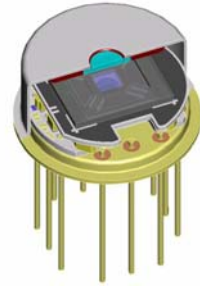


Evaluation kit for FPI detectors

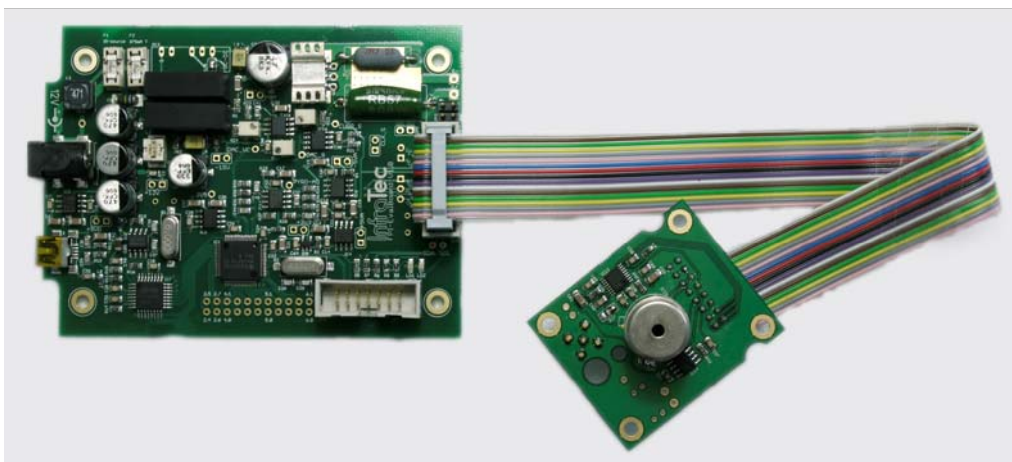
Purpose:

The kit supports customer needs for an initial test of InfraTec's Fabry-Perot detectors without having to develop test circuitry and software themselves. It allows easy control of detector and IR source with customized software to analyze the detector signals. With the help of this kit a quick and easy configuration of a simple FPI spectrometer is possible.



LFP-3041L-337 or LFP-3950L-337

FIGURE



CONTENT AND FEATURES OVERVIEW

It includes a basic board and a FPI detector board with USB Interface, USB cable, ribbon cable, CD-ROM with test and measurement software, USB driver and a manual. The following features are integrated:

- Activation of FPI detector and analysis of signals
- Activation of IR source (no IR source supplied)
- Extensive configuration options including mappings of complete spectra by use of the "FPI evaluation workbench" software

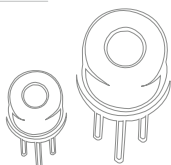
A version of this kit with one mounted FPI detector (LFP-3041L-337 or LFP-3950L-337) and a MIRL 17-900 IR source is also available on request.

SPECIFICATION

- Power supply: 12V DC
- Current consumption: 150mA (without IR source)
- Detector supply: $\pm 5V$
- LFP-control voltage: 0...35V 12Bit
- Control of IR source up to 900mA DC and 100Hz (square wave 50% duty cycle)
- Signal acquisition with 12Bit 1kHz, analysis with FFT-technique
- Rohs conformity

REQUIREMENTS

- PC with Windows 2000, XP or Vista
- USB 2.0 Interface
- Power supply 12V DC (300mA Minimum)
- Eventually LFP detector and IR source



Evaluation kit for FPI detectors

PERFORMANCE DETAILS

Electronics and software of the FPI Evaluation kit are designed to give the user full access to performance and tuning capabilities of InfraTec's new "variable color" products.

The basic operation principles are very similar as normally applied for conventional single or multicolor pyroelectric detectors: Modulation frequency, duty cycle and driving current of the IR source can be configured by software. The detector signal can be displayed real-time and recorded with 12Bit resolution and 1kHz sampling frequency. Evaluation of the RMS amplitude is implemented by a FFT-algorithm.

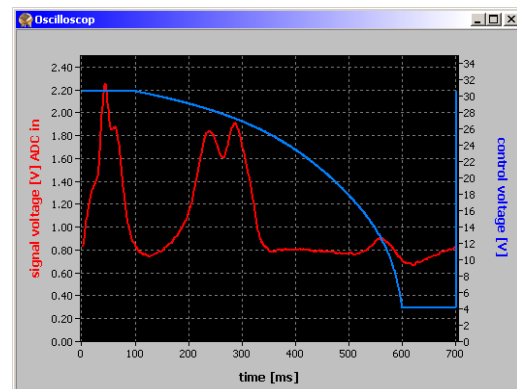
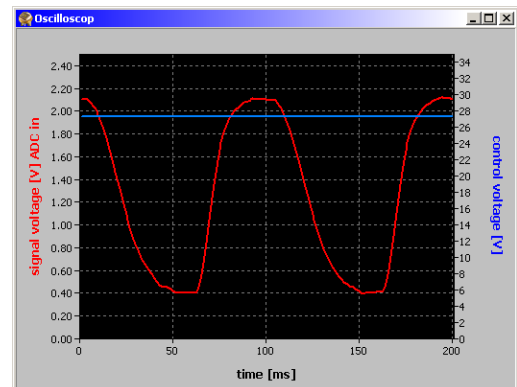
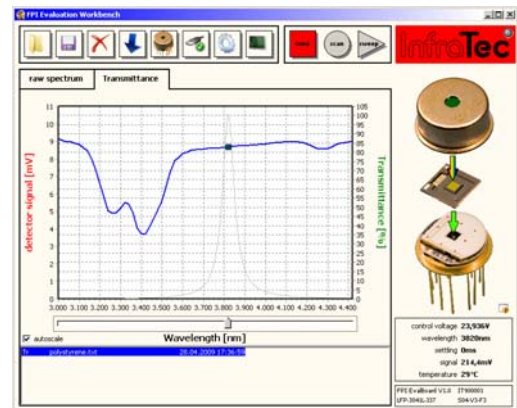
In addition to that, the electronics can provide voltages up to 35V with 12Bit resolution to control the tunable filter. To easily create calibration files for the tuning, characteristics of individual detectors are also supported by the software. Latency for filter settling between measurements at different wavelengths can be configured, too.

In the basic operation mode the filter can be manually set to any wavelength within the tuning range. Measurements can continuously be recorded into a log-file.

The more advanced **Sequence mode** is intended to compare the tunable detector with conventional multispectral solutions like filter wheels or multicolor detectors. The filter is periodically adjusted to a set of wavelengths, which can be predefined by the user.

The **Scan mode** is used to obtain complete spectra with a designated spectral range and step size. Measurements can be displayed and saved as raw signal spectra or as transmittance spectra if a previously measured background spectrum was defined as reference.

The software also supports the new innovative **continuous sweep mode**. This particular operation mode has principally the potential to accelerate the recordings of spectra remarkably. Here the IR source is DC-driven, but the filter is continuously scanned and so the spectral information can be used directly for the modulation. With the assistance of the software waveform, tuning speed and wavelength range can be adapted to find the most suitable operation. Recordings can be made with the integrated logging function, so external software can be used for further signal analysis.



Please find more details in the application kit manual and in our FPI detector application note