Spectrometer for Cast Steel



Overview

Spectrometers for Steel Testing in Steel Industry Plants Enhance steel testing with our Spectrometers. Ensure accurate & precise analysis of Carbon, Nitrog.

Key Takeaways

Optical Emission Spectrometers (OES), particularly arc spark OES, are the preferred choice for accurate and rapid analysis of cast steel.

Why OE

S is Ideal for Cast SteelOptical Emission Spectrometry (OES) is widely used in steel foundries and fabrication shops because it provides fast, precise, and non-destructive elemental analysis of ferrous alloys, including cast steel.

OE

S works by applying a spark to the metal surface, exciting atoms to emit light at characteristic wavelengths. The spectrometer then measures these wavelengths to determine the concentration of elements such as carbon, manganese, silicon, chromium, nickel, molybdenum, and trace elements like niobium or copper. This ensures that the chemical composition meets stringent production standards.

Advantages of Arc Spark OES

High Accuracy and Precision: Arc spark OES can detect a wide range of elements, including light elements like carbon, nitrogen, and oxygen, which are critical in cast steel quality. Rapid Results: Analysis is completed in seconds, allowing real-time quality control during casting, melting, or post-processing.

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

Non-

Destructive Testing: The method leaves the part largely intact, which is essential for expensive or large castings. Field and Laboratory Use: Portable or mobile OES units, such as the Metavision-MX or handheld arc spark spectrometers, allow on-site testing of large castings or installed equipment.

Alternative Spectrometry Options

Process Mass Spectrometry (MS): While highly accurate for gas analysis in steel production, MS is primarily used for monitoring process gases in furnaces or continuous casting lines rather than direct solid cast steel analysis.

X-

Ray Fluorescence (XRF): Handheld XRF analyzers are useful for rapid alloy identification but are less precise for light elements like carbon or nitrogen, which are critical in cast steel.

Practical Recommendations

For cast steel analysis, a stationary or portable arc spark OES is generally the best choice. It allows foundries to: Verify alloy composition before pouring or after solidification. Detect trace elements that influence corrosion resistance, hardness, and mechanical properties.

Perform routine quality control efficiently, reducing defects and rework. In summary, arc spark OES spectrometers provide the optimal combination of speed, accuracy, and versatility for cast steel, making them the standard in modern steel foundries and fabrication facilities.

Article Content

Spectrometers for Steel Testing in Steel Industry Plants

Enhance steel testing with our Spectrometers. Ensure accurate & precise analysis of Carbon, Nitrogen, Oxygen & fine wire, foil, thin analysis in

Metal analysis spectrometer

Find your metal analysis spectrometer easily amongst the 40 products from the leading brands (Thermo Fisher, LECO, Malvern Panalytical, ...) on DirectIndustry, the industry specialist for your professional

Analysis of Iron and Steel with ARL easySpark Optical Emission

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

The ARL easySpark is able to determine all the elements necessary in your current and future applications, in all possible qualities of iron and steel: white or grey cast iron, alloyed cast iron, low

Spectrochemical Analysis | Metal Casting Resources

Spectrometers are often the instrument of choice for foundry metal analysis as they require only minimal intervention from foundry operators when

FOUNDRY-MASTER Smart 2 | Optical Emission Spectrometer

Engineered for value, ease of use, and backed by application-driven support. The FOUNDRY-MASTER Smart 2 delivers lab-grade precision for ferrous and non-ferrous metal analysis in a compact, durable

PG SPARK OES CCD METAL ANALYSER FOR

This high quality, affordable and compact OES Spark Spectrometer is perfect for the routine analysis of elemental content in materials such as Iron and Steels,

Spectro Analysis and Metal Detection | Cast Steel

Spectrometers are calibrated weekly using base metals to ensure accurate readouts. CSP utilizes Optical emission spectrometers (OES or spark discharge

Process Mass Spectrometry in Iron and Steel

Field-Proven Technology with a Worldwide Installation Base From the blast furnace to the galvanizing line, Thermo Scientific process mass spectrometers have proven to optimize a diverse range of hot

Steel Analysis | XRF Spectrometer | XRF Spectrometry

Discover how the ARL X900 XRF spectrometer is utilized in accurate steel analysis, learn how it''s features aid in precision, reliability and more.

Optical Emission Spectrometry

Analysis of iron and steel with ARL iSpark 8860 Optical Emission Spectrometer Since 1934, our company has set the standard of quality for spectrochemical analysis of metals. Throughout these

IS 15338 (2003): Spectrometric Analysis of Cast Iron by Direct

In this standard the condensed spark method is specified for determination of alloying elements in cast iron with the help of direct reading optical emission spectrometer having automatic print out

Analysis of Steel and Cast Iron Using the SPECTROMAXx

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

The SPECTROMAXx enables the accurate analysis of steel and cast iron. The instrument takes advantage of modern CMOS/CCD technology combined with the latest generation of readout

Process Mass Spectrometers in Iron and Steel Manufacturing

The advantages of process mass spectrometers over conventional analysis techniques have been proven over many years in the iron and steel industry. The ability to measure a wide range of

Analysis of iron and steel with ARL iSpark 8820 Plus Optical Emission ...

Analysis of iron and steel with ARL iSpark 8820 Plus Optical Emission Spectrometer Since 1934, our company has set the standard of quality for spectrochemical analysis of metals. Throughout these

portable metal analyzer factory,professional portable metal analyzer ...

Common Optical Emission Spectrometer Troubleshooting Spectrometers will inevitably have problems in their use. As instrument users, they often lack the necessary knowledge of instrument mainten...

ASTM E1999 Standard Test Method for Analysis of Cast Iron by Spark ...

ASTM E1999 provides a standardized technique for the chemical analysis of cast iron using spark atomic emission spectrometry. The method is important for identifying alloying and

Spectrometer for Metal, Alloy Steel, Stainless Steel,

Spectrometer for Metal, Alloy Steel, Stainless Steel, Metallurgy, Cast Iron, Find Details and Price about Spectrometer Spectrometer for Metal Analysis from

Design and operational characteristics of a cast steel mass spectrometer

A cast steel magnetic sector mass analyzer is developed for studies of hydrogen and helium ion beams generated by a gas discharge compact ion source. The optimum induced

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

Contact Us

Continue your research online:

Website: https://kenhardtprimary.co.za
Technical inquiry: https://kenhardtprimary.co.za/project-desk.html
African project coordination: Century City, Cape Town, Western Cape, South Africa

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved