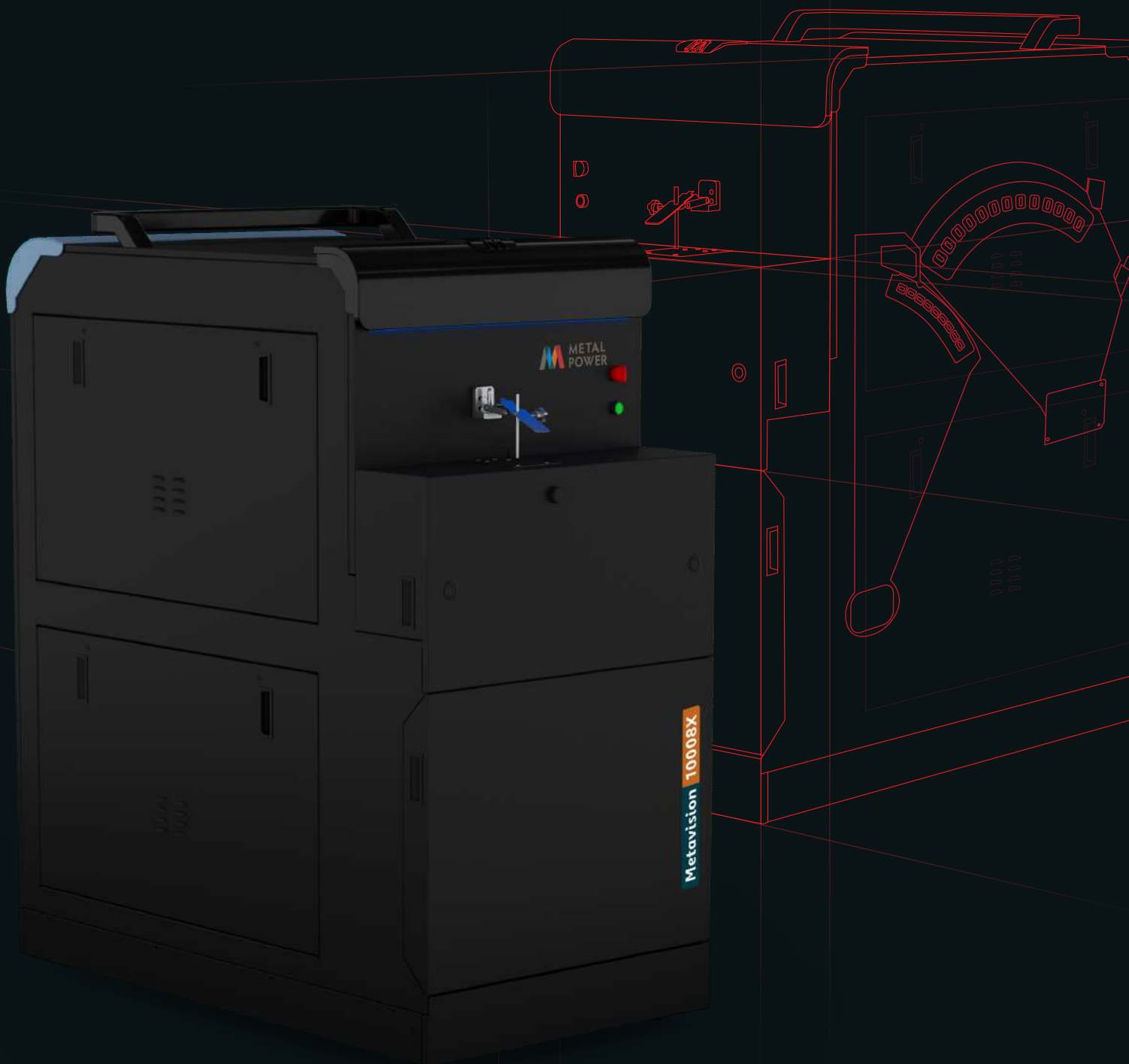


**Metavision 10008X**

The zenith of sensitivity



***Empowering industry leaders  
with unmatched performance***



# Metavision 10008X

The zenith of sensitivity



Dual optics with  
750 mm focal length

Unmatched analysis  
of O, N and H

118-800 nm  
wavelength span

Reciprocal linear  
dispersion (RLD)  
of 0.32 nm/mm

Sealed optics with  
multi-stage Argon  
repurification

Single-sample Smart  
standardisation/  
recalibration



Designed for industries demanding unparalleled accuracy, stability, uptime, and productivity, the **Metavision-10008X** is the cutting-edge solution for ferrous and non-ferrous metal analysis. Each element of the **Metavision-10008X** has been engineered specifically to deliver the highest accuracy and precision at extremely low detection limits in 24x7 operations. Capable of analysing just about every naturally occurring element with single and sub-ppm limits of detection, the **Metavision-10008X** is ideal for the widest range of applications.

