

QuiK-Spec<sup>®</sup>  
QuiK-Lab<sup>®</sup>  
Your critical link to instant analysis

# QuiK-Spec<sup>®</sup> and QuiK-Lab<sup>®</sup>

## Your critical link to instant analysis

### Introduction

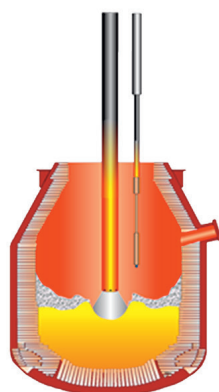
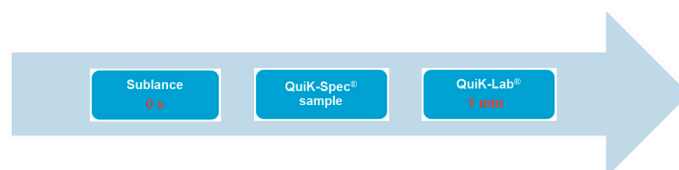
Increasing demands to produce high quality steels with lower phosphorus levels and lower CO<sub>2</sub> outputs require steel plants to reinvent their converter process. Key element is a faster knowledge of the steel composition during this process.

The QuiK-lab<sup>®</sup> 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.

### System Timeline



### The system

#### QUIK-SPEC<sup>®</sup> MULTI-LANCE<sup>®</sup> 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<sup>®</sup> Multi-Lance<sup>®</sup> in the picture on the cover shows its concept.

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

#### QUIK-LAB<sup>®</sup> INSTRUMENT

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



The QuiK-Lab<sup>®</sup> spectroanalyzer provides:

- a balance between operational simplicity and accurate analysis; and
- automatic spectro analyser calibration based on preloaded reference samples (only for QuiK-Lab<sup>®</sup>2)
- a strong enclosure suitable for the converter environment.

We have designed the QuiK-Lab<sup>®</sup> 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<sup>®</sup> 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 20 seconds.

By default, the following basic elements are analyzed and displayed:

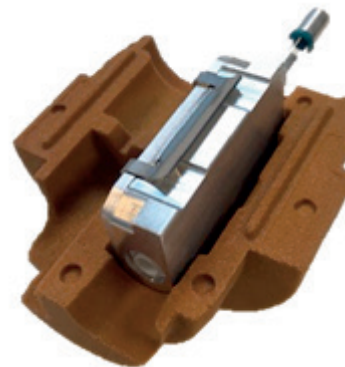
- Carbon
- Manganese
- Phosphorus
- Sulphur

**QuiK-Lab<sup>®</sup>2 versus QuiK-Lab<sup>®</sup>3**

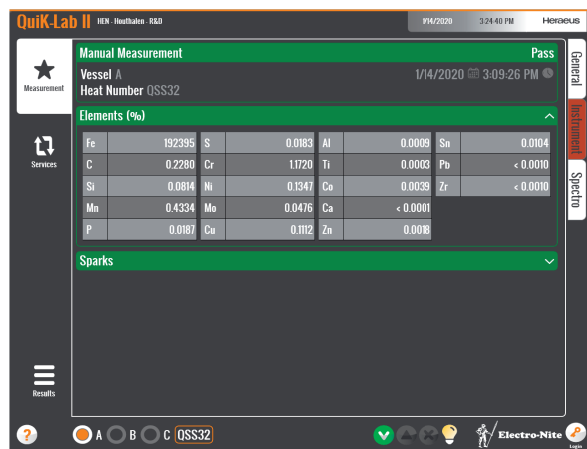
The QuiK-Lab<sup>®</sup>3, a lean and smaller unit, providing C, Mn, P and S. If space on converter floor is limited and the results of these 4 elements is sufficient, this is the best choice.

The QuiK-Lab<sup>®</sup>2 uses more space but offers the full analytical spectrum. A total of 21 other elements are also analyzed and displayed.

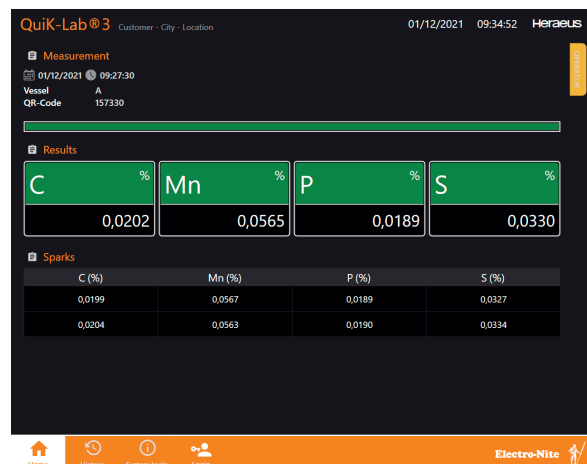
Accuracy of QuiK-Lab<sup>®</sup>2 and 3 are identical. The pictures on the right show an example of a measurement result.



QuiK-Spec<sup>®</sup> Sampler



QuiK-Lab<sup>®</sup>2 measurement screen



QuiK-Lab<sup>®</sup>3 measurement screen

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