DRAAGBARE HPGE

peo DETECTION

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PHDS Co. specializes in the development of portable High-Purity Germanium (HPGe) gamma-ray detectors, providing high-resolution spectroscopy and imaging capabilities for applications in nuclear security, emergency response, and scientific research. Their instruments are designed to offer precise isotope identification and quantification in field-deployable formats.

Product offering

GeGI: Imaging HPGe Detector

NP Radiochemistry Imager

Fulcrum: HPGe Detector

Fulcrum-40h: 40% HPGe Detector

LoPro HPGe Detector

GeGI: Imaging HPGe Detector

- HPGe gamma-ray spectroscopy and isotope identification
- Real-time exposure rate calculation
- Fully capable of imaging Special Nuclear Materials (^{235}U and ^{239}Pu)
- Fast cool-down to operating temperature
- Long-life mechanical cooler
- Compact and hand-portable
- Hot-swappable batteries for continuous field operation
- User-friendly tablet operation
- Reachback File: ANSI N42.42 format

NP Radiochemistry Imager

The NP Imager is specifically designed to measure the dynamics of radiochemical separation processes in real time. Developed under a Small Business Innovation Research (SBIR) grant from the Department of Energy Office of Nuclear Physics (NP), the NP Imager focuses on the unique needs of radiochemists and technicians separating radioisotopes for radio-pharmaceuticals and other applications.

The NP Imager monitors the locations and distributions of multiple isotopes over time, allowing the radiochemist and technician to monitor separation processes in real time. In the process shown here, NP Imager measured Lu-177 and Yb-175 separation on a column over the course of 3 ½ hours using 10-minute exposures. Note that it's clear when the Yb-175 has been removed from the column, allowing the radiochemist to know when to collect the desired Lu-177.

Applications

- Radiopharmaceutical Process Monitoring
- Radiochemical Separation Research and Development
- Nuclear Physics Isotope Production
- Nuclear Materials Management
- Waste Management
- Decontamination and Decommissioning

Fulcrum: HPGe Detector

Overview:

The Fulcrum is a next-generation HPGe gamma ray detector engineered for rapid, accurate isotope identification in a compact, field-ready design. Weighing just 8 lbs, it is the lightest and most portable detector of its kind, making it ideal for mobile and emergency response scenarios. Equipped with the user-friendly PHDS OMNI software, the Fulcrum offers real-time exposure rate calculation and intuitive, color-coded isotope identification—all accessible through a simple touchscreen interface. With fast cool-down, wireless capability, and extended field operation features, the Fulcrum sets a new standard for high-performance gamma spectroscopy in any environment.

Features:

- HPGe gamma-ray spectroscopy and isotope identification
- Ultra-fast cool-down to operating temperature (2 hours)
- Most compact and lightweight HPGe detector (8 lbs)
- Relative efficiency: 12% at 1333 keV
- Real-time exposure rate calculation
- Compact, hand-portable design
- User-friendly Android app interface
- Wireless capability for remote operation
- Long-life mechanical cooler
- Bridge battery option for uninterrupted field use
- User-defined timed data acquisition with auto file save
- Reachback file output in ANSI N42.42 format

Fulcrum-40h: 40% HPGe Detector

– HPGe gamma-ray spectroscopy and isotope identification
– Relative efficiency of 40% (at 1332 keV)
– Fast cool-down to operating temperature (5 hours)
– Long-life mechanical cooler
– ISOTAC activity calculator
– Configurable with 1 or 2 onboard batteries and optional neutron detector
– Real-time exposure rate calculation
– User-specified timed data acquisition and auto file save
– Reachback File: ANSI N42.42 format

LoPro HPGe Detector

The LoPro is a lightweight, low-profile HPGe gamma ray detector used by U.S. military operators around the world. The LoPro provides unmatched field reliability and gamma-ray spectroscopy for mission-critical applications. The unique form factor allows inconspicuous measurements for missions in which discretion is a must, while not sacrificing the spectroscopic performance expected from an HPGe detector.

Features

HPGe gamma-ray spectroscopy and isotope identification	Fast cool-down to operating temperature (3 hours)	Compact and hand-portable (8 lbs)
Integrated GADRAS isotope identification	Relative efficiency: 12% (at 1333 keV)	Real-time exposure rate calculation
User-friendly Android app, including TAK compatibility	Reachback File: ANSI N42.42 format	Long-life mechanical cooler
Long battery life (up to 15 hours per battery)	Wireless capable for remote operation	User-specified timed data acquisition and auto file save