NCS Germany

Combustion Master CS

Carbon and Sulphur Analyser

MADE
IN
GERMANY

Combustion Master CS

Carbon and Sulphur Analyser

Analyser

- Stable metal housing
- Maintenance friendly design

PC Controlled Analysis

- Loss-free data transfer
- Multilingual user-friendly operation software

Induction Furnace

- PC programmable furnace
- Automatic dust removal system (optional)
- Protection hood for the operator´s safety

Infrared Detector

- Up to 4 individual IR detector units
- Established German infrared technology

Technical support free of charge

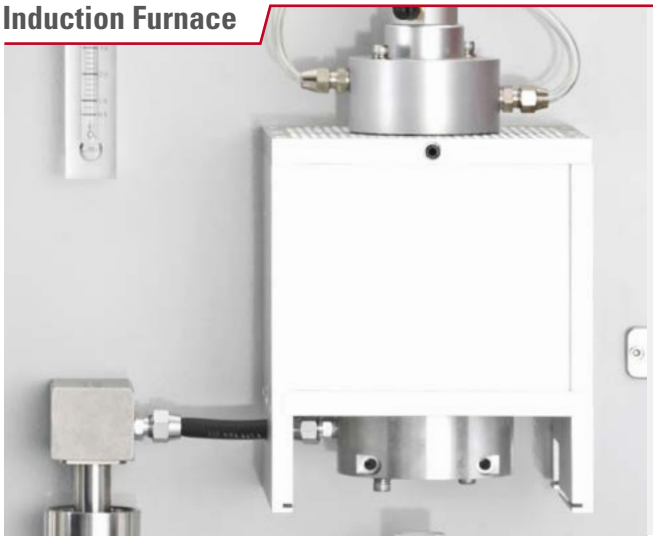
Analyser Features

Analysis Method

The sample will be burnt in the induction furnace together with accelerators in pure oxygen. The usual combustion temperature is about 2200 °C. During the combustion the carbon components will be oxidised to CO_2 and the sulphur components to SO_2.

Dust and water will be removed from the combustion gas afterwards. The combustion gas will then be led to the detectors, which will determine the CO_2 and SO_2 concentrations by IR absorption. From the received data of the sample the PC is calculating the concentrations of carbon and sulphur.

Induction Furnace



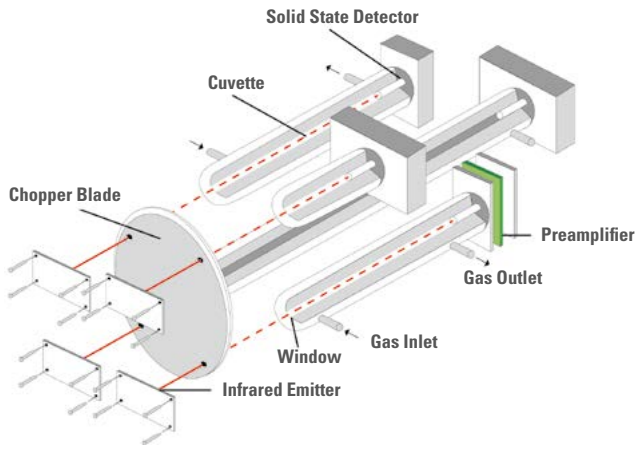
The furnace will heat up the sample by inductivity up to 2200 °C. The power of this process is controlled by the PC and might reach up to 2.2 kVA.

Through a lance the oxygen will be led to the sample for a rapid and complete combustion.

The locating surface of the pedestal guarantees a secure hold of the crucible.

A programmable, automatic furnace cleaning will remove the dust after the analysis.