## Best in Class Optics

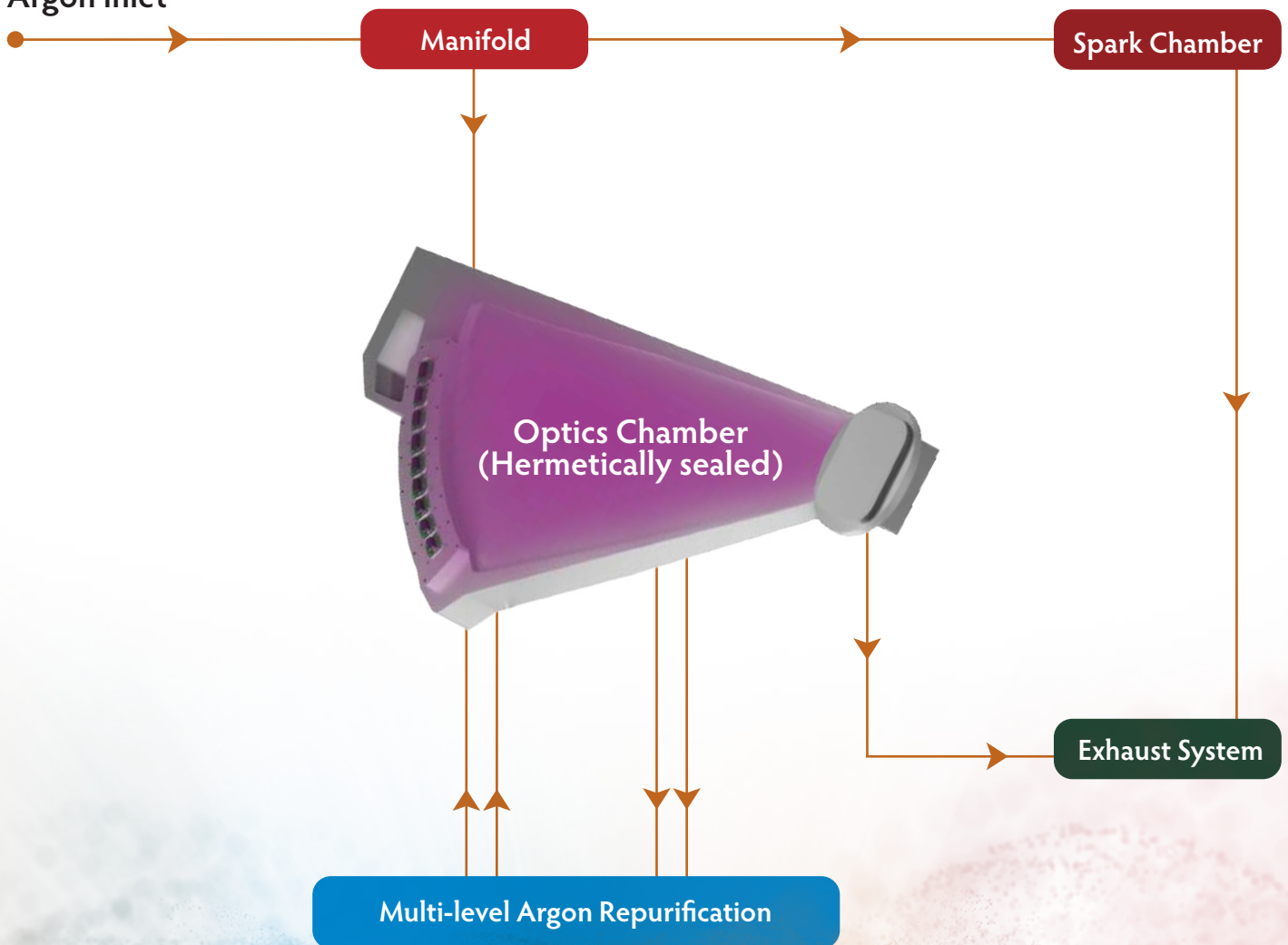
The **Metavision-10008X** features a high-resolution dual optics system with a focal length of 750 mm and a reciprocal linear dispersion (RLD) of 0.32 nm/mm. The uniquely designed Deep UV (DUV) optics chamber carries an unbroken span from 118-235 nm, featuring custom-designed components optimised for the very best gaseous element analysis. This enables the system to deliver analysis for Carbon, Nitrogen, Oxygen, and even Hydrogen with accuracy that matches combustion analysers, even for concentrations as low as 1 ppm. The Air (or Visible) optics system meanwhile covers a span of 190-800nm, ensuring it also offers coverage for the analysis of Lithium (Li), Sodium (Na), and even Potassium (K).



