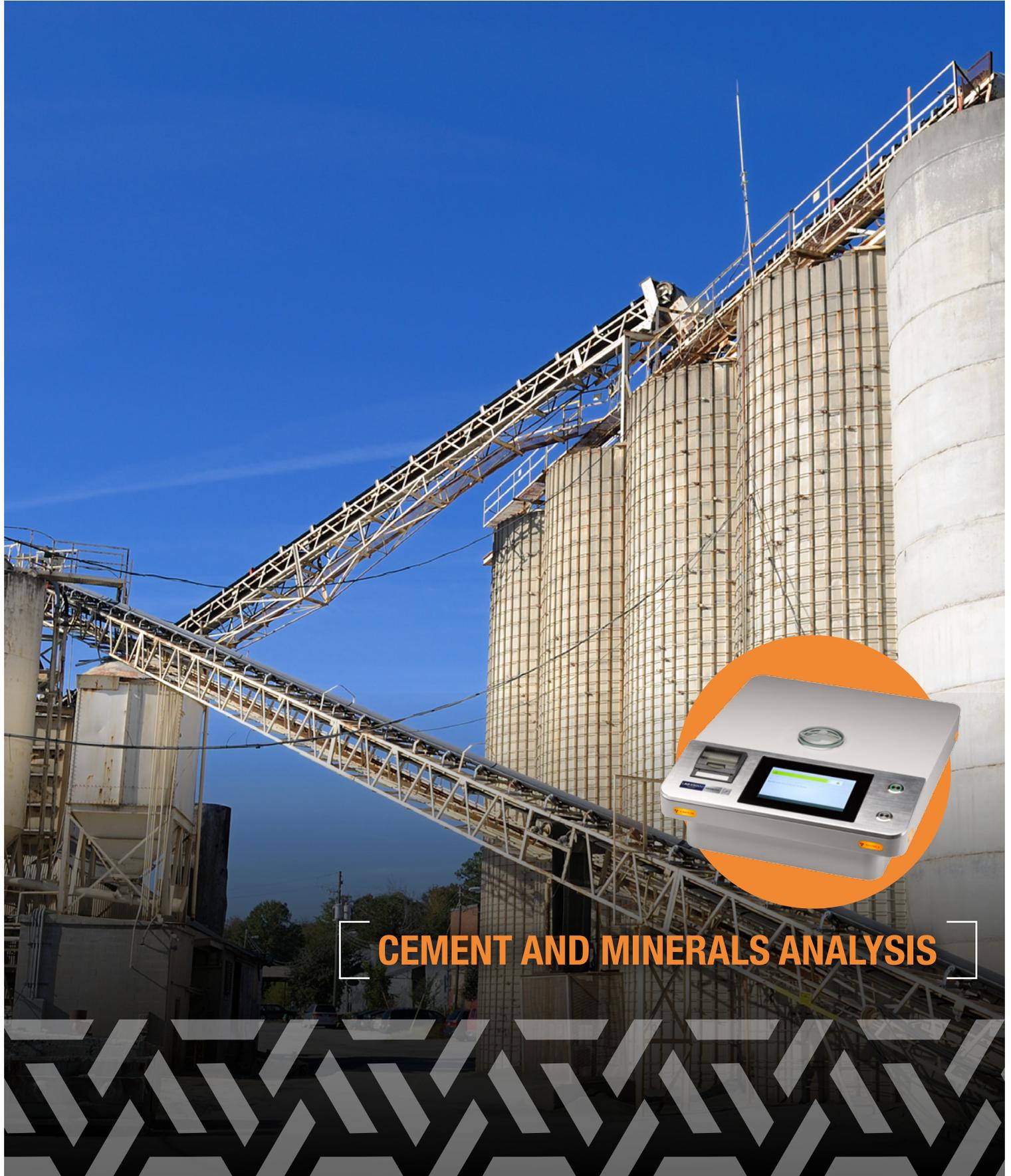


LAB-X 5000

HITACHI
Inspire the Next

Every shift. Every test. Every time.



CEMENT AND MINERALS ANALYSIS

Reliability, durability and accuracy for every measurement

The LAB-X5000 benchtop XRF analyser measures the amount of all key oxides in cements and minerals including: Al_2O_3 , SiO_2 , CaO , Na_2O , MgO and Fe_2O_3 . It meets the precision requirement of ASTM C114 for chemical analysis of hydraulic cement and comes pre-loaded with the parameters needed for cement and minerals composition analysis.

The analyser brings reliability, durability and accuracy to your in-house quality control, supporting your production 24/7. The LAB-X's rugged design and small footprint means it's perfectly at home in a minerals extraction facility or cement works. Short measurement times give you fast feedback on the quality of your product and the reliability of your in-house processes.

The LAB-X5000 gives you certainty of your product's composition for every batch, for every step of the process.







Results you can trust

The LAB-X5000 is engineered to detect a wide range of elements and includes a high-performance silicon drift detector for superior compositional analysis and low detection limits. An integrated **sample spinner** rotates the sample during the measurement, ensuring results are repeatable, even for inhomogeneous samples such as powders.

User error is minimised: the analyser is easy to use with a simple one-button start, intuitive user interface and a large, easy to read display. The LAB-X5000 comes with several options for data management, including automatic export to the ExTOPE Connect cloud, export via USB, a built-in printer, and stores up to 100,000 results.



