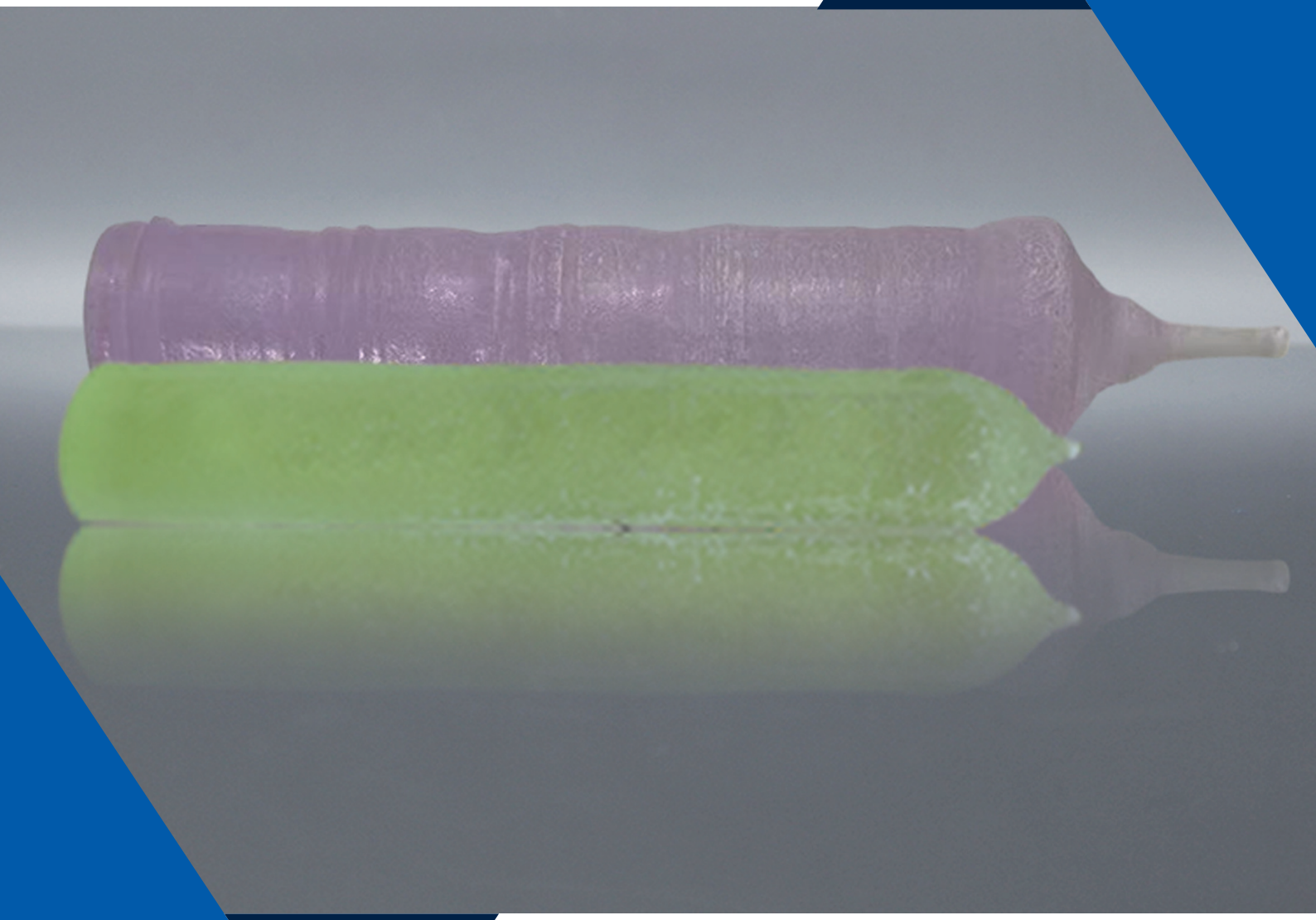
CRYLINK
LINKING VALUE



Crylink Pr:YLF

For Visible Laser

Scan for more detail

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CRYLINK
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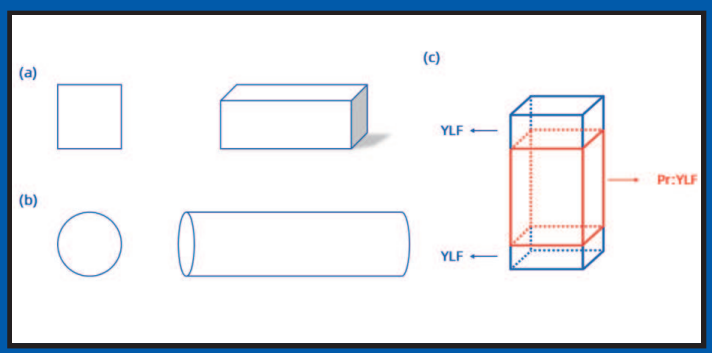
Crylink Pr:YLF · Superior Quality

Crylink, a global leader in Pr:YLF crystal manufacturing, utilizes our independently developed advanced crystal growth technology to stably produce Pr:YLF crystal blanks with doping concentrations ranging from 0.3% Pr to 1.0% Pr.

Pr:YLF crystals are characterized by relatively long energy level lifetimes and large stimulated emission cross-sections. Due to trivalent praseodymium ions (Pr^{3+}), these crystals exhibit the properties necessary for laser emission in the visible spectrum. They can achieve down-conversion laser outputs at visible wavelengths, including blue, green, and red light.

