On-Stream slurry XRF analyser

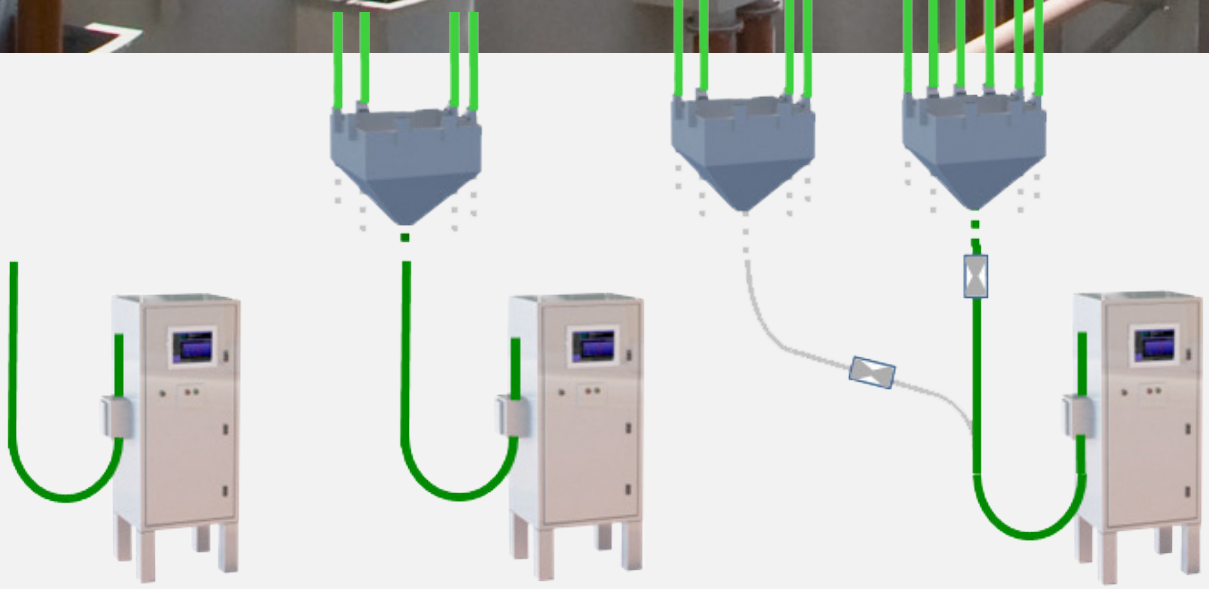
QCX® PERI™ PX2200

FLSmidth

WE DISCOVER POTENTIAL

On-Stream X-ray analyser

Our QCX® PERI™ PX2200 is a technologically advanced solution for your mineral processing operations, with minimal maintenance requirements.



Single stream solution

Few stream solution

Multi stream solution with multiple multiplexers – up to 12 streams supported by analyser – also with foreign brand multi-plexer, retrofitted with control from PERI controller.

Key benefits

- Fast analysis
- Analyse multiple streams
- Lower cost of ownership
- Full range of sampling equipment
- Advanced technology

Rapidly analyse your mineral process streams with our slurry analysis system

The PX2200 analyser system offers state-of-the-art sensitivity and short analysis cycle times for monitoring slurry process streams in mineral processing plants. This system supports multiple streams via a multiplexer system.

The analyser uses a silicon drift detector with a detection range of approximately 500 keV to 30 keV, which includes the primary emission lines from Oxygen to Xenon*. The detector incorporates a thermoelectric cooler to maintain the detection surface at -40°C without using liquid nitrogen. The low power x-ray tube (50W) requires only air cooling, so additional water-based heat exchangers are unnecessary.

PX2200 uses a thermoelectric cooler to maintain a constant temperature inside the analyser cabinet. For extremely hot climates, a cooling-only air conditioning unit is offered.

The analyser is housed in a NEMA 4X/IP66 enclosure, and includes a rugged touch screen for local display and control of the system.

PX2200 connects directly to plant information networks using standard industrial protocols. X-ray spectra, assay information, analyser alarms and events are all stored in an internal Microsoft SQL Server database, which is accessible to other computers on the plant network, such as FLSmidth ECS™ or QCX® PC Servers offering high level control & optimization based on the acquired analyser data. The unit can be remotely supported.

