

Products for your imagination

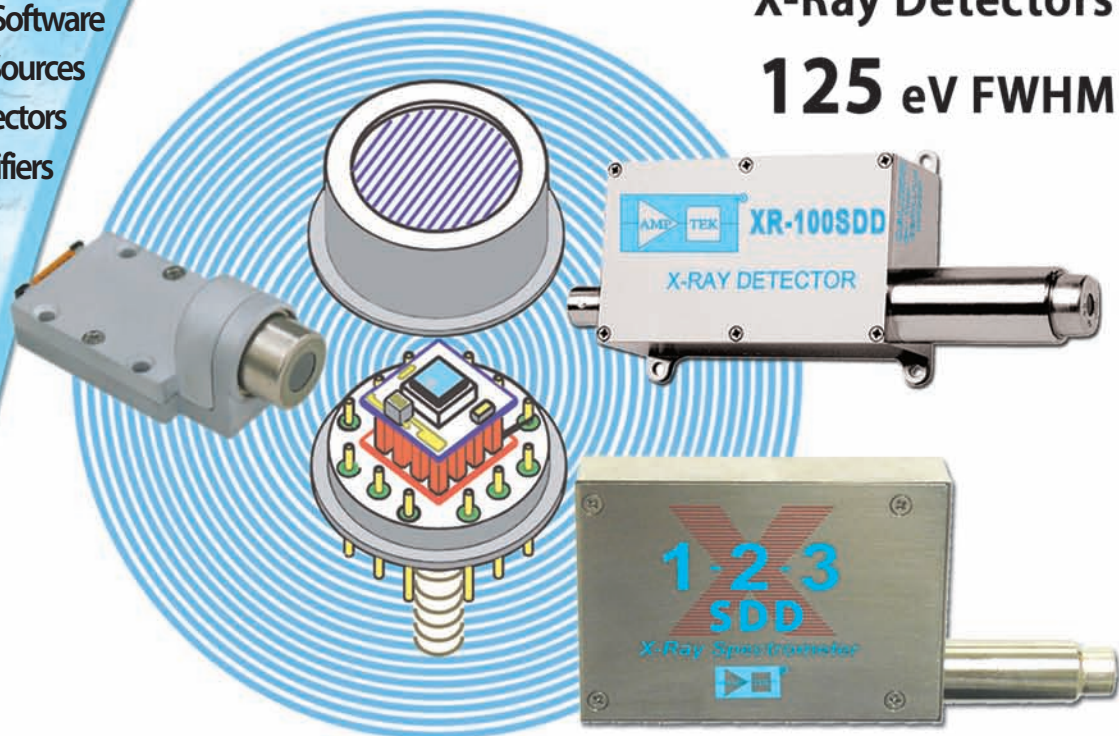
Complete X-Ray Spectrometers
X-Ray and Gamma Ray Detectors
Digital Pulse Processors
Multichannel Analyzer
XRF QA Software
X-Ray Sources
Scintillation Detectors
Charge Sensitive Preamplifiers

