



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

Your critical link to  
instant analysis



The Multi-Lance QuiK-Spec® sensor together with the QuiK-Lab® II instrument provides, within 80 seconds, a fast and reliable analysis of the most critical elements during converter treatment. This gives an accurate measurement of carbon, phosphorus, manganese, copper, chromium, sulphur and 14 other chemical elements.

### The system

The system is made up of the:

- Multi-Lance® QuiK-Spec® – a sensor that also uses inert atmosphere-purging technology to provide a clean, preparation-free sample; and
- QuiK-Lab® II – an instrument that quickly spectroanalyzes the sample with the help of a high-end optical emission spectrometer.

### Benefits

Sublance technology, together with the new Multi-Lance® QuiK-Spec®, provides:

- A new type of sample, which needs no preparation and is ready for a direct spark, giving an almost immediate analysis; and
- The measurement of temperature, oxygen, and liquidus identical with the existing Multi-Lance® sensors.

### System timeline



### Background

In Europe and Asia, the main aim of the converter process is to reduce the amount of phosphorus in steel and to get the temperature and carbon within specification at the end of blowing. Until now, because of steel grades with tighter specifications on phosphorus and also increased phosphorus content in the iron ore, steel makers have been waiting for the final sample (TSO measurement) to know the phosphorus content before deciding if they need to reblow the heat or can tap it immediately.

QuiK-Lab® II offers the potential to analyze phosphorus within 80 seconds of the TSC inblow measurement. This offers operators critical information on the P flight path and they can continue the oxygen blow until all the critical elements (Phosphorus, Carbon) and the temperature are within specification. QuiK-Spec® and QuiK-Lab® II enable to reduce the converter tap-to-tap time by a few minutes and increase the productivity of the convertor shop.

### Advantages

- 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

### System operation

The Multi-Lance® QuiK-Spec® allows the sample to be recovered quickly and transferred to the sample holder on the QuiK-Lab® II without any sample preparation.

A positioning robot takes over and moves the sample to the first analysis position, the spectrometer analyzes the sample.

An estimation is given within 20s and the final result is given 20s after the estimation.

The following elements will always be displayed:

- Carbon
- Manganese
- Phosphorus
- Sulphur
- Chromium
- Copper

A total of 16 other elements are also reported to give an indication of the content.

### The Multi-Lance® QuiK-Spec® sensor

We have developed the QuiK-Spec® hardware to allow measurements using classic TSC and TSO sensors as well as the new QuiK-Spec® sensors in a TSC and TSO version. This gives operators the flexibility to choose between the different sensor options.

### QuiK-Lab® II instrument

The QuiK-Lab® II provides fast analysis of the QuiK-Spec sample and because it is on the steel-making shop floor, allowing fast decisions on the converter process.

The QuiK-Lab® II spectroanalyzer provides:

- A balance between operational simplicity and accurate analysis; and
- Automatic spectro analyser calibration based on preloaded reference samples.
- A strong enclosure suitable for the converter environment;

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



Sample door open



QuiK-Lab® II display



QuiK-Spec® sensor



QuiK-Lab® II instrument





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Certified Quality System  
DIN EN ISO 9001:2000  
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