

**Metavision** **RX**

Extremely rugged oil analyser

**OIL ANALYSIS  
USING RDE-OES  
ANALYSE WEAR  
METALS, ADDITIVES  
AND CONTAMINANTS**

## **Metavision** **RX**

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# The best possible line combinations for every element at every concentration level.

The **Metavision-RX** is a Rotating Disc Electrode (RDE) spectrometer designed to meet the highest level of requirements when it comes to oil analysis. Its fully CMOS/CCD optics use the latest generation ultra high-resolution CMOS/CCD detectors to perform complete qualitative determination of metallic elements in oils and lubricants. With its compact and rugged design, the unit delivers exceptional accuracy and precision combined with low detection limits while not compromising on economy. Capable of analysing 33+ elements with detection limits down to 0.01 ppm, this RDE Optical Emission Spectrometer is ideal for a wide range of quality-conscious users.



## Innovative optics driving optimal value

The *Metavision-RX* features ultra-high resolution dual optics and 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 full range capability of 165-800 nm, including dedicated (optional) optics for Sulphur analysis, the *Metavision-RX* covers all the required elemental lines – capable of analysing 33+ elements across bases in standard configurations – and the potential to add still more besides. The *Metavision-RX* delivers class-leading resolution, and the usage of custom-developed components and applications ensures that it analyses every element with great accuracy and precision even at extremely low concentration levels (down to 0.01 ppm) making it the ideal solution for even the most stringent applications.

## 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-RX* comprises a fully digital source with ratings that

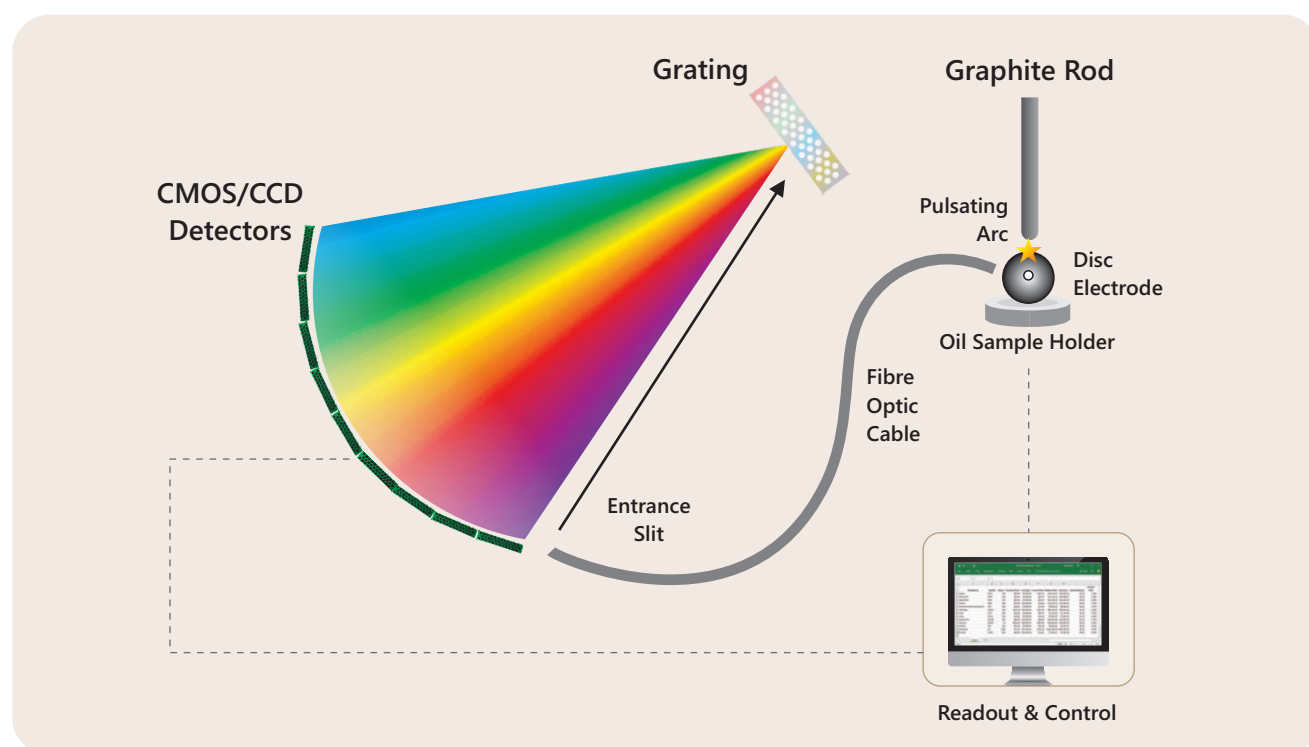
ensure an exceptionally wide range of outputs for each parameter of the discharge. With ultra-granular computer-based control over each parameter, the power unit ensures the highest levels of plasma stability and the ability to generate the ideal spectra for different applications. Designed for inputs of 90-270 VAC, this is also truly global and can be used anywhere in the world without restriction.