Near-Stream sampling

- Configurable for one to 12 streams with modular multiplexing
- Unlimited number of elements per stream
- Can be retrofitted to existing sampling systems
- Controls composite sampler, calibration sampler and demultiplexer
- Provides detection and warning of sample flow problems

Analytical

- Flexible I/O accommodates new and retro-fit sampling requirements
- Low power X-ray tube
- Uses high performance high rate SDD (Silicon Drift Detector)
- Built-in reference sample for every measurement
- Many elements and solids with a single detector

User and plant interface

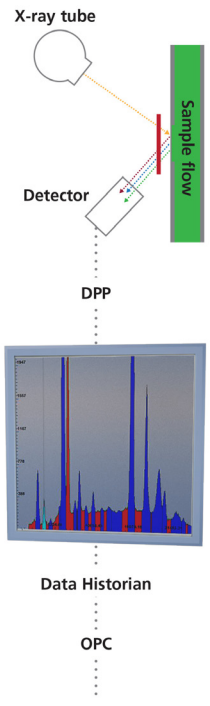
- Windows-based graphical touch-panel user interface
- Local or remote data historian
- Connectivity using OPC or other protocols
- Remote control from plant DCS/PLC
- Remote diagnostic and configuration capability
- Integrates into existing Windows-based secure environments virtualised servers
- Seamless connectivity to FLSmidth ECS & QCX systems

Maintenance

- Front panel user interface provides local monitoring and control; simple Run/Stop switch
- Easily replaceable sample windows
- NEMA4X/IP66 stainless steel enclosure and cooling system, resists corrosion and can be washed down
- Thermoelectric cooling system

Safety

- ¼” stainless steel housing prevents X-ray leakage
- Hardwired interlocks for the sample door and maintenance access
- Employs enclosure, detector and X-ray tube temperature sensors, as well as X-ray on/off lamp failure detection.

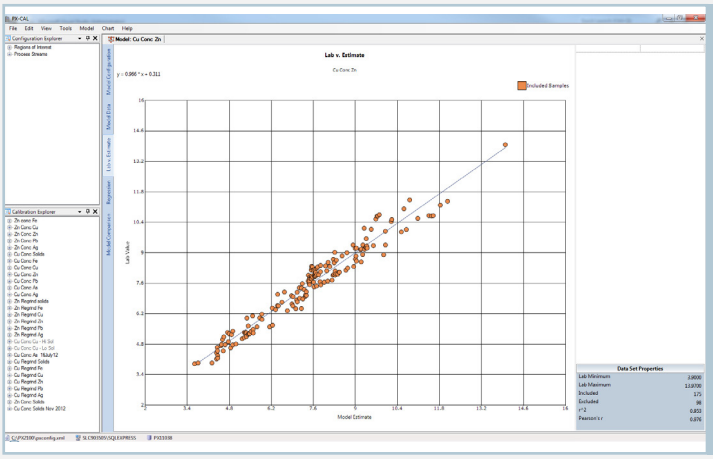


Sample flow enters a flow cell, where the X-ray tube through a plastic window illuminates the sample and a reference wire with a broad spectrum of X-rays producing excitation and scatter over a wide range of energies. Fluorescence and scatter from the sample are detected and converted into a spectrum (energy vs. intensity) by the Energy Dispersive detector.

The spectrum of raw counts is retrieved from the Digital Pulse Processor (DPP) and further analysed by the computer, and elemental assays are calculated based on regression models. Results are sent to the supervisory control system and also recorded in the PX2100 historian.

A fast, accurate and flexible slurry analysis system

PERI Online Slurry Analysis System is a technologically advanced, customisable solution for your plant.



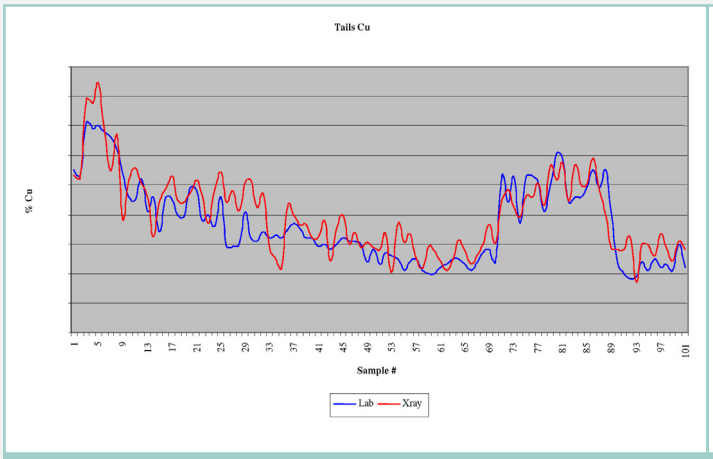
Calibration of intensities (cps) from Raw X-ray Spectrum vs Reference sample data (%)

Typical Standard Errors for Base Metals:

- Feed 5 to 10 % Relative
- Conc. 2 to 8 % Relative
- Tails 5 to 12 % Relative

Typical Copper Concentrate Calibration:

- 15 to 30% Copper R2=0.97
- 2 to 23 % Solids R2= 0.99



PX2200's analytical capability has been demonstrated via trials conducted at several installations. The tests have comprised both PX2200 versus lab data and PX2200 versus data obtained by other brand on-line analysers installed in parallel.

The graphs show typical comparative performance.

Installed applications include feed, concentrate and tailing process flows for Copper, Moly (Molybdenum), Silver, Lead and Zinc concentrators.

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