SB-RETAX

Super Broadband - RETAX

Constant linear retardance is realized for light of any wavelength ranging form visible (VIS) to near infrared (NIR) when linear polarized light passes through this waveplate SB-RETAX.

This SB-RETAX is fabricated by laminating birefringent films within optical glass substrates.

Type of Products

SB-RETAX realizes constant linear retardance for light of any wavelength in broadband, when linear polarized light passes through SB-RETAX. Wavelength ranges depend on the number of film layers, SB-RETAX has 2 type of lineup such as 3 layer and 5 layer.

The Number of films	3Layer	5Layer
Wavelength range	450～700nm 500～800nm 600～900nm 800～1100nm	450～1100nm
Type of products	**SB-RETAX-3L-1/4λ** **SB-RETAX-3L-1/2λ**	**SB-RETAX-5L-1/4λ** **SB-RETAX-5L-1/2λ**
Tolerance of retardance	λ/80	$\lambda_1/50$ (450nm≦λ_1<550nm) $\lambda_2/80$ (550nm≦λ_2≦1100nm)
Glass material	BK7	
Size（Diameter）	Φ20（0/-0.2）mm Φ25（0/-0.2）mm Φ30（0/-0.2）mm	
Thickness	2.5（±0.3）mm	3（±0.3）mm
AR coating	Multi layer coating on both sides	None（Option）

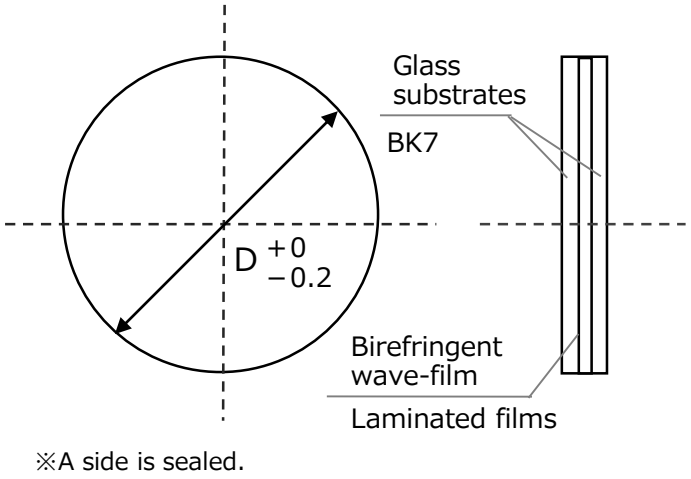
【 P/No. 】 **SB-RETAX - ○L - ○λ - ○**

- ○ ↑ **Film layer**
- ○ ↑ **Retardance**
- ○ ↑ **Size**

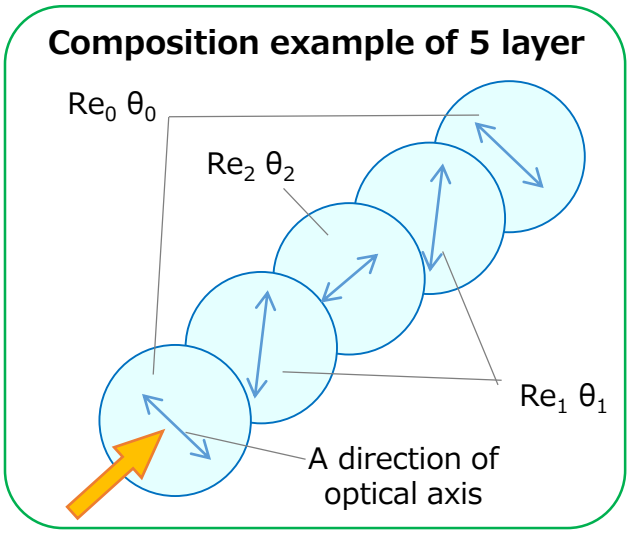
（Wavelength range of 3L type）

Composition of Products

SB-RETAX is fabricated by laminating birefringent films within optical glass substrates.



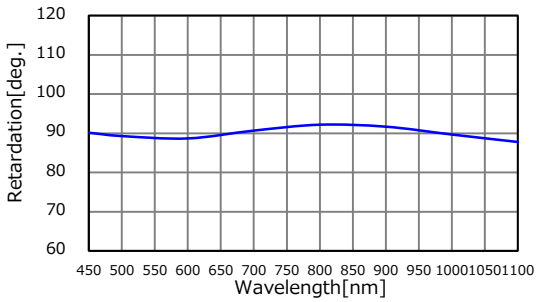
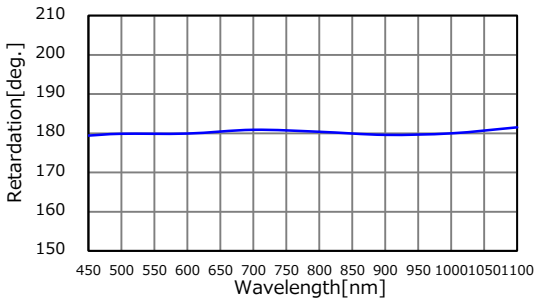
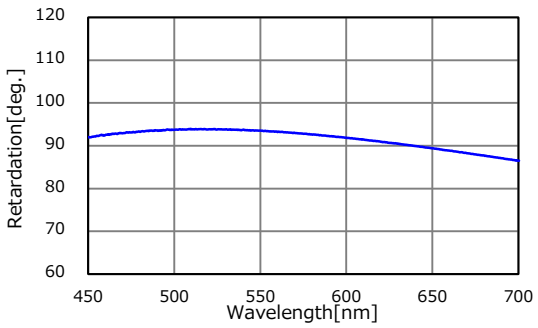
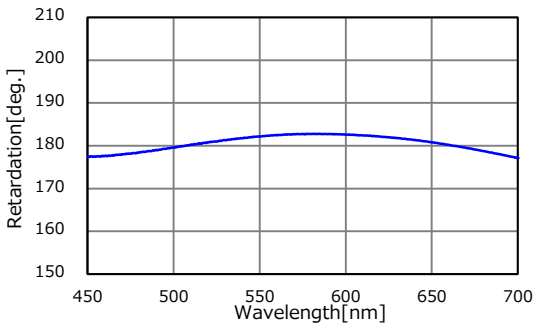
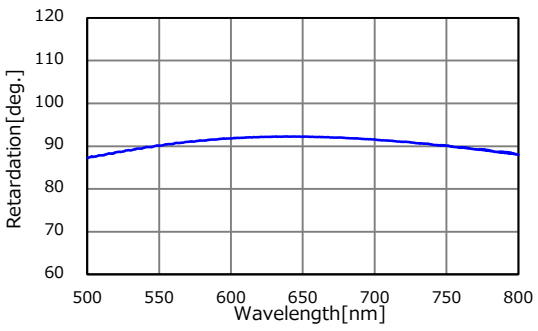
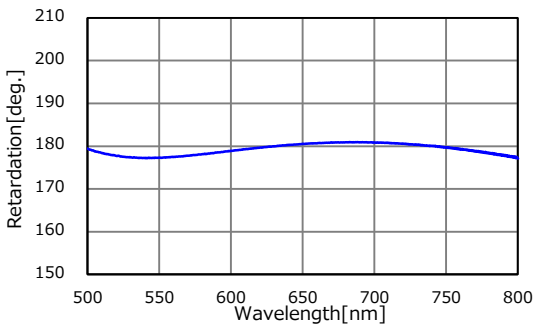
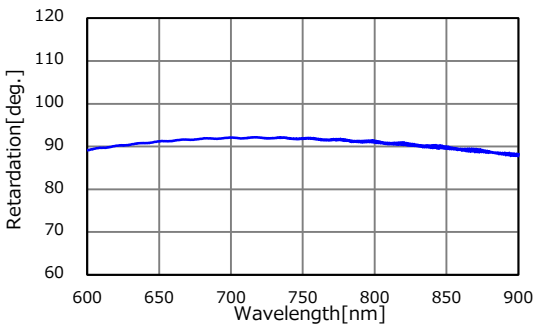
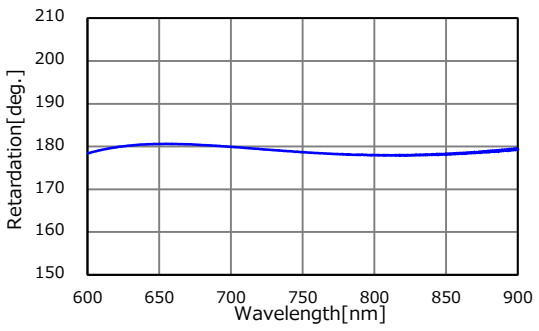
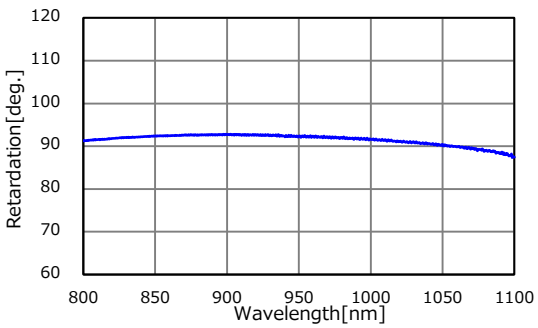
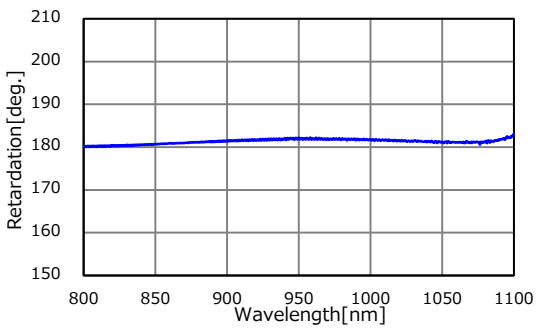
※A side is sealed.



