Technical Description

XRF Spectrometer (Bruker)

- Model: S2 PUMA Series 2

Dimensions (LxWxH)	670x710x610 mm (26.2x27.8x23.8")
Weight	110 kg (243 lbs)

Automated process sample analysis
Professional interface to conveyor belt or robot arm link-up, 2 buffer positions, dedicated interface software (AXSCOM), LIMS-compatible

Random, out-of-line samples
20 positions on a removable EasyLoad™ tray to run sample batches at any time

X-ray tubes & detectors
Powerful 50-Watt X-ray tube with Ag or Pd target, air-cooled; HighSense and HighSense™ XP silicon-drift-detectors (SDD), Peltier-cooled

Atmosphere modes
Air, vacuum, helium

Sample sizes
51.5 mm Ø as automation sample ring

Smart UPS
Intelligent Uninterruptible Power Supply (UPS) to shut down the instrument safely in case of a power outage

Sample rotation
More accurate analysis of inhomogeneous samples

TouchControl™
Integrated 12.1" adjustable, multilingual TFT touchscreen

Connectivity
Built-in RJ45 Ethernet port, 3x USB ports for mouse, keyboard, printer

Power requirements
100–240 V, 50/60 Hz, max. power consumption 600 VA

Quality & safety
DIN EN ISO 9001:2015, DIN EN ISO 14001:2015, 2006/42/EC (CE-certified Machinery Directive), 2014/35/EC (Electrical Equipment), 2014/30/EC (Electromagnetic Compatibility), German Type Approval and *Vollschutz* according to BfS RöV, fully radiation-protected system; radiation <1 µSv/h (H*), compliant with ICRP, IAEA, EURATOM

HP-MP HERZOG

- Colour: RAL 5007/7035
- Equipment: 1 set of wrenches
- Operating manual: 1 copy, English

Dimensions (LxWxH)	Machine	1050x750x1404 mm
Weights	Machine	Approx. 900 kg
Power supply and consumption		
Voltage	400 V, 50 Hz, 3-phase	
Neutral wire	Not required	
Connected load	5.0 kVA	
Compressed air supply and consumption		
Pressure	min. 5 bar, max. 10 bar	
Consumption	Approx.: 1500 l/sample	
Disposal connection		
Compressed air supply and consumption	At the rear of the machine, height approx.100 mm	
Diameter of dedusting stud	80 mm (exterior)	
Required dedusting capacity	6–10 m³/minute at 2100 Pa	
Electric control cabinet (integrated)		
PLC control	Siemens PLC SIMATEC S7	
Control voltage	24 V	
Protection	IP 44	
Insulation class	B	
Sample input/output	Side or front of the machine	
Process parameters	Grinding time	0–999 s
	Adjustable press power	50–200 kN
	Pressure holding time	0–99 s
	Number of programmes	16
Processable samples		
Material	Raw materials for cement production, clinker, cement	
Grain size	max. 5 mm	
Hardness	max. 5 Mohs	
Temperature	max. 100° C	

The machine is manufactured in accordance with European CE Directives.

AtLine Lab

- Colour: RAL 5007/7035
- Operating manual: 1 copy, English

Dimensions (LxWxH)	Machine	1500x2100x1404 mm
incl. packing: Palette 1 (Container)		2500x2000x2950 mm
Palette 2 (HP-MP + Accessoiries)		3000x2000x1600 mm
Weight	Machine	Approx. 1100 kg
	Incl. packaging	Approx. 2600 kg

Power supply and consumption	
Voltage	400 V, 50 Hz, 3-phase
Neutral wire	Not required
Connected load	3.0 kVA
Compressed air supply and consumption	
Pressure	min. 5 bar, max. 10 bar
Consumption	Approx. 1500 l/sample

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CE The design of the machine complies with the applicable accident prevention and VDE regulations. We reserve the right to make technical modifications.

