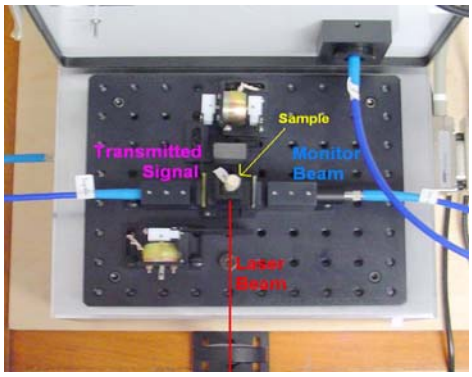
Luzchem

Shedding light on new ideas

Laser Flash Photolysis System
Model mLFP-111

This transient absorption spectrometer has been developed for spectroscopic and kinetic laser flash photolysis measurements. It includes a ceramic xenon light source; 125 mm monochromator; Tektronix 9-bit digitizer TDS-3000 series with 300 MHz bandwidth; compact photomultiplier and power supply, Pentium computer with 17" monitor and back-up drive, cell holder and fiber optic connectors, fiber optic sensor for laser-sensing pretrigger signal, computer interfaces and the software needed to operate the system.

Configuration:



Configuration for transient absorption setup.

System Specifications:

Footprint:	12" x 18" (20cm x 46cm)
Weight:	51 lbs. / 23 kg
Power Rating:	110-240 VAC, 50/60 Hz cycle, 3 Amps
Ambient Temperature:	Must be between 5ºC and 55 ºC
Humidity:	Must be between 0% and 95% (non-condensing)
Time Response and Time Scales:	Detector: ~3 ns risetime Digitizer: 300 Mz; 9 bit; record seize: 10,000; Series TDS3000

	Note that the TDS3000 series has many other functions, including FT that are not employed in the MLFP systems.
	Short time scales: 5 ns or pulse duration and up
	Long time scales: Millisecond measurements readily performed.
Spectral Range:	With recommended PMT and grating: 240-750 nm
Standard Sample Holder:	For ambient temperature studies.
	Holds 10 x 10 mm cells (optional adapter for 7 x 7 mm cells and Q-tubes is available)
mLF Triggering:	The laser pulse is probed by a fiber that synchronizes the mLFP system with the digitizer and enables full pre-trigger functions.
Laser Triggering:	Generates 5 volt trigger pulses suitable for most lasers, including the two-pulse sequence required for YAG lasers (flash lamps and Q-switch)
	Programmable frequency (0.5 Hz–10 Hz) and delay (1 µs and up)
Temperature Monitor:	A temperature sensor monitors the temperature in the sample compartment.
	Monitors temperatures from 5 – 50 ºC
Computer Interfacing:	Connected to the computer via GPIB and RS-232 serial interfaces (supplied) that control all experimental parameters.
Computer:	Processor: Intel Pentium
	Operating system: Microsoft Windows
Software:	Developed in the LabVIEW environment from National Instruments and compiled as a stand-alone application.
	Data from the mLFP systems can easily be exported in ASCII format.

Light Source:

- Energy: 300 watts
- Expected lifetime: ~1000 hours (warranty: 500 hours)
- Lamp type: Full-UV, focused ceramic xenon lamp
- Beam delivered through fiber optic cables

Additional requirements for the operation of the mLFP-111:

- A nanosecond excitation laser
- A safe exhaust for the trace ozone contained in the lamp exhaust

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