Customized products	It is possible to supply not only standard products but also customized products as you request glass material, shape, size, thickness and so on. The large size products of more than 30 mm diameter are available due to using resin films. Even if wavelength ranges are changed as you request, customized products are available by designing optically.

Retardation data of each products (Reference data)

Following graphs show measured retardation data with a measurement equipment we possess.

Wavelength range	1/4λ	1/2λ
450～1100nm 5L		
450～700nm 3L		
500～800nm 3L		
600～900nm 3L		
800～1100nm 3L		

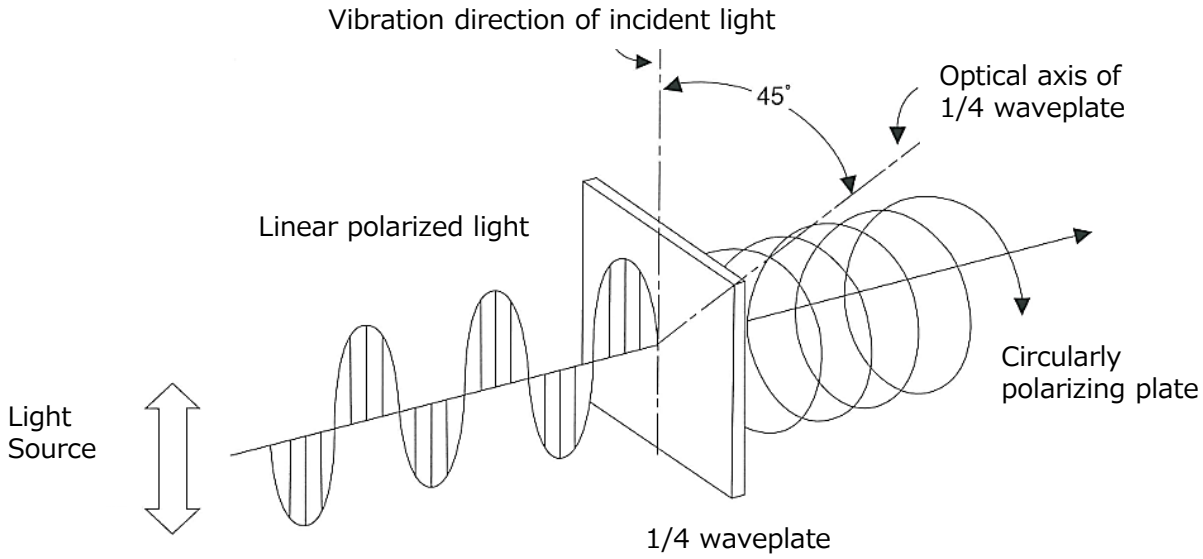
Function of waveplate

1/4 waveplate (1/4λ)

SB-RETAX-3L-1/4λ

SB-RETAX-5L-1/4λ

1/4 waveplate realizes quarter retardance to an incident light.
A circularly polarizing plate is realized when 1/4 waveplate is combined with a linear polarizer.