New at Amptek

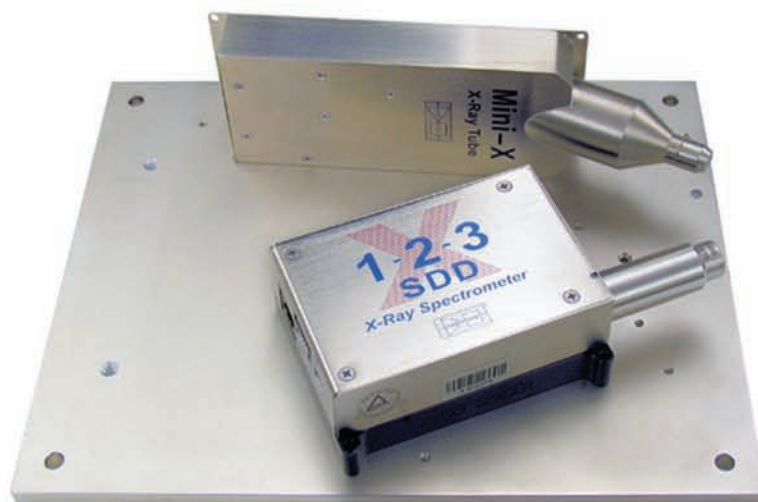
SUPER SDD

X-Ray Detectors

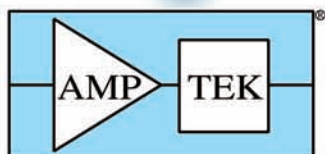
125 eV FWHM



Experimenter's XRF Kits



OEM's #1 Choice
For XRF



Over 30 Years of Innovation
www.amptek.com

New Versions of Top Sellers Inside

X-RAY and GAMMA RAY DETECTORS

X-Ray Fluorescence Made Easy

No Liquid Nitrogen
Low Cost

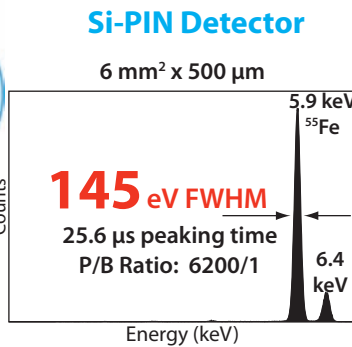
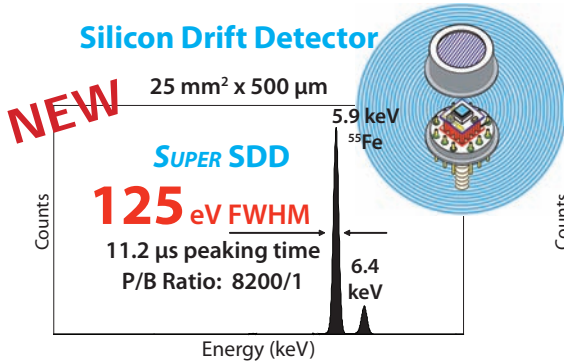
OEM's #1 Choice
For XRF

USB Controlled
Easy to Use

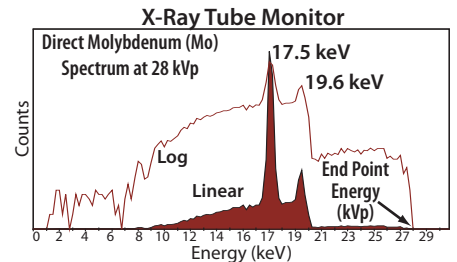
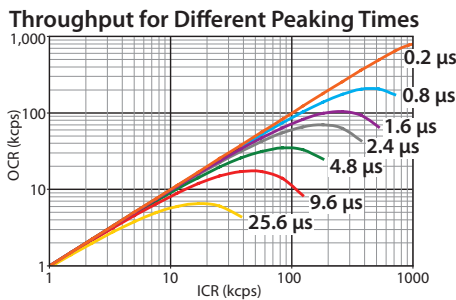
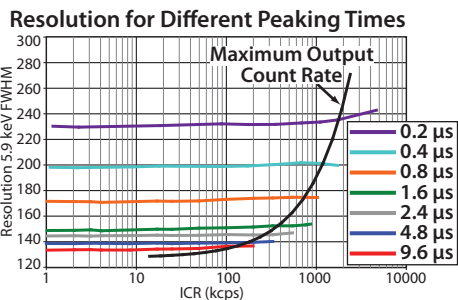
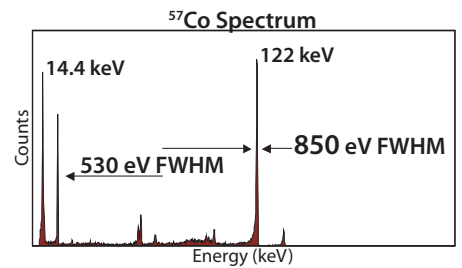
DETECTOR APPLICATIONS

- RoHS / WEEE Compliance
- Restricted Metals Detection
- Vacuum Applications
- Semiconductor Processing
- Paper Analysis
- Research & Teaching
- OEM
- Regulations Compliance
- Environmental Monitoring
- Nuclear Plant Monitoring
- Plastic & Metal Separation
- Smoke Stack Analysis
- X-Ray Fluorescence (XRF)
- X-Ray Tube Beam Monitor
- Nuclear Medicine
- Heavy Metals in Plastic
- Plating Thickness
- Art & Archaeology
- Process Control
- Sulfur in Oil & Coal Detection
- Nuclear Safeguards Verification
- Lead Detectors
- Coal & Mining Operations
- Forensic Investigations

