



< Manufacturing standards

Facilities / Equipement

Tools

- SECASI X-ray goniometer
- Meyer & Burger slicing machine
- Meyer & Burger dicing machine
- SOMOS grinding machines
- SOMOS polishing machines
- Ultrasonic cleaning machine

Controls

- Microscopes
- Interferometers
- Shadowgraph
- Laser test benches for non-linear efficiency check-up
- Laser benches for custom requirements
- Photo-thermal Common-Path Interferometer for absorption measurements

Specifications

Materials processed: laser crystals, glass, non-linear crystals

Aperture cut:	tolerance +/-0.1 mm
Length:	tolerance +0.3/-0.2 mm
Parallelism:	30 arcsec
Perpendicularity:	30 arcmin
Flatness ($\lambda=633$ nm):	better than $\lambda/6$
Orientation:	+/-0.5 deg.
Roughness:	better than 10 Å RMS
Scratch/dig:	10-5

For custom requirements please contact us

Thin film coatings

Technologies available:	PVD, IAD, IBS
Damage threshold:	500 MW/cm ² AR-coated, at 10 Hz, 10 ns.
AR coatings:	better than 0.1% (0.05% on request) at 1064 nm, 0.25% at 532 nm



< **KTP.fr**



Applications

Operation	Advantages	Field of Application
SHG <ul style="list-style-type: none"> Fundamental range : 1.0-1.3 μm 	<ul style="list-style-type: none"> No gray-track Large non-linear coefficient (-3pm/V at 1064/532 nm) Small walk-off 	<ul style="list-style-type: none"> Mid-power CW lasers (up to a few Watts at 532 nm) High rep. rate, high average power lasers for material processing or surgery (average power up to 100 W at 532 nm)

Optical properties - same as KTP

Physical properties

Ionic conductivity, (room temperature, 10 kHz), S. cm^{-1}	8.10^{-8}
Aperture, mm^2 :	up to 8x8
Length, mm:	up to 7

According to KTP users, gray-track formation can cause harmonic power instability for many intracavity doubling CW lasers, and reduced conversion efficiency and crystal blackening in case of high power, high repetition rate Q-switched lasers. Sometimes the process is accompanied by beam distortion when the beam is tightly focused in the crystal.

The occurrence of gray-track in a KTP crystal can be measured by an increase of bulk absorption at 1064 nm induced by a strong CW green radiation at 532 nm (10 kW/cm^2). This measurement was performed with the Photo-thermal Common-path Interferometer, a device developed at Stanford University, USA. The two graphs below show the difference between a standard KTP crystal and a grey-track full-resistant KTP.fr crystal, both produced at Cristal Laser.

Whereas the measured absorption sharply and steadily increases in the standard KTP as soon as the green laser is switched on, it rises and then quickly stabilizes in case of the KTP.fr, thus showing gray-track inhibition.

