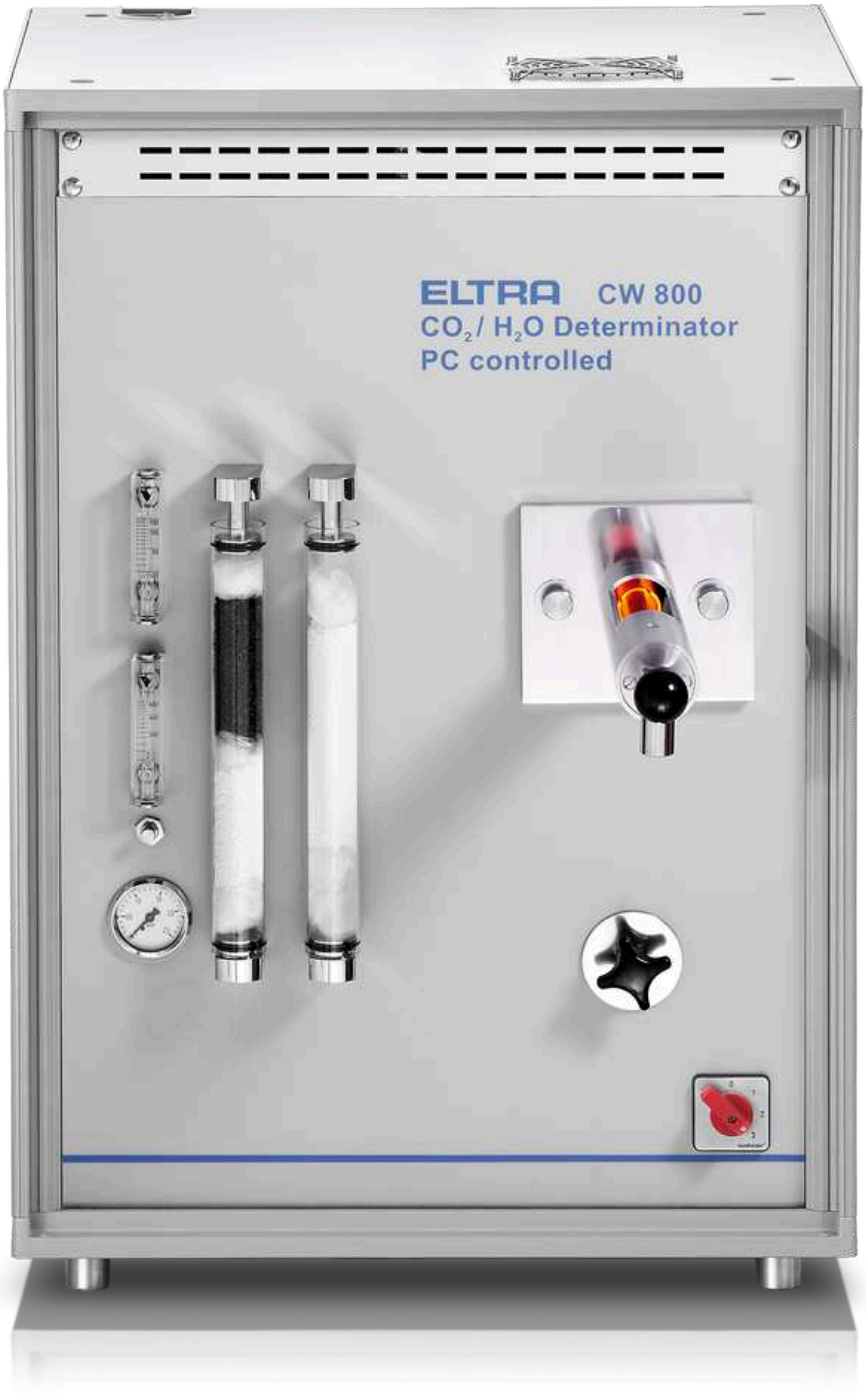
ELTRA®
a VERDER company



CARBON / WATER ANALYZER

CW-800

Determination of released carbon dioxide and water is a special requirement for quality control in the cement and lime industry. **ELTRA's CW-800 analyzer is designed for the precise, simultaneous determination of carbon dioxide and water in lime, gypsum and cement from trace level up to 100 % (depending on sample weight).** Other sample materials include ores, soil and minerals.