Step 1: Choose Your Detector



CdTe-diode Detector for Gamma Ray Detection



Step 2: Choose Your Configuration

XRF System



XR-100CR Si-PIN Detector or
SUPER SDD XR-100SDD Silicon Drift Detector or
XR-100T-CdTe X-ray and γ-ray Detector
and
PX5 Digital Pulse Processor, Power
Supply, Shaping Amplifier and MCA
and
Mini-X Portable X-Ray Tube System
and
XRF-FP Quantitative Analysis Software

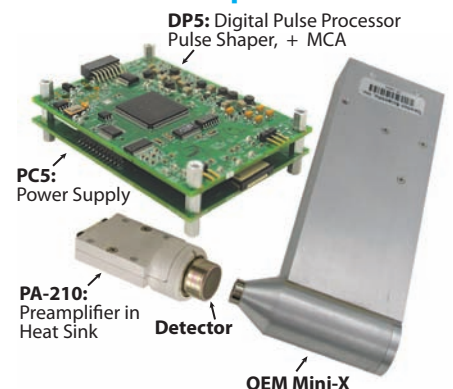
X-Ray Spectrometer



X-123 Includes:

- 1 Detector and Preamplifier
- 2 Digital Pulse Processor and MCA
- 3 Power Supply

OEM Components



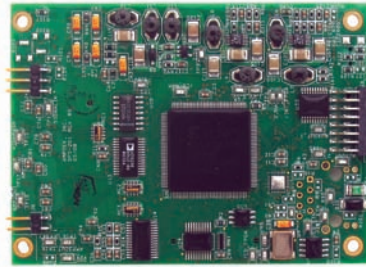
visit www.amptek.com for complete specifications

DIGITAL PULSE PROCESSORS

New Version



Digital Pulse Processor
Shaping Amplifier
MCA
Power Supplies



Size: 3.5 in. x 2.5 in.

Features of the PX5:

- Compatible with all Amptek XR100 detectors & detectors from other manufacturers
- 80 MHz ADC
- Trapezoidal and CUSP shaping
- Reduced ballistic deficit
- High count rate capability & stability
- High throughput & pile-up rejection
- MCA with 8 k channels
- USB, RS232 & Ethernet interface
- Software for instrument control, data acquisition, and analysis
- Oscilloscope mode

Features of the DP5:

- 80 MHz ADC
- Replaces both shaping amplifier and MCA
- Supports both reset and feedback preamplifiers of either polarity
- 16 SCAs
- Configurable for use with PMTs
- For OEM or custom laboratory use
- Highly configurable

Also available: XRF-FP Quantitative Analysis Software

Experimenter's XRF Kits

NEW



XRF Kits include:

- X-Ray Detector
- Digital Pulse Processor, MCA, and Power Supply
- Mini-X X-ray Generator
- XRF-FP Quantitative Analysis Software
- MP1 XRF Mounting Plate
- Stainless Steel 316 (SS316) test sample
- Complete documentation with step-by-step instructions
- XRF Kit wizard for quick software setup

GAMMA-RAY DETECTION SYSTEM

New Version

Features of the GAMMA-RAD5:

Scintillation Detector (NaI)
& Digital Pulse Processor



- Ruggedized scintillator and PMT
- Gain stabilized in software
- Ethernet, RS232 & USB interfaces for robust communications
- USB powers entire system
- Flexible architecture for tailoring interface
- For OEMs and custom users

Nuclear Plant Monitoring
Homeland Security Applications

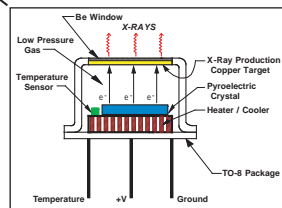
X-RAY GENERATOR

Miniature X-Ray Generator with
Pyroelectric Crystal



Applications

- X-Ray Fluorescence
- Teaching Laboratories
- Instrument Calibration
- Research



Features of the COOL-X:

- Low Power: <300 mW
- Solid state: Pyroelectric Crystal
- No radioactive sources
- Runs on a standard 9V battery
- Variable end point energy: up to 35 kV
- Peak X-Ray flux: 10^8 photons per second (equivalent to a 2 mCi source)
- Small: 0.6" dia x 0.4" (15 mm dia x 10 mm)

