METAL POWER

**Metavision 10008X**

The zenith of sensitivity

# EMPOWERING INDUSTRY LEADERS WITH UNMATCHED PERFORMANCE

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

The *Metavision-10008X* has been designed specifically for those who require the highest level of accuracy and precision at extremely low limits of detection. Capable of analysing 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 who wish no compromise on any aspect, the *Metavision-10008X* optimises the analysis of each element for every application to meet the most stringent standards.

## Optics to deliver the finest analysis

The 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 118-800 nm – is hermetically sealed and thermally stabilised to a low temperature, which ensures exceptional stability and minimises thermal noise, resulting in unmatched performance standards. On the UV side, the unique design and components ensure that the most difficult elemental lines – Hydrogen (H) and Oxygen (O) – are optimised 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 ensure 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 optimised 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 VAC, 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 optimised isolation of subsystems to deliver twin benefits: no interference/noise and easy maintenance access. Each system is easily and independently accessible to engineers, and design benefits include redundancies and 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 the 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 the 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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Scan for our full product details

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

Colour options

Warm Grey | Cool Grey | Classic Grey | Space Grey | Matte Black

## Highlights

- 60+ elements in standard calibrations, including low H, N, O, C, etc.
- Cooled, low-temperature, hermetically sealed optics enabling high stability with ultra-low detection limits
- Time-resolved spectroscopy (TRS)
- Soluble-insoluble analysis (Al, Ti, B, Ca etc.)
- Grades library for quick identification and confirmation of grades
- Triple-stage internal Argon re-purification 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
- Wavelength range: 118-800 nm
- Focal Length: 750 mm
- Reciprocal Linear Dispersion (RLD): 0.3 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
- Sample Preparation 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-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 limits in 1 ppm range for 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 of 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 a soluble-insoluble analysis of key elements typically sought by the Steel industry 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 and trace elements even in 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 the lowest levels. Such users also require gaseous element analysis 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 and environmental norms.

The ***Metavision-10008X*** has been designed specifically to cater to such needs, with ultra-low detection limits that enable the analysis of 99.997%+ 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 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.

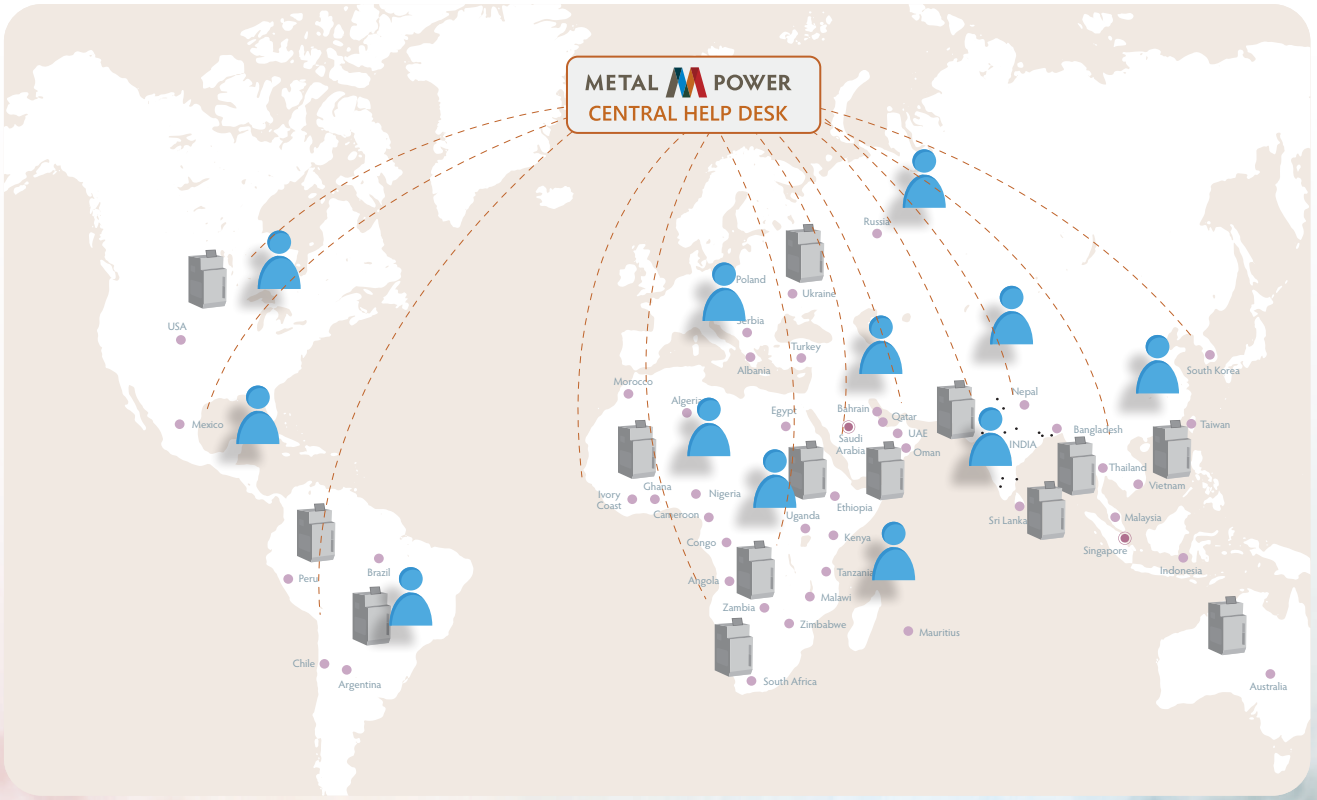
## The Metal Power advantage

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 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.



METAL POWER

## A comprehensive ecosystem for your *Metavision-10008X*

**MetaCloud**
*You're never far from your lab*
Access your OES from anywhere and on any device

**3in1**
SPM
Prepare sample surfaces for quality analysis

**Wireless RTDS**
Transmit your readings from lab to melting platform wirelessly


**Armour Safe**
Protect your OES against unstable power and temperature for optimal performance

**MetaLib PRO**
Access the world's most comprehensive library for metal grade identification

**FRP melt**
Integrated IT solution for best practice in melting and furnace operations

**[FP]-LIMS**
Digitise and connect your analysis instruments to manage data seamlessly

## Our other Spectrometers

***Metavision-1008i³***
When excellence is not good enough

***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.


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

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

**Metal Power Analytical DMCC**
Unit No: R29-26, Reef Tower, Plot No: JLT-PH2-O1A
Jumeirah Lake Towers, Dubai, UAE
sales@metalpower.ae | www.metalpower.ae