

# Alignment Free Pulse Monitor

## Femtosecond Autocorrelator

### HAC-150

#### Key Features

- Alignment-free
- Polarization independent
- High measurement sensitivity
- Fast, real-time measurement
- Simple "Plug-and-Measure" operation
- Pulse measurement software included
- Easy USB interface
- Compact, lightweight, low-power



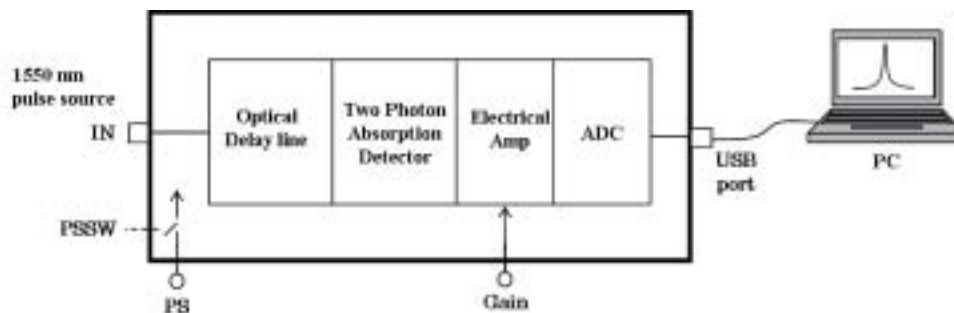
HAC-150 is a picosecond and sub-picosecond optical pulse characterization system based on the autocorrelation function of the optical pulse. Unlike the conventional autocorrelator that uses SHG crystals, the HAC-150 employs a proprietary two-photon absorption (TPA) method that is polarization independent and provides a high measurement sensitivity. Furthermore, it is completely alignment-free for easy plug-and-measure operation. The autocorrelation traces and the key parameters of the measured optical pulses are instantaneously displayed in real-time mode with a user-friendly graphical interface.

The unit is compact, lightweight and low-power which is suitable for applications from laboratory to field environment.

#### Applications

- Picosecond & femtosecond pulse characterization
- Repetition rate measurement ( $>40\text{GHz}$ )
- Dynamic pulse waveform monitor
- Real-time pulsed laser characterization

#### Functional Diagram



### Specifications

Category	Parameter	Specification			Unit
		Min.	Typ.	Max.	
Optical nm	Wavelength range	1400			1650
	Optical sensitivity <sup>1</sup>	1x10 <sup>-5</sup>			1x10 <sup>-3</sup>
	Measureable pulse width	0.1			15
	Polarization sensitivity				10
Temporal	Scan range	50			ps
	Resolution	25			fs
	Refresh rate	5			Hz
Connector	Optical input	FC or SC, APC or SPC			
Electrical	PC Interface	USB 1.1/2.0			
	Power supply	DC 9V/1.5A (AC Adaptor)			
Ambient	Operating Temperature	+15 to +35			
	Humidity (non-condensing)	<80% RH			
Physical	Dimensions (W x H x D)	110 x 110 x 210 mm			

Note: The specifications are subjected to change without prior notice. Please contact Alnair Labs for more details.

1. Optical sensitivity is defined as the product of input signal average power (Pavg) and peak power (Ppeak), at a minimum detectable input signal level. [Pavg x Ppeak] in unit of W<sup>2</sup>.

### Software Interface & Measurement Example

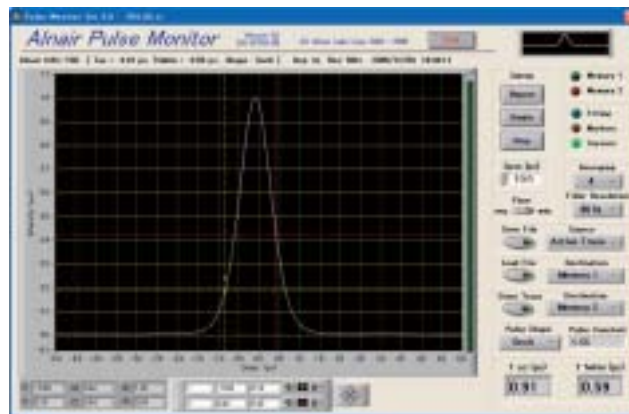


Fig. 1 Measuring a 590fs optical pulse.

### Application Examples



Fig. 2 Pulse repetition rate measurement.

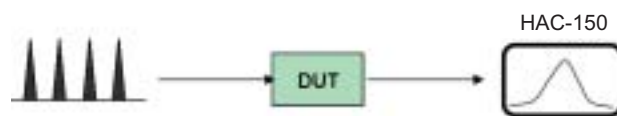


Fig. 3 Characterization of broadened pulse due to dispersion/nonlinear effect of

### Ordering Information

HAC-150--

Option Code		Connector Type	
01	Without PC	FS	FC/SPC
02	With notebook PC	FA	FC/APC
		SS	SC/SPC
		SA	SC/APC