

Metavision 10008X

The zenith of sensitivity

**EMPOWERING
INDUSTRY LEADERS
WITH UNMATCHED
PERFORMANCE**

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Coverage of the entire relevant analytical spectrum from 118-800nm, to offer an unrivalled feature-set.

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 groundbreaking in every way and uses the latest generation detectors and custom-designed gratings. The entire optical system – across the range from 118-800 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 (H) and Oxygen (O) – 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 CMOS/CCD architecture the only OES to truly cover the entire spectrum from 118-800 nm and offer the full feature-set including low detection limits, gaseous element analyses and time-resolved spectroscopy.

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.



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Colour Options



Warm Grey



Cool Grey



Classic Grey



Space Grey



Matte Black

Highlights

- 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 ultra-fine wires, master alloys, razor foils and many more

Technical Specifications

Optics

- Multi-optics system using latest-generation, high-resolution detectors
- Wavelength range: 118-800 nm
- Resolution: Down to 6 pm ($1 \text{ pm} = 10^{-12} \text{ m} / 10^{-3} \text{ nm}$)
- 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

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 gaseous element 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, 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 – as well as 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.

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 instruments of the highest quality 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.



A comprehensive ecosystem for your *Metavision-10008X*



Our other Spectrometers



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) Spectrometers for analysis of oil samples, Sample Preparation Machines for spectrometers as well as a wide range of accessories and allied instruments that help optimize 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 35+ countries spread over 6 continents.

True pioneers in the field of CCD- and CMOS-based Spectrometers, our product philosophy is driven by the focus on offering a 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 on economic value.

Metal Power Analytical offers both Stationary (Laboratory) as well as Mobile OES for metals analysis. Our stationary spectrometer range spans from the R&D-grade **Metavision-10008X**, that delivers virtually every feature known in spectrometry, through the Laboratory-grade **Metavision-1008i³** and **Metavision-1008i**, to the entry-level **MOSS** – the world's smallest, most economical and first truly scalable OES. In mobile OES too, we offer different models, each with a choice of probes – Arc, Spark, UV and combined probe options – to meet every user need.

The **Metavision-RX** RDE-OES offers the very best option for customers that wish to analyze 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.



Metal Power Analytical Pvt. Ltd.
87, Metal Power House, Plot No. 14, Marol Co-operative
Industrial Estate, Andheri (East), Mumbai 400059
sales@metalspower.net | www.metalspower.net
+91 22 4083 0500

Metal Power Analytical Pte. Ltd.
105 Cecil Street, #18-00, The Octagon
Suite 1827, Singapore 069534.
sales@metalspower.sg | www.metalspower.sg
+65-94374601