



SURFACE CARBON ANALYZER

SurfaceC-800

Determination of surface carbon is a special requirement for quality control in the metal producing and metal working industry. **ELTRA's SurfaceC-800 analyzer is designed for the precise determination of surface carbon in numerous kinds of solid samples from trace level up to 1000 µg/cm².**

The SurfaceC-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 SurfaceC-800 can be set up in steps of 1 °C. As common carrier gas in the SurfaceC-800 oxygen is used.

The detection system of ELTRA's SurfaceC-800 is very sensitive, reliable and guarantees a long lifetime. It can be customized according to the user's requirements. It is possible to combine two infrared cells independently to allow for highly precise measurement of surface carbon from trace level up to large amounts.

APPLICATION EXAMPLES

aluminum, ceramics, metals, carbon on steel

PRODUCT ADVANTAGES

- | 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
- | Powerful software (multilingual, customized display, export of results)
- | Single and multipoint calibration
- | Electronic gas flow control
- | Low maintenance
- | Robust design allows usage in production control and laboratory
- | Easy calibration with standard materials or gas dose
- | Surface carbon determination with minimal sample preparation
- | Large sized samples can be measured (up to 32 x 145 mm)
- | Optional gold IR path for analysis of halogen or acid containing samples
- | Special sample sluice for reduction of atmospheric blank

FUNCTIONAL PRINCIPLE

Operation of the SurfaceC-800 is simple and convenient. The temperature of the SurfaceC-800 is set up to defined temperature up to 1000 °C. After entering the sample surface size in the PC, the sample is placed in a quartz boat. In the following the analysis can be started and the sample boat is pushed from the open end of the combustion tube into the hot zone of the furnace.

The combustion gas is led through a copper oxide catalyst and the formed CO₂ is 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 CO₂ determination only takes about 60 up to 90 seconds.

SURFACE CARBON ANALYZER SURFACEC-800

TECHNICAL DATA

Measured elements	carbon
Samples	inorganic
Furnace alignment	horizontal
Sample carrier	quartz boats
Field of application	ceramics, steel / metallurgy
Furnace	resistance furnace with quartz tube, adjustable up to 1000 °C
Maximum sample size	32 x 145 mm
Detection method	solid state infrared absorption
Number of IR cells	1 - 2
Material of IR path	aluminum (optional gold)
Typical analysis time	60 - 90 s
Chemicals required	magnesium perchlorate, sodium hydroxide
Gas required	oxygen 99.5 % 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/surfaceC800

ORDER DATA

ELTRA SURFACEC-800

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

88100-4031		SurfaceC-800 1xC	0.1 – 100 µg/cm ²
88100-4032		SurfaceC-800 2xC	0.1 – 100 µg/cm ² 1 – 1,000 µg/cm ²
88100-4045		SurfaceC-800 1xC	10 – 1,000 µg/cm ²

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

88500-0011	Starter-kit (3 quartz boats, 50 g glass wool and quartz wool)
90200	 Anhydron (magnesium perchlorate), 454 g 1)
90210	 Sodium hydroxide, 500 g 1)
90289	 Copper II oxide, 100 g 1)

FURTHER OPTIONS AND CONSUMABLES

ACCESSORIES (HARDWARE)

72070	Oxygen regulator
88400-0610	Barcode scanner

CHEMICALS (FILLINGS FOR GLASS AND QUARTZ TUBES)

90200  Anhydron (magnesium perchlorate), 454 g l)

90210  Sodium hydroxide, 500 g l)

90289  Copper II oxide, 100 g l)

90331  Glass wool, 454 g

90332  Glass wool, 50 g

90330  Quartz wool, 50 g

92610  Tube of high vacuum grease, 35 g

BOATS

36120  Quartz boat, 75 x 16 x 7.5 mm, 1 piece

46160  Combustion boat SurfaceC-800

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

36218-2001 Combustion boat removing stick, 600 mm, 1 piece

46245 Boat tray

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

TOOLS FOR MAINTENANCE

46200-8000		Maintenance kit SC-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
88400-0489		Rubber plug 14 x 20 x 24 mm, 1 piece, for sealing small glass tubes like 88400-0006
88600-0027		Sodium hydroxide, Anhydrone filter tube, for sealing small glass tubes like 88400-0006

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

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

SPARE AND WEAR PARTS SURFACEC-800

FRONT SIDE

11035		Device fan
11064		Reagent tube (2 pieces)
11170		Balston filter
11480		Adjustable restrictor
15083		Flow meter 15 l/h
15084		Flow meter 60 l/h
15085		Flow meter 120 l/h
46157		Boat holder (glass cover)
72010		Pressure gauge
78017		Main power switch

FURNACE

20040		Quartz reagent tube
46156		Combustion tube
46209		Furnace
46200-2003		Angle combustion tube SC 800
46200-8000		Maintenance kit SC 800
48767		Thermocouple
70287		O-ring 19 x 5 mm
70340		O-ring 27 x 5 mm
77140		HF filter
77450		Thermoswitch

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