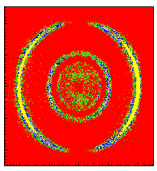
The DLD delay line detectors



RoentDek Handels GmbH

Supersonic Gas Jets
Detection Techniques
Data Acquisition Systems
Multifragment Imaging Systems

The **RoentDek DLD-detectors** are position sensitive single particle detectors. Their main applications are found in the following fields:

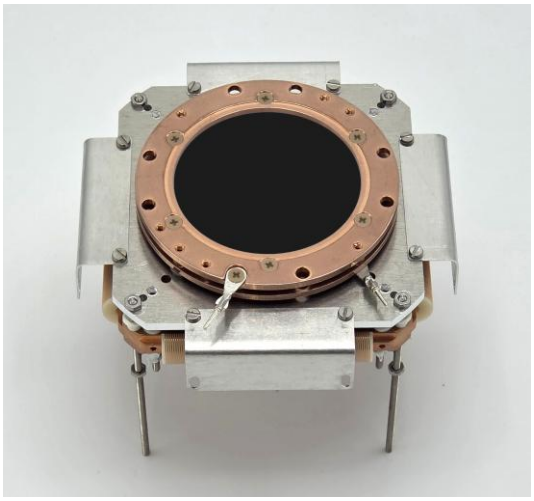
- beam monitoring
- atomic/molecular physics incl. laser- and synchrotron measurements
- COLTRIMS, VMI
- atom probe
- surface analysis, MALDI
- FLIM
- Upgrade of existing setups (e.g. Scienta spectrometers)

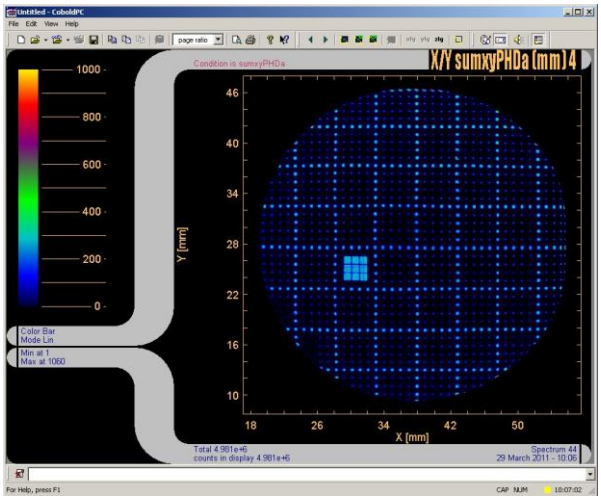
Delay line detectors combine a huge range of applications. Compared to other techniques (e.g. quadrant anodes, resistive screen anodes, CCD-cameras) the delay line technique is much less limited. No other technique offers such a wide range of parameters as high particle rate, high position resolution and low dead time.

RoentDek DLD detectors are available in various sizes ranging from 40 mm active area up to 150 mm active diameter – either as single devices or as part of a complete system which include a complete set of the required electronics and complete software solutions (incl. support for LabView).

Already starting with the early detectors **RoentDek** always kept a focus on multi-particle detection (e.g. required for recording complete molecular fragmentations). Lowest dead times and multi-hit capability in the hardware as well as in the software are a fundamental part of our philosophy.

For applications with special demands concerning multi-particle detection, zero dead time and highest image linearity **RoentDek** has developed the hexagonal delay line detectors **HEX40/75/100**.





Typical specifications:

- Particle rates beyond 1 MHz
- Multi particle detection
- Absolute detection efficiency up to 81%
- Dead times < 50 ns (exactly zero in the case of our patented **HEX-delay line detectors**)
- Position resolution 17 to 45 µm (RMS)
- Timing TOF-resolution 25 to 100 ps (RMS)
- Also available as timing detectors without position readout. (e.g. the DET40)
- Available with photon cathodes for single **photon detection**.

for more information see www.roentdek.com/info/Delay_Line