Infrared Detector

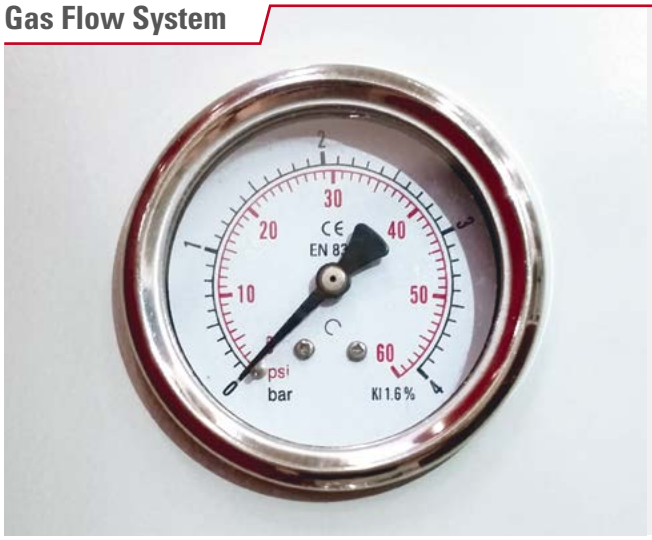


The IR system is designed for a precise operation with low maintenance. The constantly active IR emitter is providing a low-noise signal.

It is possible to extend the analyser with up to 4 independent detector units for a wide analytical range.

The design of the cuvette allows easy cleaning.
A temperature controlled environment ensures a long-time stability of the analyser´s performance.

Gas Flow System



A mass flow controller ensures a high stability of the carrier gas flow.

The user-friendly positioning of the reagent tubes also guarantees an optimised flow of the carrier gas.

The diagnostic programme on the PC further on contains an automatic leak check procedure for reliable results.

Software Features

The NCS operation software is designed for the easy operation of our elemental analysers. It incorporates a desktop for the sample analysis with data transmission as well as the set-up of different methods and user profiles.

The password protected service area shows all important operation parameters of the instrument.

Additionally an automatic leak check system ensures a safe operation.

A remote access for one of our service engineers is also available.

Applications

Steel Production

The Combustion Master CS is the ideal analyser to control the whole steel production from pig iron to the finished product.

With its wide carbon range from 0.5 ppm to 6 % it is able to analyse precisely each production step from the blast furnace to the converter and continuous caster.

The detection limit of 0.5 ppm also guarantees the needed accuracy to verify the lowest specified concentration.

A sulphur range from 0.8 ppm to 20 % ensures the full capability for all commercial steel qualities and raw materials.

Mining Industry

The Combustion Master CS is the suitable instrument to analyse ores and mining products.

The induction furnace is able to digest all kinds of materials for a complete and accurate analysis.

A metal dust filter and special chemical resistant materials are ensuring a nearly maintenance free operation.

Foundry Shops

With its high analytical range and precision the Combustion Master CS is the optimal analyser for foundries.

An easy operation and heavy duty design makes it the right instrument to get fast and accurate results from the casted material.

Partner for the Laboratory

The Combustion Master CS for carbon & sulphur analysis and the Fusion Master ONH for oxygen, nitrogen & hydrogen analysis.

Technical Data

Measuring range		Carbon	Sulphur
	Low range	0 ppm - 0.2 %	0 ppm - 0.3 %
	High range*	0.2 % - 6 %	0.3 % - 30 %
	*Using sample weight of 500 mg, with reduced sample weight up to 100 %		
Sensitivity / recision		Carbon	Sulphur
		0.1 ppm / ± 0.5 ppm	0.1 ppm / ± 0.8 ppm
Furnace	PC controlled induction furnace with automatic cleaning device. Power: 2.2 kVA, 19.5 MHz, 2200 °C usual operating temperature.		
Detection method	Solid state infrared absorption with up to 4 independent detector units.		
Typical sample weight / Analysis time	500 mg to 1 g / 50 s		
Reagents	Anhydrous magnesium perchlorate, sodium hydroxide, rare earth copper oxide		
Gas connection	Oxygen 3.0, 2 bar, compressed air, 6 bar (oil free)		
Power supply	230 VAC (+/-10 %), 50/60 Hz, 16 A, 3.0 kVA max.		
Dimensions	W, H, D: 670 mm, 870 mm, 800 mm weight: 130 kg		
For operation needed	PC, monitor (included in the scope of supply), balance (resolution 0.0001 g)		

Norm Conformity ASTM	Steel, Iron, Nickel and Cobalt: E-1019, E-1587 Refractory Metals: E-1941 Ores and related materials: E-1915 Catalyst: UOP 703
Norm Conformity ISO	Iron and Steel: 9556, 10719, 15349-2, 4935, 13902, 15350 Nickel and Nickel Alloys: 7524, 7526 Iron Ore and Soils: 10694, 4689-3

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