Carbon / Water Analyzer CW-800

General Information

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

cement, gypsum, 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 live time for analysis of halogen or acid containig 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

Features

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,

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	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	balance (resolution 0.0001g), monitor, PC
Optional accessories	voltage stabilizer 5 KVA

Function 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 CO2 (from CaCO3) 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.

incl. 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

88100-4029	CW-800 H2O 0 - 20 % H2O
88100-4030	CW-800 1x CO2 0 - 70 % CO2 | + H2O 0 - 20 % H2O

PC, Monitor, Balance

71015	Computer with dual core processor, 300 GB HDD, 4 GB RAM, Windows operating system, DVD-ROM, keyboard, mouse
71016	Monitor, TFT
88600-0002	Balance (resolution 0.0001 g)

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71002	Printer

Accessories

38001	TIC-Module
72080	Nitrogen regulator
71090	Voltage Stabilizer 5 KVA

Consumables

Required consumables

88500-0010	Starter-kit for 1,000 analyses (1,000 disposable porcelain boats, 3 quartz boats, 50 g glass wool)
90200	Anhydrone (magnesium perchlorate), 454 g
90210	Sodium hydroxide, 500 g

Optional consumables

36120	Quartz boat 75x7.4x1.5 mm
90160	Disposable porcelain boats 86x13x10 mm, 1,000 pieces
90332	Glass wool, 50 g
90810	Calcium carbonate, 100 g
90700-1040	Calcium oxalate, 50 g
92610	Tube of high vacuum grease

Spare and Wear Parts

82130	Filter element (pressed micro fibre)
48750	Combustion tube
09090	Reagent tubes 32x280 mm, 1 piece
70150	O-ring 6x2.5
70320	O-ring 20x5
70330	O-ring 21x2
70280	O-ring 18x2
70380	O-ring 35x5
70410	O-ring 48x3