## Argon Repurification

The entire optical system and its associated electronics are hermetically sealed in a thermally stabilised and cooled atmosphere, ensuring the very lowest levels of noise. Additionally, the DUV optics feature a multi-stage internal Argon repurification system, ensuring that not only is Argon consumption exceptionally low but also that the transparency and stability of the DUV system are constantly maintained at the highest possible level, enabling exceptional long-term stability and accuracy as well as precision of the highest order even at the lowest concentration levels.

### Argon inlet



## Ultra High Purity Analysis

The *Metavision-10008X* redefines ultra-high-purity analysis, delivering unmatched accuracy for industries that demand absolute accuracy. Designed for the most stringent analytical requirements, it enables trace-level detection down to single-ppm levels, ensuring purity verification up to 99.998%.

<div> <div>AI</div> <div>AL_Low_Alloy (UltraPure)</div> <div>Type CRM</div> <div>Sample Name 112993_9C_AL_STP</div> <div>Heat Number</div> <div>Grade @ Hide</div> <div>Customer</div> </div>									
Elements	Si (%)	Fe (%)	Cu (%)	Mg (%)	Mn (%)	Ti (%)	Zn (%)	Ni (%)	Pb (%)
Burn1	0.00010	0.00006	0.00004	0.00005	<0.00010	<0.00010	0.00001	0.00011	<0.00010
Burn2	<0.00010	0.00006	0.00004	0.00005	<0.00010	<0.00010	0.00001	<0.00010	<0.00010
Burn3	<0.00010	0.00006	0.00004	0.00005	<0.00010	<0.00010	0.00001	<0.00010	<0.00010
Mean	<0.00010	0.00006	0.00004	0.00005	<0.00010	<0.00010	0.00001	<0.00010	<0.00010
Cert. Val.	0.00007	0.00006	0.00004	0.00005	0.00001	0.00001	0.00001	0.00001	0.00001
SD	-	-	-	-	-	-	-	-	-
Elements	Sn (%)	Cr (%)	Ba (%)	Sr (%)	Zr (%)	Ca (%)	V (%)	Co (%)	Bi (%)
Burn1	<0.00010	<0.00010	0.00001	0.00001	<0.00010	0.00001	<0.00010	<0.00020	<0.00010
Burn2	<0.00010	<0.00010	0.00001	0.00001	<0.00010	0.00001	<0.00010	<0.00020	<0.00010
Burn3	<0.00010	<0.00010	0.00001	0.00001	<0.00010	0.00001	<0.00010	<0.00020	<0.00010
Mean	<0.00010	<0.00010	0.00001	0.00001	<0.00010	0.00001	<0.00010	<0.00020	<0.00010
Cert. Val.	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
SD	-	-	-	-	-	-	-	-	-
Elements	Ga (%)	Ag (%)	In (%)	Mo (%)	Sb (%)	Cd (%)	B (%)	P (%)	Ce (%)
Burn1	<0.00010	0.00001	<0.00020	<0.00020	0.00003	0.00001	<0.00010	<0.00020	<0.00010
Burn2	<0.00010	0.00001	<0.00020	<0.00020	0.00003	0.00001	<0.00010	<0.00020	<0.00010
Burn3	<0.00010	0.00001	<0.00020	<0.00020	0.00003	0.00001	<0.00010	<0.00020	<0.00010
Mean	<0.00010	0.00001	<0.00020	<0.00020	0.00003	0.00001	<0.00010	<0.00020	<0.00010
Cert. Val.	0.00001	0.00001	0.00001	0.00001	0.00003	0.00001	0.00001	-	0.00005
SD	-	-	-	-	-	-	-	-	-
Elements	Ba (%)	Li (%)	Nb (%)	Hf (%)	As (%)	La (%)	Al (%)		
Burn1	<0.00010	0.00001	0.00001	<0.00020	<0.00020	<0.00010	99.9992		
Burn2	<0.00010	0.00001	0.00001	<0.00020	<0.00020	<0.00010	99.9993		
Burn3	<0.00010	0.00001	0.00001	<0.00020	<0.00020	<0.00010	99.9995		
Mean	<0.00010	0.00001	0.00001	<0.00020	<0.00020	<0.00010	99.9993		
Cert. Val.	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	99.9994		
SD	-	-	-	-	-	-	0.0001		

