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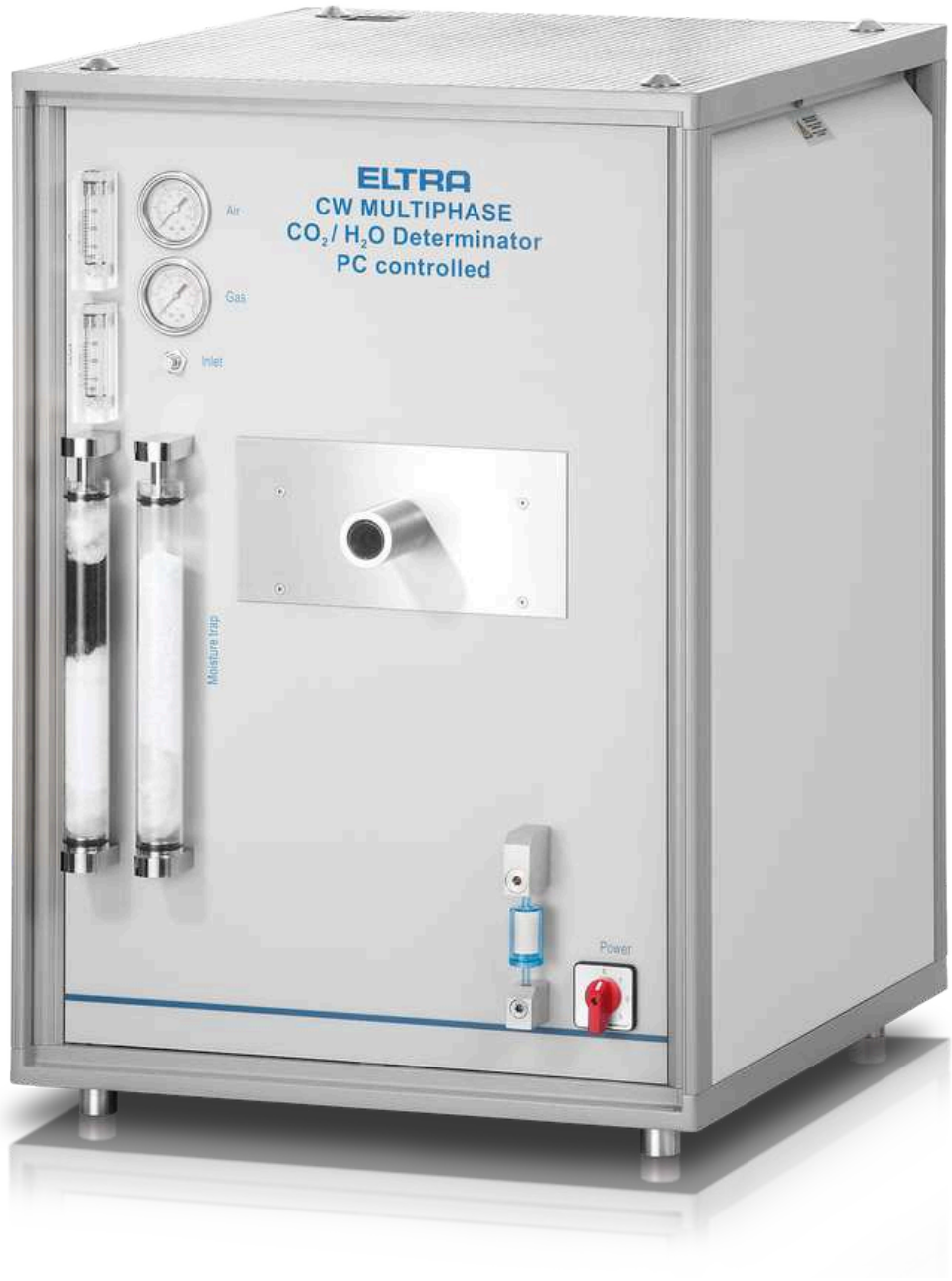
a VERDER company



CARBON / WATER ANALYZER

CW-800M

ELTRA's CW-800M analyzer is designed for fractional analysis of carbon and water in one single operation. It is based on the proven technology of the CW-800 but has a modified furnace which allows fast adjustment of the temperature in the furnace. Different fractions of carbon and water of the sample are analyzed by applying different furnace temperatures. **ELTRA's CW-800M analyzer is designed for the precise, simultaneous determination of carbon (released as CO_2) and water in lime, gypsum and cement from trace level up to 100 % (depending on sample weight).** Other sample materials include ores, soil, minerals, slags and waste.

