



Thermo Scientific GS Omni

Light Element Analysis in Slurry Process Streams

The Thermo Scientific GS Omni analyzer provides accurate, real-time elemental analysis of multiple slurry streams for both light and heavy elements. Using the Prompt Gamma Neutron Activation Analysis (PGNAA) technology, the GS Omni analyzer has a distinct advantage over analyzers using X-ray fluorescence by being able to directly measure elements lower than calcium on the periodic table.

Measuring the process, allowing for:

- Process Control of contaminant elements
- Achieving product grades (minimizes penalty costs)
- Increased recovery
- Optimise reagent dosage
- Maintain circuit stability

Features

- Analyzes a range of elements in:
 - Iron Ore flotation and Iron Ore wet magnetic separation - S, Si and Al
 - Phosphate flotation - P, Ca, Fe, Mg and Si
 - as well as various others light element applications in Sulphide Gold and Base Metal flotation.
- Accepts multiple streams using a multiplexer
- Factory calibrated for slurry applications

Benefits

The Thermo Scientific GS (Gamma Slurry) Omni analyzer is the latest development of a proven, robust, analyzer that provides direct simultaneous analysis of multiple elements in slurry beneficiation plants.

The analyzer is available in configurations of 1 to 8 streams. The optimum number of streams is usually dependent on the stream

concentrations, elements of interest, required cycle analysis time, plant layout and process control considerations.

This elemental analyzer will enable improvements in product quality, recovery and lower production costs.

Applications

The Thermo Scientific GS Omni analyzer is a powerful measurement tool in the following applications:

- Slurry beneficiation / Light element analysis
- Product quality / Penalty costs
- Tailings management

Slurries include:

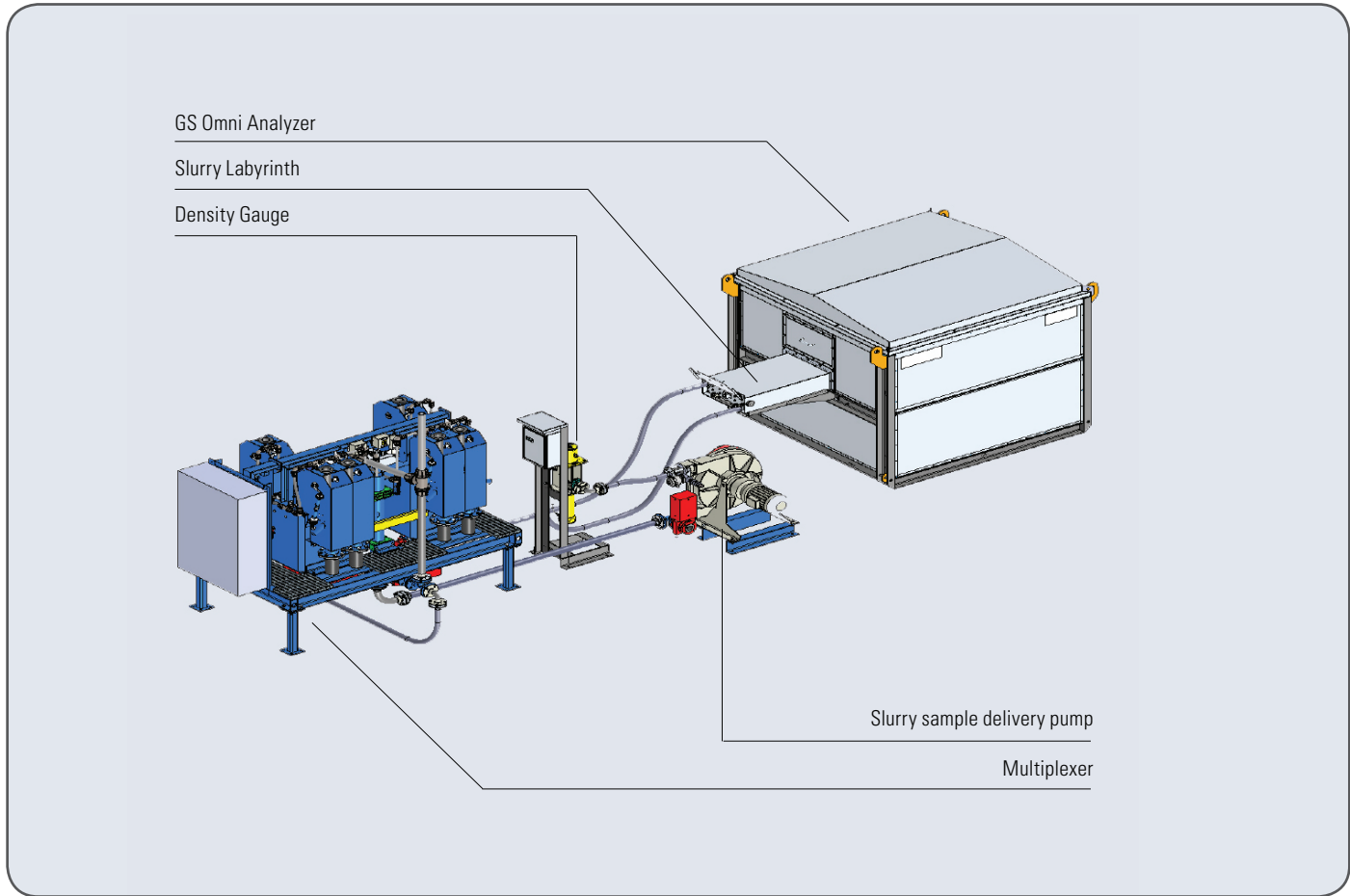
- Iron ore
- Sulphur
- Phosphates
- Copper
- Calcium carbonate
- Magnesium
- Chlorine
- Industrial Minerals
- Rare Earths

