LEOI-100
Experimental CCD Spectrometer

- *Innovative Design*
- *CCD Receiver*
- *Real-time Acquisition*
- *3-D Display*
- *Cost Effective*

LEOI-100 Experimental CCD Spectrometer is a general purpose spectrum measuring instrument. It uses a linear CCD as a receiving unit capable of real-time acquisition and 3-dimensional display. It is ideal equipment for studying the spectra of various light sources or calibrating optical probes.

Specifications

Wavelength Range	300 ~ 900 nm
Focal Length	302.5 mm
Relative Aperture	D/F=1/7
Resolution	≤ 0.2 nm
Wavelength Accuracy	≤ ± 0.4 nm
Wavelength Repeatability	≤ 0.2 nm
Stray Light	≤ 10^{-3}
Slit Width	0 to 2 mm, adjust., 0.01 mm
Grating	600l/mm, blazed at 550 nm
CCD Receiver	2048 cells Integration time: 1 ~ 88 stops
Filter	Yellow filter: 320 ~ 500 nm White filter 500 ~ 900 nm

System Structure

LEOI-100 consists of a grating monochromator, a linear CCD unit, manual scanning system, electronic amplifier and USB interface This instrument integrates optics, precision machinery and electronics. The optical element adopts a C-T model that is showed in figure on the right.

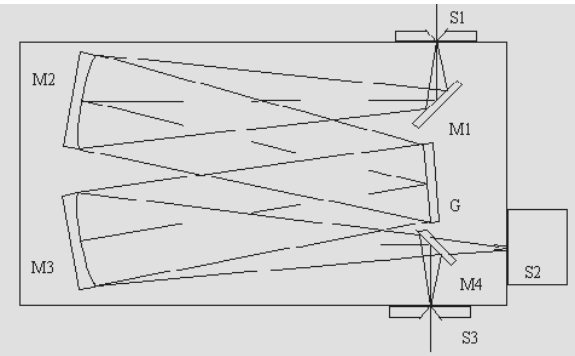
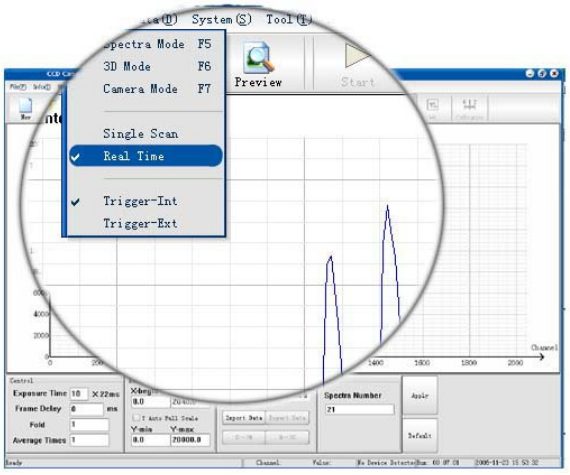


Figure2-1 Schematic Diagram
M1: Mirror M2: Collimate Mirror M3: Objective M4: Tilting Mirror
G: Plane Diffraction Grating S1: Entrance Slit S2: CCD Unit S3: Exit Slit

Both the entrance and exit slits are straight with a width continuously adjustable from 0 to 2 mm. The beam from the light source passes through entrance slit S1 (S1 is on the focal plane of reflectance collimation mirror), then reflected by mirror M2. The parallel light strikes grating G. Mirror M3 forms the image of diffracted light coming from the grating onto S2.

Powerful Software

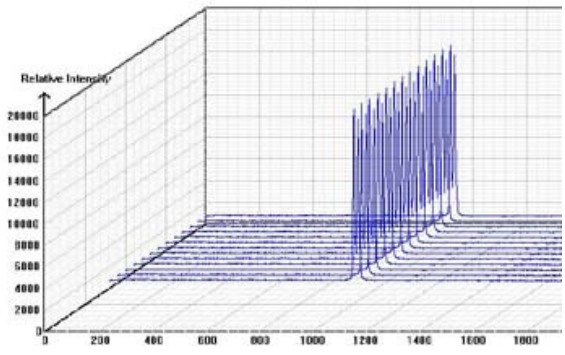
The figure to the right shows the main menu screen of the software provided. By selecting different submenus, the software will lead the user into different functions of the system, from which the user can capture a set of spectral data, graphically display it, and print it out.



With the powerful function of the software, the user can also build their own spectra library.

Experiment Examples

- CCD spectrometer calibration
- Observation of light source spectra, such as Sodium or Mercury lamp
- Measurement of Rydberg Constant



Parts Included

Description	Qty
Experimental CCD Spectrometer	1
Yellow and White Filters	1
USB Cable	1
Power Adaptor	1
Software CD	1
Computer	Optional

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