Up to five temperature steps ("ramps") can be programmed for each application. The temperature levels and their durations are selectable. The maximum temperature is 1000°C.

Depending on the application step, either O_2 can be used as furnace atmosphere (oxidation of the sample) or inert gas like N_2 or argon.

The detection system of ELTRA's CW-800M is very sensitive, reliable and guarantees a long lifetime. It can be customized according to the user's requirements. Two infrared cells can be combined independently and allow highly precise measurement of the released CO_2 and H_2O.

APPLICATION EXAMPLES

gypsum, cement, limestone, minerals, ores, soil, slag, waste

PRODUCT ADVANTAGES

- Simultaneous carbon dioxide and water determination with minimal sample preparation
- Analysis of TOC (Total Organic Carbon) and TIC (Total Inorganic Carbon) without adding acids
- Rapid, precise, accurate and reliable element determination
- Up to 5 programmable steps with different temperatures ("ramps") can be defined
- Wide range of materials can be analyzed
- Resistance furnace temperature can be set up to 1000 °C in steps of 1 °C
- Customized infrared cells provide wide, dynamic measuring range
- Due to gold IR path, increased cell life time for analysis of halogen or acid containing samples
- Powerful software (multilingual, customized display, export of results)
- Single and multipoint calibration
- No halogen trap required
- Electronic gas flow control
- Low maintenance
- Robust design allows usage in production control and laboratory

FUNCTIONAL PRINCIPLE

Operation of the CW-800M is simple and convenient. After weighing the sample in a quartz boat, it is placed on the loading mechanism of the furnace. In the following, the analysis can be started and the boat is introduced into the furnace by the user. Depending on a user defined program, different temperatures and carrier gases are applied to the sample. While processing this program, the released CO2 and water is determined by the infrared cells. The received “chromatogram” of the sample subsequently shows different fractions of carbon and water of the sample. All data processing, control of the combustion process and calculating of the result is done by an external PC. The duration of the measurement depends on the length of the user defined steps. A common analysis takes about up to 20 minutes.

TECHNICAL DATA

Measured elements	carbon dioxide, water
Furnace alignment	horizontal
Sample carrier	quartz boats
Field of application	agriculture, biology, chemistry / plastics, construction materials, environment / recycling, geology / mining, others
Furnace	resistance furnace with quartz tube, adjustable up to 1000 °C
Catalyst furnace	+
Process of measurement	temperature and carrier gas can be changed during measurement according to a user-defined program
Detection method	solid state infrared absorption
Number of IR cells	1 - 2
Material of IR path	gold
Typical analysis time	5 - 20 min (depending on program)
Chemicals required	copper oxide, magnesium perchlorate, sodium hydroxide
Gas required	nitrogen 99.995 % pure (2 - 4 bar / 30 - 60 psi) oxygen 99.995 % pure (2 - 4 bar / 30 - 60 psi)
Power requirements	230 V, 50/60 Hz, max. 10 A, 2300 W
Dimensions (W x H x D)	55 x 80 x 60 cm
Weight	~ 65 kg
Required equipment	PC, monitor, balance (resolution 0.0001g)
Optional accessories	TIC module, voltage stabilizer 5 KVA

www.eltra.com/cw800M

ORDER DATA

ELTRA CW-800M

(Please order PC, monitor, balance and consumables (starter-kit, anhydrone, sodium hydroxide, copper oxide) separately)

				Measuring ranges at 200 mg sample weight 2)
88100-4042		CW-800M	H2O	0 – 20 % H2O
88100-4041		CW-800M	1x CO2 + H2O	0 – 70 % CO2 | 0 – 20 % H2O
88100-4055		CW-800M	1x CO2 + 1x CO2	0 – 1 % CO2 | 1 – 70 % CO2

