

Metavision 8i

Laboratory powerhouse

**COMPREHENSIVE
ELEMENTAL ANALYSIS
WITH DUAL-OPTICS AND
MULTI-BASE CAPABILITIES**

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Delivers analysis of 99.9+% for all pure metals, with some going well beyond 99.98% purity as well.

Research in the field of spectrometry has continually been focused on ever-lower detection limits and faster analysis time coupled with high precision and accuracy. At Metal Power, our R&D team focuses on these while not losing sight of the need to deliver economic value across the product lifecycle. The *Metavision-8i* exemplifies all these endeavours, offering rapid, highly precise and accurate analysis for an extremely wide range of elements at very low levels in ferrous and non-ferrous metals while also offering exceptional economic value.



Innovative optics

The *Metavision-8i* represents a significant advancement in optical analysis technology, featuring an innovative dual-optics system specifically designed for superior performance across a broad wavelength spectrum. This system incorporates dedicated optics for the Deep Ultraviolet (DUV) spectrum, ranging from 140 to 220 nm. This is crucial for detecting elements with strong absorption lines in this region, such as Carbon (C), Sulphur (S), Phosphorus (P), Boron (B) and Nitrogen (N). The distinct and easily measurable lines in the Deep UV range enable the *Metavision-8i* to achieve significantly improved detection limits, precision, and accuracy.

Leveraging this advanced optical system, the *Metavision-8i* spans a wavelength range of 140 to 620 nm, providing comprehensive spectral coverage. This broad range facilitates the analysis of over 50 elements in standard factory calibrations for both metals and alloys. The instrument demonstrates remarkable sensitivity, with detection limits as low as ≤ 20 ppm for Carbon (C) and Sulphur (S) in steels and cast irons and down to 20 ppm for Nitrogen. Additionally, it excels in analysing non-ferrous metals, achieving purities of 99.9+% for all pure metals, and exceeding 99.98% for elements such as Copper (Cu) and Lead (Pb). The *Metavision-8i* also sets a new benchmark in analysing Sodium (Na), Phosphorus (P), and Lithium (Li) in Aluminum (Al) bases, showcasing unparalleled accuracy and versatility across a wide range of analytical applications.

Powering the best results

For any spectrometer, the quality and stability of analyses are intrinsically linked to the quality and consistency of the power source, particularly the stability of the current discharge it provides. The *Metavision-8i*'s innovative, fully digital pulsed current-controlled power source offers precise, computer-controlled adjustments across a broad range of discharge parameters. This ensures optimal plasma generation and tailored spectral output for each element and application. With inputs ranging from 90 - 270 V AC, the *Metavision-8i* is designed for global use, offering unparalleled flexibility and reliability in any part of the world.

Modular design

The *Metavision-8i* is engineered for easy servicing and maintenance, featuring a fully modular design that ensures optimised isolation of subsystems. This design prevents interference and noise and enables quick and straightforward access for maintenance and servicing. Engineers can independently access each system without disturbing other components, ensuring that critical subsystems remain protected during routine tasks such as cleaning or consumable replacement. This approach minimises downtime, enhances reliability, and reduces overall maintenance costs, making the *Metavision-8i* an exceptionally service-friendly instrument.



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Colour options



Warm Grey



Cool Grey



Classic Grey



Space Grey



Matte Black

Highlights

- 55+ elements in standard calibrations; Includes N, C, S, P, B, etc., all to low levels.
- Dual-optics for improved sensitivity and detection limits.
- Unique capability - ≤ 20 ppm limits in the analysis of C, N, S, and P in steels, as well as Na, Li and P in Aluminium.
- Dual optics ensuring consistently high levels of accuracy and precision.
- Extreme flexibility - any number of bases and matrices, including on-site additions.
- Fully digital pulsed current-controlled power source.
- Latest generation processing software for noise-free clear spectra for low detection limits, ensuring uncompromised accuracy in the analysis.
- Grade Identification library for quick identification of grade and matrix, ARQC, etc.,
- Vacuum-free optics enabling lower capital and maintenance costs and very rapid stabilisation.
- Special applications for small samples, wire rods (2.2 mm dia.), thin sheets (0.05 mm thickness), and many more.