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BRUKER

HERZOG AtLineLab

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AtLine Lab

A compact solution for the cement industry, enabling high-quality sample preparation & analysis

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HERZOG AtLineLab

At a Glance

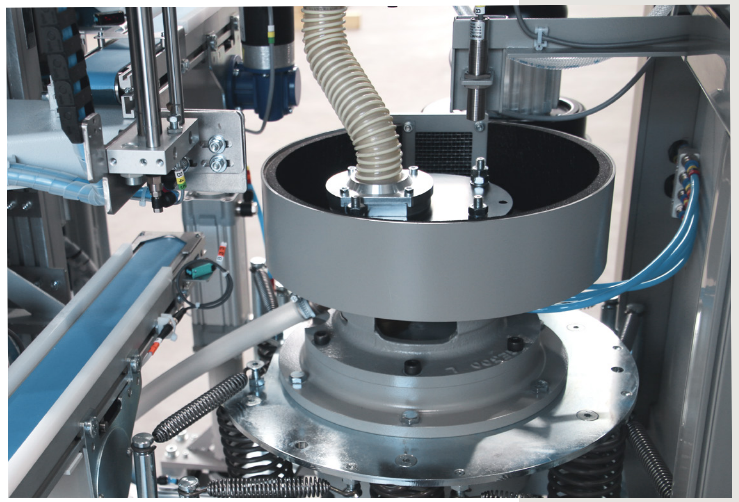
- Compact analysis, all-in-one solution; ideal for fast chemical analysis in cement process control
- Fully automated sampling, preparation (grinding, mixing, pressing) and XRF analysis
- Reliable 24/7 operation and easy maintenance
- Adaptable to customer requirements
- The HP-MP ensures highest quality of pressed pellet sample preparation
- The S2 PUMA Series 2 EDXRF provides outstanding analysis quality less than 5 minutes

1. Sampling

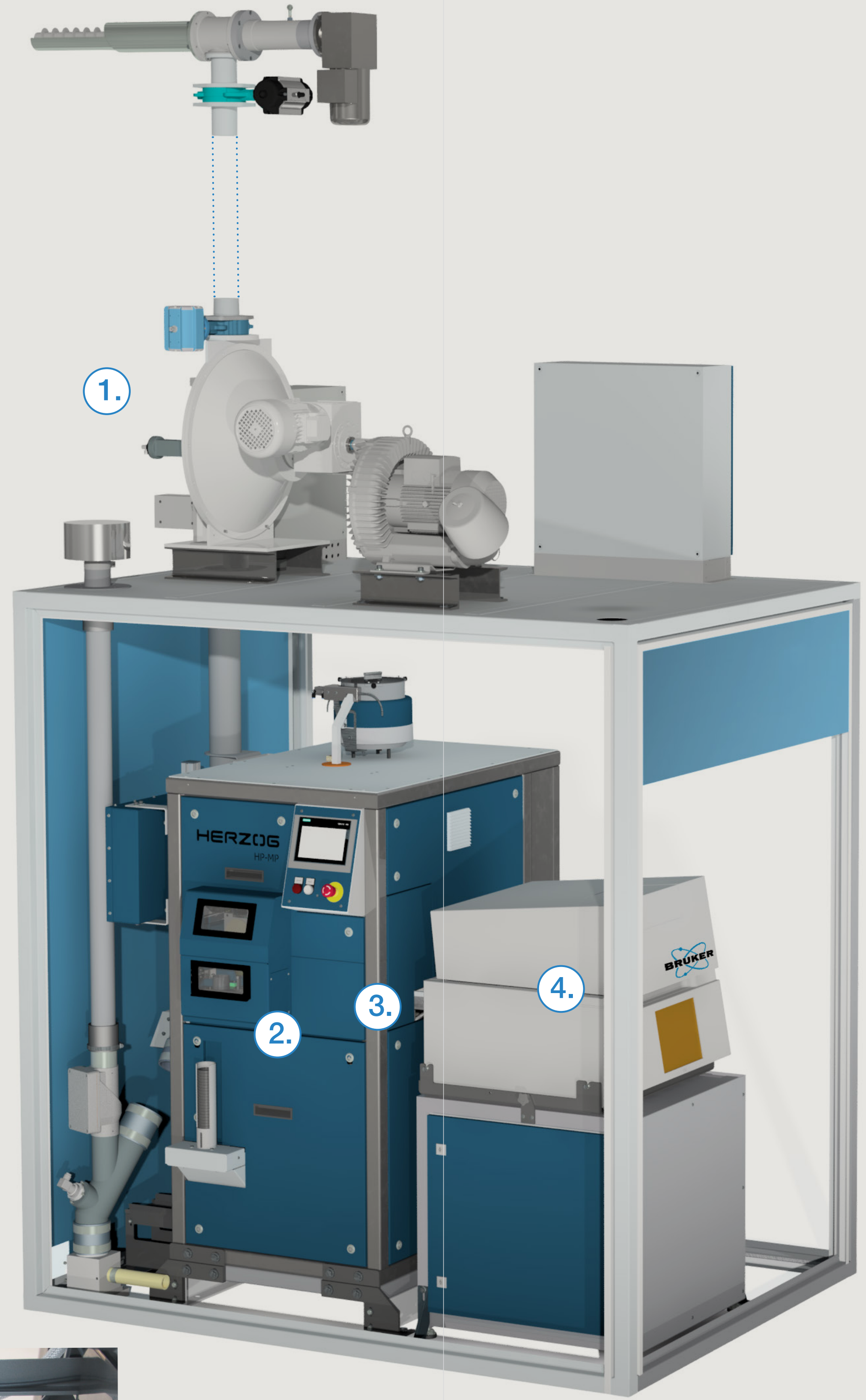
The Atline Lab was specially developed for the cement industry and can be used for the analysis of raw meal and cement. The AtLine Lab is equipped with a mixer that collects the material supplied by the conveyer (e.g. a screw or channel sampler). A homogeneous average sample is created in the mixer after a freely selectable time interval. Once the sample has been homogenised, volumetric dosing takes place for the subsequent sample preparation in the HP-MP.

