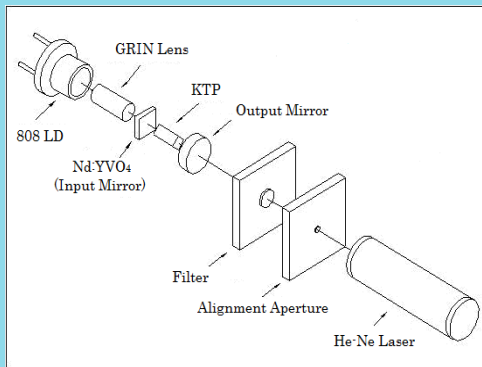


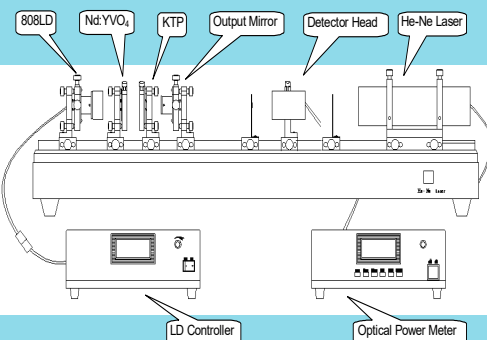
LEOI-50 Diode-Pumped Solid-State Laser Demonstrator

- Laser diode output: <math><500\text{ mW}</math> at 808 nm
- Ideal for demonstration
- Variable pumping current
- He-Ne alignment laser and optical power meter included



Schematic of diode laser pumping

LEOI-50 is designed for teaching nonlinear optical experiments at universities and colleges. It can help students understand the theory of a diode-pumped solid-state (DPSS) laser with frequency doubling technique. A solid-state laser with Nd: YVO₄ as the gain material, which is pumped by a semiconductor laser at 808 nm, emits infrared light at 1.064 μm . By incorporating a KTP crystal into the laser cavity to generate frequency-doubled green light, it is possible to observe frequency doubling phenomenon, and measure frequency doubling efficiency, phase matching angle and other basic parameters.



Schematic of system

Specifications

Semiconductor Laser	
CW Output Power	≤ 500 mW
Polarization	TE
Center Wavelength	808 ± 10 nm
Operation Temperature Range	10 ~ 40 °C
Laser Driver	0 ~ 500 mA
Nd: YVO4 Crystal	
Nd Doping Concentration	0.1 ~ 3 atm%
Dimension	3×3×1 mm
Flatness	< λ/10 @632.8 nm
Coating	AR@1064 nm, R<0.1%; HT@808 nm, T>90%
KTP Crystal	
Transmissive Wavelength Range	0.35 ~ 4.5 μm
Electro-Optic Coefficient	r ₃₃ =36 pm/V
Dimension	2×2×5 mm
Output Mirror	
Diameter	Φ 6 mm
Radius of Curvature	50 mm
He-Ne Alignment Laser	≤ 1 mW @632.8 nm
Optical Power Meter	2 μW ~ 200 mW, 6 scales

Part List

Optical Rail		with built-in He-Ne laser power supply	1
He-Ne Laser Holder	LEOI-50-1	with carrier	1
Alignment Aperture	LEOI-50-2	f1 mm hole with carrier	1
Filter	LEOI-50-3	f10 mm aperture with carrier	1
Output Mirror	LEOI-50-4	BK7, f6mm R = 50 mm with holder and carrier	1
KTP Crystal	LEOI-50-5	2×2×5 mm with holder and carrier	1
Nd:YVO ₄ Crystal	LEOI-50-6	3×3×1 mm with holder and carrier	1
808nm Laser Diode	LEOI-50-7	with 4-axis adjustable holder and carrier	1
Detector Head Holder	LEOI-50-8	with carrier	1
Infrared Viewing Card	HT582	750 ~1600 nm	1
He-Ne Laser Tube	LLL-2	<1.0 mW@632.8 nm	1
Optical Power Meter	LLM-2	2 μW ~ 200 mW (6 ranges)	1
Detector Head		with cover and post	1
LD Current Controller	LEPO-62	0 ~ 500 mA	1
Power Cord			3