

## Ti:Sapphire

Ti:Sapphire is the most widely used laser crystal for tunable and ultrashort pulsed lasers with high gain and power outputs. The upper state lifetime of titanite is as short as 3.2 ms. Due to its high saturation power, titanite is commonly used as lamp, argon ion laser or frequency double pumped neodymium yttrium aluminum garnet laser.

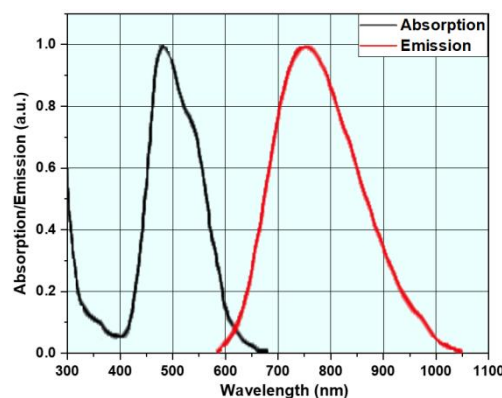
### Main features:

- Wide wavelength tunability
- Absorption pump bandwidth
- Short excited state lifetime (3.2ms)
- High damage threshold and excellent output efficiency
- Excellent thermal conductivity

### Typical applications:

- Wavelength tunable laser
- Can replace dye laser
- Ultra short pulse ultraviolet and deep ultraviolet (about 193 nm) lasers below 10 fs can be generated
- The pump source is used for optical parametric amplification to extend its adjustable range

**Absorption and emission curves of Ti:Sapphire**



### Standard Products

Model	Diameter (mm)	Length (mm)	Cut Direction	Coating
T-S-301	3	5	Right-angle cut	AR/AR@532+750-850 nm
T-S-302	3	5	Brewster cut	Uncoated
T-S-601	6	7	Right-angle cut	AR/AR@532+750-850 nm
T-S-602	6	7	Brewster cut	Uncoated

## Technical Parameters

Names of Parameters	Values & Ranges
Directional	C-axis is the direction of the optical axis, which is perpendicular to the crystal surface
Clear aperture	> 90%
Chamfering	< 0.2 × 45°
Finish	< 10/5
Flatness	< 1/10@633nm
Wavefront distortion	< λ /4@633nm
Parallelism	< 30 arc sec
Perpendicularity	< 5 arc min
Doping concentration	0.06 - 0.26 atm%
Quality warranty period	1 year (under normal use)

See appendix P37 for more information