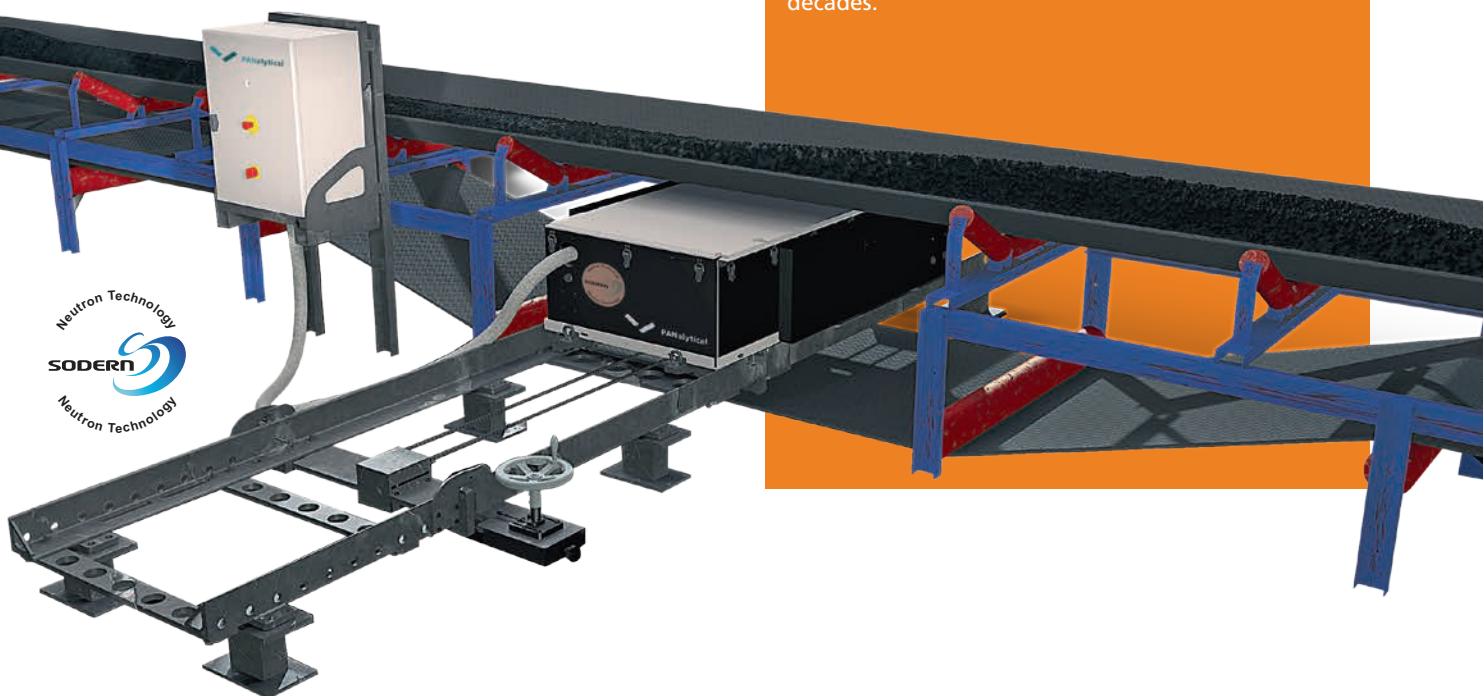**PANalytical**
get insight

CNA³ CROSS BELT ANALYZER

Real-time process control for the mining industry

Unrelenting environmental, quality, and profitability pressure continue to drive the need for process improvements. Rapid and accurate elemental analyses can provide the basis for process control actions to achieve these improvements. The PANalytical CNA³ online analyzer provides this information in real time. Thanks to a unique 'below the belt' design, the CNA³ can be employed for many mining and mineral processing applications.

The CNA³ features the well-known Sodern neutron technology in a new configuration designed for simple installation, easy maintenance and superior performance in mining applications. The unit is based on advanced PFTNA (pulsed fast and thermal neutron activation) technology that can detect a range of elements while providing unmatched safety.

The unique design makes the CNA³ suitable for a wide range of applications. Mining companies can now more readily benefit from proven analysis technology that has been employed in industry for decades.

Versatility for a large range of applications

Coal: Coal is an important industrial mineral both as a fuel and feedstock. Coal quality can vary greatly depending on the source, hence the usage and price are highly dependent on the composition. Whether located directly at a mine, a coal processing plant, a metallurgical plant, a power plant or other usage point, the CNA³ can provide reliable real-time information on the coal composition, calorific value, ash content, volatile matter, and moisture. The CNA³ neutron generator technology enables measurement of a wide range of elements, including C and O.

Copper: The CNA³ design is particularly suited for conveyor belts carrying copper ore. The unit is designed to accommodate wide belts with variable loading and a wide range of particle sizes. With the entire unit below the belt, oversize material passes harmlessly over the analyzer. The unit provides elemental data for a wide range of elements. This data can be used to guide mining operations, sort material streams, and provide feed forward process control information.

Iron: With its large calibration range, the CNA³ can analyze a wide range of iron ore. The unit can be located deep underground or at ground level and can provide elemental information to guide mining operations and/or mix different ores to a target composition to reduce variability in downstream processes.

Nickel: Whether used at the mine or in downstream processing, the CNA³ can provide information to control nickel grade, Fe/Ni ratio, basicity index and other key process parameters. Powered by a neutron tube, the CNA³ provides a controlled neutron flux for stable operation and unmatched safety.

CNA³ installed 800 m underground in the LKAB iron ore mine at Malmberget (Northern Sweden)

Specifications

Analysis	
Methods	Pulsed fast & thermal neutron activation analysis
Generator	Electrical neutron generator (On/Off)
Quantified elements	Application-specific
Moisture	Yes
Features	Non-material specific Unaffected by varying belt loading Stable analytical performance (SAP) system

Environment	
Temperature	From -35 °C (-31 °F) to 45 °C (113 °F)
Humidity	Non-condensing for electronics

Operational	
Conveyor width	Not limited by analyzers
Material top size	Not limited by analyzers
Belt speed	Not limited by analyzers
Belt inclination	0 - 45° or more

Electronics	
Electrical cabinet	H = 800 mm, W = 600 mm, D = 400 mm
Power requirement	220-240 V, 1.4 kW

User interface	
CNA³ control software	CNA³ data collector, trending application and basic pile building function
System interface	OPC (industry standard for communication) Other interfaces upon request

Communication	
Network	Ethernet or fiber optic Suitable interface with many plant control networks
Off-site communication	Internet link (VPN)

Safety	
Safety loop	ARPS (automatic radiation protections system)
Radiation levels	Compliant with European Council Directive 96/29/EURATOM No radiation when the CNA³ is not in operation

Maintenance	
Customer support	PANalytical customer support service with PANassist. Wide range of maintenance contracts upon request

Global and near

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