rapid N exceed

elementar
EXCELLENCE IN ELEMENTS

Analyzer for fast and absolutely safe measurement of nitrogen or protein according to the Dumas combustion method with samples sizes up to 1 g. **Novel EAS REGAINER® technology ensures binding of excess oxygen without reduction metals. The EAS REDUCTOR® tube lifetime is approx. 2000 samples**.** The rapid N exceed is the most compact high performance elemental analyzer for real organic macro samples with a measuring range of up to 500 mg N absolute.

System Data Sheet

Elemental combustion analyzer

Analyzer	
Concentration analysis of	Nitrogen
Operating modes	N
Design	Compact benchtop with single power supply
Sample introduction	Zero blank patented ball valve system with nickel flap
Furnace design	Triple furnace system, 10 years warranty
Detector type	High sensitivity thermal conductivity detector
Control	Fully digital via external PC (no additional control panel required)
Sample Introduction	
Construction	One block, auto-aligned sample introduction system with integrated carousel
Access	Inert gas free easy access, no purging of sample carousel required
Movement control	Fully electrical
Carousel type	Non-stacked 60, 80* or 120* position sampler
Solid sampling system	Compact integrated patented ball valve with nickel flap
Furnace	
Type	Slide-out, triple vertical furnace system for usage of both 28 mm inner diameter steel reaction tubes
Furnace	Resistive heater element with 1200 °C maximum temperature
Electrical supply	48 Volt safety design for entire instrument including furnaces
Control	Automatic power output adjustment (no hardware change required)
Combustion/reduction reactor	Separated straight steel and EAS REDUCTOR tube
Oxygen binding	EAS REGAINER to remove excess oxygen metal free from gas stream
Post-combustion reactor**	Straight steel tube with copper oxide, platinum catalyst and EAS REGAINER filling
Ash removal	Steel, easy-removal ash crucible
Reactor stability	No need for cooling down during routine maintenance
Carrier gas	Carbon dioxide
Connections	Quick swap clamp connections for fast changing with no tools required
Gas separation	
Type	Chromatography-free, aliquot-free whole gas analysis
Operating principle	Chemical separation and physical water removal with chemical fine drying
CO_2 scrubber	Not required
Water removal	3 step gas drying utilizing condensor, gas membrane drying and chemical fine drying

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Detectors/electronics	
Type	Thermal Conductivity Detector (TCD)
Design	Thermistor, oxygen proof, imbalanced flow, double channel
Detection limit**	< 20 ppm (TCD)
Calibration	Multipoint, multirange, matrix-independent calibration
Analysis time**	~3-4 min
Electronics	Fully digital, fully integrated in unit, no external control panels
Security norms	EU machinery directive 2006/42/EG
Software	
Operating system	Windows® 10, Windows® 8, Windows® 7, minimum XP, other systems upon request
Analyzer software	Winvar proprietary software
Features	Automatic leak finding software Intelligent error indicator with sophisticated self-diagnostics Auto sleep and wake-up Statistical calculations Indication service cycle LIMS integration 21 CFR part 11 compliant* Comprehensive documentation for fast part identification
Data Storage	Non manipulated storage of experimental raw data and peak graphics
Balance	Automatic read out of weighing data*

* requires optional configuration
**depending on sample type, analysis mode and configuration

Measuring Range and Technical Specifications

nitrogen:	0 – 500 mg absolute (0 – 100%)
standard deviation**:	< 0.05% absolute (250 mg aspartic acid)
weight:	approx. 80 kg
electrical connections:	100/110/200/230 V, 50/60 Hz, 1.8 kW
oxygen consumption**:	approx. 0.4 l / analysis
required gases:	carbon dioxide and oxygen only
dimensions:	48 x 55 x 57 cm (W x D x H)

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