



Metavision 10008X

The zenith of sensitivity



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The *Metavision-10008X* has been designed specifically for those that require the highest level of accuracy and precision at extremely low limits of detection. Capable of analyzing just about every element possible and with single and sub-ppm limits of detection for each, the *Metavision-10008X* is ideal for the widest range of applications. Designed to meet the most exacting analytical needs of users that wish no compromise on any aspect, the *Metavision-10008X* optimizes the analysis of each element for every application to meet the most stringent standards.

Optics to deliver the finest analysis

The multi-optics design of the *Metavision-10008X* is ground-breaking in every way and uses the latest generation detectors and custom-designed gratings. The entire optical system – across the range from 120-800 nm – is hermetically sealed and thermally stabilized to a low temperature, which ensures exceptional stability and minimizes thermal noise, resulting in unmatched performance standards. On the UV side, the unique design and components ensure that the very toughest elemental lines – Hydrogen and Oxygen – are optimized for and deliver high precision and low detection limits. On the Visible side, the optics design extends as far as to ensure even Potassium (K) is covered. Throughout the range, our choice and design of detectors, cards and applications ensures single and even sub-ppm limits for trace elements, making the *Metavision-10008X* with its fully-CCD architecture the only OES to truly cover the entire spectrum from 120-800 nm and offer the full feature-set including low detection limits, gaseous element analyses and time-resolved spectroscopy.



Highlights

- Full spectral coverage of 120-800 nm; covers virtually the entire periodic table
- 60+ elements in standard calibrations; including low N, O, C, H etc.
- Fully quantitative analysis of fine wires (down to 0.1 mm), thin foils (down to 0.02 mm)
- Time-resolved spectroscopy (TRS)
- Soluble-insoluble analysis (Al, Ti, B, Ca etc.)
- Grades library for quick identification and confirmation of grades
- Auto-identification of grade and matrix
- 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

High power and efficiency

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-10008X* 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-10008X* has a fully modular design with optimized isolation of sub-systems to deliver twin benefits – no interference / noise and easy access for maintenance. Each system is easily and independently accessible to engineers – and design benefits include redundancies as well as cost-optimization for spares.

Lowest TCO and per-analysis costs

The *Metavision-10008X* 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 at any time in future as well, to add elements and calibrations as required. The design of parts that require routine maintenance, the software interface and applications suite are all designed to be usable even by laymen, making ownership and analysis costs the lowest in the world.

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-10008X* that meet every stated and unstated need across sectors. This spans not just the elemental coverage, but also the detection limits and additional outputs the spectrometer delivers. For example, in Steels, the *Metavision-10008X* offers detection limits in the 1-5 ppm range for all of O, C, N, S and P making it ideal for the analysis of all manner of killed steels, including those used for Defence, Railways and automotive requirements. Similarly, keeping in mind the requirements makers of Pure Copper, the instrument delivers detection limits as low as 1 ppm (0.0001%) for Oxygen and in the range of 0.1 – 0.5 ppm for the likes of Se, Te, Bi and Be, ensuring that users need but a single instrument to cover the entire gamut of chemical testing requirements.

Similarly, the *Metavision-10008X* offers soluble-insoluble analysis of key elements that are typically sought by the Steel industry and offers 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 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 the lowest levels. Such users also require analysis of O, H and soluble-insoluble analysis of elements such as Al, Ti, B and Ca.

With single and sub-ppm detection limits for most elements and the ability to analyse C, O, H, N, S, P etc. to very low levels as well as TRS coupled with soluble-insoluble analysis, the *Metavision-10008X* has been designed to address all these needs and then more. The ability to also analyse fine wires and razor foils, makes the *Metavision-10008X* a truly unbeatable value proposition.

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-10008X* has been designed specifically to cater to such needs – with ultra-low detection limits that enable analysis of 99.995+% purity metals with exceptionally high precision. For Pure Copper and Titanium in particular, the Oxygen analysis capability adds an additional dimension – allowing for precise determination even in OFC and OFE Copper and covering the needs for all Titanium grades as well.

High-end laboratories in defence, aerospace and pure research and also those commercial laboratories that cater to high-end applications, demand the widest range of elemental analysis capabilities. These analyses require extremely low limits with high precision to assure the level of granularity of information that is essential for material design, selection, quality assurance and failure analysis.

Each of these sectors – apart from several others – also faces increasingly stringent environmental norms that call for analysis of an ever-increasing number of trace elements at very low levels. With its range of features and ultra-high precision, the *Metavision-10008X* offers the ideal solution for all such users.

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Technical Specifications

Optics

- Multi-optics system using latest-generation, high-resolution detectors
- Wavelength range: 120-800 nm
- Focal length of up to 500 mm
- Resolution: Down to 6 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-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 1008i²

When excellence is not good enough



Metavision 1008i

Laboratory Powerhouse



Metavision 108NN+

Rugged and versatile thoroughbred



MOSS

Compact and affordable



Metavision M Series

High performance on wheels



H/SCAN

Rugged, accurate & economical



Argon Purifier+



CleanSharp



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 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**, **Metavision-1008i** and **Metavision-108NN+**, 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 supported by the highest quality of service and after-sales support to our customers – wherever they may be.



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