A circularly polarizing plate has a function of isolator to block reflection light from a reflection plane, in case an incident light goes into the circularly polarizing plate and the outgoing light is reflected on the reflection plane and goes back into the circularly polarizing plate.

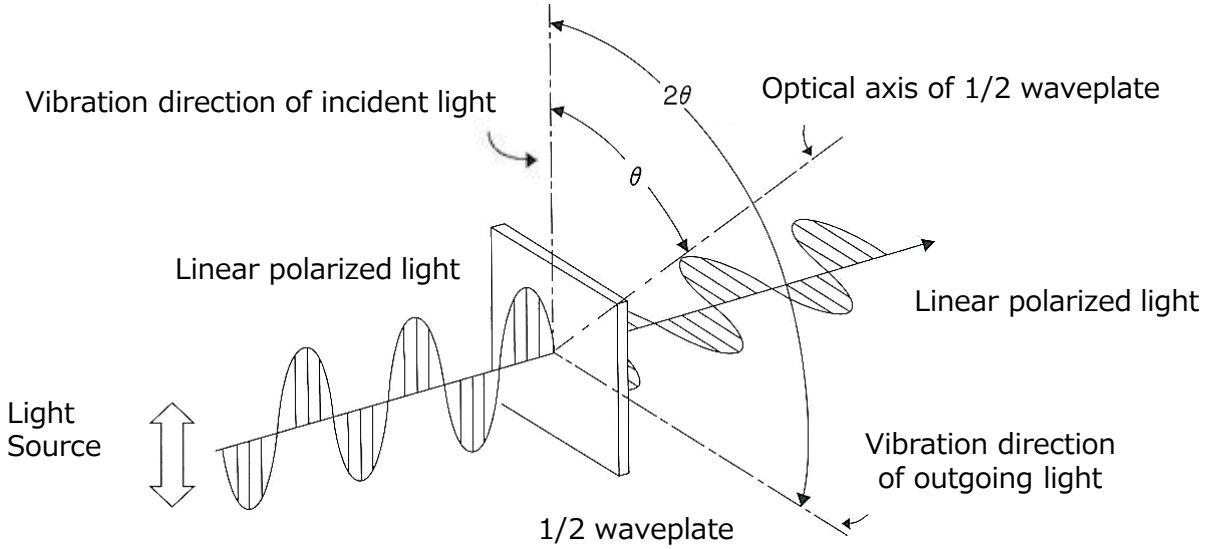


1/2 waveplate (1/2λ)

SB-RETAX-3L-1/2λ

SB-RETAX-5L-1/2λ

1/2 waveplate realizes half retardance to an incident light.
When linear polarized light goes into 1/2 waveplate at an angle of θ degree to an optical axis of half waveplate, a vibration direction of outgoing polarized light is rotated by 2θ.
Therefore when linear polarized light goes into half waveplate at an angle of 45 degree to an optical axis, an outgoing light become a linear polarized light of which a vibration direction rotated by 90 degree to the initial vibration direction of incident light.
When a circularly polarized light goes into half waveplate, an outgoing light become reverse rotated circularly polarized light.



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