

## ARL iSpark 8860 Inclusion Analyzer



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The Thermo Scientific™ ARL™ iSpark 8860 Inclusion Analyzer allows ultra-fast determination of elemental concentrations and characterization of non-metallic inclusions in a single analysis. It is designed to meet the most demanding needs of both elemental and inclusion analyses of steel samples.

### Designed to meet your needs

The ARL iSpark is the trusted standard in optical emission spectrometry. It combines the famous 1m vacuum Paschen-Runge optics with PMT detectors on which our optical emission spectrometers' reputation is built with improved and innovative hardware and software. (See the ARL iSpark brochure for details.)

The ARL iSpark 8860 Inclusion Analyzer is a package optimally configured for the most demanding needs regarding performance and accuracy in elemental analysis and inclusion analysis of steel samples. It includes all our best features for ultra-fast inclusion analysis, namely customized methods, software tools, and training of operator and manager.

### Your benefits

- Advanced inclusion analysis combined with outstanding elemental analysis
- Analysis time on par with a typical elemental analysis
- Inclusion data for up to thirty or more samples per hour
- Standard and advanced inclusion data, for example:
  - Peak and peak coincidence counts
  - Soluble and insoluble Al and B concentrations
  - Type (composition), number and average size
  - Size distribution
  - Inclusion concentration and volume fraction
  - Determination of oxygen at ultra-low concentrations based on inclusion analysis in some Al killed steel samples (subject to results of feasibility study)
- Corrective actions during steel production, made possible by near-real-time inclusion analysis
- Huge savings due to a reduction in the number of costly issues caused by unwanted inclusions, such as:
  - Unsuitable steel cleanliness and properties
  - Clogging of the submerged entry nozzle
  - Customer complaints or returns of steel products
- Comprehensive set of software tools to attain highest efficiency in inclusion analysis, e.g., Spark Explorer and SPC
- Identical maintenance and cost of ownership to the standard ARL iSpark

The ARL iSpark 8860 Inclusion Analyzer performs a two-in-one analysis that provides an immediate cost-effective and high-performance “turnkey” solution, ready to analyze on the installation day.

## Two versions available

Two versions of the ARL iSpark 8860 Inclusion Analyzer are available:

- Fe1 version: with 39 PMT channels, including 1 VUV PMT channel for measuring low contents of N
- Fe2 version: with 43 PMT channels, including 4 VUV PMT channels, one for Fe internal standard and three for measuring low contents of C, N and O

In addition to complete base ARL iSpark hardware and OXSAS software, for both versions, the package includes:

- The complete instrument base (including above mentioned PMT channels)
- OXSAS software
- Special VUV optics with high purity vacuum
- The iron and steel matrix, featuring:
  - Analysis table and consumables
  - The setting-up samples for analysis with the selected calibrations
  - Instrument adjustment, performance control and quality assurance report
- Sircal argon purifier, including stainless steel connection tube and one consumable set
- Calibration and analytical methods for analysis of low alloy steel including:
  - Determination of ultra-low N (Fe1 and Fe2 versions) and additionally C and O concentrations (Fe2 version only)
  - Determination of Al and B soluble/insoluble concentrations
  - Customizable Spark-DAT Advanced Inclusion Analysis
  - Customizable inclusions reporting

- Spark Explorer, a stand-alone software tool including all the graphical and statistical tools for in-depth exploration of inclusion analysis raw data
- Additional Spark Explorer license for a separate computer
- Inclusions Report, a software module for inclusion dedicated reporting
- SPC, an online Statistical Process Control software tool allowing viewing and processing control charts and SPC studies of elemental concentrations and inclusion data
- A 3-day session with our experts in our factory in Ecublens, Switzerland, allowing:
  - Specific training on Spark-DAT Advanced Inclusion Analysis, Inclusions Report and Spark-Explorer
  - Customization of Advanced Inclusion Analysis methods and inclusions reporting with Inclusions Report

## Options available

Many options for analysis of iron and steel samples with the ARL iSpark are available:

- Calibration options — On top of the low alloy steel calibration included in the package, multiple iron and steel calibrations are available. This includes calibrations for free cutting steel, Cr steel, CrNi steel, Mn steel, tool steel and high-speed steel, Ni Hard and cast and nodular iron, high-alloy cast iron, Ni Resist, global iron, and some calibrations to analyze small samples.
- Software options—for example, Charge Correction
- Accessories for analysis of steel wires and small samples

The ARL iSpark 8860 Inclusion Analyzer is also capable of automated operation when interfaced with one of the models from our ARL SMS series.

Contact your local Thermo Fisher Scientific sales representative for more information on the ARL iSpark 8860 Inclusion Analyzer package and available options.

 Learn more at [thermofisher.com/inclusionanalyzer](https://thermofisher.com/inclusionanalyzer)