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Crylink Yb:CALGO

For Narrow Pulse Width Femtosecond Laser

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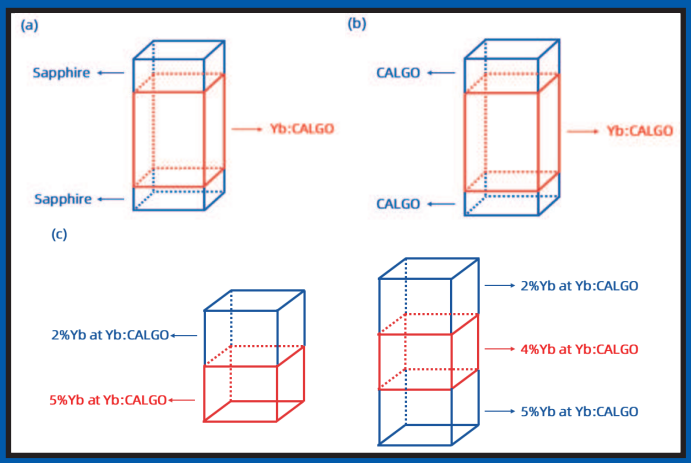
Crylink Yb:CALGO · Superior Quality

Crylink, a global leader in Yb:CaGdAlO4 (Yb:CALGO) crystal manufacturing, leverages its independently developed advanced crystal growth technology to reliably produce raw crystals with doping concentrations ranging from 1.0% Yb at to 5.0% Yb at.

These crystals are ideal for creating narrow-pulse-width, high-average-power ultrafast femtosecond lasers. They are widely used in cutting-edge fields such as femtosecond machining, ultrafast spectroscopy, and attosecond science.

Crystal Growth Furnace for CZ Methond

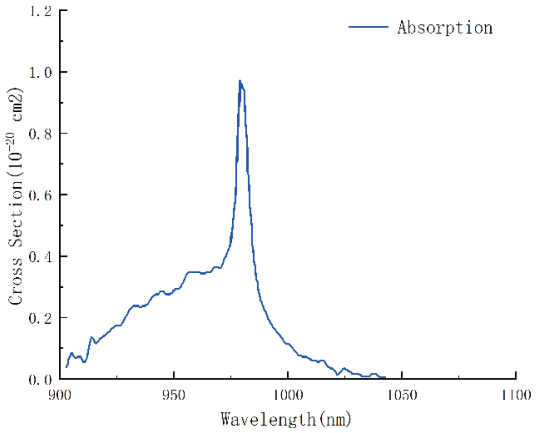
Crylink Yb:CALGO · Product Type

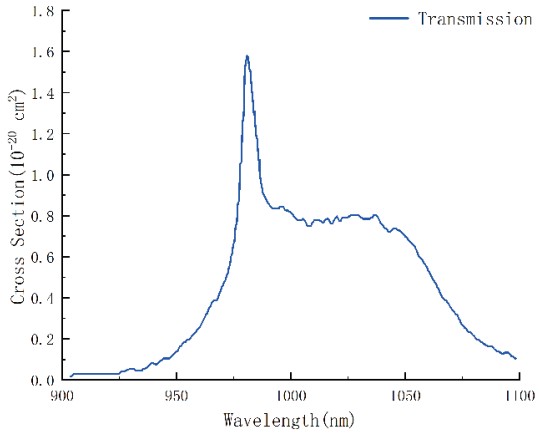


Crylink's Yb:CALGO crystals are routinely designed as dual-pass facet-coated cubes or disks. These can be combined with a front-end LD pump module or a front-stage mode-locked system to achieve laser outputs with pulse widths within 100 femtoseconds.

Additionally, crystal solutions such as Sapphire + Yb:CALGO + Sapphire, CALGO + Yb:CALGO + CALGO, and bonded crystals with varying concentration gradients can be customized to meet your specific needs to ensure optimal performance and application effectiveness.

Crylink Yb:CALGO · Spectral Imaging





www.crylink.com
sales@crylink.com
+86-21-66566068
Building 7, No. 718, Baoqi Road, Baoshan District, Shanghai, China

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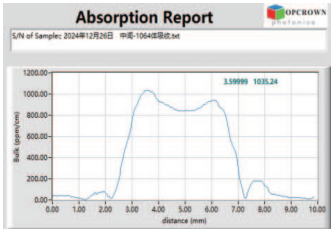
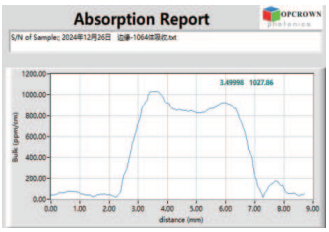
Crylink Yb:CALGO · Test on Inner Quality

Crylink has established a dedicated laser testing platform to evaluate the internal quality of Yb:CALGO crystals. The Agilent spectrophotometer is used to measure their absorption and transmittance, to determine crystal's doping concentration and the consistency of the concentration gradient.

Additionally, the laser-induced weak absorption meter (LID) is employed to test the weak absorption coefficient of the crystal's interior using efficient and precise laser irradiation techniques. This ensures that every crystal meets high standards of internal quality.





