















electron micr oscopy

lasers

ionizing radia tion detection

phosphors fo r light conver sion

x-ray imagin  $\mathbf{g}$ 

coating

sapphire prof iles

precision opti cs

materials

products

## technologies Laser rods - Erbium doped

## about us

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- Crytur delivers high quality laser rods based on pr
- F oprietary crystals and in-house processing and coa ting

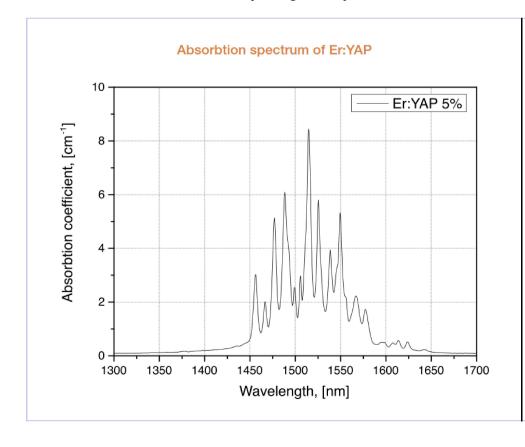
**⊘** ER:YAG

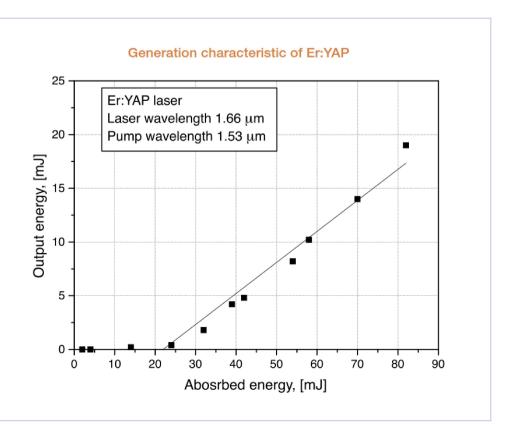
**⊘** ER:YAP

Yttrium aluminium oxide YAlO<sub>3</sub> (YAP) is an attractive laser host for erbium ions due to its natural birefringence combined with good thermal and mechanical properties similar to those of YAG.

Er:YAP crystals with high doping concentration of Er<sup>3+</sup> ions are typically used for lasing at 2,73 microns.

Low-doped Er:YAP laser crystals are used for of the eye-safe radiation at 1,66 microns by in-band pumping with semiconductor laser diodes at 1,5 microns. The advantage of s uch a scheme is low thermal load corresponding to low quantum defect.





## MATERIAL CHARACTERISTICS Crystal structure orthorhombic - Pbnm $^4S_{3/2} {\rightarrow} ^4I_{9/2}$ 1.66 µm Laser wavelengths $^{4}I_{11/2} \rightarrow ^{4}I_{13/2}$ 2.73 μm 0.6**-**0.8 μm Pump bands 1.53 µm Thermal conductivity 11 W/m K Refractive index at 632 nm 1.93 Crystallographic orientation b-axis ref. to Pbnm convention **DESIGN** Rod Diameter 2-5 mmUp to 100 mm Rod Length 1 % **-** 50% at. Doping concentration Barrel surface fine ground or polished. Perpendicular or wedged ends. Polishing Polishing according to DIN and MIL standards. Coatings Ion assisted



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