vario MAX cube

Reach a new level in throughput

High sample throughput

Great flexibility

High data quality

Ease of use

elementar

EXCELLENCE IN ELEMENTS

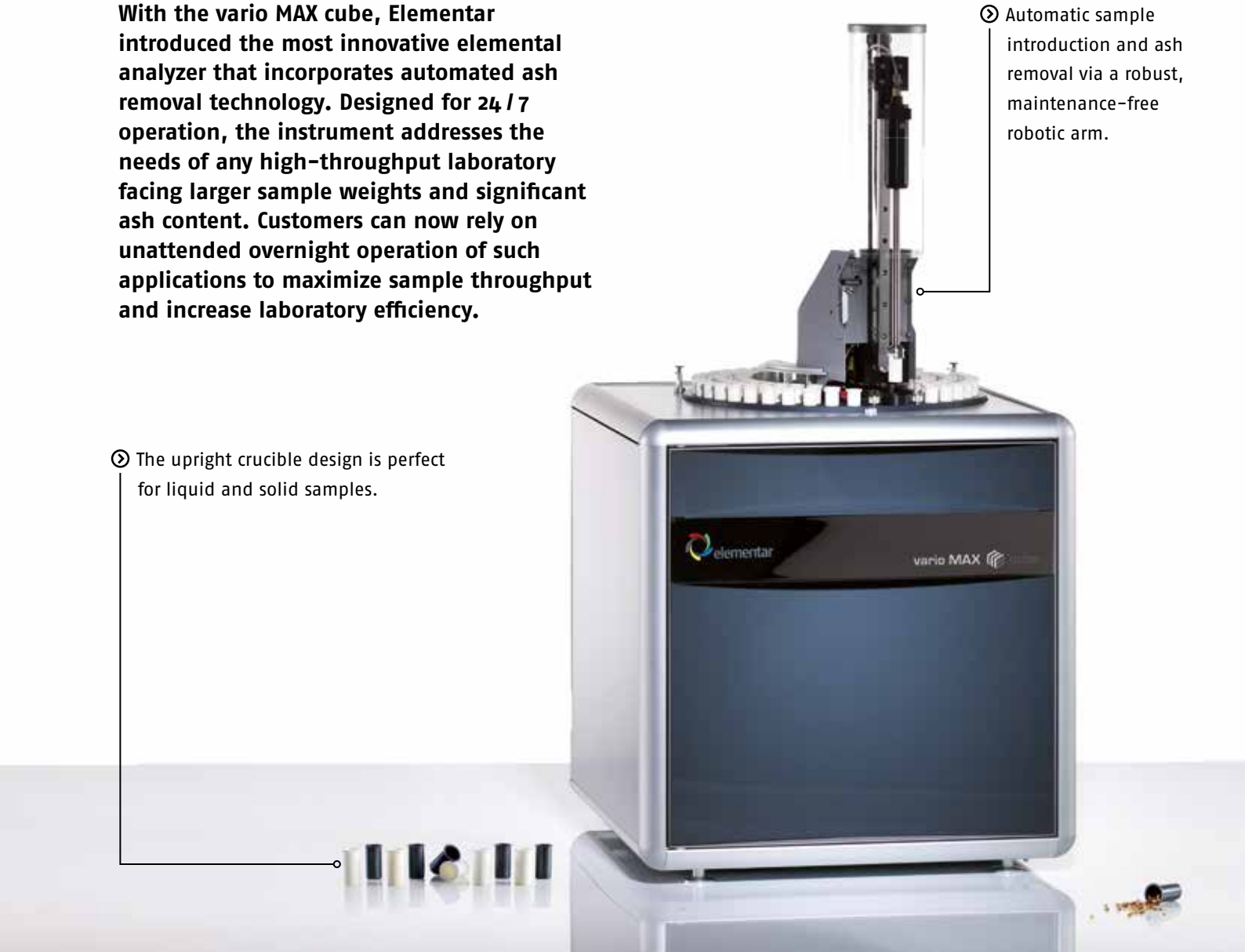
vario MAX cube

Outstanding sample flexibility

KEY FEATURES

- Simplified sample preparation
- Sample size / volume up to 5 g / 5 ml
- Helium or argon as carrier gas
- Outstanding robustness
- 10 year warranty on furnace and thermal conductivity detector cell
- Automatic ash removal

With the vario MAX cube, Elementar introduced the most innovative elemental analyzer that incorporates automated ash removal technology. Designed for 24 / 7 operation, the instrument addresses the needs of any high-throughput laboratory facing larger sample weights and significant ash content. Customers can now rely on unattended overnight operation of such applications to maximize sample throughput and increase laboratory efficiency.



Automatic sample introduction and ash removal via a robust, maintenance-free robotic arm.

The upright crucible design is perfect for liquid and solid samples.