## Modular design

The *Metavision-RX* has been built to be very easy to service and maintain. Fully modular in its build, the instrument has optimized the 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

The *Metavision-RX* 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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\*ASTM D6595 compliance

### Highlights

- Complete spectral coverage in the range of 165-800 nm; including Sulphur in DUV region
- Thermally stabilised optics enabling high stability with low detection limits
- Simultaneous analysis of up to 33 elements
- Fully quantitative analysis of Oils/Lubricants
- Extremely rugged and state-of-the-art design, featuring the latest electronics and detector technology
- No solvents or chemicals required
- High degree accuracy and precision coupled with rapid analysis
- 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



## Technical Specifications

### Optics

- Advanced optics system using latest-generation, high-resolution detectors
- Wavelength range: 165-800 nm
- Focal length of up to 400 mm
- Gratings of 2,400 gr/mm & 3,600 gr/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

- Sulphur Analysis (DUV Optics)
- Oil Standards (CRMs)
- Wireless RTDS (Data Transmitter)
- MetaCloud (Mobile/Web Application)

## Applications

The **Metavision-RX** is the ideal solution for condition monitoring programs aimed at detecting wear of system components or potential points of ingress for contaminants into the system through the detection of wear metals, contaminants, and other impurities in lubricating oils, engine oils or coolants. This analysis, coupled with knowledge of the system design, allows for precise identification of problems and implementation of mitigation measures and helps to prolong the life of the equipment.

**Heavy Industries:** The **Metavision-RX** can be deployed for usage in a wide range of industrial settings, such as manufacturing plants and power generation facilities, to analyse the condition of lubricating oils and coolants in machinery, gears, bearings, and other equipment to identify when a replacement is needed.

**Aviation, Automotive and Railways:** The **Metavision-RX** is an excellent solution for all sectors of the transportation industry where its analysis results help assess the condition of lubricants, engine oils and coolants in engines, gearboxes, and other

systems. This analysis is critical to ensure the safe and efficient operation of engines in ships, locomotives, aircrafts, etc.

**Power Generation:** Power generation facilities use turbines, generators and all manner of heavy equipment with moving parts that need a constant flow of lubricants and coolant oils and which also require constant condition monitoring to avoid potentially catastrophic failures. The **Metavision-RX**, with its high throughput, rapid analysis times, and high accuracy, is the ideal RDE OES to conduct wear analysis as well as guide maintenance procedures in such settings.