Technical Specifications

Optics

- Dual-optics system with dedicated optics for the Deep UV spectrum
- Wavelength span of 140 – 620 nm
- Latest-generation, high-resolution CMOS detectors
- Reciprocal Linear Dispersion (RLD): 1.6 nm/mm
- Thermally stabilised 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 Adaptors
- Small Sample Adaptors
- Wire and Wire Rod Adaptors
- Spectrometer Sample Surface Polishing Machines
- **Wireless RTDS** (Data Transmitter)
- **MetaLib Pro** (Grade Library)
- **MetaCloud** (Mobile/Web Application)
- **[FP]-LIMS** Integrated with **FRP®.melt** addition software

Applications

In any spectrometer, far beyond design specifications and feature sets, it is the nature, quality and usability of analytical outputs that drive value. To this end, the **Metavision-8i** has been equipped with features that meet the vast majority of needs of users across sectors. This spans not just the elemental coverage and detection limits but also the additional outputs the spectrometer and analytical suite deliver. On the analytical capabilities, this is delivered through capabilities across the vast majority of elements needed in every base, from C, S, P, Na, Li and N to V, Sb, Hg and As the **Metavision-8i** provides an immense range of coverage with low detection limits.

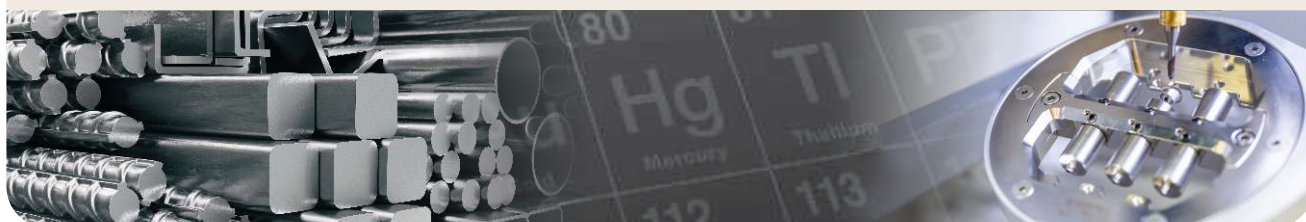
Apart from this, the analytical suite has also been crashed to deliver value through both standard and optional features. Equipped with a powerful and customisable report-writing engine, the Analyst suite on the **Metavision-8i** also offers a host of other features. Ranging from gas quality checks and proactive alert systems to Grades and CRM Libraries – both pre-loaded and user-configurable – as well as the ability to add customised Melt Addition Programs, the suite leaves no stone unturned in ensuring that the instrument enables Laboratories to maximise the value a spectrometer delivers.

Steel plants and makers of all manner of ferrous alloys require analysis of a wide range of elements with a focus on high accuracy and precision. The **Metavision-8i** analyses 29+ elements in ferrous metals – including Nitrogen down to 20 ppm – and covers all the key elements, excluding Oxygen, down to a level of 10 – 20 ppm for most elements, with some being analysed to even lower levels. This makes the instrument ideal for most firms making or processing alloy steels, cast iron, alloyed cast irons, and stainless steels.

In non-ferrous applications, the **Metavision-8i**'s high-resolution results in wide analytical ranges across elements.

This ensures it analyses all manner of low as well as high alloys with exceptional analytical accuracy and precision, delivering not just trace analysis but also master alloy analysis. For pure metal producers such as those in Lead, Zinc, Copper, Titanium, etc., the **Metavision-8i** offers low limits of detection across a wide range of elements, including heavy elements such as Lead, Arsenic, Cadmium, etc., enabling users to meet purity requirements and also ensure compliance with regulatory norms. In pure metal applications, the **Metavision-8i** offers detection limits that enable an analysis of metals of up to 99.98%+ purity with exceptionally high precision.

