

LEAI-101 Modular Multifunctional Grating Spectrometer/Monochromator



Note: laptop computer not included

- Replaceable gratings for different spectral range and resolution needs
- Modular structure
- Configurations of spectrometer & monochromator
- Photomultiplier and CCD receiver



Schematic of spectrometer

This spectrometer/monochromator is designed to help students understand the concepts of light and wave phenomena and learn how a grating spectrometer/monochromator works. By replacing the default grating in the spectrometer with a different grating, the spectral range and resolution of the spectrometer can be altered. The modular structure provides flexible solutions for spectral measurements under photomultiplier (PMT) and CCD modes, respectively. Emission and absorption spectra can be measured. It is also a valuable analytical tool for the studies and characterizations of optical filters and light sources. By dismounting the CCD device from the machine, it is the configuration of a monochromator with high wavelength accuracy. This instrument uses a sine mechanism for wavelength scanning.

To calibrate the spectrum of a selected work window in CCD mode, at least two standard spectral lines are needed within the spectral range of the work window. For this purpose, an optional calibration spectral lamp with multiple spectrum tubes can be ordered separately.

The instruction manual contains comprehensive materials including experimental configurations, principles and step-by-step instructions.

A lambda

Specifications

Eocal Length	500 mm
i ocal Lengin	300 mm
Wavelength Range	Grating A: 200 ~ 660 nm; Grating B: 200 ~ 800 nm
Slit Width	0~2 mm adjustable with a reading resolution of 0.01 mm
Relative Aperture	D/F=1/7
Grating*	Grating A (pre-installed): 2400 lines/mm; Grating B:1200 lines/mm
Blazed Wavelength	250 nm
Wavelength Accuracy	Grating A: ± 0.2 nm; Grating B: ± 0.4 nm
Wavelength Repeatability	Grating A: ≤ 0.1 nm; Grating B: ≤ 0.2 nm
Stray Light	≤ 10 ⁻³
Resolution	Grating A: \leq 0.06 nm; Grating B: \leq 0.1 nm
Photomultiplier Tube (PMT)	Grating A: 200 ~ 660 nm; Grating B: 200 ~ 800 nm
CCD (2048 cells)	Grating A: 300 ~ 660 nm; Grating B: 300 ~ 800 nm
Integration Time	88 steps (each step: approximately 25 ms)
Filter	White filter: 320~ 500 nm; yellow filter: 500~ 660 nm
Dimensions	560×380×230 mm
Weight	30 kg

* Choose either Grating A or Grating B. Grating A is the default configuration and pre-installed in the spectrometer. If grating B is required, please specify it in your order.

Part List

Grating Monochromator	1
Power Control Box	1
Photomultiplier Receiving Unit	1
CCD Receiving Unit	1
USB Cable	1
Filter Set	1
Power Cord	3
Signal Cable	2
Software CD (64-bit PC, Windows 7 or later)	1



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Note: above product information is subject to change without notice.