

TIPA

Single-Shot Autocorrelator

FEATURES

- 30 fs – 1 ps pulse duration range
- 500 – 2000 nm wavelength range
- Pulse-front tilt measurements
- High-speed 12-bit CCD camera
- Non-collinear intensity and collinear interferometric autocorrelation traces
- Non-dispersive polarization control
- Compact and portable design
- Pulse-analysis software



TIPA is a single-shot autocorrelator for pulse-front tilt and pulse duration measurements of systems with ≤ 1 kHz repetition rate. Its unique design allows monitoring and measuring of the pulse duration as well as the pulse front tilt in both vertical and horizontal planes. Operation of TIPA is based on non-collinear second harmonic (SH) generation, where the spatial distribution of the SH beam contains information on the temporal shape of the fundamental pulse. The basic idea is that two replicas of a fundamental ultrashort pulse

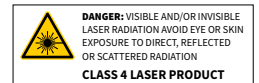
pass non-collinearly through a nonlinear crystal, in which SH generation takes place. The SH beam width and tilt in a plane perpendicular to propagation provide information about the pulse duration and pulse front tilt.

This technique combines low background and single-shot measurement capabilities. The CCD camera carries out the SH beam sampling. TIPA comes with user-friendly software for direct monitoring of pulse properties.

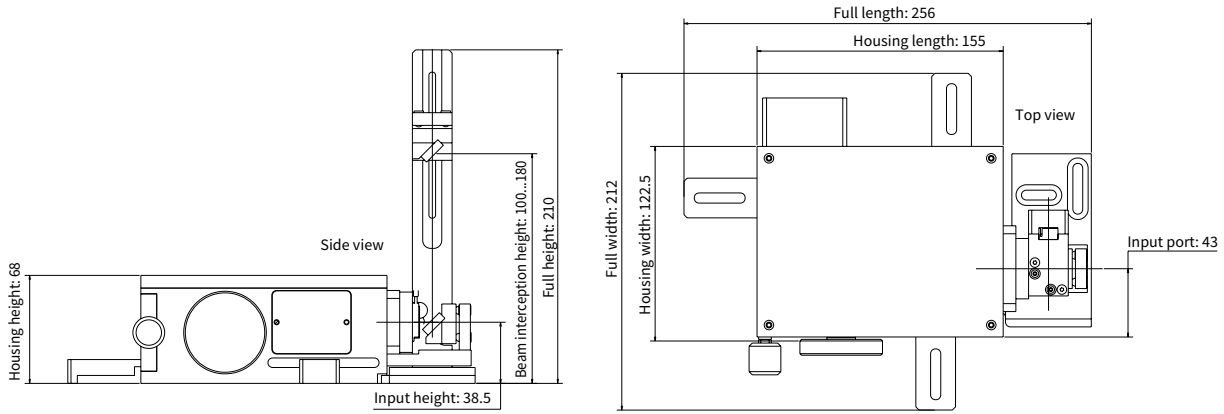
SPECIFICATION

Model ¹⁾	AT1C1	AT2C1	AT5C3
PERFORMANCE			
Input wavelength range	700 – 900 nm	900 – 1100 nm	500 – 2000 nm
Input pulse duration	30 – 1000 fs		
Minimum repetition rate	Single-shot		
Minimum input power	from amplifiers	Integration mode: 5 – 200 mW @ 1 – 1000 kHz Single-shot mode: 30 – 200 μ J	
	from oscillators	800 nm, < 100 fs: > 500 mW @ 75 MHz 1030 nm, < 100 fs: > 300 mW @ 75 MHz	
Temporal resolution	500 fs/mm		
Detector	CCD (1296 \times 964 resolution, 3.75 μ m pixel, 12 bits)		

¹⁾ Non-standard models are available on request.



DRAWINGS



TIPA drawings