Fast quality and process control

The LAB-X5000's **fast analysis** time means that it can be used at any stage of production for fast feedback on production processes, ensuring that crucial procedures are under control.

Minimal sample preparation is required: simply grind the material into powder and measure in a sample cup. For best accuracy, powders are pressed into a pellet and then placed in the analyser. The analyser can be set up to check the key elements you need to verify for your process, as well as post-analytical calculations such as Lime Saturation Factor (LSF).

With the SmartCheck feature, you can set pass and fail criteria for all elements and post-analytical calculations, making it easy to see if something's not right.



Ruggedness built in

Minerals processing and cement production are never clean environments. This is why the LAB-X5000 is designed to work perfectly in dusty locations. For example, an **automated turntable** moves the sample away from key analyser components as soon as the measurement is complete to minimise damage and contamination to the analyser's critical component. The design includes **robust, field-proven components** and an industrial grade PC. The analyser has been subjected to a series of rigorous tests to ensure it won't let you down. These features, and the **easy to clean** exterior, help to ensure the LAB-X5000 is tough enough for use in the harshest of production facilities.



Low running costs

You won't need to recruit specialist personnel or give extensive training to use the instrument. The LAB-X5000 **can be used by anybody** with a small amount of training – which we'll provide.

Helium usage and costs are kept to a minimum as the majority of measurements can be taken in air. This is thanks to **built-in atmospheric variation compensation**. In the detection of elements that emit relatively low energy X-rays, variations in air temperature and pressure can affect the results and cause inaccurate readings. Traditionally, the way round this was to measure in helium or in a vacuum. This is no longer necessary in most cases as sensors detect changes in air temperature and pressure and compensate accordingly to deliver ultimate repeatability.

Few consumables are needed (only sample cups and sample film for powders analysis). And **maintenance costs are very low**, especially when compared to other analytical methods, like ICP.

The LAB-X5000 benchtop analyser is ideal for round-the-clock cement and minerals processing

All the features and technical aspects of the LAB-X 5000 at a glance:

| Features | |
|---|---|
| ASTM C114 compliant | Meets the precision requirements of this international standard test method for the chemical analysis of hydraulic cement |
| Element range | Na to U (elements suite depends on applications) |
| One-touch measurement | Simple routine operation: load the sample, press start and the analysis begins |
| Intuitive software | Clear, intuitive interface reduces operator error and increases sample testing throughput |
| Large touch screen | The 7-inch industrial-grade screen is durable and clearly displays results and menus for complete ease of use |
| SmartCheck software | Define upper and lower acceptance limits for key elements and calculations for rapid decision making |
| Rugged | Engineered to work in harsh environments to minimise analyser downtime and maintenance costs |
| Automated turntable | Minimises the risk of damage and contamination to the analyser's critical components by rotating the sample away from them when the analysis is complete |
| Sample spinner | Rotates the sample during the analysis to ensure best repeatability, even for inhomogeneous samples |
| Post-analytical calculations | Fast and simple monitoring of process parameters: use the pre-loaded calibration settings with calculations such as Lime Saturation Factor (LSF), Alumina Ratio (AR) and Silica Ratio (SR), or create your own |
| Fast analysis | Initial results in seconds; complete comprehensive analysis in typically less than five minutes |
| No or minimum helium consumption | Calibration parameters are optimised to use helium only when strictly needed (e.g. for Na and Mg). With its automatic atmospheric variation compensation, the LAB-X can measure a wide range of elements in air, reducing running costs |

Every shift. Every test. Every time.

The LAB-X5000 packages include:*

- | LAB-X5000 benchtop analyser
- | User manual
- | Pre-loaded method parameters
- | Calibration instructions
- | Pressed pellet holders
- | Consumables pack



All the parameters, accessories and consumables you need are provided with the instrument to get you up and running fast. You can choose support and maintenance packages that are most cost effective for your facility.

*Package content may vary.

A close-up photograph of a Hitachi LAB-X5000 XRF Analyzer. The device is dark grey with a large touchscreen display. The screen shows a yellow warning icon and some text, including "Blank 0.00". Below the screen, there's a control panel with a "HITACHI" logo and a "LAB-X5000 XRF Analyzer" label. At the bottom, there's a prominent orange "X-RAYS ON" warning button with a radiation symbol.

Services: backed by decades of expertise

Our priority is keeping you up and running, so we're committed to giving you everything you need to get the most from your analyser. And should you have a problem, we'll provide a fast response that minimises your downtime.



Telephone help-desks

Whenever you have a problem, we're ready to help.



Self diagnostics

Built-in diagnostics give you confidence the analyser is running as it should.



Training

To help you get the most out of your analyser and its full range of features.



Extended warranties

To provide peace of mind and avoid unplanned costs.



Service Agreements

We offer a fast and efficient repair service, recertification and maintenance through our service agreements. This ensures your analyser is maintained in excellent condition and avoids any unplanned costs.

See the LAB-X5000 in action

Contact one of our experts today at
contact@hitachi-hightech-as.com
to arrange a demo.

MORE INFORMATION

To find out more about the LAB-X5000 visit
www.hitachi-hightech.com/hha



Other products

With over 40 years experience developing XRF analysers, we offer a range of related products, including:

| **X-Supreme8000:** with a 10-position autosampler, the X-Supreme offers additional versatility and increases testing throughput

Browse our full range of products online at
www.hitachi-hightech.com/hha

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 Science for
a better tomorrow