

## Hydrogen Analyzer H-500

### General Information

Determination of hydrogen using the heat extraction method is a special requirement for the characterization of steel, steel alloys, copper and other metals. ELTRA's H-500 is designed for the rapid and accurate determination of hydrogen in these materials.

The H-500 analyzer uses the heat extraction technique and is equipped with a resistance furnace with quartz tube. The temperature can be set up to 1000 °C in steps of 1 °C. The usual working range of the H-500 is about 900° to 1000° C.

ELTRA's H-500 can be customized to the requirements of the user. The analyzer carries up to two different sensitivities of the detectors to allow highest precision for a variety of applications.

### Application Examples

alloys, copper, steel, ...

### Product Advantages

- hydrogen determination with heat extraction technique for determination of residual hydrogen
- high-capacity thermal conductivity cell
- easy calibration with standards or gas dosing
- precise measurements even for low concentrations
- for samples of up to 10 g and 0.8 x 6 cm size
- powerful software (multilingual, customized display, export of results)
- low maintenance
- robust design allows usage in production control and laboratory

### Features

Measured elements	hydrogen
Samples	metals, steel
Furnace alignment	horizontal / tilting function
Sample carrier	-
Field of application	engineering / electronics, glass / ceramics, steel / metallurgy
Furnace	resistance furnace with quartz tube, adjustable up to 1000 °C (operating temperature 900 - 1000 °C)
Detection method	thermal conductivity
Maximum sample size	ø 13 x 60 mm
Typical analysis time	3 - 15 min
Chemicals required	magnesium perchlorate, Schuetze reagents, sodium hydroxide
Gas required	nitrogen 99.995 % pure (2 - 4 bar /

## Hydrogen Analyzer H-500

	30 - 60 psi)
Power requirements	230 V, 50/60 Hz, 2 A, max. 450 W
Dimensions (W x H x D)	75 x 52 x 60 cm
Weight	~ 40 kg
Required equipment	balance (resolution 0.0001g), monitor, PC
Optional accessories	voltage stabilizer 5 KVA

### Function Principle

Operating the H-500 is simple and safe. After weighing the sample on the interfaced electronic, the weight is transferred to the connected PC. It is also possible to enter the weight manually via the H-500 software. The sample is placed into the cold zone of the horizontally positioned furnace. After starting the analysis, the furnace is rotated upwards for the sample to fall into the hot zone. By adding nitrogen as carrier gas hydrogen diffuses out and is carried into a sensitive thermal conductivity cell. The typical analysis time is about 3 to 15 minutes. Detector signals and instrument parameters are displayed during analysis. Evaluation of the signals and display of the results are done automatically; the data can be transferred to a laboratory information management system (LIMS). The H-500 requires minimum maintenance. The particle filters and chemicals which need to be maintained are easily accessible