



Nuclear Physics



Labs and Education



Industrial



KEY FEATURES

- ◆ All-in-one detector and preamplification electronics for **Gamma Spectroscopy**
- ◆ Based on a **SiPM** area up to nearly 1.5 inch²
- ◆ 20-80 V Integrated High Voltage for SiPM biasing
- ◆ **i-Spector PLUS** version with embedded timing unit for coincidence and ToF measurements among multiple devices
- ◆ OEM electronics or detector assembly
- ◆ Assembly with CsI scintillator:
 - 18x18x30 mm³
 - 24x24x30 mm³ (approx. 1x1x1.2 inch³)
 - 30x30x30 mm³ (approx. 1.2x1.2x1.2 inch³)
- ◆ Other assembly option available on request: NaI, BGO, LYSO, LaBr3 or any other compatible scintillator
- ◆ Demountable mechanics to easily change crystal
- ◆ Ethernet connection to PC
- ◆ Web-based configuration and monitor interface
- ◆ Compact form factor
 - Ø 60 mm, h 90 mm (OEM)
 - Ø 60 mm, h 135 mm (ASSEMBLY)

DESCRIPTION

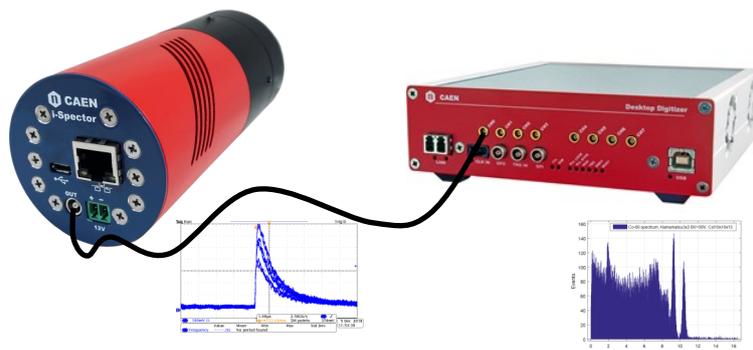
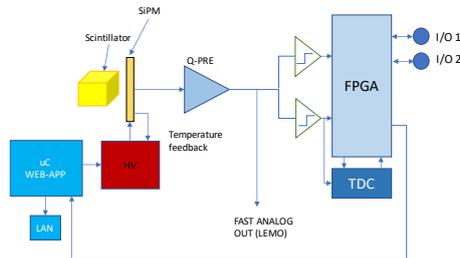
The i-Spector is a fully-integrated tube designed to replace existing systems based on PMTs. This compact unit is based on a SiPM area (18x18, 24x24 or 30x30 mm²) with preamplifier stage, integrated power supply for SiPM biasing with temperature feedback loop and a monitor for temperature, current and voltage. The i-Spector can be controlled through Ethernet. The output is a fast analog signal that can be digitized or processed with a common Digitizer, MCA or discriminator/TDC chains.

i-Spector is a solution dedicated to those users that need the versatility of a full compact single photodetection system for spectroscopy applications. Its profile makes it ideal to substitute PMTs in many physics experiments.

i-Spector PLUS integrates an additional **Timing Unit** that is able to correlate the detector signal with external signals. It is designed to perform event timestamping, ToF measurements (50 ps resolution with integrated TDC), coincidence between multiple i-Spector modules and photon counting.

A **web-based interface** is supplied with the i-Spector and i-Spector PLUS, providing status information, High Voltage control and communication setup functionalities. If the dynamic change of parameters and monitor is not required, the configuration could be stored in the internal flash and the module could be used as a **stand-alone unit**, without **any external interconnection except that the supply voltage, as a classical PMT.**

Multiple i-Spector tubes can be connected and controlled from a single PC. The API interface allows to control multiple devices using very simple http requests and JSON vectors.



i-Spector in assembly version, used as a PMT replacement, is connected to a CAEN DT5730 Digitizer to acquire a typical gamma spectrum.

