

LEOI-50

Diode Pumped Solid State Laser Demonstrator



- *Interaction of Light and Matter*
- *Non-linear Optics*
- *Nd:YVO₄ and KTP Crystals*
- *Frequency Doubling*
- *Laser Pumping*
- *Phase Matching*

LEOI-50 is designed for nonlinear optical experiments of laser education at universities/colleges. It can help students to understand the theory of diode pumped solid state laser (DPSS) and frequency doubling.

A solid state laser with Nd: YVO₄ as the laser material and pumped by a semiconductor laser at 808nm, emits infrared light at 1.064μm.

By putting a KTP crystal into the cavity to generate frequency-double green light, it is possible to observe frequency doubling phenomenon, and measure frequency doubling efficiency, phase matching angle and other basic parameters.

During the experiment, a lot of light path adjustment is involved, allowing students to be more practically familiar with the principle.

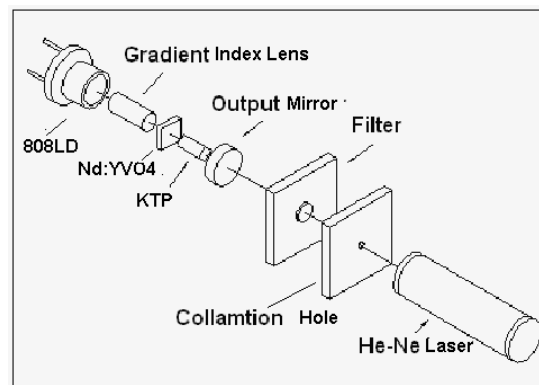
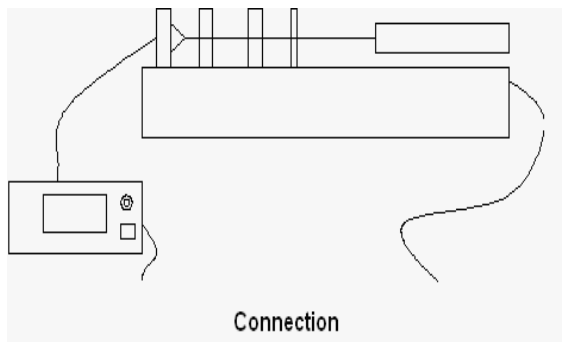
Specifications

| | |
|-----------------------------|----------------------|
| Semiconductor Laser | 808nm, ≤ 500mW |
| Laser Power Supply | Output: 0 ~ 500mA |
| Nd:YVO ₄ Crystal | 3 × 3 × 1mm |
| KTP | 2 × 2 × 5mm |
| Output Mirror | D = 6, R = 50mm |
| Laser Power Indicator | 2μW ~ 200mW, 6 steps |

Key features

- 532 nm laser output power between 10 ~ 40mW
- Variable pumping current
- Understand the theory through practice
- Cost effective

Experimental setup



Parts included

| Description | Qty |
|---------------------------------|-----|
| Optical Rail and Carriers | 1 |
| Two-axis Adjustable Holder | 2 |
| Four-axis Adjustable Holder | 2 |
| He-Ne Laser Holder | 1 |
| 808nm Semiconductor Laser | 1 |
| 632.8nm He-Ne Laser | 1 |
| KTP Crystal | 1 |
| Nd:YVO ₄ Crystal | 1 |
| Output Mirror | 1 |
| Optical Filter | 1 |
| Light Target (collimation hole) | 1 |
| Laser Power Indicator | 1 |
| Power Cable | 2 |
| IR Card | 1 |
| User's Manual | 1 |