

Boston 500

High Power Nd:YAG Laser

The Boston 500 is an all new, compact and versatile Nd:YAG laser. It is based on an efficient, single rod, oscillator only design. It uses a unique hybrid reflector pump chamber design that combines high efficiency with good beam profile.

The balanced combination of energy and beam quality makes the Boston 500 the ideal choice for pumping dye lasers.

The mechanical and optical design is optimized for easy operation: the flashlamp is changed without affecting the resonator alignment, optics have high pitch precision screws, the harmonic box is air-tight. The power supply and control electronics are based on latest solid state technologies. IGBT switching is used to drive the flashlamp; multiple processors (and FPGA control) monitors and sets the laser operation.

Features

- Superior Mode Quality
- High Pulse Energy
- Long Flashlamp Lifetime
- Low-Jitter Q-Switch
- Multiple TTL Signals for Easy Control
- Q-Switch and Long-Pulse Operation
- Software-based Operation Control
- Connection via USB or Network
- Harmonics Generation and Dichroics in the Laser Head
- Exact Timing via FPGA
- Output Frequency Adjustable During Operation
- Rep Rate Adjustable $\pm 10\%$ in 0.1 μ Hz Steps
- Flex Rate Down to 0.1 Hz in 0.1 Hz Steps
- Pump Chamber with Highly Efficient Ceramic Reflectors

Options ¹⁾

- Water-Air-Cooling
- Water-Water-Cooling



Specifications

Pulse Energy	10 Hz	20 Hz
1064 nm	500 mJ	420 mJ
532 nm	270 mJ	220 mJ
355 nm	150 mJ	115 mJ
266 nm	50 mJ	35 mJ
Pulse Width	5-8 ns	
Divergence	0.5 mrad	
Beam Diameter ²⁾	< 8 mm	
Timing Jitter	0.5 ns	
Energy Stability (rms)	0.7 %	
Pointing Stability	± 50 mrad	

Requirements

Ambient Conditions	constant temperature in the 20-30 °C range, 80% max. rel. humidity, non condensing
Cooling	G 1/2" water hose required for water-water-cooling option
Laboratory	optical table
Computer Control	Windows XP / Vista / 7 / 8 / 10, USB-Port

¹⁾ please contact Sirah for details

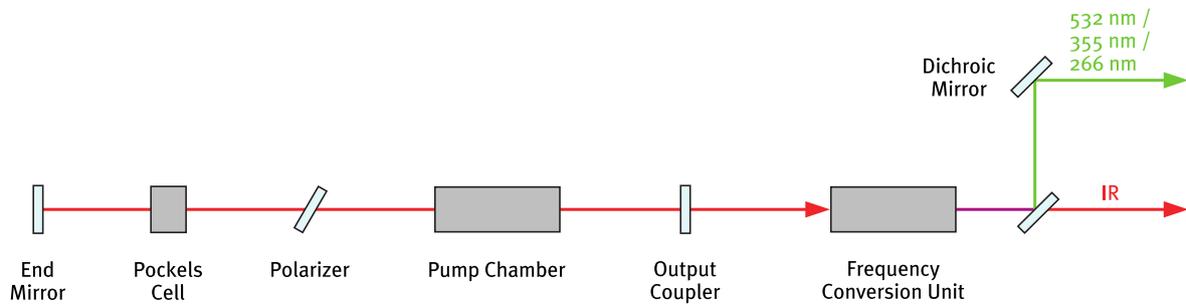
²⁾ at beam exit

Boston 500

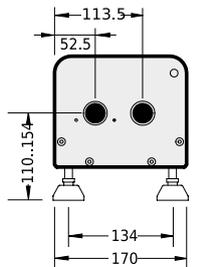
Boston 500



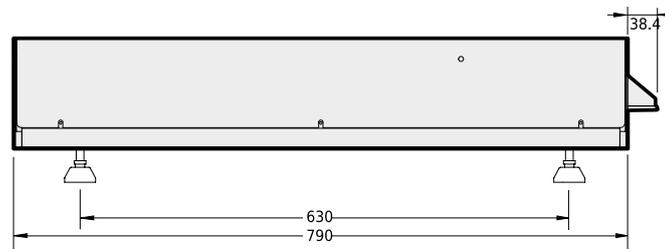
Optical Layout



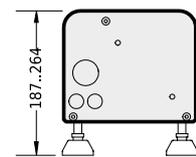
Dimensions



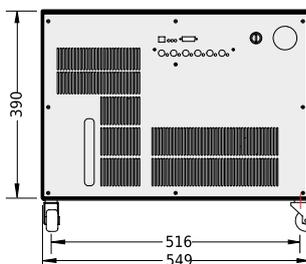
Laser Head (output end)



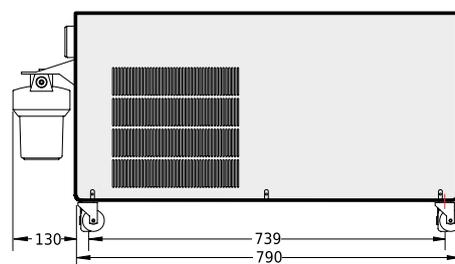
Laser Head (side view)



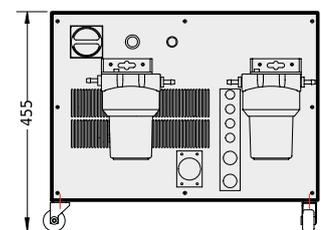
Laser Head (supply end)



Power Supply (front view)



Power Supply (side view)



Power Supply (rear view)

All Dimensions in mm
 Specifications are subject to change without notice



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