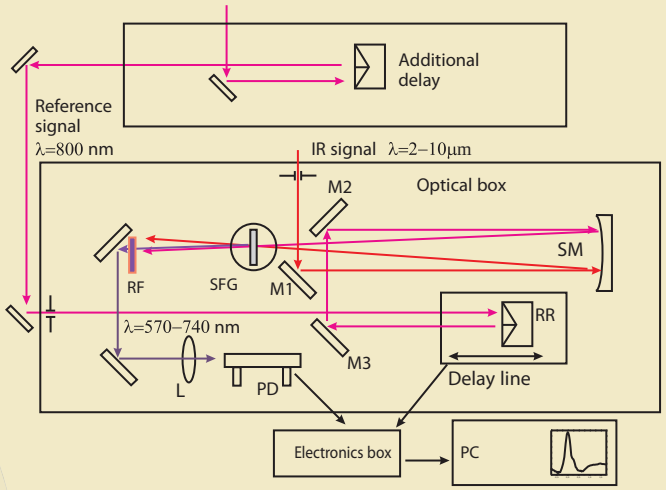
DEL MAR PHOTONICS

Diagnostics

Cross-Correlator CCIR-800

- High temporal range
- High sensitive photodetector
- USB compatible



Cross-correlator CCIR-800 scheme

Product overview

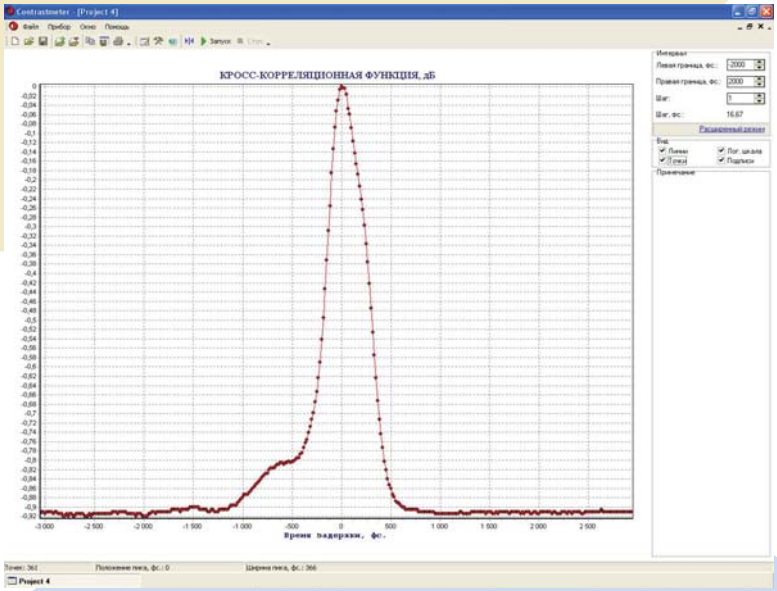
The IR cross-correlator is specifically developed for measuring duration and near contrast ratio of the IR ultrafast radiation (λ=2000 nm - 10 μm) that is usually generated by the utrafast OPAs. The direct measuring of IR pulse duration (for example, autocorrelation method) is an awkward and difficult task so we propose a simple and an effective method for its measuring.

The IR cross-correlator (CCIR-800) is based on the scheme of the correlation of the IR pulse and reference pulse (R) (λ=800 nm, τ=30-50fs). The both beams are focused by the spherical mirror into the thin nonlinear crystal for sum-frequency generation (SFG). The SFG signal is detected by high sensitive photodiode (PD). The SFG signal as a function of optical delay between the IR and R pulses yields the cross-correlation function. The duration of IR pulse is given by $\tau_{iR}^{p} = \tau_{cc}^{p} - \tau_{800}^{p}$,where τ_{cc} - the FWHM of cross-correlation function, τ_{800} - the width of reference signal, p=2 and 1.65 for Gauss and $sech^2$ pulse, respectively. The cross-correlation function is asymmetric which allows to distinguish the pre- and post- structure of the IR pulse.

The CCIR-800 includes an opto-mechanical assembly and electronics with USB interface. System is easy to operate and includes a full set of user friendly software tools for data collection and analysis. Opto-mechanical assembly consists of optical box and mechanical kit for additional delay of the reference pulse.

	CCIR-800
Wavelength (input), μm	2 - 10*
Wavelength (reference), nm	780-820
Energy of input and reference signals, μJ	< 1
Pulse width, fs	> 20
Polarazation (for input and reference signals)	linear-horizontal
Repetition rate, kHz	< 3
Temporal resolution, fs	17
Temporal range, ps	200
Electric power	220/110 V AC; 50/60 Hz +-10%
Dimensions, mm	Optical box 580x250x210 Control unit 250x180x90

** - when switching to the one of the following ranges : 2 μm – 3 μm, 3 μm – 5.5 μm, 5.5μm – 7 μm, 7 μm –10 μm - the replacement of crystal and selecting filter is required.*



Software screenshot

Del Mar Photonics, Inc.
4119 Twilight Ridge
San Diego, CA 92130
USA

Tel: (858) 876-3133
Fax: (858) 630-2376
e-mail: sales@dmphotonics.com
www.dmphotonics.com