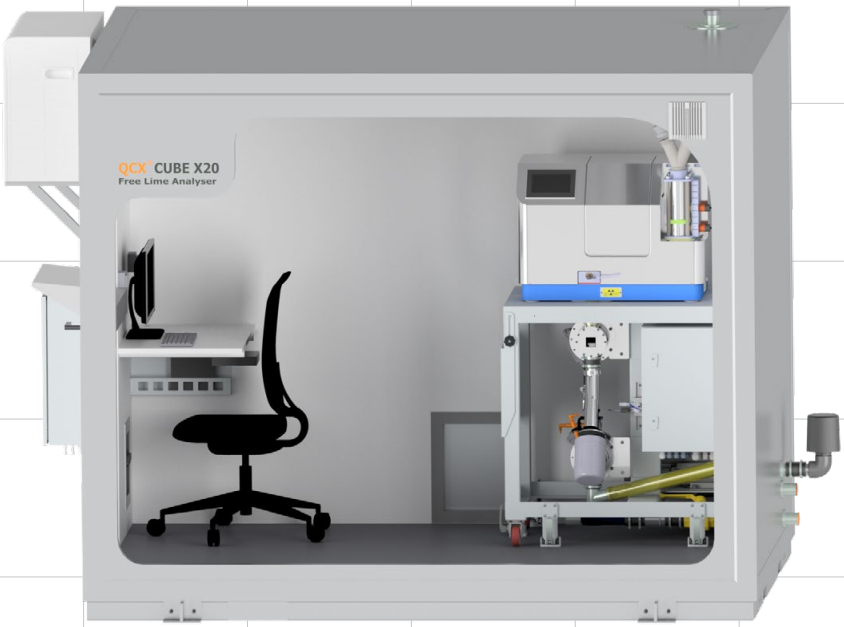
Online
Free Lime Analyser




# QCX® CUBE™ X20
# ONLINE FREE LIME ANALYSER

The QCX® CUBE™ X20 Online Free Lime Analyser is a fully automated online analyser for clinker, based on XRD technology (X-Ray Diffraction). It will as standard deliver analysis results for free lime contents, and optionally for alite (C3S) as well.

QCX® CUBE™ X20 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 clinker analysis in a cement plant, where the analysis data are used for kiln control in combination with process optimisation 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 process control loop.

The combination of well-proven industry-standard sampling components and a state-of-the-art XRD analyser unit, secures reliable operation and accurate results. Built with industrial strength, the QCX® CUBE™ X20 operates effectively, long term - even in the toughest settings.

## 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™ X20 is delivered with remote connectivity, which allows for remote assistance and diagnostics. Further, it is supported by the global Fuller Technologies service organisation.

# FAST, RELIABLE ANALYSIS

## How it works

The sampler extracts a spot sample from the process. It is then fed through optional vibrating feeder and magnetic or metal separator. Then proceeds to a crusher and continues to a splitter where it is split between analyser and optional reference sample collection. Excess material is handled by pneumatic or gravity material return system.

The material is grinded in continuous disc mill before it is dosed into the analyser.

The material stream through the analyser unit is spot with, typically 4 samples/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 X20 comes with a clinker sampler. It can be selected from 3 types: Pneumatic sampler, Electric spoon sampler (both for installation after cooler) or Hot clinker sampler (for installation after kiln). Further, it can be delivered with pneumatic transport for installing the container with analyser in a better accessible place, further away from the sampler area.

**Reference sample collection**

QCX® CUBE X20 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. It includes also a mixer for a proper sample homogenization. This solution is designed for seamless integration with a QCX® transport tube system and the QCX/AutoSampling software.
- Manual reference sampling - With a 250 or 500cc dosing unit which feeds a sample into 5 or 10L sample bucket for manual collection of reference sample.

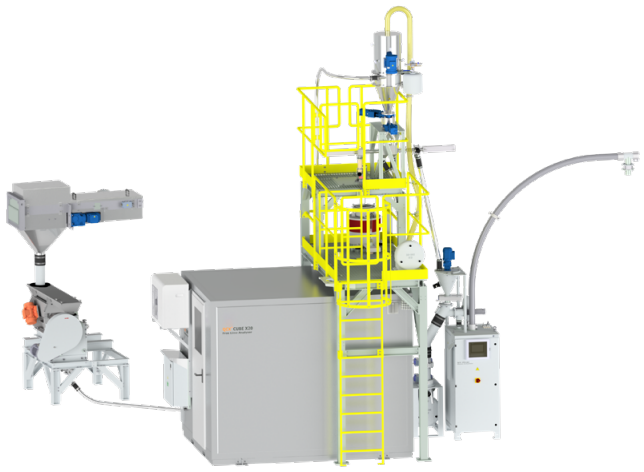
It is recommended that a reference sampling option is always included, except in cases where a good and representative composite sampler is already available close to the QCX® CUBE X20.

**QCX Operator Station**

QCX® CUBE X20 can optionally be delivered with a QCX Operator Station, located on the integrated table. The operator station allows for monitoring the process or carrying out more advanced maintenance tasks from within the shed.

## Specification

| | |
|---|---|
| **Sample material** | Clinker, dry, non-sticky<br>Up to 200°C (samplers after cooler) or<br>Up to 1.450°C (sampler after kiln)<br>Top size 40 mm |
| **Sample frequency** | Spot sample; up to 4 per hour |
| **Sample input** | Approx. 150 cc/analysis (through analyser unit) |
| **Analysis items** | Free lime<br>$C_3S$ (alite) as option |
| **Power supply** | 3 x 380 – 500 V; 50 Hz; max. 16 kW |
| **Compressed air supply** | 0.6 – 1.0 MPa<br>(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 X20 fully configured with clinker sampler and a PST102 Sending Station for automatic reference sample transport to a central laboratory

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