

GRENOUILLE-LITE

THE WORLD'S LEAST EXPENSIVE AND MOST VERSATILE ULTRASHORT-LASER-PULSE COMPLETE MEASUREMENT DEVICE

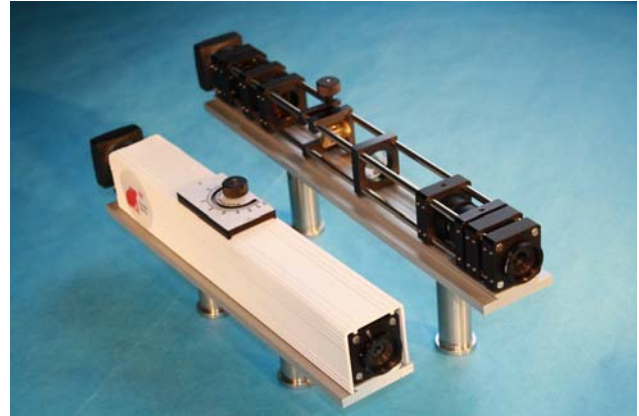
Like the **GRENOUILLE** and FROG devices, GRENOUILLE-Lite yields the complete pulse intensity and phase vs. time and spectrum and spectral phase vs. wavelength with great accuracy and reliability, making no assumptions about the pulse.

And, with the accompanying QuickFROG-Lite pulse-retrieval software, it also does all this in **real time!**

Like GRENOUILLE, GRENOUILLE-Lite tells you more about your pulse with less effort than ever imagined! GRENOUILLE-Lite models offer the same information as standard GRENOUILLES, except for the spatial profile and the spatio-temporal distortions. However, qualitative information about the spatial chirp is available by observing the trace tilt.

And it does all this for one of the lowest costs of any pulse-measurement device available.

Even better, if your needs change, and your pulses, say, become shorter or change color, GRENOUILLE-Lite easily transforms into a device that measures your new pulses. Just purchase the relevant low-cost GRENOUILLE-Lite transformation kit, replace two or three components, and you're measuring your new pulses!



GRENOUILLE-LITE AT A GLANCE

- **The pulse intensity and phase vs. time**
- **The pulse spectrum and spectral phase**
- **The autocorrelation**
- **No assumptions**
- **Minimal alignment**
- **High sensitivity**
- **Real-time intensity and phase retrieval**
- **Easily and inexpensively modified to measure pulses of a different wavelength and/or pulse length**
- **Minimal size and weight**
- **Laptop friendly**
- **Very easy to use**
- **Just connect the USB cable and go!**

A single GRENOUILLE-Lite can measure pulses from a wide variety of sources, from the lowest-energy oscillator to the highest-intensity amplifier.

Several GRENOUILLE-Lite models measure pulses with wavelengths from 700nm to 1100nm and 1400nm to 1600nm.

GRENOUILLE-Lite costs less than an autocorrelator, but is much more versatile, and it yields much more information!



GRENOUILLE-LITE MODELS AND SPECIFICATIONS

GRENOUILLE-Lite model:	8-50-Lite-USB	8-200-Lite-USB	10-50-Lite-USB	15-40-Lite-USB	15-100-Lite-USB
Wavelength range:	700-900nm		900-1100nm	1.4-1.6um	
Pulse-length range:	~50fs – ~500fs	~200fs – ~2ps	~50fs – ~500fs	~40fs – ~400fs	~100fs – ~1ps
Delay increment¹:	1.37fs/pixel	6.1fs/pixel	1.37fs/pixel	1.4 fs/pixel	3.4fs/pixel
Temporal range²:	1.7ps	6.5ps	1.8ps	1.9ps	3.8ps
Spectral resolution³:	0.7nm	0.23nm	0.8nm	2.8nm	1.4nm
Spectral range²:	50nm	20nm	100nm	150nm	150nm
Pulse complexity:	Time-bandwidth product < ~10				
Intensity accuracy:	3%				
Phase accuracy:	0.02rad (intensity-weighted phase error)				
Single-shot operation:	NA				
Sensitivity (at 10³ pps):	100μW (100nJ)				
Sensitivity (at 10⁸ pps):	10mW (100pJ)				
Spatial-profile accuracy:	NA				
Spatial-chirp accuracy (dx/dλ):	NA				
Pulse-front tilt accuracy (dt/dx):	NA				
Required input polarization:	Any (just rotate GRENOUILLE!)				
Required input-beam diameter:	2 – 4mm (collimated)				
Input-beam lateral-displacement tolerance:	> 1mm				
Time to set up:	~ 10 minutes				
Dimensions (L x W x H) w/camera:	45cm x 6.5cm x 6.5cm	45cm x 6.5cm x 6.5cm	45cm x 6.5cm x 6.5cm	35cm x 6.5cm x 6.5cm	35cm x 6.5cm x 6.5cm
Weight:	1.5 kg	1.5kg	1.5kg	1.5kg	1.5kg

1. At full camera resolution.
2. Temporal and spectral “ranges” are the full-scale ranges, not the maximum pulse length (which is typically a factor of 2 to 3 smaller).
3. Achieving optimal spectral resolution takes advantage of spectral deconvolution, which improves spectral resolution by a factor of ~3.

For more information, Please visit our website: www.swampoptics.com

SWAMP OPTICS PRICE LIST FOR GRENOUILLE-LITES

GRENOUILLE-Lites

GRENOUILLE 8-50-Lite-USB	US\$10,000
GRENOUILLE 8-200-Lite-USB	US\$10,000
GRENOUILLE 10-50-Lite-USB	US\$10,000
GRENOUILLE 15-40-Lite-USB	US\$10,000
GRENOUILLE 15-100-Lite-USB	US\$10,000

Software-Lite (required for retrieving pulses with all GRENOUILLE-Lites)

Femtosoft Technologies QuickFROG-Lite	US\$1,000
--	-----------

* The price range for the transform kits ranges from \$2000 to \$3200, depending on the models involved.