Burn Counter:753

Connected

Temperature:24.2 | 24.1

Flow:0.2

Pressure:0.101

Aerotecab

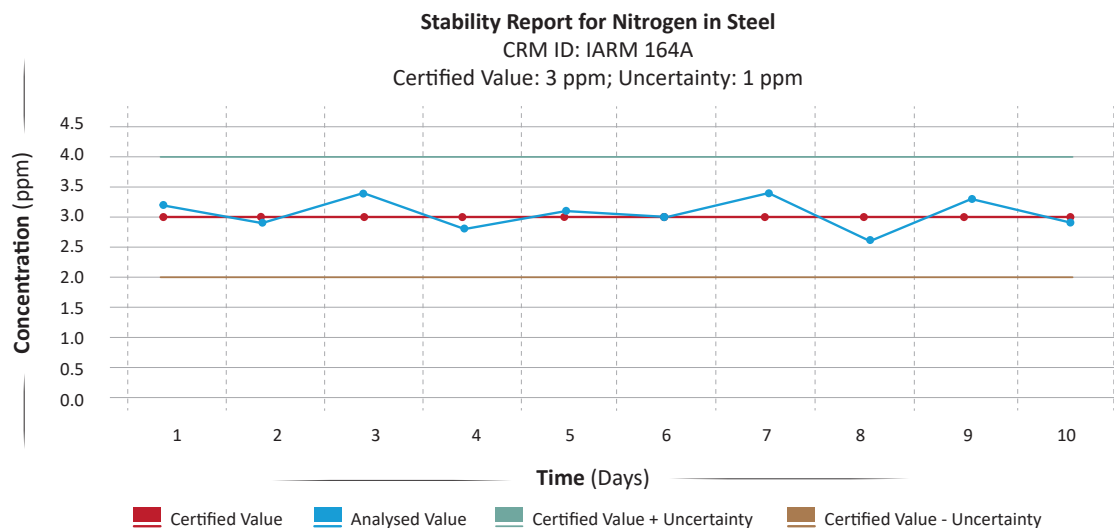
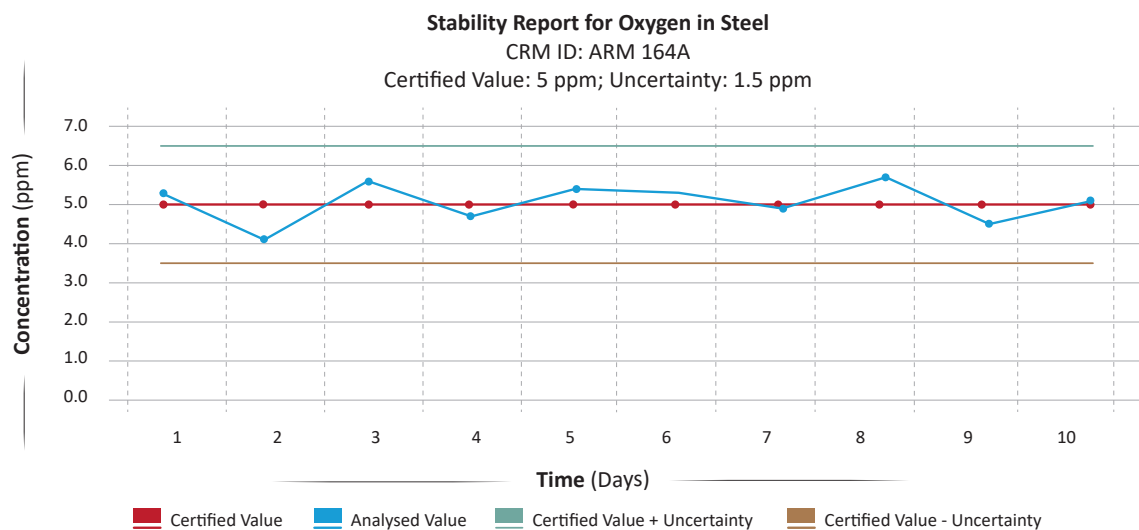
SingleSUS

Y-Correction

Image: Analysis of ultra pure Aluminium CRM

## Accurate Gaseous Element Analysis

The *Metavision-10008X* provides accurate detection of critical gaseous elements—Hydrogen, Oxygen, and Nitrogen—at single-ppm levels, essential for ensuring optimal material properties in high-performance metal applications. Detection of Hydrogen in Titanium (down to 5 ppm), Oxygen in steels, Nickel, Copper, and Titanium (down to 1 ppm), and Nitrogen in all forms of Steels (down to 1 ppm) and Nickel alloys (down to 5 ppm).