The GS Omni: The Best of the Best

The GS Omni analyzer has the following benefits:

- Draws upon almost 40 years of online PGNAA experience
- Latest generation PGNAA slurry analyzer
- Uses proven CB Omni platform with over 1200 units sold
- As distinct from the common XRF technique, most light elements can be directly measured
- The PGNAA technology is not affected by variations in particle size (up to 5 mm), due to the high penetration of neutron and gamma rays
- Scintillation Detectors do not require cooling
- Factory calibrated and only requiring infrequent site checks/maintenance with supplied reference standards
- When used with a representative primary sampler (SamStat-30C) the multiplexer can be used for near metallurgical quality samples for much higher flow rates, up to 23,800 m3/h. This presents an opportunity for cost saving on duplication of sampling systems
- Unique sample presentation system that ensures a significant and constant volume to the detection system

Applications Include	
Application	Elements of Interest
Iron Ore slurries	Fe, S, Si, Mg, Al
Phosphate flotation	P, Ca, Fe
Gold	S
Calcium Carbonate	Fe, Si, Al, Ca, Mg
Ni	Ni, S, Mg
Cu	Cu, S, Si



GS Omni Components

The analyzer has many components in common with the widely used Thermo Scientific Cross Belt Analyzer (CB Omni) platform such as the detector, digital signal processing and electronics, neutron source, shielding blocks and software. The GS Omni analyzer can offer higher source strength and multiple detectors to increase accuracy or shorter measurement times when demanded by the application. The remote diagnostics (down to the detector) with our specialized service support, ensures long term optimum analyzer performance.

The multiplexer (used for up to eight streams), has been designed for and is proven to give low maintenance operation.

Fixed slot sampler diverters are located on the multiplexer feed for each stream. This permits collection of shift composite sample for metallurgical accounting purposes. The multiplexer also provides de-aeration of frothy process streams to ensure a high level of accuracy.

Service and Support

Our service and support network offers a complete array of services designed to effectively commission and to help you maintain the availability and optimize the accuracy of your analysis system. Our global service team delivers around the clock support with guaranteed response times, customized training, parts, preventative and corrective maintenance, and more.

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General Specifications

Number of Streams	1 to 8
Flow Rate m ³ /h	5 to 15

Power

Power kW	26
Voltage (3 Phase)	380 to 600
Voltage (Single Phase)	110 to 230 *for operator console only
Frequency Hz	48 to 62

Flushing Water (Clean plant water - Intermittent requirement)

Connection	25mm / 1" BSP
Max flow L/m	84 to 168
Max Pressure kPa	300 to 800

Air

Connection	6mm / ¼" BSP
Min Pressure	550 kPa
Max Pressure	1000 kPa
Approx. Consumption L/h	50

Miscellaneous Specifications

Accuracy	Accuracy is application specific and available upon request
Cooling	No cooling is required for the Analyzer, its detection system, or the Slurry Handling system
Detectors	Sodium Iodide Scintillation Detectors – 2 or 4 (application specific)

Weight and Dimensions

Analyzer	5500kg	1.95m H x 2.2m W x 4.5m L
Slurry Handling System	2500kg	2.2m H x 1.75m W x 2.5m L

Find out more at thermofisher.com/minerals
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