



# CRISTAL LASER



**Cutting edge non linear crystals  
from the heart of Europe**

*Manufactured in France, Sold worldwide*

# Key facts and figures

Europe's premier non-linear crystals manufacturer  
**since 1990**, with a leading expertize in **UV applications**



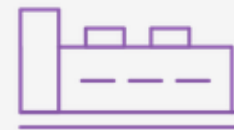
**> 10 000**  
PRODUCTS SOLD  
AROUND THE  
WORLD



**> 40**  
COUNTRIES  
SERVED



**1**  
PRODUCT ON  
PLANET MARS



**> 2500 M<sup>2</sup>**  
PRODUCTION  
AREA



**> 130**  
CUSTOMERS  
WORLDWIDE

# Key facts and figures...

**One stop shop: from crystal growth to finished products**

## Crystal growth

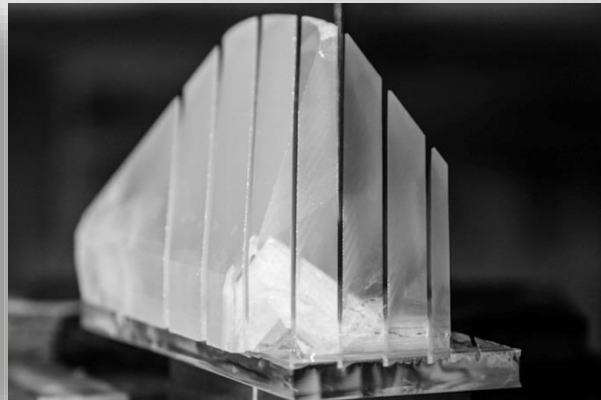


**Crystal growth capacity:**  
>25000 crystals/year

**Largest LBO boules in the world**

**Proprietary growth station design**

## Manufacturing



**11 saws and 9 polishing machines**

**Highly automatic process**

**No one-of-a-kind tool: each one is backed up**

## Quality and control



**Premier quality control equipment (Zygo, AFM, PCI)**

**Laser test benches for final control and assemblies**

**Clean room**

# Our portfolio



## LBO

Lithium Triborate -  $\text{LiB}_3\text{O}_5$



## KTP

Potassium Titanyl Phosphate -  $\text{KTiOPO}_4$



## KTA

Potassium Titanyl Arsenate -  $\text{KTiOAsO}_4$



## RTP

ELECTRO-OPTIC ASSEMBLIES  
Rubidium Titanyl Phosphate -  $\text{RTiOPO}_4$

# Main applications



- ✦ **Material processing:**  
semicon, marking,  $\mu$ -machining
- ✦ **Space and defense:**  
Eye safe laser rangefinders,  
Aeolus, Curiosity & Perseverance
- ✦ **Medical:**  
ophthalmology or dermatology
- ✦ **Bio-technologies:**  
DNA sequencing, cytometry
- ✦ **Scientific research:**  
PW laser facilities



# LBO crystals for SHG and THG

- ✦ High bulk damage threshold
- ✦ Small walk off angle
- ✦ NCPM SHG
- ✦ High transparency for UV generation



## What makes us different:

- ✦ Ultra-low bulk absorption :  $<2\text{ppm/cm@1064nm}$
- ✦ Outstanding polishing and coating quality, enabling a 300W UV-laser
- ✦ Long lifetime under UV-exposure: 10.000+ hours at 30W on one single spot
- ✦ Coating damage thresholds  $>40\text{J/cm}^2@1064\text{nm}$ , 10ns for dual-AR coating
- ✦ Available size up to  $100\times 100\text{mm}^2$ ; length up to 100mm



# KTP crystals for OPO and SHG

- ✦ Small walk-off angle in the XY plane
- ✦ High non-linearity
- ✦ Large temperature acceptance
- ✦ Mainly used for SHG and OPO



## What makes us different:

### SHG KTP crystal

- ✦ Low bulk absorption: 100ppm/cm at 1064nm
- ✦ High damage threshold of AR-coatings:  $>10\text{J}/\text{cm}^2$  at 1064nm for 10ns pulses
- ✦ Available in antigrey-track KTP

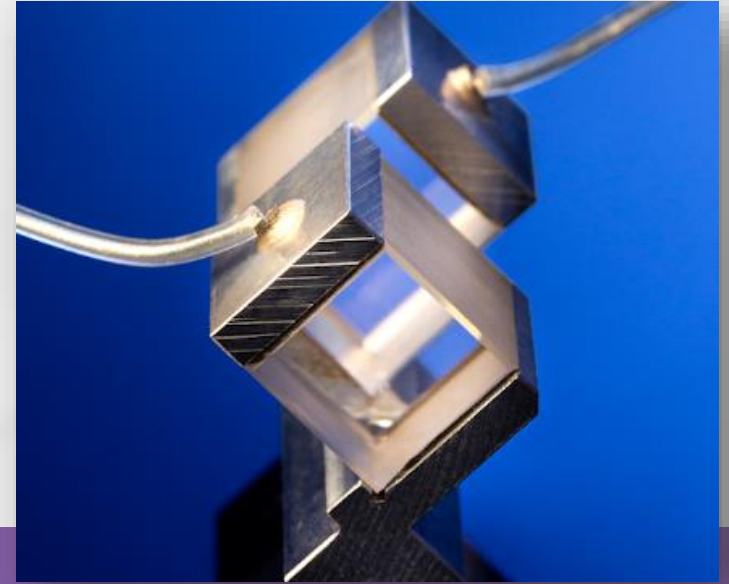
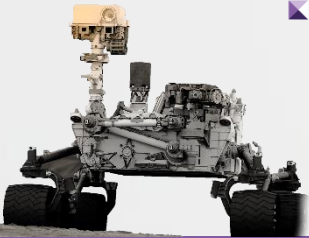
### OPO KTP crystal

- ✦ Guaranteed non-linear optical homogeneity thanks to a dedicated test bed
- ✦ High damage threshold of AR-coatings:  $>10\text{J}/\text{cm}^2$  at 1064nm for 10ns pulses
- ✦ OPO mirror coatings on KTP parts (monolithic OPO) are available



# RTP Q-switches and pulsepickers

- ✦ Non hygroscopic
- ✦ Low switching voltage
- ✦ Good extinction ratio
- ✦ No piezo and pyro-electric effects



## What makes us different:

- ✦ Excellent extinction ratio:  $>30\text{dB}$  measured in our test chamber over  $-50^{\circ}\text{C}/+70^{\circ}\text{C}$
- ✦ High damage threshold of AR-coatings:  $>10\text{J}/\text{cm}^2$  at  $1064\text{nm}$  for  $10\text{ns}$  pulses
- ✦ Space- and defense qualified assembly process and hardware
- ✦ Capability to perform an assembly on customer-supplied mounts
- ✦ No long-term degradation under static HV ( $8\text{kV}/\text{cm}$  in 500 hours)







**Thank you for  
your interest!**

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