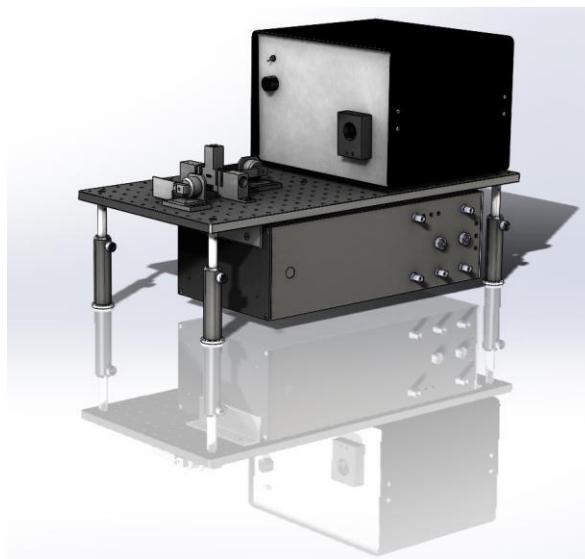
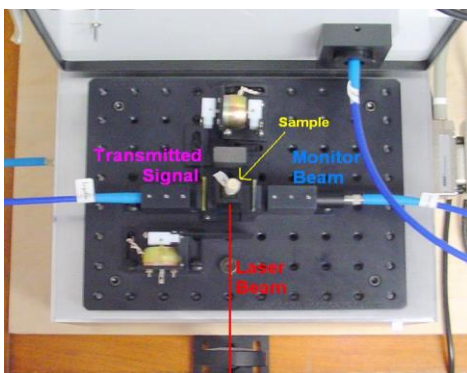

Laser Flash Photolysis System Model LFP-412 Transient Absorption System

LFP Transient Absorption Unit

This transient absorption spectrometer has been developed for spectroscopic and kinetic laser flash photolysis measurements. It includes a 300 W ceramic xenon light source; 125 mm monochromator; Tektronix 8-bit digitizer TDS-2000 series with 50 MHz bandwidth; compact photomultiplier and power supply, computer with pre-installed software, cell holder and fiber optic connectors, fiber optic sensor for laser-sensing pre-trigger signal, computer interfaces and the software needed to operate the system.



Configuration:



Configuration for transient absorption setup.

System Specifications:

Footprint:	LFP unit: 12" x 24" (20 cm x 61 cm) – includes xenon lamp for Transient Absorption, breadboard, sample compartment and optics. Digitizer: (15" x 6"; 38 cm x 15 cm) can be placed on xenon lamp. Computer: option of desktop or laptop
Weight:	50 lbs/ 23 kg (approximate)
Power Rating:	110-240 VAC, 50/60 Hz cycle, 3 Amp

Ambient Temperature:	Must be between 5°C and 55 °C
Humidity:	Must be between 0% and 95% (non-condensing)
Time Response and Time Scales:	<p>Detector: ~7 ns risetime</p> <p>Digitizer: 50 MHz bandwidth; 8 bit resolution; record seize: 2,500 points at all time bases; Series TDS2000</p> <p><i>Note that the TDS2000 series has many other functions, that are not employed in the LFP systems.</i></p> <p>Short time scales: 10 ns with built-in amplifier, or 20 ns with external amplifier</p> <p>Long time scales: Millisecond measurements readily performed.</p>
Spectral Range:	<p>User-selected at the time of order. Cannot be changed by user.</p> <p><u>UV option:</u> 240-740 nm with standard PMT and grating</p> <p><u>RED option:</u> 310-850 nm with RED PMT and grating</p> <p><u>Ozone-free option:</u> 330-850 nm with RED PMT and grating, and ozone-free xenon lamp</p>
Standard Sample Holder:	<p>For ambient temperature studies.</p> <p>Holds 10 x 10 mm cells (optional adapter for 7 x 7 mm cells and Q-tubes is available)</p>
Temperature Monitor:	Temperature monitor is standard in transient absorbance.
LFP Triggering:	The laser pulse is probed by a fiber that synchronizes the LFP system with the digitizer and enables full pre-trigger functions.
Laser Triggering:	<p>Generates 5 Volt trigger pulses suitable for most lasers.</p> <p>Programmable frequency (1, 4 or 16 Hz)</p>
Computer Interfacing:	Connected to the computer that controls all experimental parameters via USB 2.0 interface.
Computer:	<p>Processor: Intel Pentium or Intel i3</p> <p>Operating system: Microsoft Windows</p>
Software:	<p>Developed in the LabVIEW environment from National Instruments and compiled as a stand-alone application.</p> <p>Data from the LFP systems can easily be exported in ASCII format.</p>
Optional Temperature Control Upgrade	<p>A temperature controlled sample compartment (from 5°C to 65°C) is available as an upgrade. The Q-pod sample compartment software runs concurrent with the LFP software.</p> <p>This option requires a parallel lamp.</p>

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Light Source:

- Energy: 300 watts
- Expected lifetime: ~1000 hours (warranty: 500 hours)
- Variable power supply is standard
- Lamp type depends on system options:
 - Focused ceramic xenon lamp is standard; Full UV or Ozone-free available
 - Parallel ceramic xenon lamp is needed for diffuse reflectance or temperature controlled option; Full UV or Ozone-free available
- Beam delivered through fiber optic cables

Additional requirements for the operation of Luzchem LFP systems:

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

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