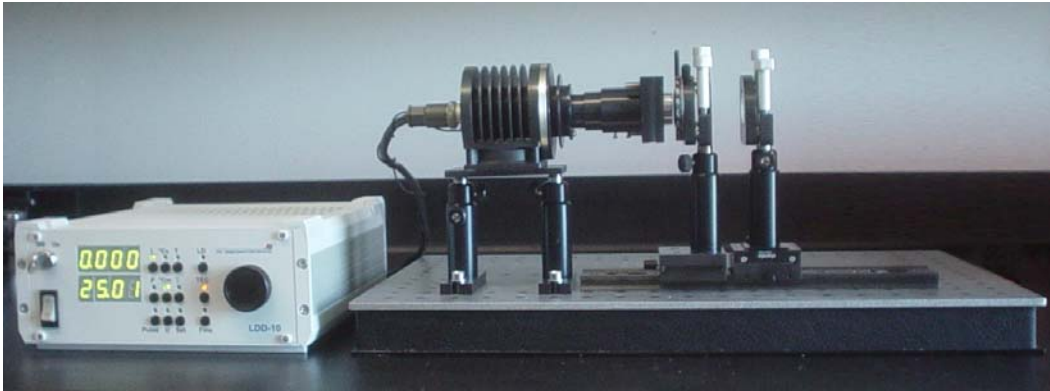


LASER KIT FOR STUDENT TRAINING

Versatile laser/course materials designed to teach University students

The latest in solid-state laser technology

A wide range of physical principles



KEY FEATURES:

- **Students receive “hands-on” experience with state of art solid-state laser technology**
- **Conceptual construction/design optimized for instruction**
- **Robust (not damage prone) easily aligned components**
- **Students instructed in the latest in laser physics, nonlinear optics and optics technology**

Laboratory laser experiments included in the Laser Kit Manual

Experiment #1: *Measurement of the time relaxation of the upper laser level of $\text{Nd}^{3+}:\text{KGd}(\text{WO}_4)_2$*

Experiment #2: *Obtaining CW laser operation*

Experiment #3: *Single mode laser operation and resonator stability*

Experiment #4: *Measurement of laser threshold and output power at CW laser operation*

Experiment #5: *Passive Q-switched regime of laser operation*

Experiment #6: *Passive Q-switched regime of laser operation*

Experiment #7: *Intracavity CW second harmonic generation*

Experiment #8: *Intracavity second harmonic generation using Q-switched laser operation*

Experiment #9: *Intracavity Raman self-conversion using Q-switched laser operation*

Extended optical experiments which can be made using the Laser Kit*

Experiment #1: *Introduction to Quantum confinement in optics for the first steps in nanoscience.*


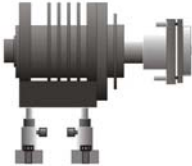







Experiment #2: *Up-converted luminescence in rare-earth doped materials*

Experiment #3: *Two-photon emission in nonlinear organic materials*

Experiment #4: *Second Harmonic Generation in powder of nonlinear organic crystals*

Experiment #5: *Absorption saturation in organic dyes*

* Materials and documentation for the extended experiments are available as kit accessories according separated request

Modular design	Included accessories
<p>MODULE 1: LD POWER SUPPLY MODULE 2: LD AND LASER CRYSTAL</p>   <p>MODULE 3: OUTPUT COUPLER MODULE 5: KTP CRYSTAL</p>  <p>MODULE 4: SATURABLE ABSORBER</p>  	<p>Honeycomb breadboard for laser kit installation Optical rail for resonator alignment</p>   <p>Safety glasses Converter of IR emission to visible</p>  

Active Crystal

Potassium Gadolinium Tungstate doped with Neodymium (Nd:KGW)

Laser Cavity Length, mm

Semi-confocal, 75.0 (or 50.0)

Mode of Operation

Continuous Wave (CW) or Pulsed (passive Q-switch)

Output Wavelength, nm

- fundamental 1067
- Second Harmonic (with intracavity doubling) 533.5
- 1-st Stokes Raman Scattering (with intracavity Raman conversion at non-linearity of active medium) 1180

Output Power at CW mode (at 0.95 W pump power for 808 nm), mW

- at fundamental ≥ 300
- at Second Harmonic ≥ 20

Output Power at Q-switch mode (at 0.95 W pump power for 808 nm), mW

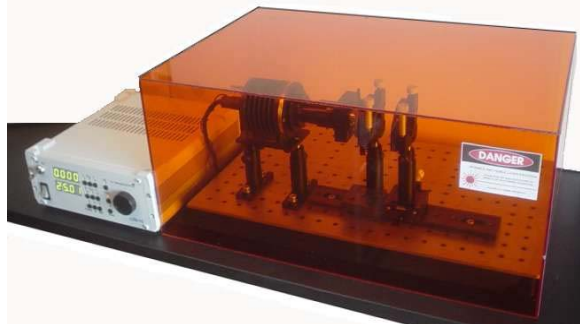
- at fundamental ≥ 150
- at Second Harmonic ≥ 20
- at 1-st Raman Stokes ≥ 0.1

Pulse Repetition Rate at Q-switch mode (at 0.95 W pump power for 808 nm), kHz

~ 40

Pulse width of fundamental output for Q-switch mode (at 0.95 W pump power for 808 nm), ns

~ 50



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