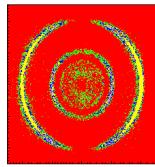


# The DLD delay line detectors



**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:

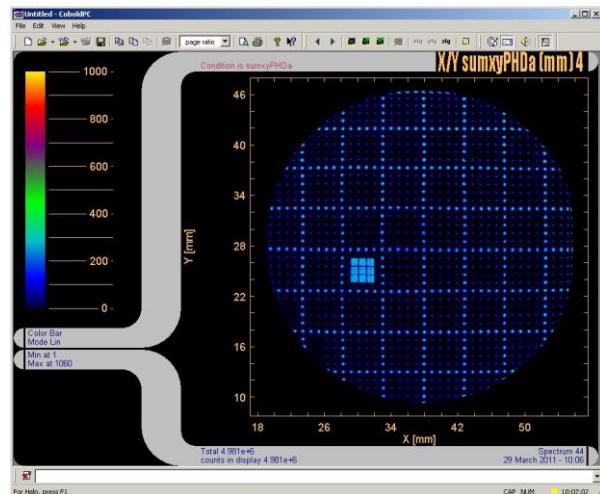
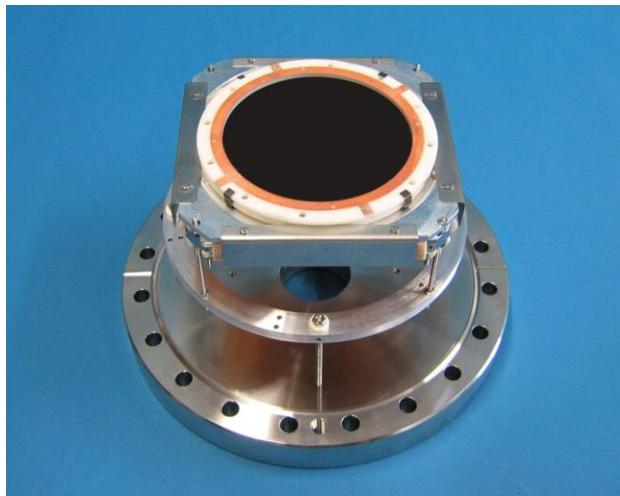
- beam monitoring
- atomic/molecular physics incl. laser- and synchrotron measurements
- [COLTRIMS](#), VMI
- atom probe
- surface analysis, MALDI
- FLIM
- Upgrade of existing setups (e.g. Scienta spectrometers)

[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](#).