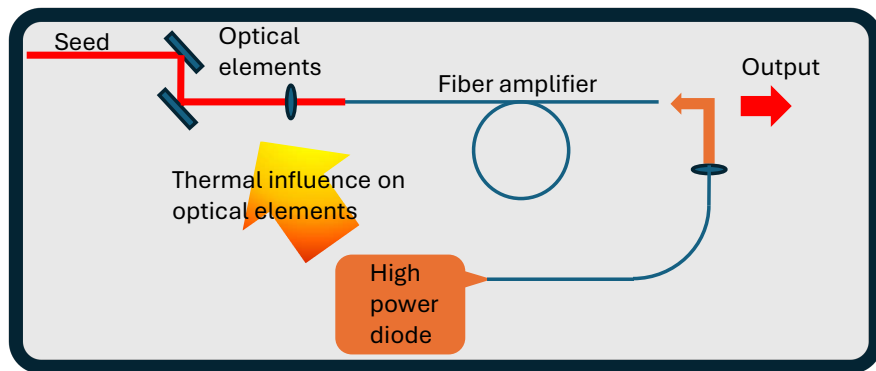


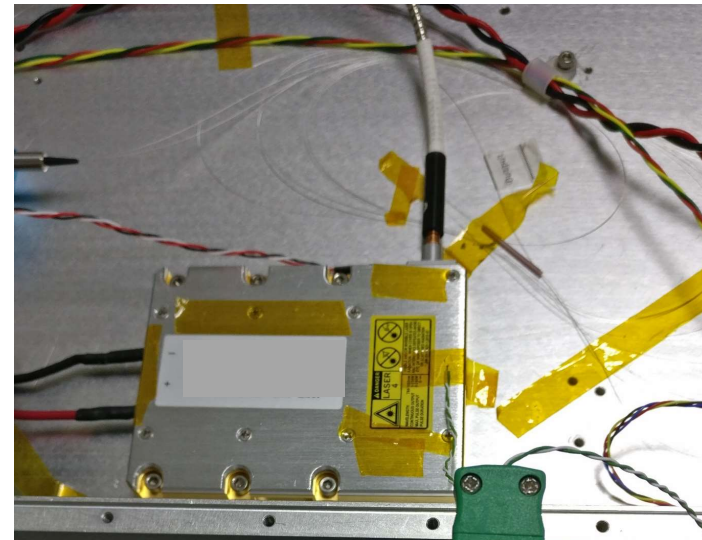
Study of high power laser diode integration into a laser system

Context : The customer product line is based on a « Laser head + Control Unit » architecture, with a high power diode deported into the Control Unit. The customer would like to move this high power diode into the Laser head. This comes with a risk : the thermal load from the diode (250W typ.) can cause thermo-mechanical effects and cause laser misalignment.

Objective of the study : Validate the integration of high power laser diode into the laser head



Schematic of the diode integration

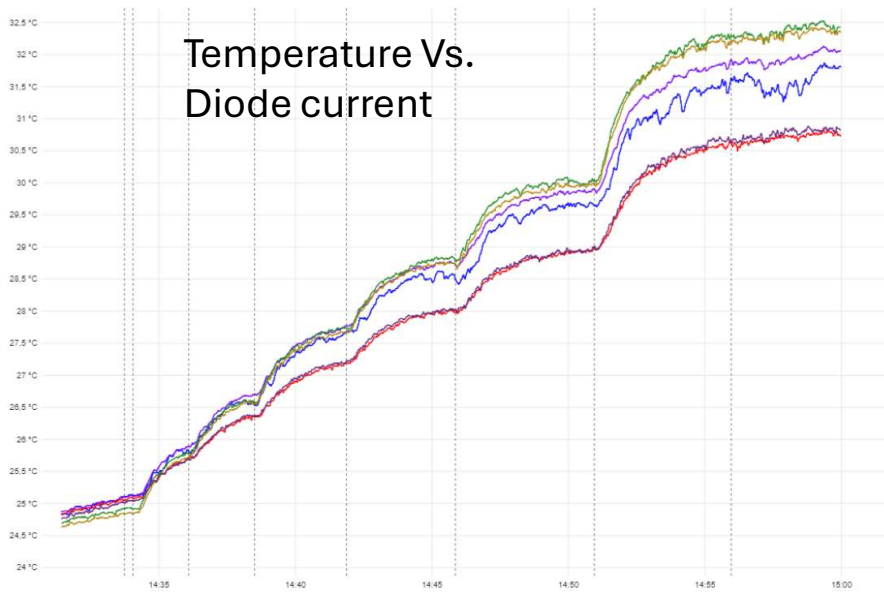


High power diode in the laser head

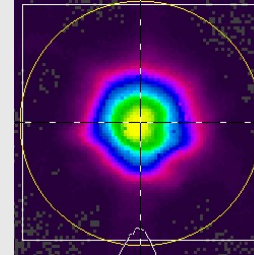
Study of high power laser diode integration into a laser system

Results :

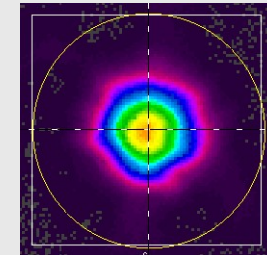
- Thermal mapping inside the laser head
- Optical measurement of laser beam injection with and without the thermal load
- Optimization of heat removal



Final alignment test result



Diode Off



Diode at maximum power



Validation of thermal integration