



SSA

Designed for use over a broad range of energies and wavelengths, the SSA is well suited to a variety of amplified laser systems, including Ti:Sapphire, Nd:YAG, Nd:Glass, and dye amplifiers.

Laser pulses are split into two beams, which are then non-collinearly frequency-doubled in a non-linear crystal. The relative wavefront tilt produces a spatial time delay in the frequency-doubled signal, resulting in an autocorrelation of the temporal intensity profile of the pulse. The autocorrelation is detected by a CCD array that is read out on a standard laboratory oscilloscope or captured with a computer DAC card.

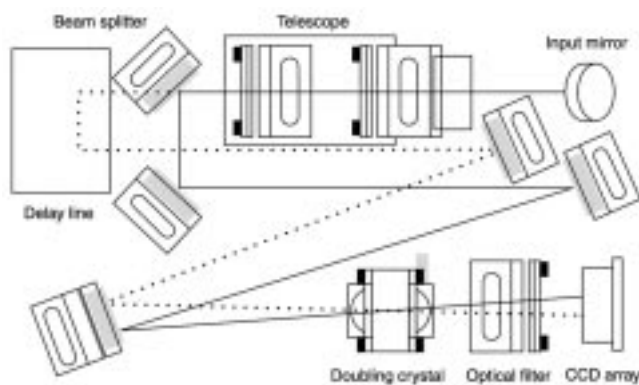
In the femtosecond mode the geometric wavefront tilt introduced by non-

collinearly crossing the beams in the crystal is sufficient to measure sub-picosecond pulses.

In picosecond mode one mirror is replaced by a diffraction grating, introducing additional wavefront tilt and allowing accurate measurement of pulses with Full Width Half Maximum (FWHM) to several picoseconds. In both cases, a variable delay line is included, which provides accurate, calibrated synchronization of the two beams.

The SSA requires a one-time installation and then can be left for in-line measurements. Compact and rugged, the SSA is an indispensable tool for accurately measuring pulse widths.

SSA Optical Layout



Single-Shot Autocorrelator

FEATURES

- **Measures temporal width of amplified pulses**
- **Measures pulse widths ranging from 25 fs to 20 ps**
- **Wavelength coverage from 530 to 1600 nm**
- **Indexed internal mirror allows beam to be sampled without disrupting experiments**
- **Operates on 110-240 VAC, 50/60 Hz**

SSA

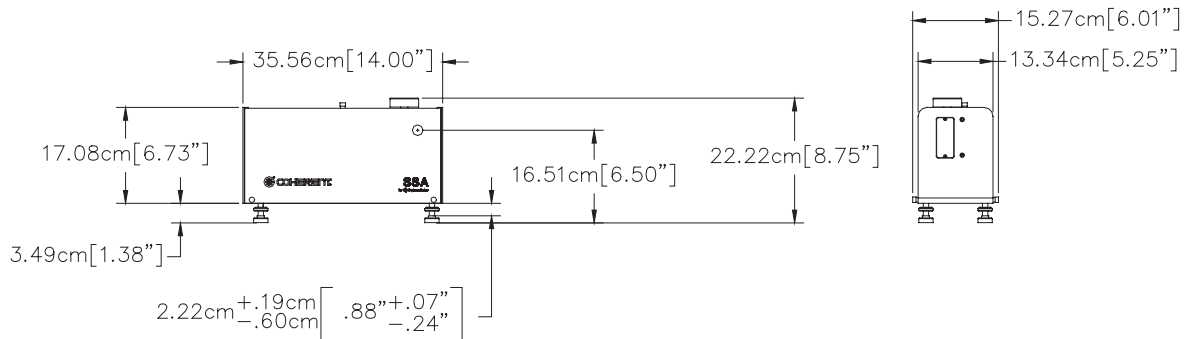


System Specifications

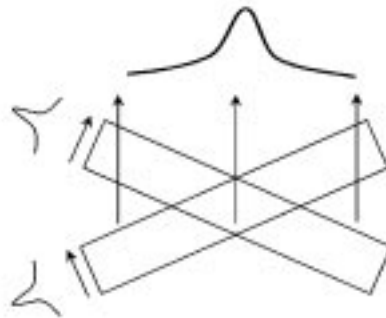
	Femtosecond	Picosecond
Wavelength	530-1600 nm	
Sampling Rate	100 Hz (internally triggered)	
Maximum Sampling Rate	100 Hz (externally triggered)	
Pulse Length	25 to 500 fs	500 fs to 20 ps
Range	1.8 ps	34 ps at 800 nm ¹
Resolution	5 fs	0.085 ps at 800 nm ¹

¹ In picosecond mode, the range and resolution are wavelength-dependent. Contact us for details on a specific wavelength.

Mechanical Specifications



Titled Wavefronts Produce Autocorrelation



COHERENT, INC.

5100 Patrick Henry Drive
 Santa Clara, CA 95054
 phone (800) 527-3786
 (408) 764-4983
 fax (800) 362-1170
 (408) 988-6838
 tech.sales@Coherent.com
 www.Coherent.com

Japan +81 (3) 5635 8700
 Benelux +31 (30) 280 6060
 France +33 (1) 6985 5145
 Germany +49 (6071) 9680
 Italy +39 (02) 34 530 214
 UK +44 (1353) 658 800

Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice.

For full details on warranty coverage, please refer to the Service and Support section at www.Coherent.com, or contact your local Sales or Service Representative.

