

Metavision 1008i³

When excellence is not good enough

***FINEST MID-RANGE OES,
INCLUDING ACCURATE
ANALYSES OF ALL
GASEOUS ELEMENTS!***

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Custom-developed components and applications ensure that it is the only instrument in its class to offer Oxygen in Steel and Hydrogen in Titanium.

The *Metavision-1008i³* has been designed to deliver high performance at low detection limits while not compromising on economy. Capable of analysing 60+ 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 on-site.



Innovative optics driving optimal value

The *Metavision-1008i³* features ultra-high resolution dual optics, employs the latest generation CMOS/CCD detectors and custom-developed optical components, offering a 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 stabilised to a low temperature, which minimises thermal noise and further improves performance.

With a wavelength span of 118-671 nm, expandable up to 800 nm, the *Metavision-1008i³* covers the majority of elemental lines. It boasts the capability to analyse 60+ elements across various bases in standard configurations, with the potential for further expansion. The *Metavision-1008i³* has a Reciprocal Linear Dispersion (RLD) of 0.8 nm/mm, and the usage of custom-developed components and applications ensures that it is the only instrument in its class to offer Oxygen analysis in Fe, Cu and Ti bases (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. Moreover, with its latest upgrade, the *Metavision-1008i³* now also offers Hydrogen (H) analysis in Titanium.

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 optimised 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 VAC, 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 optimised 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 in all aspects

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 the site to add elements and calibrations as required, and the design of parts that require routine maintenance, the software interface and the 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.



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1	1.0079	7	14.007	8	15.999
H		N		O	
Hydrogen		Nitrogen		Oxygen	

Colour options



Warm Grey



Cool Grey



Classic Grey



Space Grey



Matte Black

Highlights

- Complete spectral coverage in the range of 118-671 nm (option to extend up to 800 nm)
- Cooled, low-temperature, hermetically sealed optics enabling high stability with low detection limits
- 60+ elements in standard calibrations; including low N, O, C, S, P and H in Ti
- Auto-identification of grade and matrix
- Soluble-insoluble analysis (variant-dependent) for Al, Ti, B and Ca
- Triple-stage Internal Argon purification system for optics
- 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 stabilisation
- Special applications for ultra-fine wires, razor foils, master alloys, and many more

Technical Specifications

Optics

- Dual-optics system using latest-generation, high-resolution detectors
- Multi-detectors with high resolution
- Wavelength range: 118-671 nm (extendable to 800 nm)
- Focal Length: 400 mm
- Reciprocal Linear Dispersion (RLD): 0.8 nm/mm
- Triple-stage internal Argon re-purification
- Cooled low-temperature, thermally stabilised and hermetically sealed optics to ensure high precision and stability

Source

- Digital, current-controlled source for plasma generation
- Peak Discharge Current: 100 A
- Maximum Discharge Frequency: 1000 Hz
- 90-270 VAC; 50/60 Hz

Accessories and Options

- Thin Foil, Wire and Fine Wire Analysis Adapters
- Spectrometer Sample Surface Polishing Machines
- **Wireless RTDS** (Remote Transmission Display System)
- **MetaLib Pro** (Grade Library)
- **MetaCloud** (Mobile/Web Application)

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 of 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 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 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 the 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 analyse fine wires and razor foils also 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 99.995%+ purity metals with exceptionally high precision. For makers of Pure Copper and Titanium, the Oxygen and Hydrogen 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 a wide range of covered elements and detection ranges is essential to ensure the 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.