Commercial laboratories cater to a whole host of industries when analysing several hundreds of samples daily for different bases, matrices, etc. 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. The **Metavision-8i** has a rapid analysis time, assuring high throughput and low detection limits that meet the analytical requirements of just about every industrial user, making it the ideal solution for most commercial laboratories.



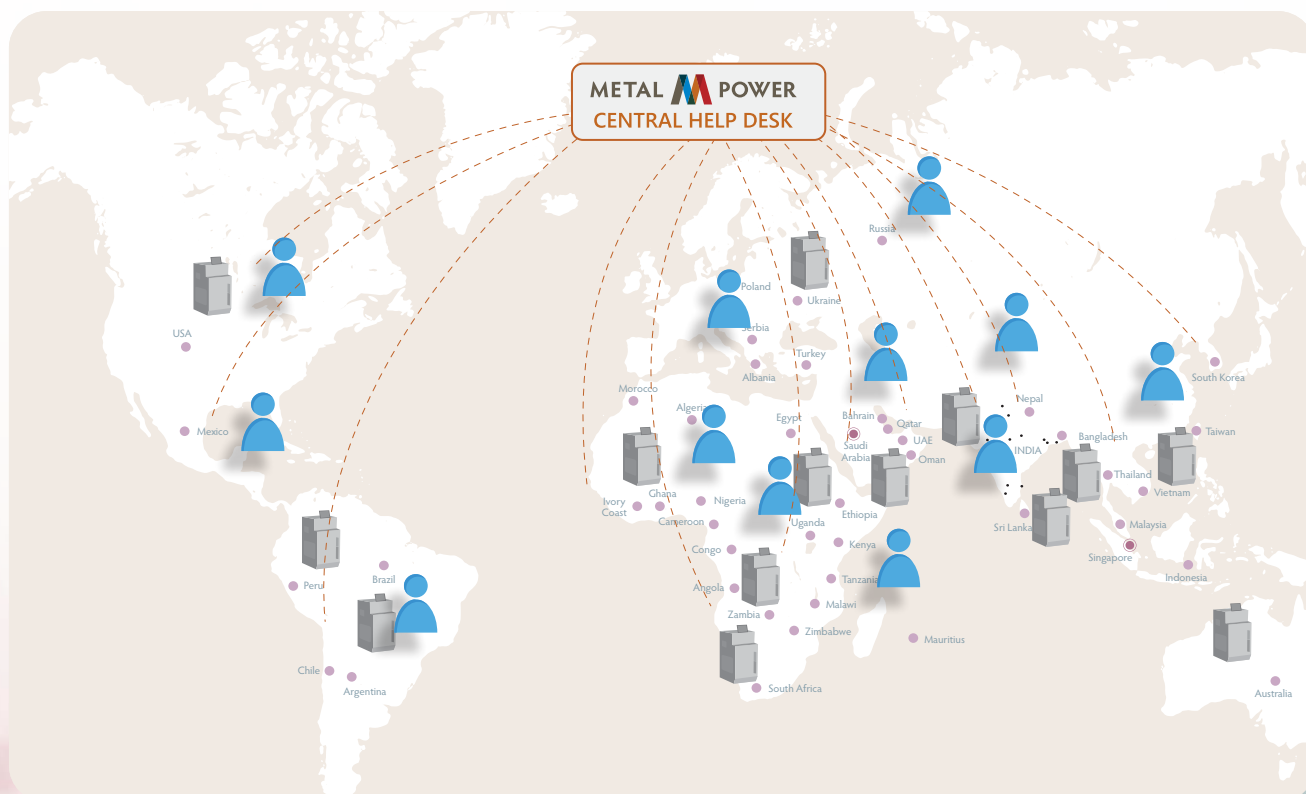
The Metal Power Advantage

The **Metavision-8i** offers some unique features that truly set it apart from other instruments in its class. These include the analysis of rods, wires and foils as thin as 50 microns (0.05 mm). Metal Power 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. 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.

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-8i*



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 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 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 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**, 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, too, we offer different models, each with a choice of probes – Arc, Spark, UV and combined probe options – to meet every user's need.

The **Metavision-RX** RDE-OES serves as the best option for customers who want 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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