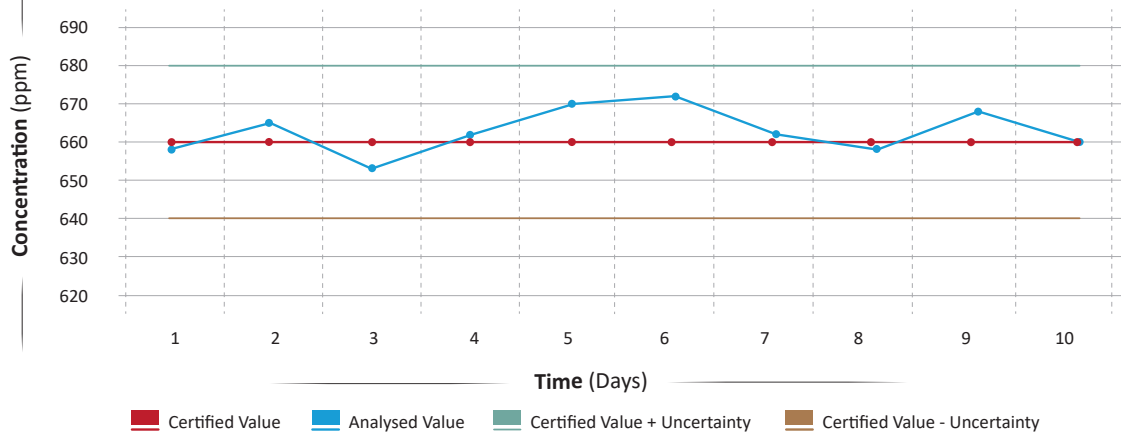




### Stability Report for Oxygen in Titanium

CRM ID: IARM312A

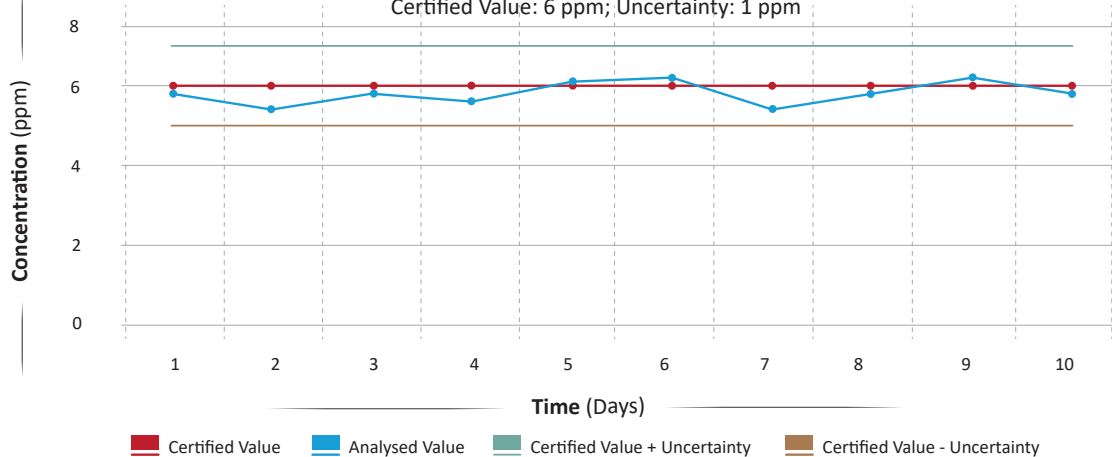
Certified Value: 660 ppm; Uncertainty: 20 ppm



### Stability Report for Oxygen in Copper

CRM ID: IARM159A

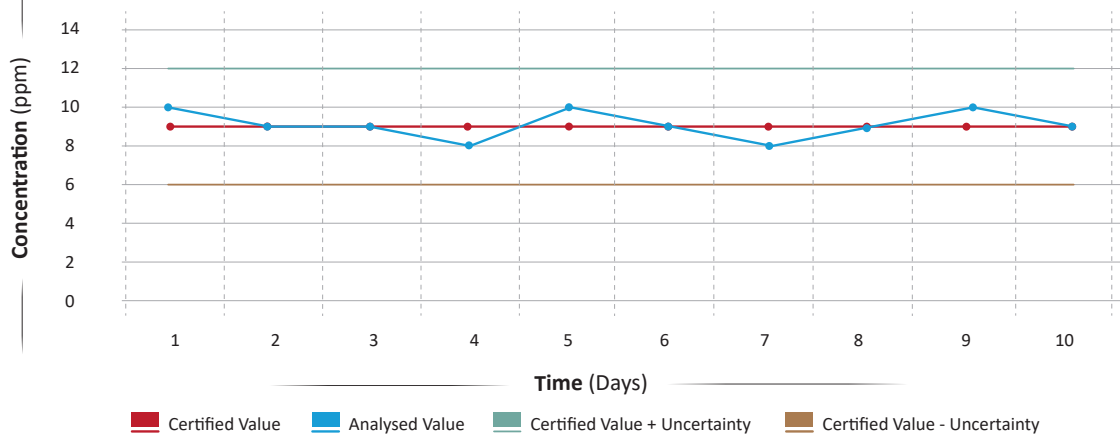
Certified Value: 6 ppm; Uncertainty: 1 ppm



### Stability Report for Oxygen in Nickel

CRM ID: IARM68C

Certified Value: 9 ppm; Uncertainty: 3 ppm



## Soluble and Insoluble Analysis

The *Metavision-10008X* leverages time-resolved spectroscopy to accurately distinguish between acid-soluble and acid-insoluble components of Aluminium (Al), Titanium (Ti), Boron (B), and Calcium (Ca) in Steels.

