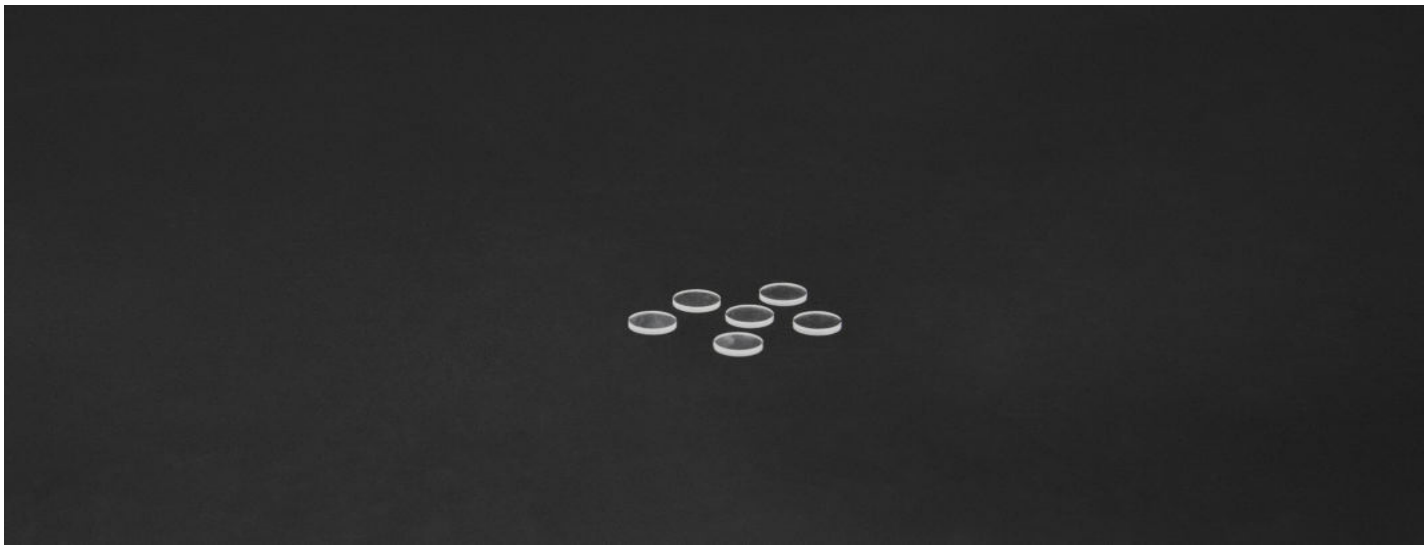
TiO_2

Titanium Oxide (TiO_2) Crystal Substrate



DESCRIPTION

Rutile phase Titanium Oxide (TiO_2) single crystal is one of the most commonly used materials for optical isolators and special prisms. This is because TiO_2 has a large birefringence with a high refractive index. Furthermore, compared to YVO_4, TiO_2 crystal it is more stable chemical and physical properties. Rutile is attracting attention not only as a birefringent material for optics but also as a substrate for epitaxial growth.

FEATURE

- A large birefringence
- A high refractive index
- Stable chemical and physical properties

APPLICATION

- Optical isolators
- Special prisms
- Substrate

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PARAMETER

Physical Properties

Crystal Structure	Tetragonal a=4.5936 Å,c=2.9582 Å
Growth Method	Floating Zone
Melting Point	1840°C
Density	4.26g/cm^3
Hardness	Mohs 7
Specific Heat capacity	0.17 (25℃)Cal./(g.Deg)
Linear expansion Coefficient	a:7.14x10^{-6} c:9.19x10^{-6}
Refractive Index	n_0=2.47 n_e=2.73 at l=1.3mm
Transmittance	0.5- 4.5 mm
Thermal optical Coefficient	dh/dT: a:-0.72 x10^{-6}/K c:-0.42 x10^{-6}/K
Crystal boule dimension	~25 mm diax35mm length (conical)

Main Specification

Surface Polishing	Single or double side polished, Epi-ready, Ra < 0.5 nm
Crystal Orientations	(001), (100), (110), (111)
Size	5x5 mm, 10x10 mm, other customized sizes are available upon request
Package	Sealed in class 100 clean bag packed in class 1000 clean room