



Metavision 1008i³

When excellence is not good enough



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The *Metavision-1008i³* has been designed to deliver high-performance at low detection limits while not compromising on economy. Capable of analyzing 55+ elements across ferrous and non-ferrous metals and alloys and with low to single and even sub-ppm limits of detection for each, this spectrometer is ideal for a wide range of quality-conscious users. Being CMOS/CCD-based, there is never any need for hardware upgrades, even if new elements, bases or matrices are to be added post-purchase, with additions being simple and possible to do even at-site.

Innovative optics driving optimal value

The *Metavision-1008i³* features ultra-high resolution dual optics, employs the latest generation CMOS detectors and custom-developed optical components, offering class-leading resolution that directly translates into lower detection limits, higher stability and better elemental coverage than any other OES in its class. Added to this, the entire optical system is hermetically sealed and thermally stabilized to a low temperature, which minimizes thermal noise and further improves performance.

With a full range capability of 130-671 nm, the *Metavision-1008i³* covers the vast majority of elemental lines – capable of analyzing 55+ elements across bases in standard configurations – and the potential to add still more besides. The *Metavision-1008i³* delivers resolution down to 7 pm and the usage of custom-developed components and applications ensures that it is the only instrument in its class to offer Oxygen analysis at low levels (down to 10 ppm) with extremely high precision; the instrument also offers low level analysis for all trace and alloying elements including C, S, P, B, Ni, Cr, Li, Na etc. making it the ideal solution for all but the most stringent applications..



Highlights

- Complete spectral coverage in the range of 130-671 nm; including low O, Na and Li
- Cooled, low-temperature optics enabling high stability with low detection limits
- 55+ elements in standard calibrations; including low N, O, C etc.
- Fully quantitative analysis of fine wires (down to 0.1 mm), thin foils (down to 0.02 mm)
- Auto-identification of grade and matrix
- Soluble-insoluble analysis (variant-dependent)
- Advanced instrument and user safety features
- Latest-generation processing software for noise-free clear spectra for ultra-low detection limits with high precision and accuracy
- Comprehensive diagnostic systems including error detection, reporting and logging
- Vacuum-free optics enabling lower capital and maintenance costs and very rapid stabilization
- Special applications for direct powder analysis, master alloys, razor foils and many more

Powering the best results

For any spectrometer, the quality as well as the stability of analyses are very closely correlated with the quality of the power source – and the stability of the current discharge it provides. Additionally, the ability to tailor output at a granular level is critical to ensure that analysis is optimized for each element in every application. The innovative digital plasma generator of the *Metavision-1008i³* comprises a fully current-controlled source with ratings that ensure an exceptionally wide range of outputs for each parameter of the discharge. With ultra-granular computer-based control over each parameter, the power unit ensures the highest levels of plasma stability and the ability to generate the ideal spectra for different applications. Designed for inputs of 90-270 V AC, this is also truly global and can be used in any part of the world without restriction.

Modular design

The *Metavision-1008i³* has been built to be very easy to service and maintain. Fully modular in its build, the instrument has optimized isolation of sub-systems to deliver twin benefits – no interference / noise and easy access for maintenance and servicing. Each system is easily and independently accessible to engineers for servicing and to operators for routine maintenance tasks. The design also ensures that no sub-system is at risk during any activity including cleaning and changing any of the consumables.

High economy on all aspects

The *Metavision-1008i³* offers ultra-rapid analyses and employs an optics design that negates the need for any vacuum pumps. It also reduces Argon consumption to the lowest levels by eliminating constant purging. The instrument is also seamlessly upgradable at-site to add elements and calibrations as required and the design of parts that require routine maintenance, the software interface and applications suite are all designed to be usable even by laymen. This ensures optimal investment protection and class-leading analysis and ownership costs across each stage of the product lifecycle.

Applications

For users, what matters far beyond design and feature-sets is the quality and usability of outputs. To this end, we have envisaged and developed applications for the *Metavision-1008i³* that meet almost every stated and unstated need of users across sectors. This spans not just the elemental coverage, but also the detection limits and additional outputs the spectrometer delivers. For example, keeping in mind the requirements makers of Pure (OFC and ETP) Copper, the instrument delivers detection limits as low as 10 ppm (0.001%) for Oxygen, ensuring that users need but a single instrument to cover the entire gamut of chemical testing requirements.

Similarly, the *Metavision-1008i³* offers detection limits in the range of 1-10 ppm for virtually every important element in Steels (including C, S, P, B, Mo, V, Al etc.) along with low detection for N and O; it offers single-ppm detection for Li and Na, as required by firms in the Aluminium sector and low-level Cobalt detection to meet the requirements of battery manufacturers. It also offers Master Alloy calibrations to meet the needs of alloy-makers who are now able to accurately assess major as well as trace elements accurately even in the master alloys. In the design of each application, the first question addressed has been what the user truly requires for completeness of analyses.

Steel Plants and makers of micro-alloys require analysis of the widest possible range of elements, all down to single or sub-ppm levels. More importantly, they require the highest levels of accuracy and repeatability even at very low levels.

With low and single-ppm detection limits for most elements and the ability to analyse C, O, N, S, P etc. to very low levels with high repeatability, the *Metavision-1008i³* addresses all these needs and more. The ability to also analyse fine wires and razor foils, adds a different dimension to the instrument, making it an exceptional value proposition for such buyers.

