



Elescan XRF-100: Isotope-free, real-time elemental slurry analysis

Enhancing precision and efficiency in mineral processing operations

Introducing the Thermo Scientific™ Elescan™ XRF-100 Analyzer

The Elescan XRF-100 analyzer is designed to enhance operational efficiency and precision of your mining operations - isotope-free and real-time. The analyzer helps maximize recovery rates while ensuring compliance with regulatory standards and worker safety. Elescan XRF-100 is ideal for both new installations and upgrades, offering flexible integration options for mining operations of any scale.

- Simultaneous multi-element analysis of up to 20 slurry streams
- No clean room or X-ray tube chiller required
- Radioisotope-free
- Highest metallurgical quality control and process optimization
- Intuitive control panels with high operator acceptance

The Elescan XRF-100 analyzer: The smart choice for modern mining operations.



Key features and value propositions



Isotope-free technology

The Elescan XRF-100 Analyzer stands apart with its air-cooled X-ray tube, entirely eliminating the need for radioactive sources. Cut annual radiation checks, radiation safety certified personnel and other administrative burdens associated with isotopes. Rely on accurate and compliant elemental analysis without the hassle of managing hazardous materials.



Real-time elemental analysis

The Elescan XRF-100 provides sequential, near-instant analysis of up to 20 different slurry streams with a count rate of up to 300,000 cps. The high-performance analyzer setup ensures efficient and reliable real-time results. With measurement cycles as short as 15 seconds, operators gain immediate insights, allowing them to quickly respond to process upsets and maximize mineral recovery.



Modular design for flexible plant integration

The analyzer is designed to operate with modular multiplexers (MUX units), which can be configured to fit specific plant needs, allowing for operational flexibility.

Whether for a greenfield installation or a brownfield upgrade, Elescan XRF-100 Analyzer's modular design can be tailored to suit various plant sizes and process requirements. Its scalability makes it suitable for small plants with just a few slurry streams or large facilities handling multiple flows, adapting as your needs evolve.



Ease of maintenance

The Elescan XRF-100 Analyzer is designed with simplicity in mind. An automated window roller minimizes manual maintenance of the flow cell window, featuring self-cleaning technology to further reduce the need for manual intervention. Modular components such as Multiplexer (MUX) and Programmable Electronic Set (PES) push productive uptime to the next level.



Cost efficiency

Affordable yet powerful, the Elescan XRF-100 Analyzer is designed to maximize return on investment for operations of all sizes. By eliminating regulatory hurdles, cutting down maintenance costs, and providing advanced recovery rate optimization, the system ensures a quick payback period and long-term savings.



Remote access

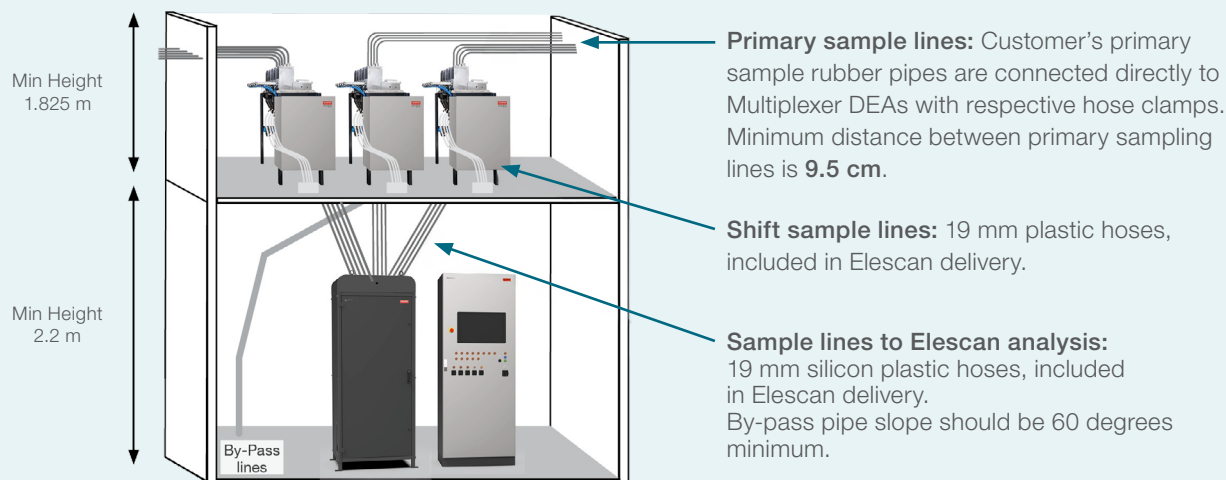
The Elescan XRF-100 Analyzer offers comprehensive remote support capabilities, enabling all manual functions to be performed off-site, facilitating tech support, calibration, and training with ease.