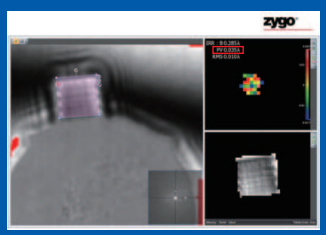
Crylink Yb:CALGO · Test on Production Process

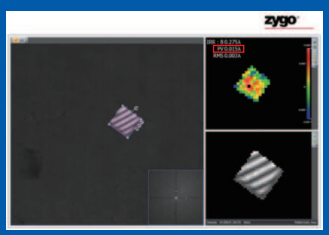

Measurement of Crystal Surface Flatness and Wavefront Distortion by ZYGO Interferometer

*Crylink's Yb:CALGO crystal processing capability is shown in the ZYGO assay data (PV value):

Flatness < λ /12@633nm;

Wavefront distortion < λ /6@633nm



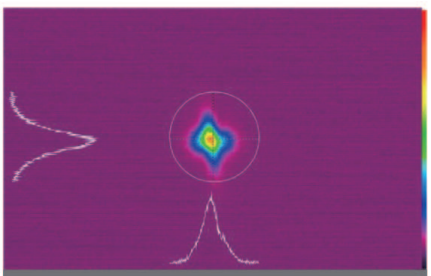


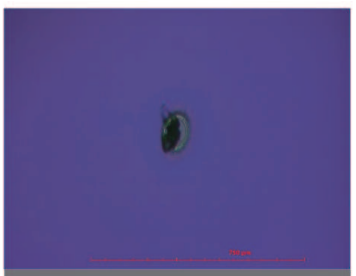
Crylink adheres to the ISO production system, implementing strict standards at every stage of the manufacturing process. We utilize an interferometer to precisely measure the surface roughness of Yb:CALGO crystals with nanometer-level, non-contact accuracy, after each phase of processing.

Additionally, a Zygo interferometer is employed to assess the flatness and wavefront distortion of the crystals, enabling precise quantification of minute

Crylink Yb:CALGO · Test on Coating

Crylink conducts rigorous final product testing on Yb:CALGO crystals. We use a surface profilometer to precisely measure the thickness and uniformity of the crystal's thin film. By creating steps and scanning surface height variations, we ensure the film meets the designed specifications.


Targeting Fundamental Frequency Spot Distribution Image (1064nm,11ns,452.7μm(Diameter),linear polarization)


Critical Blow-up Point of Rear Surface Damage, Corresponding to an Energy Density of 70.10 J/cm²

An Agilent spectrophotometer is employed to measure the transmittance and reflectance of the crystals. Additionally, some samples were sent to third-party testing organizations, such as LIDARIS, Spica, and SIOM, for damage threshold testing. This ensures the reliability and performance of the Yb:CALGO crystal's coated

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+86-21-66566068
Building 7, No. 718, Baoqi Road, Baoshan District, Shanghai, China

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Crylink Yb:CALGO · Properities Index

Physical and Chemical Properties of Yb:CALGO	
Properties	Value
Chemical Formula	Yb:CaGdAlO4 (Yb:CALGO)
Crystal Structure	Tetragonal
Thermal Conductivity	6.3$Wm^{-1}K^{-1}$ (2.0%Yb at) 5.0$Wm^{-1}K^{-1}$ (5.0%Yb at)
Thermal Expansion Coefficient	10.1x10^{-6}/K(//a) 16.2x10^{-6}/K(//c)
Melting Point	1840℃
Mohs Hardness	6Mohs
Doping Concentration	1%Yb~5%Yb (at)

Optical Properties of Yb:CALGO	
Properties	Value
Absorption Peak Wavelength	980nm
Absorption Cross-Section (980 nm, π-polarization)	2.7×$10^{-20}$$cm^2$
Emission Peak Wavelength	1050nm
Emission Wavelength Range	1018~1052nm
Emission Bandwidth (FWHM)	80nm
Fluorescence Lifetime	420μs
Quantum Defect	< 0.8%

Crylink Yb:CALGO · Service

1.Yb:CALGO Crystal Customization:
Custom crystals are available based on specific requirements for size, doping concentration, coating, etc.
2.Yb:CALGO Crystal Testing:
Testing services include surface wavefront measurements, absorption, and transmittance data for Yb:CALGO crystals.
3.Yb:CALGO Crystal Processing:
We offer cutting, polishing, and other processing services for supplied Yb:CALGO crystals.
4.Yb:CALGO Crystal Repair:
Services include reprocessing, polishing, and recoating for damaged Yb:CALGO crystal surfaces.

*For customization evaluations, please get in touch with sales.

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Note: All information and specifications in this product manual are subject to change at any time without notice. We reserve the right to make improvements and changes to our products and services. All test data is for reference only and actual performance may vary depending on specific applications and conditions of use.

Follow us on social media to get more information about Yb:CALGO Crystal

www.crylink.com
sales@crylink.com
+86-21-66566068
Building 7, No. 718, Baoqi Road, Baoshan District, Shanghai, China