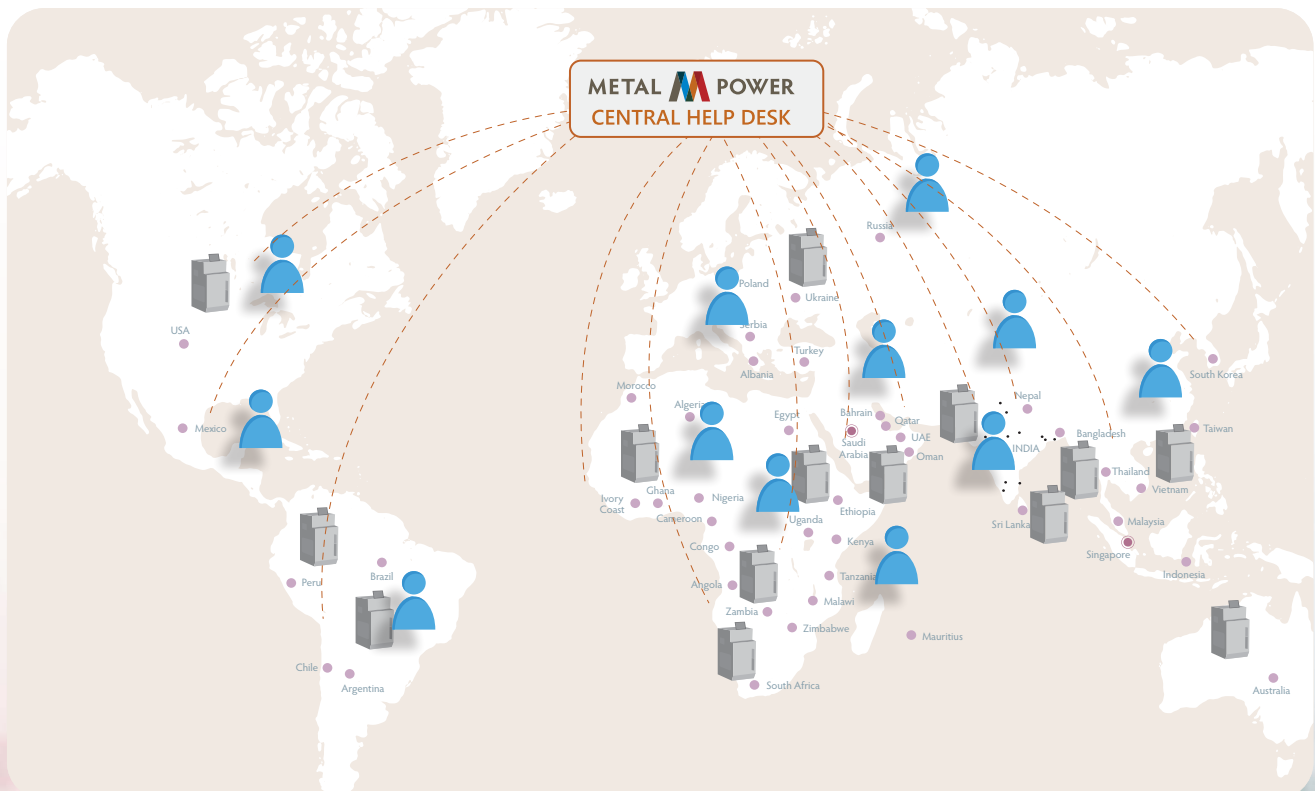
The Metal Power Advantage

The *Metavision-1008i*³, 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 and thin foils. 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.

Worldwide service support

Metal Power offers multi-modal service support to all customers globally and prioritises customer proximity through true omnichannel access. Underpinned by our Salesforce system, all customers get immediate access to service and call-logging through the *MetaCloud* mobile app, website forms, telephonic access, email and WhatsApp chat. Each call is logged instantly on the CRM and is tracked against stringent SLAs. Customers, too, can track the progress and status of any call via *MetaCloud*, which provides them with instant updates from the CRM. To address calls immediately, apart from direct site visits, we ensure that customers always have access to online/remote support.

With a team of 35+ in-house engineers and a large and high-quality pool of trained engineers through our partners, we guarantee the highest level of service and delight. Each of our engineers is a highly skilled professional, and we ensure that all possess extensive knowledge and experience in the field, allowing us to address any customer needs promptly and efficiently. All our engineers and partners, and therefore our customers, are also supported by our dedicated Central Helpdesk, which provides guidance, coordination, and applications support based on what each situation demands. Each Service interaction is closely monitored, with internal assessments and customer feedback being used to continuously improve service levels and customer delight.



A comprehensive ecosystem for your *Metavision-1008i*³



Our other Spectrometers



Metavision-10008X
The zenith of sensitivity



Metavision-8i
Laboratory powerhouse



Metavision-RX
Extremely rugged oil analyzer



Mobile-OES
High performance on wheels



MOSS
Compact and affordable

Founded in 1987, Metal Power provides a comprehensive range of products, applications and services to meet the analytical needs of Production and Quality Control/Assurance Laboratories. Our product portfolio spans Laboratory (Stationary) as well as Mobile Optical/Atomic Emission Spectrometers (OES/AES) for metals analysis, Rotating Disc Electrode (RDE) Optical Emission Spectrometers (OES) for analysis of oil samples, Sample Preparation Machines for spectrometers as well as a wide range of accessories, allied instruments and Industry 4.0 digital solutions that help optimise the analytical outputs of our spectrometers.

Today the company boasts over 35 years of experience in spectrometry and has a truly global presence, directly and indirectly supplying and servicing our customer base across 50+ countries spread over 6 continents.

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

Metal Power Analytical offers both stationary (laboratory) and mobile OES for metal analysis. Our stationary spectrometer range spans from the R&D-grade **Metavision-10008X**, which delivers virtually every feature known in spectrometry, through the Laboratory-grade **Metavision-1008i³** and **Metavision-8i**, to the entry-level **MOSS** – the world's smallest, most economical and first truly scalable OES. In Mobile OES, we offer different models, each with a choice of probes – Arc, Spark, UV, and combined probe options – to meet every user's needs. The **Metavision-RX** RDE-OES offers the very best option for customers who wish to analyse oil samples for contaminants, additives and/or wear metals. Including the option of Sulphur analysis, the instrument offers the widest elemental coverage and leverages all our expertise in the field of CMOS/CCD detector-based optics to offer low detection limits with exceptional accuracy and precision.



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