How it works

Help ensure long term stability and accurate results

The Peltier-cooled silicon drift detector and digital pulse processor convert X-ray photons into digital events, enhancing measurement accuracy. Elescan XRF-100 Analyzer conducts periodic internal reference checks to maintain consistent performance over the

long term. It utilizes a standard calibration procedure requiring plant reference samples. Automated calibration verification ensures continuous accuracy without human intervention.



Elescan XRF-100 Analyzer utilizes advanced energy dispersive X-ray fluorescence (EDXRF) technology to provide real-time analysis of slurry streams.

The process involves:

- 1. Sample collection:** Slurry samples are collected from multiple process streams and directed to the Multiplexer (MUX).
- 2. MUX processing:** The multiplexer ensures that each stream is analyzed systematically by directing the slurry to the X-ray Probe.
- 3. X-Ray analysis:** The slurry passes through the X-ray analysis cell, where the air-cooled X-ray tube excites the sample to emit characteristic X-ray fluorescence, which is detected and quantified.
- 4. Return flow:** Analyzed samples are then returned to the process, minimizing waste.

Technical details at a glance

2-20

Number of streams supported

IP55 & NEMA 4

Environmental protection: Double steel enclosure

3-8%

Accuracy for minor concentrations

1-5%

Accuracy for major concentrations

MODBUS/TCP, OPC

Accuracy for minor concentrations

15-60

Second Measurement cycle

70-250 L/min

Sample flow rates

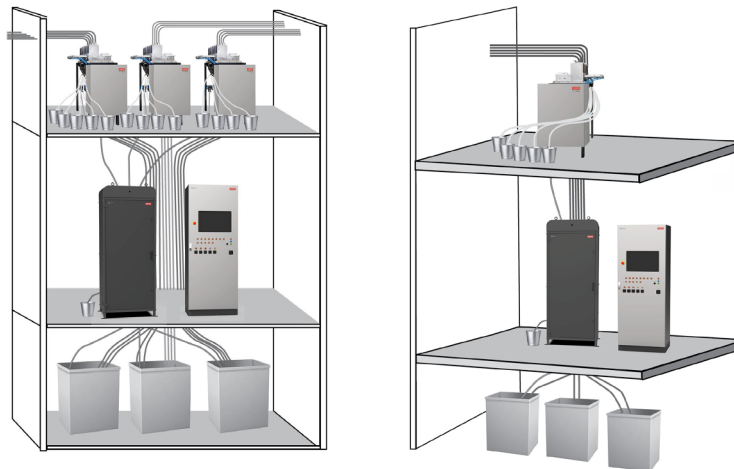
300,000 cps

Maximum count rate

Example use cases

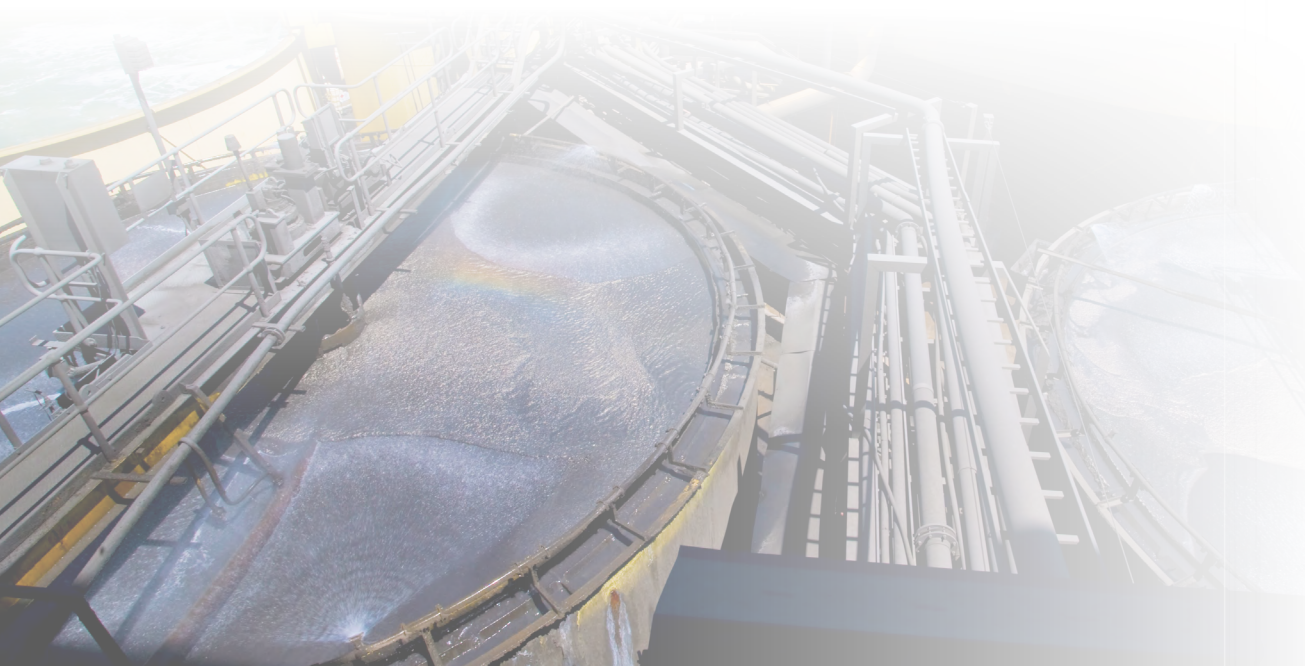
The Elescan XRF-100 Analyzer is designed to bring significant benefits across various mineral processing industries. Here are some examples of the impact it can create:

