ELTRA®
a VERDER company

OVER 40 YEARS

HYDROGEN ANALYZER ELEMENTRAC H-r & H-r XXL

PRECISE DETERMINATION OF HYDROGEN VIA HEAT EXTRACTION

The ELTRA ELEMENTRAC H-r and H-r XXL are reliable, robust and precise hydrogen analyzers with resistance furnace and TCD detector. The resistance furnace with quartz tube can be heated up to 1100 °C to measure diffusible hydrogen or in selected samples also total hydrogen via heat extraction.

ELEMENTRAC H-r & H-r XXL: RELIABLE HYDROGEN ANALYSIS

RELIABLE AND PRECISE HYDROGEN DETERMINATION OVER A WIDE RANGE

Hydrogen is a demanding element to be measured in metal samples like iron, titanium, copper or welding seams. Depending on the sample composition, sample size and required parameter (e.g. total, diffusible, residual hydrogen content) different analyzers are required.

The ELEMENTRAC H-r series analyzers utilize a resistance furnace with quartz tube and TCD detection for the measurement of hydrogen via carrier gas heat extraction. The ELEMENTRAC H-r can be equipped with two furnaces of different dimensions (13 or 34 mm inner diameter).

The small furnace is ideally suited for the hydrogen analysis in typically steel based samples like screws, pins wires, whereas the large furnace is more suited for the analysis of welding seam samples according DIN EN ISO 3690.

ELEMENTRAC H-r XXL

ELEMENTRAC H-r

BENEFITS

- Two furnace configurations available for different applications
- Resistance furnace for temperatures up to 1100 °C
- Powerful TCD for low, medium and high hydrogen concentrations
- ELEMENTRAC H-r: Furnace of 13 mm inner diameter for samples up to 5 – 10 g
- ELEMENTRAC H-r XXL : Furnace of 34 mm inner diameter (samples up 12 x 30 x 180 mm)

ELEMENTRAC H-r & H-r XXL: RELIABLE HYDROGEN ANALYSIS

OPERATION AND ANALYSIS PROCESS

Operation of the ELEMENTRAC H-r series analyzer is fast, easy and safe. After weighing of the sample, the weight is transferred to the connected PC. Of course a manual introduction is also possible. Afterwards the sample is placed in the hot zone of the furnace and the measurement can be started in the software.

The introduction of the sample into the hot zone of the furnace can be done in the ELEMENTRAC H-r configuration by tilting the furnace in an upwards position.

After the analysis the furnace can be moved downwards to remove the sample from the furnace. Due to the big sample masses in the H-r XXL configuration, the sample has to applied and removed by the utilization of sample stick.

In both cases the sample releases its hydrogen content during analysis, which is transported via the carrier nitrogen to the TCD cell. The measurement can be finished via time or comparator settings. Of course, the results can be exported as a report, text file or by LIMS.

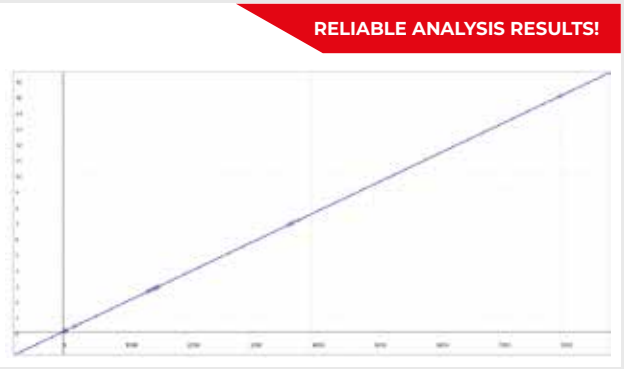
TYPICAL SAMPLE MATERIALS

- Steel, copper, alloys, tec
- Welding seams according DIN EN ISO 3690

CALIBRATION OF THE ELEMENTRAC H-r

ELEMENTRAC H-r analyzers can be calibrated using certified reference materials, integrated gas calibration, or at high concentrations, with primary materials such as TiH_2.

RELIABLE ANALYSIS RESULTS!



Linear calibration over a wide concentration range.

TECHNICAL INFORMATION

	ELEMENTRAC H-r & H-r XXL
Furnace	Resistant heated, up to 1100 °C
Detector	TCD
Calibration	Solid CRM, gas calibration
Chemicals	Magnesium perchlorate, sodium hydroxide on carrier, Schuetze Reagent
Requires gas	Nitrogen (99.995 %; 2 – 4 bar) Flow 10 – 15 Sec
Nominal Flow	10 – 15 L/h
Typical analysis time (Sample depending)	90 – 1200 sec
Working conditions	15-35 °C; 20 – 80 % humidity (not condensing)
Power supply	230 V AC ± 10 %; 50/60 Hz; 2.0 A; 450 W
Options	Carrier gas purification furnace Touch Screen & Monitor holder

	ELEMENTRAC H-r	ELEMENTRAC H-r XXL
Inner furnace diameter	13 mm	34 mm

ELTRA APPLICATION LABORATORY

For many applications (e.g. hydrogen determination in special alloys) no international standard is released. To assure a reliable and safe analysis the ELTRA application laboratory in Haan provides free of charge test measurements and aplplication support. This support covers the full ELTRA product portfolio of TGA, ONH and CS measurement.

Participation in interlaboratory tests (e.g. ASTM Powder Metallurgy) and participation in the certification of reference materials (e.g. ECRM 268-1; ECRM 049-1) ensure a consistently high analysis quality.

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