2. Sample Preparation

The automatic mill and press HP-MP produces high-quality pressed powder pellets for XRF analysis. All relevant machine parameters and process steps can be adjusted and fine-tuned for each material. Each pelletising cycle can be monitored from the HP-MP's user-friendly HMI panel or the PrepMaster screen.

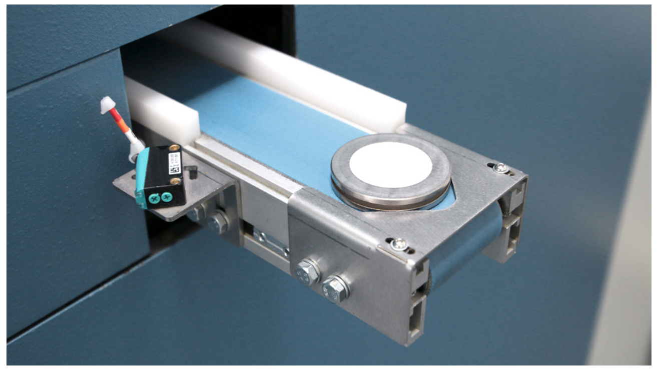


The interior of the HP-MP



3. Sample Transport & Handling

The pressed pellet is automatically transported with the "sunny side up" to the S2 PUMA. A flipper within the spectrometer flips the sample for the analysis. Buffer positions ensure that the S2 PUMA runs smoothly. The 51.5 mm steel rings can be reused after elemental analysis.



4. X-Ray Fluorescence Analysis

The sample analysis starts automatically, and results are available within minutes. The 20-position EasyLoad tray allows the analysis of additional randomised samples at any time using the intuitive SPECTRA.ELEMENTS software.

The S2 PUMA Series 2 is a compact but powerful energy-dispersive XRF (EDXRF) spectrometer designed to run 24/7 in industrial environments. Equipped with SampleCare, a Smart UPS and heavy-duty air filters, it can handle the challenging, dusty environment of a cement plant.

A 50-Watt X-ray tube, carefully selected primary beam filters, a close-coupled direct excitation beam path, and the HighSense XP detector ensure outstanding analytical performance.

5. Customised Reporting

The analytical results can be automatically transferred to an existing LIMS system as well as to Prepmaster Analytics software. The Analytics module can be used for raw mix adjustments and process optimisation.