X-RAY TUBE

New Version

Features of the Mini-X:

- 50 kV/80 μ A
- Silver (Ag) or Gold (Au) target
- USB controlled
- Stable output
- Fast
- Low power
- Small size



Applications

- X-Ray Fluorescence analysis
- Portable systems
- OEM
- Process control
- Research and teaching

Self-contained system includes:

- X-ray tube
- Power supply
- Control electronics
- USB communication

visit www.amptek.com for complete specifications

MULTICHANNEL ANALYZER

WORLD'S BEST MCA

Features of the MCA8000A:

- 16k data channels.
- Conversion time $<5 \mu\text{s}$ ($>200,000 \text{ cps}$).
- Two stage input analog pipeline.
- Sliding-scale linearization.
- Differential nonlinearity $<\pm 0.6\%$.
- Integral nonlinearity $<\pm 0.02\%$.
- Two peak detection modes: first peak after the threshold (nuclear spectroscopy) or absolute peak after the threshold (particle counter calibration in clean rooms).
- Two TTL compatible gates for coincidence and anticoincidence.
- Stand-alone data acquisition.
- 115.2 kbps RS232 serial interface.
- Compatible with USB to RS232 adapters.
- Free PC software supports ROI, energy calibration, peak information, peak search, multiple spectra, and mathematical operation.



FITS IN A SHIRT POCKET!!

The MCA8000A is a full featured, low power multichannel analyzer intended to be used with a wide variety of detector systems.

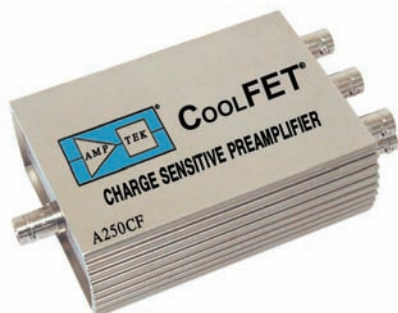
RUNS FOR 24 HOURS ON 2 AA BATTERIES

Dimensions: 6.5 x 2.8 x 0.8 in / 165 x 71 x 20 mm
Weight (including batteries): $<300 \text{ g}$.

CHARGE SENSITIVE PREAMPLIFIERS

Your complete source for high performance preamplifiers and amplifiers

See <http://www.amptek.com/hybrids.html> for Selection Guide



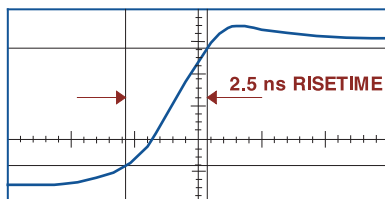
Noise @ 0 pF: 670 eV FWHM (Si)
~76 electrons RMS

Noise Slope: 13 eV/pF with Low C_{ISS} FET
11.5 eV/pF with high C_{ISS} FET

Fast Rise Time: 2.5 ns

Features of the COOLFET:

- Thermoelectrically Cooled FET
- 3 internal FETs to match detector
- Lowest Noise and Noise Slope
- AC or DC coupling to the detector
- Both Energy and Timing outputs
- Optional input protection
- Easy to use



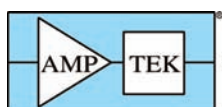
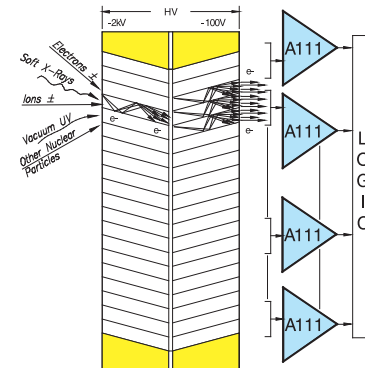
Horizontal = 2 ns/div. Vertical = 500 mV/div.

Features of the A250:

External FET
FET can be cooled
Noise: $<100 \text{ e}^-$ RMS (Room Temp.)
 $<20 \text{ e}^-$ RMS (Cooled FET)
Gain-Bandwidth $f_T > 1.5 \text{ GHz}$
Power: 19 mW typical
Slew rate: $>475 \text{ V}/\mu\text{s}$



A Microchannel Plate (MCP) Array Connected to Multiple A111s



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visit www.amptek.com for complete specifications