



QuiK-Spec[®]
QuiK-Lab[®] 4
Your critical link to instant analysis

QuiK-Spec[®] and QuiK-Lab[®] 4

Your critical link to instant analysis

Introduction

Increasing demands to produce high quality steels with lower phosphorus levels and lower CO₂ outputs require steel plants to reinvent their converter process. Key element is a faster knowledge of the steel composition during this process.

The QuiK-Lab[®] Spectral Units of Heraeus Electro-Nite provide a fast and reliable analysis of the most critical elements such as Carbon, Phosphorus, Manganese and Sulfur, within one minute after immersion during converter treatment.

Benefits

- Availability of all vital information on the composition of the liquid steel before the end of blow.
- Helps the operator to decide which actions to undertake to get temperature, carbon, phosphorus within specification.
- Reduces reblows and overblows to a minimum.
- Reduce the converter tap-to-tap time by a few minutes and increase the productivity of the converter shop.

The system

QUIK-SPEC[®] MULTI-LANCE[®] SENSOR

The use of the gas purging technology, either being nitrogen or argon, and the unique sample design provide a clean preparation-free sample. The design ensures an almost direct cooling of the sample and a clean surface, which needs no preparation and is ready for a direct spark, giving an almost immediate analysis. A nice cut-out of the QuiK-Spec[®] Multi-Lance[®] in the picture on the cover shows its concept.

The new hardware for these QuiK-Spec[®] probes has been developed to allow as well measurements with the classical TSC-TSO probes as the new QuiK-Spec[®] probes, giving the operators the flexibility and autonomy for selecting the correct type of probes. The sublance technology, together with the new Multi-Lance[®] QuiK-Spec[®], provides the measurement of temperature, oxygen and liquidus identical with the existing Multi-Lance[®] sensors.

System Timeline



QUIK-LAB[®] 4 INSTRUMENT

An instrument that quickly spectroanalyzes the sample with the help of a high-end optical emission spectrometer.

The QuiK-Lab[®] spectroanalyzer provides:

- a balance between operational simplicity and accurate analysis; and
- a strong enclosure suitable for the converter environment.

We have designed the QuiK-Lab[®] instrument to withstand the harsh environment around the converter, while access to the unit and its analysing functions is easy. The instrument also needs limited maintenance.

The analysis: Synergy between Speed, Simplicity, Accuracy

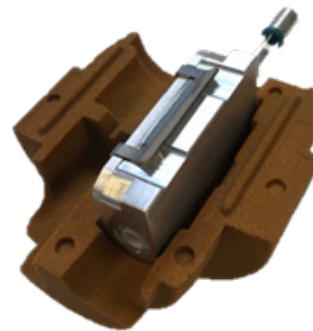
The Multi-Lance[®] enables a quick recovery of the sample. The operator puts the sample in the sample holder. A positioning robot takes over and moves the sample to the first measurement position, a spark is ignited and a first sparkresult obtained in 40 seconds.

Measurement mode

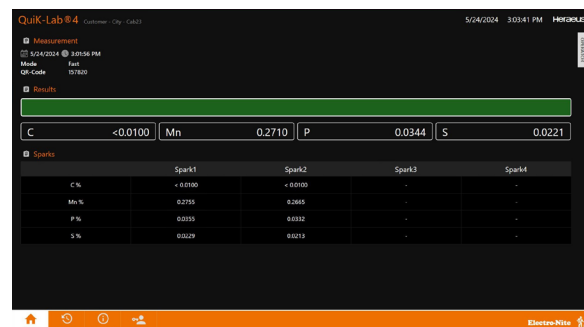
QuiK-Lab[®] 4 has two measurement modes: FAST and FULL. In FAST mode, the elements C, Mn, P, and S are analyzed. The FULL mode takes longer as it also measures elements such as Al, V, Cr, Si, Mo, Ni, Co, Cu, Nb, Ti, Sn, As, Ca, B, Mg, and Zr.

A customer can decide:

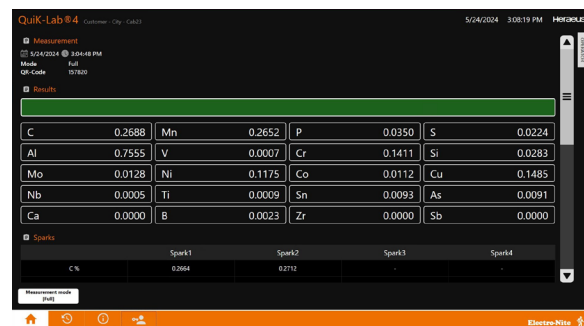
- Measure always FAST
- Measure always FULL
- Decide before the measurement to measure FAST or FULL (Dynamic).



QuiK-Spec[®] Sampler



QuiK-Lab[®] 4 measurement screen FAST mode



QuiK-Lab[®] 4 measurement screen FULL mode

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