Elements	C (%)	Si (%)	Mn (%)	P (%)	S (%)	Cr (%)	Mo (%)	Ni (%)	Cu (%)	Al (%)	As (%)	B (%)	Co (%)	Nb (%)
Burn1	0.014	0.548	1.45	0.028	0.026	16.80	2.10	10.03	0.439	0.0047	0.0067	0.0020	0.126	0.012
Burn2	0.016	0.552	1.47	0.030	0.026	16.77	2.10	10.10	0.432	0.0046	0.0067	0.0019	0.126	0.011
Burn3	0.015	0.550	1.46	0.029	0.026	16.79	2.10	10.09	0.437	0.0048	0.0067	0.0019	0.126	0.011
Mean	0.015	0.550	1.46	0.029	0.026	16.79	2.10	10.07	0.436	0.0047	0.0067	0.0019	0.126	0.011
SD	0.0010	0.0020	0.010	0.0010	-	0.016	-	0.038	0.0036	0.00010	-	0.00007	-	0.0007

Elements	Pb (%)	Sn (%)	Ti (%)	V (%)	W (%)	Zn (%)	Ce (%)	N (%)	Sb (%)	Ca (%)	Bi (%)	O (%)	Fe (%)	Al Sol (%)
Burn1	0.0021	0.0094	0.013	0.060	0.042	<0.0005	<0.0005	0.060	<0.0020	0.0018	<0.0050	0.0056	68.20	0.0044
Burn2	0.0023	0.0090	0.013	0.066	0.047	<0.0005	<0.0005	0.063	<0.0020	0.0015	<0.0050	0.0054	68.13	0.0042
Burn3	0.0022	0.0092	0.011	0.062	0.045	<0.0005	<0.0005	0.061	<0.0020	0.0018	<0.0050	0.0055	68.14	0.0044
Mean	0.0022	0.0092	0.012	0.063	0.045	<0.0005	<0.0005	0.061	<0.0020	0.0017	<0.0050	0.0055	68.15	0.0043
SD	0.0001	0.0002	0.0012	0.0031	0.0025	-	-	0.0016	-	0.0002	-	0.00010	0.039	0.0001

Elements	Al InSol (%)	Ti Sol (%)	Ti InSol (%)	Ca Sol (%)	Ca InSol (%)	B Sol (%)	B InSol (%)
Burn1	0.0003	0.013	0.0003	0.0018	0.00003	0.0020	0.00002
Burn2	0.0004	0.012	0.0008	0.0014	0.0001	0.0017	0.0002
Burn3	0.0004	0.010	0.0005	0.0017	0.00009	0.0018	0.0001
Mean	0.0004	0.012	0.0006	0.0016	0.00008	0.0018	0.0001
SD	0.00005	0.0012	0.0002	0.0002	0.00005	0.0001	0.00008

Burn Counter :251

Connected Temperature :24.3 | 24.5 Flow :0.2 Pressure :0.460 Autostab SingleSUS Y-Correction

Image: Analysis of Stainless Steel sample with Soluble-Insoluble Analysis activated for Al, Ca, Ti and B