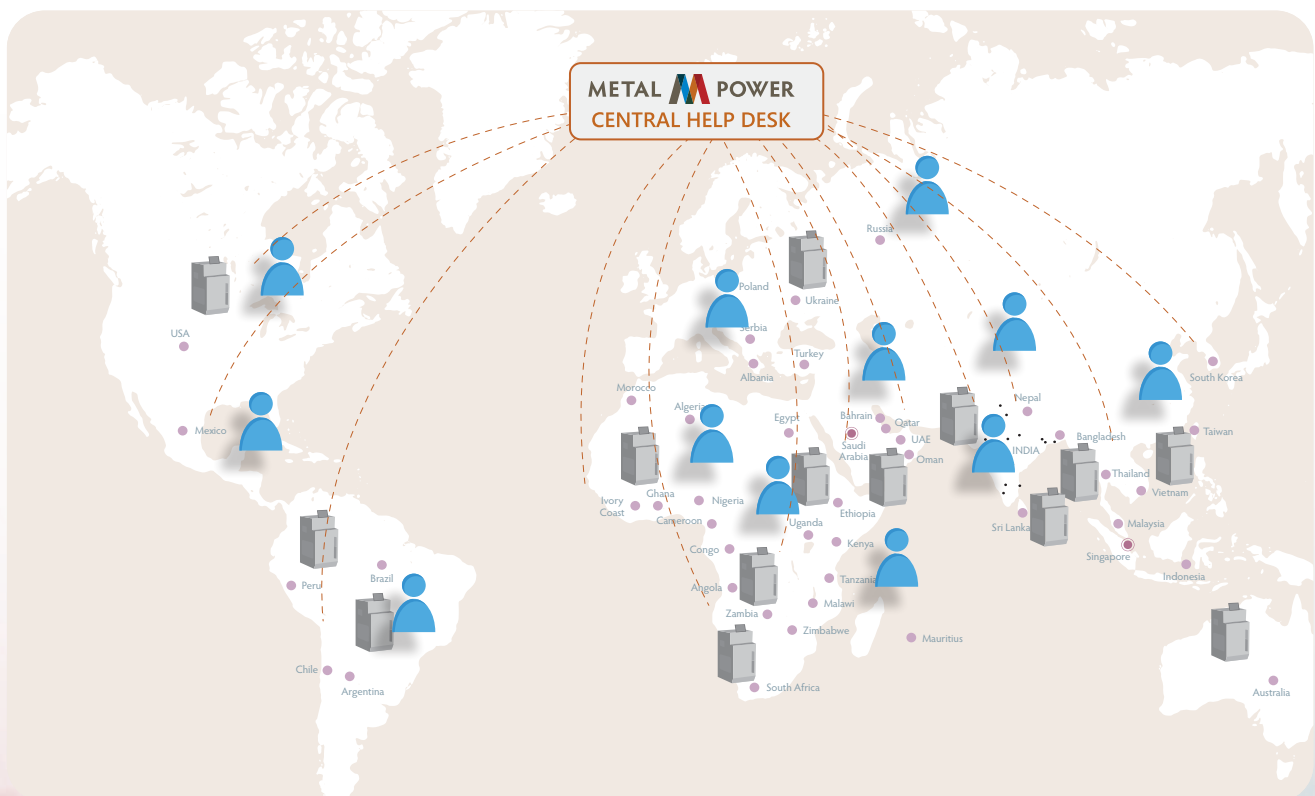
## The Metal Power Advantage

The **Metavision-RX** features the latest generation CMOS/CCD detectors in an ultra-high resolution optical configuration to deliver elemental analysis down to single and sub-ppm levels with high accuracy. Apart from routine analytical features, the **Metavision-RX** can also carry applications customized for specific user needs and supports the **MetaCloud** suite as well as the **Wireless RTDS** system.

## Worldwide service support

Metal Power offers multi-modal service support to all customers globally and prioritizes 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-RX*



Access your OES  
from anywhere and  
on any device

### **Armour Safe**

Protect your OES against  
unstable power and  
temperature for optimal  
performance



### **Wireless RTDS**

Transmit your readings  
from lab to melting  
platform wirelessly

### **[FP]-LIMS**

Digitise and connect  
your analysis  
instruments to manage  
data seamlessly

## Our other Spectrometers



**Metavision-10008X**  
The zenith of sensitivity



**Metavision-8i**  
Laboratory powerhouse



**Metavision-1008i<sup>3</sup>**  
When excellence is not good enough



**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-1008i<sup>3</sup>* 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 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.



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