Pure Metal Producers such as those in Lead, Zinc, Copper, Titanium etc. – require extremely low limits of detection across

almost every element including heavy elements such as Lead, Arsenic, Cadmium etc. to meet purity requirements as well as environmental norms.

The *Metavision-1008i³* offers low detection limits that enable analysis of 99.99+% purity metals with exceptionally high precision. For makers of Pure Copper and Titanium, the Oxygen analysis capability of the *Metavision-1008i³* adds an additional dimension – allowing for precise determination even in OFC and ETP Copper apart from covering the needs for all Titanium grades as well.

Commercial laboratories cater to a whole host of industries, often analysing several hundreds of samples daily for a large variety of metals and alloys. This is

also true for laboratories involved in failure analyses and those in large industries with multifarious applications, such as investment castings. For such laboratories, having a spectrometer with high throughput, low operating costs and wide range of covered elements and detection ranges is essential to ensure satisfaction of a varied clientele with varied applications.

The *Metavision-1008i³* has a rapid analysis time assuring high throughput and detection limits ranging from single and low ppm for pure metals to very high levels to cover any and every metal and alloy. It also offers exceptional long-term stability and reliability, making it the ideal solution for such users.

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Technical Specifications

Optics

- Multi-optics system using latest-generation, high-resolution detectors
- Wavelength range: 130-671 nm
- Focal length of up to 400 mm
- Resolution: Down to 7 pm
(1 pm = 10^{-12} m / 10^{-3} nm)
- Cooled low-temperature, thermally stabilized optics to ensure high precision and stability

Source

- Digital Pulsed Current Controlled Source
- 90-270 VAC; 50/60 Hz

Accessories and Options

- Wire and Fine Wire Analysis Adapters
- Spectrometer Sample Surface Polishing Machines
- Certified Reference Materials (CRMs)
- Argon Purifiers

*Specifications are subject to change on account of product upgrades



The Metal Power Advantage

The *Metavision-1008i³* – like its higher-end sibling, the *Metavision-10008X* – also offers some unique and patented features that truly set it apart from the crowd. These include the analysis of ultra-fine wires down to 0.1 mm thickness and of foils as thin as 20 microns (0.02 mm). These apart, through our in-house Applications Lab, Metal Power also offers custom development of applications to meet specific and unique needs of individual users – including Melt-Addition Programs.

Highest Level of Customer Satisfaction

Our primary objective is to provide the industry with reliable and rugged instruments at affordable prices. In each category, Metal Power's spectrometers offer industry-leading performance, coupled with the lowest costs of ownership. We understand the criticality of our instruments to the operations of our customers and are committed to ensuring minimum downtime.

Our extensive team of dedicated and highly trained service engineers are equipped to handle service issues on our products. This is supported by an efficient call-logging system that is accessible to all customers via our phone lines, email or website.

For customers in the Indian sub-continent, Metal Power offers direct service support and a toll-free helpline (India-only) with a direct field-support team of 35+ in-house engineers spread across 17 locations. In all other markets, Metal Power assures the highest level of service through our authorized partners' engineers, with each trained in regular programs conducted by Metal Power.

All our engineers and partners are supported by our dedicated Central Helpdesk and also provided access to Applications Support when the situation so demands.

Our other products

Metavision 10008X

The zenith of sensitivity



Metavision 1008i

Laboratory Powerhouse



MOSS

Compact and affordable



Mobile OES

High performance on wheels



H/SCAN

Rugged, accurate & economical



Argon Purifier+

For better analysis



CleanSharp

The Brushless Wonder



Wire Adaptors



Sampling Mould



Sample Surface Preparation Machines



Certified Reference Materials



Proficiency Testing Services



Founded in 1987, Metal Power provides a comprehensive range of products, applications and services to meet the analytical needs of metal industries. Our product portfolio spans Laboratory Optical / Atomic Emission Spectrometers (OES / AES), Mobile Spectrometers, Hydrogen analysers for molten Aluminium, Certified Reference Materials (CRM), Sample Preparation Machines for spectrometers as well as a wide range of accessories.

Apart from the product range, Metal Power through its Laboratory Division also offers services in Material Analyses and Proficiency Testing for other laboratories. Today the Company boasts over 30 years of experience serving the needs of ferrous and non-ferrous metals industries and has a truly global presence, spread across more than 35 countries in 5 continents.

True pioneers in the field of CMOS/CCD-based Optical Emission Spectrometers, our product philosophy is driven by the focus on offering a tailored model to meet every customer need – both analytical and financial. As an outcome, we offer the world's widest range of spectrometers – with each offering positioned to be the best-in-class in terms of features as well as on economic value.

Our stationary spectrometer range spans from the high-end R&D-grade **Metavision 10008X**, that delivers virtually every feature known in spectrometry, through the rugged, Laboratory-grade **Metavision-1008i³** and **Metavision-1008i**, to the entry-level **MOSS**.

The common denominator across all our offerings – products, applications and services – remains our commitment to deliver the highest level of quality, reliability and uptime, while also offering the lowest cost over the product lifecycle, through low acquisition costs backed by the highest quality of service and after-sales support to our customers – wherever they may be.



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