BELA MPS Laser PM

Prototype Model of BELA MPS Laser

- Prototype Model of the complete Laser System for the Laser Altimeter Experiment BELA intended to be used within ESAs Mission BEPICOLOMBO to Planet Mercury
- Consists of three miniaturized boxes:
  - Nd-YAG based passively q-switched solid state laser in Master Oscillator and 2 stage Power Amplifier configuration
  - Fibre coupled laser diode box for optical pumping
  - Complete Power & Control Electronics box
- Performance Data:

Solid State Laser (built by Laser Zentrum Hannover e.V.):

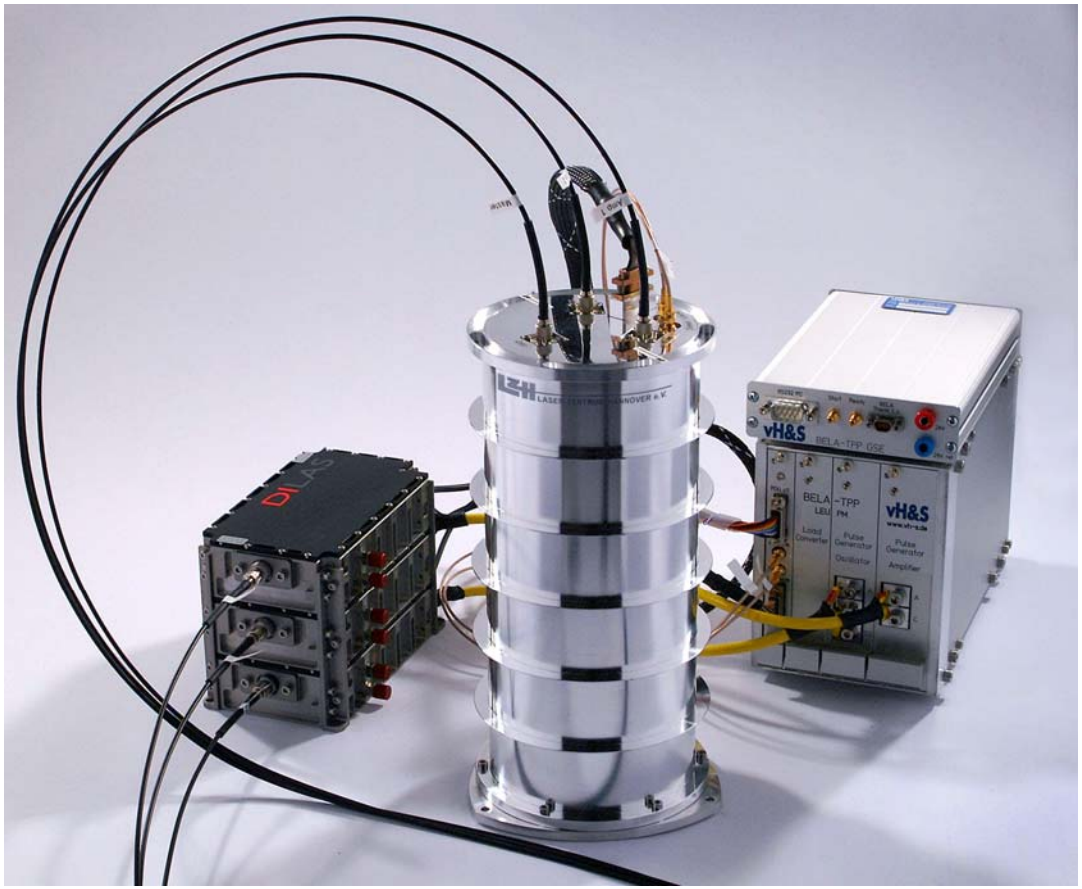
- Output Pulse Energy: 50 mJ within 3 ns at 1064 nm
- Output pulse duration: 3 ns
- Beam quality: $M^2 < 1.5$
- Mass of solid state laser box: 1.5 kg

Pump Laser diode box (built by DILAS GmbH):

- Pump Power: 110 W for Oscillator and 2 * 550 W for Amplifiers (end of 800 µm core diameter fibre with NA of 0.22)
- No. of diode bars: 2 * 2 for Oscillator and 2 * 9 for Amplifiers
- Mass of Laser Diode box: 1.32 kg

Power & Control Electronics Box (built by vH&S GmbH):

- Complete single shot energy storage and pulse current generator, separately for Oscillator and Amplifier pumping laser diodes
- High efficiency storage capacitor loading from 28V input line
- Electrical input power: 10 W at 10 Hz pulse repetition rate
- Complete control & housekeeping electronics including control Interface
- Mass of electronics box: 1.6 kg (in commercial standard housing)



Successfully developed and built under main contract of Max Planck Institute for Solar System Research (MPS) and delivered in September 2006

von Hoerner & Sulger GmbH

Schlossplatz 8, 68723 Schwetzingen
Germany
Phone: +49-6202-57-56-0
FAX: +49-6202-57-57-55
Web: www.vh-s.de

vH&S LZH DILAS Diodenlaser GmbH EADS for MPS