Crystal Growth Furnace for CZ Methond

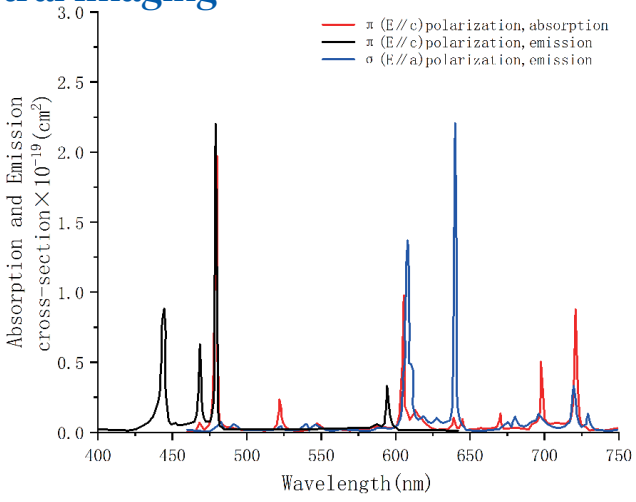
Crylink Pr:YLF · Product Type



Crylink's standard Pr:YLF crystal products are designed as dual-pass coated block-shaped crystals. Users can integrate these crystal blocks with an upstream LD pump module and a downstream frequency-doubling module to achieve high-conversion-efficiency ultraviolet (UV) light output.

Additionally, we offer customized crystal solutions tailored to specific user requirements, such as block-shaped crystals and bonded structures like YLF + Pr:YLF + YLF, ensuring optimal performance and application outcomes.

Crylink Pr:YLF · Spectral Imaging



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Crylink Pr:YLF · Test on Inner Quality

Crylink has established a dedicated laser testing platform to evaluate the internal quality of Pr:YLF 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.

Test Weak Absorption within Pr:YLF Crystal by LID Absorption Measurement

Crylink Pr:YLF · Test on Production Process

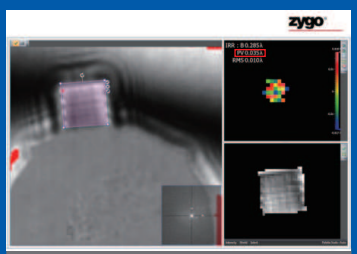
ZYGO Interferometer

Pr:YLF Finished Product

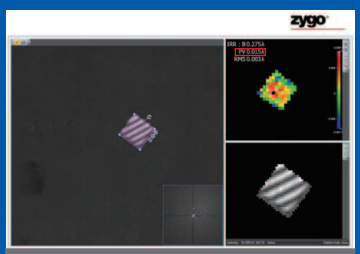
*Crylink's Pr:YLF crystal processing capability is shown in the ZYGO assay data (PV value):

Flatness < λ/15@633nm;

Wavefront distortion < λ/15@633nm



The Measurement Result of Pr:YLF Flatness



The Measurement Result of Pr:YLF Wavefront Distortion

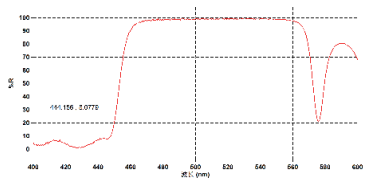
Crylink adheres to the ISO production system, implementing strict standards at every stage of the manufacturing process. We utilize an interferometer to precisely measure the surface roughness of Pr:YLF crystals with nanometer-level, non-contact accuracy, after each phase of processing.

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

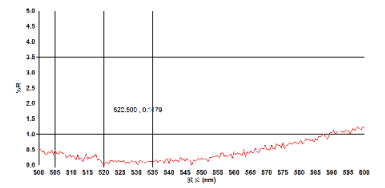
Crylink Pr:YLF · Test on Coating

Crylink conducts rigorous final product testing on Pr:YLF 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.

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 Pr:YLF crystal's coated surfaces.



Transmittance of Pr:YLF Coating@ 480nm~560nm



Transmittance of Pr:YLF Coating@ 522nm

Agilent Spectrophotometer

Wiping Pr:YLF Coating Surface

*Crylink's transmittance of the coated surface of Pr:YLF crystals is shown in the spectrophotometer testing data below:

HR coating: R>99.9%@480~560nm
AR coating: R<0.5%@522nm

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Crylink Pr:YLF · Properities Index

Physical and Chemical Properties of Pr:YLF	
Properties	Value
Chemical Formula	Pr:LiYF4 (Pr:YLF)
Crystal Structure	Tetragonal
Thermal Conductivity	6.3$Wm^{-1}K^{-1}$
Thermal Expansion Coefficient	7.6x10^{-6}/K(⊥c) 5.2x10-6/K(//c)
Melting Point	819℃
Mohs Hardness	5Mohs
Doping Concentration	< 1.0%Pr

Optical Properties of Pr:YLF	
Properties	Value
Absorption Peak Wavelength	444nm
Absorption Cross Section	8 ×$10^{-20}cm^2$
Emission Peak Wavelength	640nm
Emission Cross Section	20×$10^{-20}cm^2$
Fluorescence Lifetime	50μs

Crylink Pr:YLF · Standard Product

Crystal Type	Concentration	Width(mm)	Height(mm)	Length(mm)	Coating
Pr:YLF	0.3%Pr at	2	2	5/10/15	S1:AR/HR S2:AR
		3	3	5/10/15/18	
	0.5%Pr at	2	2	5/8/10/15	
		3	3	5/8/10/15	

*The above is part of the standard product information, please contact sales for details:(+86 021-66566068/sales@crylink.com)

SUBSCRIBE

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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 Pr:YLF Crystal

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