

# Co:Spinel (Co<sup>2+</sup>:MgAl<sub>2</sub>O<sub>4</sub>) Crystals



## Description

Co<sup>2+</sup>:MgAl<sub>2</sub>O<sub>4</sub> (or Co:Spinel) is a relatively new material for saturable absorber passive Q-switching in lasers emitting from 1.2 to 1.6 μm, in particular, for eye-safe 1.54 μm Er:glass laser.

High absorption cross section of  $3.5 \times 10^{-19} \text{ cm}^2$  permits Q-switching of Er:glass laser without intracavity focusing both with flash lamp and diode-laser pumping. Negligible excited-state absorption results in high contrast of Q-switch, i.e. the ratio of initial (small signal) to saturated absorption is higher than 10. Finally, excellent optical, mechanical, and thermal properties of the crystal give an opportunity to design compact and reliable laser sources with this passive Q-switch.

## Standard specifications

Absorption cross section	$3.5 \times 10^{-19} \text{ cm}^2 @ 1540 \text{ nm}$
Dimensions tolerance	+0/-0.1mm
Surface quality	10-5 S-D
Surface flatness	$< \lambda / 10 @ 632.8 \text{ nm}$
Parallelism error	$< 10 \text{ arcsec}$
Perpendicularity	$< 10 \text{ arcmin}$
Protective chamfers	$< 0.1 \text{ mm} \times 45^\circ$
AR coatings reflectivity	$< 0.2\% @ 1540 \text{ nm}$

## Miscellaneous

- Custom design production is also available
- Different doping levels available
- Various dielectric coatings are available
- Complex coatings are realized with IBS technique