- **Copper concentrators:** Optimization of copper recovery and reduction of impurities. The Elescan XRF-100 can improve copper recovery by 3 %, reducing the need for manual sampling by 80 %, leading to a significant increase in profitability.
- **Polymetallic ore processing, nickel and chromium Concentrators:** Improvement of yield by monitoring multiple metal elements simultaneously. The analyzer enables achieving the optimal blend for smelting by providing real-time data on elements such as zinc, lead, and silver, increasing overall recovery rates.



Examples of Elescan XRF-100 configurations.

Left: 3-level system. Right: 2-level system



Main enclosures are supplied with a protective cabin to keep slurry and dust off the equipment.

Why choose Elescan XRF-100 Analyzer

Benefits at a glance

Higher recovery rates. Immediate adjustments based on real-time data help optimize the mineral extraction process, reducing losses and improving productivity.

Lower operating costs. Reduced maintenance, increased uptime, and minimized regulatory compliance expenses lead to cost-effective operations, with potential savings of up to 25% in operational costs over three years due to minimized manual sampling and reduced regulatory expenses.

Environmentally friendly. With no need for radioactive sources, Elescan XRF-100 Analyzer aligns with environmental sustainability goals, reducing the ecological footprint of mining operations.

Designed to optimize performance: Our service solutions

Benefit from our tailored services designed to minimize downtime, ensure optimal performance and extend equipment lifespan. The Thermo Fisher service team prioritizes our customers' business goals and requirements.

Exclusive advantages for our customers:

We provide what is needed, right where it counts:

- Maintenance
- Inspections
- Spare parts
- Application support
- Software and system upgrades
- Operator trainings



Learn more at thermofisher.com/elescan

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