Simplified sample preparation

Save valuable time in sample preparation. Thanks to the broad sample weight range of up to 5 g / 5 ml, the vario MAX cube is the perfect instrument to handle any inhomogeneous substance. Grinding or milling can, therefore, often be omitted without affecting reliable data quality. Simply weigh in the solid or liquid samples into reusable crucibles, place them on the autosampler, and start the sequence. The unique post-combustion technology ensures the complete digestion of challenging species.

Always the right configuration

The vario MAX cube can be setup in N, CN or CNS mode to ensure an optimum configuration, tailor-made to customer demands. Concerning soil analysis, the most common approach is to run the analyzer in CN or CNS mode. Elementar also offers optional, semi-automatic total inorganic carbon (TIC) determination in solids.

HIGH-TEMPERATURE COMBUSTION

All elemental analyzers from Elementar are designed for minimal sample preparation and secure, unattended 24 / 7 operation. They use the safe, simple, and environmental friendly high-temperature combustion principle. The proven Elementar furnace technology, combined with efficient oxygen dosing, guarantees quantitative conversion of the sample to measuring gas – a prerequisite for highly precise and matrix-independent elemental analysis.

MAXimum independence

The vario MAX cube may be operated with either helium or argon as the carrier gas without hardware changes, providing absolute independence from rising helium prices or uncertainities in supply. Utilization of inexpensive argon yields even lower price per analysis.

Future-proof investment

Thanks to the outstanding robustness and longevity for all elemental analyzers, a 10 year warranty on furnace and thermal conductivity detector (TCD) cell is granted. With our well-known, long-term oriented dedication to technical support, Elementar provides spare parts for a minimum of 10 years after the end of production. This results in outstanding low total cost of ownership and gives customers confidence in return of investment.

ADVANCED PURGE AND TRAP

Elementar's proprietary APT technology is the leading chromatographic technique for the determination of non-metal elements. In conjunction with the detection of the complete combustion gas without gas splitting and dilution, the APT technology is capable of resolving e.g. C / N ratios of up to 7000 : 1. The distinct peak separation assures absolutely reliable and trouble-free data acquisition. The analysis can therefore be easily automated for larger sample amounts while maintaining highest possible quality and accuracy. Elementar's unique purge and trap columns are optimized to provide unmatched robustness and longevity compared to GC columns. Furthermore, they can be loaded up to 250-fold higher, resulting in outstanding sample flexibility. The analysis of samples with an absolute carbon content of up to 500 mg is therefore possible. Thus, customers enjoy industry-leading accuracy, sensitivity, and versatility.

Elemental analysis has never been easier!

SAMPLE	CARBON [%]	NITROGEN [%]	SULFUR [%]
CLAY	2.082 ± 0.014	0.188 ± 0.002	–
SAND	0.822 ± 0.004	0.064 ± 0.004	–
SOIL	1.14 ± 0.004	0.103 ± 0.002	0.023 ± 0.001
WHEAT FLOUR	40.7 ± 0.02	1.88 ± 0.003	–
GRASS	30.5 ± 0.05	2.81 ± 0.02	2.55 ± 0.08
RAPE SEED	58.3 ± 0.10	2.96 ± 0.06	0.357 ± 0.014
SILAGE	43.2 ± 0.02	2.66 ± 0.01	0.22 ± 0.01
MALT	41.9 ± 0.05	1.75 ± 0.01	–
SULFADIACINE	47.97 ± 0.07	22.38 ± 0.08	12.81 ± 0.02
FERTILIZER	0.33 ± 0.01	11.9 ± 0.015	10.1 ± 0.05

Sample weight between 150–1200 mg

INDUSTRY-PROVEN CONVENIENCE

The upright, open crucible design ensures a facilitated, fast handling of any kind of sample. Liquid sample preparation is now as easy as pouring a glass of water. No further absorbers or complicated liquid alignment systems are necessary. Moreover, after complete combustion, a robotic arm automatically removes the crucible containing ashes from the furnace. For high ash containing samples such as soils or sediments, this drastically increases instrument uptime.

QUALITY YOU CAN TRUST

Our consumables and spare parts are designed to meet the highest quality standards and reliability. They are certified and validated in accordance with international norms and standards. We do not compromise on quality of our parts and chemicals – this is the prerequisite of a guaranteed long lifetime of our instruments.

IDEAL SOLUTION FOR

- Chemical contract laboratories
- Soil and plant research groups
- Fertilizer producers

SAMPLE TYPES ANALYZED

- Soil
- Plants
- Fertilizer
- Chemicals

High sample throughput

Designed for 24 / 7 unattended operation. Industry-leading system uptime for highest laboratory efficiency.

Great flexibility

Wide range of optional conversion kits available for special applications. Upgradeable at any time.

High data quality

Outstanding precision and accuracy through high performance combustion. Matrix-independent results. Longterm stability of calibration.

Ease of use

Easy, labor-saving instrument operation and sample preparation. Simplified maintenance.

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