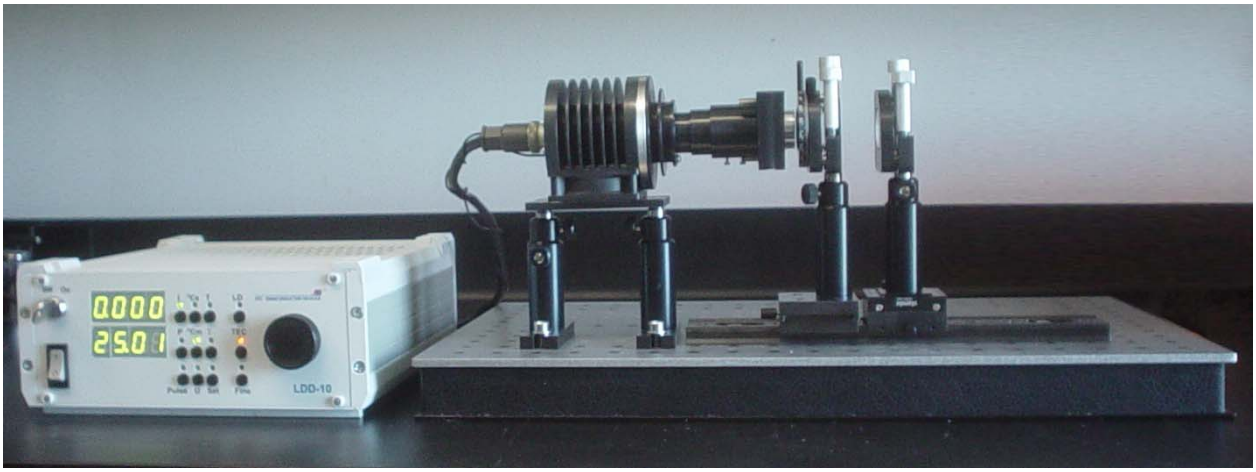
LASER KIT FOR STUDENT TRAINING

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***
  - ***physical principles***

Laboratory laser experiments included in the Laser Kit Manual

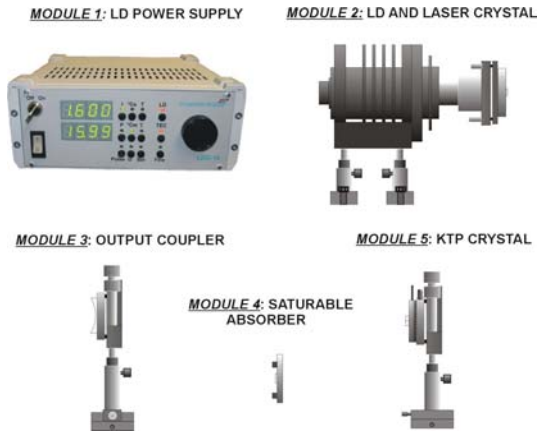
Experiment #1: *Measurement of the time relaxation of the upper laser level of* Nd^{3+}*:*$KGd(WO_4)_2$
Experiment #2: *Obtaining CW laser operation*
Experiment #3: *Single mode laser operation and resonator stability*
Experiment #4: *Measurement of laser threshold and output power at CW laser operation*
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*

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

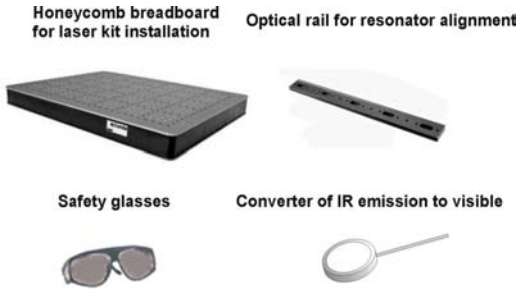
Experiment #1: *Laser operation in Rhodamine 6G dye*
Experiment #2: *Up-converted luminescence in rare-earth doped materials*
Experiment #3: *Two-photon emission in nonlinear organic materials*
Experiment #4: *Second Harmonic Generation in powder of nonlinear organic crystals*
Experiment #5: *Absorption saturation inorganic dyes*

* Materials for these additional experiments are available as kit accessories

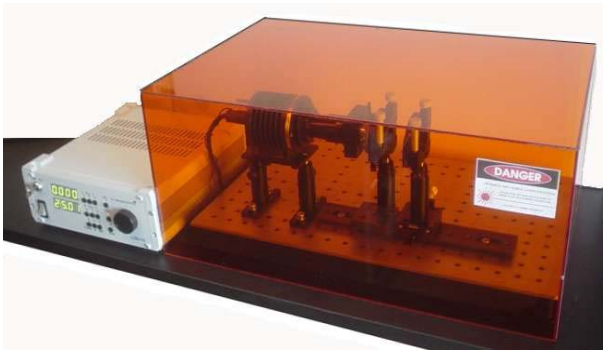
Modular design



Included accessories



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 on CW mode (at 0.95 W pump power for 808 nm), mW	
- at fundamental	≥ 330 (400*)
- at Second Harmonic	≥ 25
Output Power on Q-switch mode (at 0.95 W pump power for 808 nm), mW	
- at fundamental	≥ 130 (170*)
- at Second Harmonic	≥ 25
- at 1-st Raman Stokes	≥ 0.1
Pulse Repetition Rate (at 0.95 W pump power for 808 nm), kHz	~ 40 (~50*)
Pulse width of fundamental output for Q-switch mode (at 0.95 W pump power for 808 nm), ns	~ 50 (35*)



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