

# COMMISSIONING OF THE COMPACT PICOSECOND 0.5 KW LASER SYSTEM PERLA C

The laser system PERLA C, commissioned at HiLASE Center in 2018, combines half-kilowatt average power, high repetition rate (100 kHz), picosecond pulse duration (1.5 ps) and high beam quality. Such parameters are ideal for high-volume industrial manufacturing and processes ranging from drilling and cutting to surface structuring. The laser was developed together with optical system for wavelength conversion to visible, ultraviolet and mid-infrared spectral regions. Broadening the spectral range then enables even further applications in industry, medicine or research.

Realization of the laser system required the laser team to internally develop many additional subsystems and devices, such as fiber lasers and amplifiers, electro-optic switches, various custom optomechanics and material processing station. PERLA C laser system is since its commissioning (and even before it) used for experiments with both internal and commercial users.

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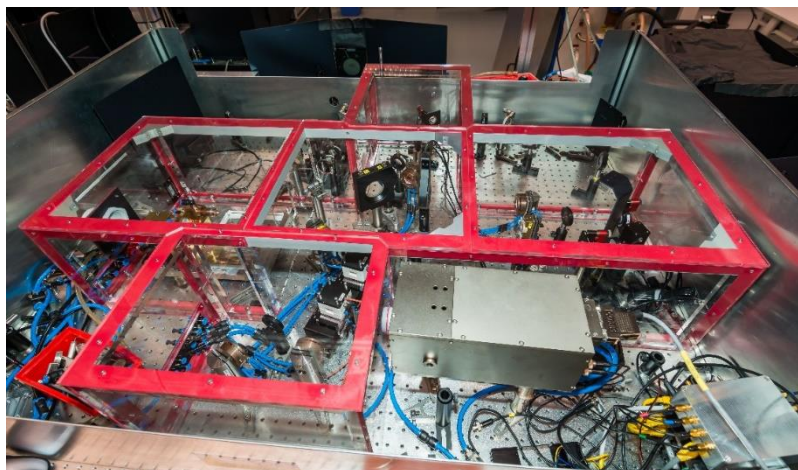


Figure . Prototype of the main amplifier of PERLA C laser system.

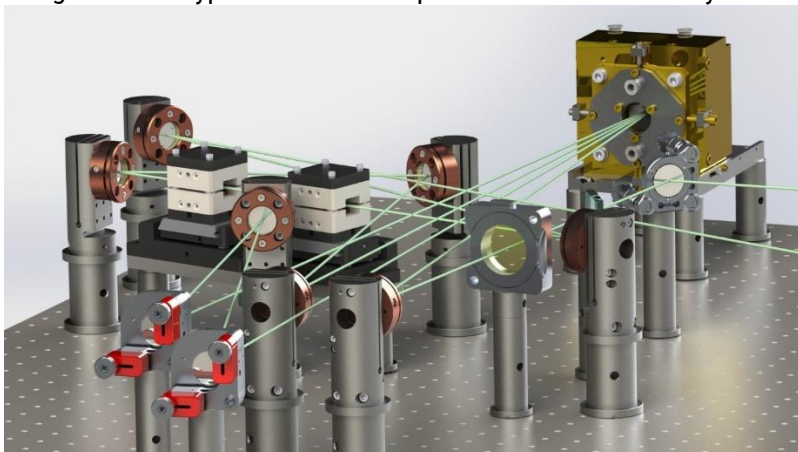


Figure . 3D model of the main amplifier of PERLA C laser system.