Further measuring range combinations on request

REQUIRED ACCESSORIES

PC, MONITOR, BALANCE		
71015-1000		Computer with Intel Core i5-8400 Processor, 256 GB SSD; 8 GB RAM; Windows 10 operating system; keyboard; mouse
88400-0584		Monitor, TFT (23.8")
88400-0645		Balance (resolution 0.0001 g)
REQUIRED CONSUMABLES / CHEMICALS FOR FIRST OPERATIONS		
88500-0014		Starter-kit for 1000 analyses (1000 disposable porcelain boats, 3 quartz boats, 50 g glass wool, 50 g quartz wool)
90200		Anhydrone (magnesium perchlorate), 454 g 1)
90210		Sodium hydroxide, 500 g 1)
90289		Copper II oxide, 100 g 1)

FURTHER OPTIONS AND CONSUMABLES

ACCESSORIES (HARDWARE)

88200-3800		TIC-Module
72070		Oxygen regulator
72080		Nitrogen regulator
88400-0610		Barcode scanner

CHEMICALS (FILLINGS FOR GLASS AND QUARTZ TUBES)

90200		Anhydrone (magnesium perchlorate), 454 g 1)
90210		Sodium hydroxide, 500 g 1)
90289		Copper II oxide, 100 g 1)
90330		Quartz wool, 50 g
90332		Glass wool, 50 g
90331		Glass wool, 454 g
92610		Tube of high vacuum grease, 35 g
90840		Quartz sand, 100 g

BOATS

36120		Quartz boat, 75 x 16 x 7.5 mm, 1 piece
90160		Disposable porcelain boats 86 x 13 x 10 mm, 1000 pieces
88400-0502		Re-usable inconel boat, 54 x 18 x 13.5 mm, 1 piece
88400-0503		Re-usable inconel boat, 54 x 18 x 9 mm, 1 piece

TOOLS FOR OPERATION: SPATULAS, TWEEZERS, TONGS AND OTHER			
36216		Combustion boat insertion stick, 1 piece	
36217		Combustion boat removing stick, 380 mm, 1 piece	
88400-0229		Tweezers (160 mm), curved, 1 piece	
88400-0472		Tweezers (145 mm), straight, 1 piece	
88400-0475		Set with 6 spatula and 1 tweezers	for multiple weighing procedures
88400-0477		Weighing boat, 1 piece	for weighing and usage of granulates
90145		Tongs for ceramic crucibles and boats, 220 mm, 1 piece	
90146		Steel pot for preheated crucibles	

TOOLS FOR MAINTENANCE			
46300-8000		Maintenance kit CW-800M	
71010		Brush, 16 mm, 1 piece	for cleaning balance from dust
88400-0473		Powder funnel (plastics), 1 piece	for easy filling of chemical tubes
88400-0490		Rubber plug 29 x 35 x 30 mm, 1 piece, for sealing big glass tubes like 09090	
88600-0026		Rubber plug 29 x 35 x 30 mm, 1 piece, for sealing big glass tubes like 09090	

CALIBRATION MATERIALS

Calibration materials may show slight variations depending on the current lot.

To see the current certification please visit www.ELTRA.com.

LIMESTONE

90812-3001		Limestone, 25 g, 0.04 % S; 12 % C
90812-3002		Limestone, 25 g, 0.4 % S; 12 % C
90812-3003		Limestone, 25 g, < 5 % C
90812-3004		Limestone, 25 g, 5 – 10 % C

SOIL	
90817-3001	Soil, 25 g, > 2 % C, S
90817-3002	Soil, 25 g, < 1 % C, S
90817-3003	Soil, 25 g, > 2 % C, S
90817-3004	Soil, 25 g, < 2 % C, < 1 % S

PRIMARY SUBSTANCES FOR CALIBRATION		
90810		Calcium carbonate, 100 g
90700-1040		Calcium oxalate, 50 g

Please note: Every analyzer requires PC, monitor, balance and some consumables (crucibles, chemicals) which have to be ordered separately