The CW-800 is equipped with a resistance furnace with quartz tube for sample oxidation and can provide temperatures up to 1000 °C. The temperature of the CW-800 can be set up in steps of 1 °C and the temperature is fixed during measurement. As common carrier gas in the CW-800 nitrogen is used.

The detection system of ELTRA's CW-800 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 CO2 and H2O.

APPLICATION EXAMPLES

gypsum, cement, limestone, minerals, ores, soil

PRODUCT ADVANTAGES

- Simultaneous carbon dioxide and water determination with minimal sample preparation
- Rapid, precise, accurate and reliable element determination
- 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-800 analyzer is simple and convenient. The temperature of the CW-800 is set up to defined temperature up to 1000°C. 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 the applied temperature, residual or crystallization water and CO_2 (from $CaCO_3$) is released from the sample and determined by the infrared cells.

All data processing, control of the combustion process and calculating of the result is done by an external PC. The simultaneous determination of carbon dioxide and water only takes about 2 to 3 minutes.

CARBON / WATER ANALYZER CW-800

TECHNICAL DATA

Measured elements	carbon dioxide, water
Furnace alignment	horizontal
Sample carrier	quartz boats
Field of application	construction materials, environment / recycling, geology / mining
Furnace	resistance furnace with quartz tube, adjustable up to 1000 °C
Process of measurement	fixed temperature, fixed carrier gas, no changing during measurement
Detection method	solid state infrared absorption
Number of IR cells	1 - 2
Material of IR path	gold
Typical analysis time	2 - 3 min
Chemicals required	magnesium perchlorate, sodium hydroxide
Gas required	nitrogen 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	voltage stabilizer 5 KVA

www.eltra.com/cw800

ORDER DATA

ELTRA CW-800

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

				Measuring ranges at 200 mg sample weight	2)
88100-4029		CW-800	H2O	0 – 20 % H2O	
88100-4030		CW-800	1x CO2 + H2O	0 – 70 % CO2 | 0 – 20 % H2O	

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		
88500-0010		Starter-kit for 1000 analyses (1000 disposable porcelain boats, 3 quartz boats, 50 g glass wool)
90200		Anhydrone (magnesium perchlorate), 454 g 1)
90210		Sodium hydroxide, 500 g 1)

FURTHER OPTIONS AND CONSUMABLES

ACCESSORIES (HARDWARE)	
88200-3800	TIC-Module
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)
90331		Glass wool, 454 g
90332		Glass wool, 50 g
92610		Tube of high vacuum grease, 35 g
90840		Quartz sand, 100 g

BOATS

36120		Quartz boat, 75x16x7.5 mm, 1 piece
90160		Disposable ceramic boats, 86x13x10 mm, 1,000 pieces

TOOLS FOR OPERATION: SPATULAS, TWEEZERS, TONGS AND OTHER

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
90145		Tongs for ceramic crucibles and boats, 220 mm, 1 piece
88400-0477		Weighing boat, 1 piece — for weighing and usage of granulates
90146		Steel pot for preheated crucibles and used crucibles

TOOLS FOR MAINTENANCE		
48600-8000		Maintenance kit CW-800
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		Anhydrone filter tube

CALIBRATION MATERIALS

Calibration materials may show slight variations depending on the current lot.
To see the current certification please visit www.ELTRA.com.

LIMESTONE	
90812-3003	Limestone, 25 g, < 5 % C
90812-3004	Limestone, 25 g, 5 – 10 % C

PRIMARY SUBSTANCES FOR CALIBRATION		
90810		Calcium carbonate, 100 g
90700-1040		Calcium oxalate, 50 g
88400-0283		Gas pump

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