FULLER®

Online Elemental Analyser

QCX® CUBE X10 ONLINE ELEMENTAL ANALYSER

The QCX® CUBE X10 Online Elemental Analyser is a fully automated online analyser for powder materials, based on EDXRF technology (Energy Dispersive X-Ray Fluorescence). It will as standard deliver analysis results for the elements Ca, Si, Al and Fe, and with helium purge additionally Na and Mg. Other elements are available on request after a site-specific evaluation.

QCX® CUBE X10 is designed as a complete and self-contained solution, including sampling components, analyser unit, airconditioned shed and a local control system with Human Machine Interface panel. It can operate autonomously, simply delivering analysis data to a connected communications partner.

The main application is raw meal analysis in a cement plant, where the analysis data are used for raw mix control in combination with the QCX/BlendExpert-Mill software: By adding fast and frequent data from an online analyser to a system with automated sampling and well-performing central laboratory, it becomes possible to establish a tight chemical quality control.

The combination of well-proven industry-standard sampling components and a state-of-the-art EDXRF analyser unit, secures reliable operation and accurate results. Built with industrial strength, the QCX® CUBE X10 operates effectively, long term - even in the toughest settings.

FAST, RELIABLE ANALYSIS

Advantages

- **Safety:** The entire system is as standard CE marked. This guarantees a consistent and high level of operator safety as well as compliance with a wide range of important international safety standards.

- **Efficiency:** The system is delivered as a complete and self-contained solution - fully configured, programmed and dry tested from the factory. This secures a fast and trouble-free installation and start-up process.

- **Serviceability:** QCX® CUBE X10 is delivered with remote connectivity, which allows for remote assistance and diagnostics. Further, it is supported by the global Fuller service organisation.

How it works

The sampler extracts a continuous - or semi-continuous - sample stream from the process, which is then fed through a divider and split between analyser, reference sample collection and an excess material return system.

The material stream through the analyser unit is continuous with a high flowrate, typically 2-3 L/hr; a concept which ensures representative and accurate results, as it reduces many of the errors which are associated with online analysis of small sample volumes.

Possible configurations

Sampling - QCX® CUBE X10 is available with either screw sampler or airslide sampler. Further, it can be delivered with a horisontal or inclined transport screw for installation scenarios where it is difficult to find room for the shed directly beneath the sampler.

Reference sample collection

QCX® CUBE X10 can optionally be extended with different solutions for collection of reference samples:

- Automatic reference sampling - Fully configured with a QCX® PTS102 Automatic Sending Station for automatic transport of reference samples to a central laboratory. This solution is designed for seamless integration with a QCX® transport tube system and the QCX/AutoSampling software.

- Manual reference sampling - With a 25 L homogenising mixer for manual collection of reference samples. The reference sample is collected in a 2 L plastic container, and the remainder is automatically returned to the process.

It is recommended that a reference sampling option is always included, except in cases where a good and representative composite sampler is already available close to the QCX® CUBE X10.

Sample material	Raw meal or cement, max. 120°C >50% passing 45µm Max. particle size 0.5 mm
Sample frequency	Continuous sample stream; up to 60 result sets per hour
Sample input	30-50 cm³/min (through analyser unit)
Analysis items	Ca, Si, Al, Fe; Additionally Na, Mg with helium purge Other elements on request
Accuracy (Dry basis; **w/ He-purge; RMSD%)**	SiO_2: 0.38% Al_2O_3: 0.18% Fe_2O_3: 0.11% CaO: 0.39%
Repeatability **(10 minute basis; w/** **He-purge; SD%)**	SiO_2: 0.06% Al_2O_3: 0.03% Fe_2O_3: 0.03% CaO: 0.08%
Helium consumption	Approx. 5 cm³/sec
Power supply	3 x 380 – 500 V; 50 Hz; 10 kW
Compressed air supply	0.6 – 1.0 MPa (Quality 2.4.2 as per ISO 8573-1)
Operating conditions	Temperature: -20°C to 55°C
Weight	Approx. 2,400 kg
Dimensions (H x W x D)	2,200 x 2,200 x 2,700 mm

QCX® CUBE X10 fully configured with screw sampler and a PTS102 Sending Station for automatic reference sample transport to a central laboratory.

Optional PTS102 Sending Station for automatic sample transport to a central laboratory.

FULLER®
TECHNOLOGIES

fuller-technologies.com