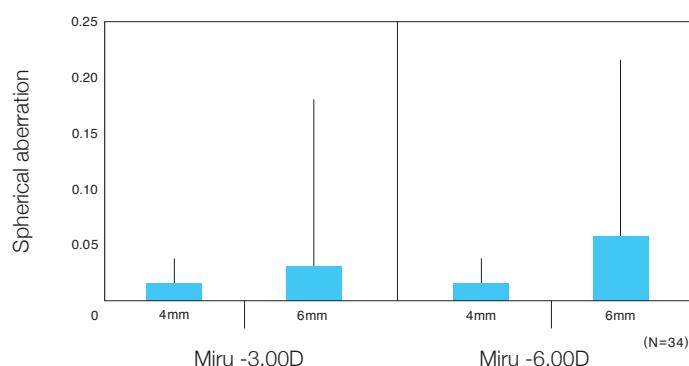
With the Miru 1day aspherical lens design, spherical aberration is minimized; light rays come together at the correct focal point to ensure a sharper, clearer view.



### Spherical aberration measurement

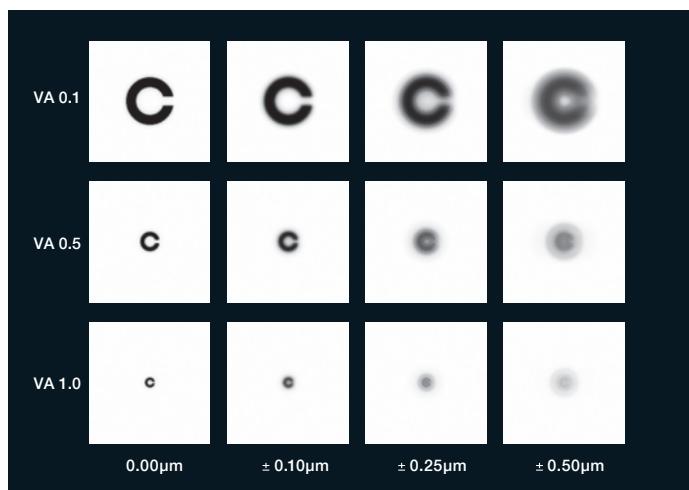
Spherical aberration was measured at 4mm and 6mm from the pupil center of subjects wearing -3.00D and -6.00D lenses. The data shows that spherical aberration is suppressed even at higher diopters and increased distances from the pupil center\*.

Measurement of spherical aberration when wearing Miru 1day lenses; larger values indicate greater aberration.



### Spherical aberration vs. visual acuity (simulated)

As the adjacent simulation highlights, shapes become less distinct and small type becomes harder to read as spherical aberration increases. Correlating this with the "Spherical aberration measurement" graph, the Miru 1day test data confirms an average spherical aberration of only 0.00µm to  $\pm 0.10\mu\text{m}$  even at 6mm from the pupil center with a -6.00D lens\*.



\*Menicon in-house test data

# ■ Lens specifications

## Material

Monomer	hydroxyethyl methacrylate (HEMA), glycerol monomethacrylate (GMA)
USAN	hioxifilcon A

## Physical properties

Item	Property	Unit	Measurement standard
Oxygen permeability	25.38	$\times 10^{-11}(\text{cm}^2/\text{sec}) \cdot (\text{mL O}_2/(\text{mLxmmHg}))$	revised Fatt method
Water content	57	%	ISO18369-4
Refractive index	1.409	-	ISO18369-4
Luminous transmittance	>94	%	ISO18369-3

## Parameters range

Base curve	8.60mm
Diameter	14.20mm
Thickness at center	0.10mm (-3.00D)
Dioptric range	+0.50D ~ +4.00D (0.25 steps) -0.50D ~ -6.00D (-0.25 steps) -6.50D ~ -10.00D (-0.50 steps)

## Miru 1day Menicon Flat Pack

Design	Aspherical design
Handling tint	Light blue
Manufacturing	CENTRAFORM™ process
Packaging	30 - lens pack 90 - lens pack 6 - trial lens pack
Wearing modality	Daily wear
Replacement schedule	One day disposable

CE 0483 Manufactured by Menicon Co., Ltd