Soluble-Insoluble Analysis												
CRM Name	Certified			Burn 1			Burn 2			Burn 3		
	Al (Total)	Al Sol	Al Insol	Al (Total)	Al Sol	Al Insol	Al (Total)	Al Sol	Al Insol	Al (Total)	Al Sol	Al Insol
22-c	0.095	0.092	0.003	0.0965	0.094	0.0025	0.0954	0.093	0.0024	0.0972	0.094	0.0032
23-c	0.0453	0.045	0.0003	0.0432	0.043	0.0002	0.0464	0.046	0.0004	0.0434	0.043	0.0004
24-c	0.023	0.021	0.002	0.0242	0.022	0.0022	0.0236	0.022	0.0016	0.0215	0.02	0.0015
25-d	0.002	0.001	0.001	0.0022	0.0009	0.0013	0.0022	0.0011	0.0011	0.0021	0.0012	0.0009
26-c	0.006	0.004	0.002	0.0054	0.0038	0.0016	0.0059	0.0041	0.0018	0.0059	0.0043	0.0016
27-c	0.018	0.016	0.002	0.0177	0.0163	0.0014	0.0179	0.0161	0.0018	0.0173	0.0155	0.0018

Table: Analysis of Soluble-Insoluble Certified Reference Material in Stainless Steel



## Master Alloy Analysis

The **Metavision-10008X** delivers special applications to overcome the challenges of analysing Master Alloys containing exceptionally high concentrations of key alloying elements like Boron (B), Strontium (Sr), Titanium (Ti), etc. These alloys are typically very difficult to spark and, therefore, are not covered in standard calibration programs. The **Metavision-10008X** carries specialised hardware and custom-developed factory-calibrated or even site-calibrated applications that enable sparking and accurate analysis for such alloys. Custom-tailored to cater to unique alloy compositions, these programs deliver exceptional value to alloy-makers by reducing uncertainty, eliminating rework, and substantially increasing productivity.

Start Burn	Stop Burn	Delete Burn	Load Spectrum	Exclude Burn	Save Spectrum	Finish Analysis	Customize Element	Sample Details	Search Grades	Metallic Type: MetAlloy Basic	Print	Export	Export PDF	Dynamic Analysis Screen	Horizontal	Element Concentration
Al	Al_B (Master Alloy)	Type	Reference	Sample Name	Al_B 7	Heat Number	Grade	Hide	Customer							
Elements	B (%)	Si (%)	Fe (%)	Cu (%)	Mg (%)	Mn (%)	Ti (%)	Zn (%)	Ni (%)							
Burn1	7.05	0.157	0.135	0.089	0.089	0.115	0.013	0.087	0.0036							
Burn2	7.04	0.162	0.127	0.081	0.095	0.129	0.013	0.103	0.0034							
Burn3	7.01	0.166	0.119	0.070	0.102	0.147	0.013	0.127	0.0031							
Mean	7.03	0.162	0.127	0.080	0.095	0.130	0.013	0.106	0.0034							
SD	0.021	0.0045	0.0080	0.0095	0.0065	0.016	0.0000	0.020	0.0002							
Elements	Pb (%)	Sn (%)	Cr (%)	Be (%)	Sr (%)	Zr (%)	Ca (%)	V (%)	Co (%)							
Burn1	0.012	0.287	0.037	0.0003	0.0004	0.053	0.014	0.029	<0.0010							
Burn2	0.012	0.330	0.040	0.0004	0.0003	0.059	0.014	0.033	<0.0010							
Burn3	0.012	0.393	0.044	0.0004	0.0003	0.068	0.014	0.041	<0.0010							
Mean	0.012	0.337	0.040	0.0004	0.0003	0.060	0.014	0.034	<0.0010							
SD	0.0000	0.053	0.0035	0.00007	0.00007	0.0075	0.0000	0.0061	-							
Elements	Bi (%)	Ga (%)	Sb (%)	Cd (%)	P (%)	Na (%)	Al (%)									
Burn1	0.011	0.0048	0.031	<0.0005	0.0057	0.0005	91.771									
Burn2	0.012	0.0048	0.030	<0.0005	0.0063	0.0005	91.707									
Burn3	0.014	0.0048	0.028	<0.0005	0.0056	0.0005	91.616									
Mean	0.012	0.0048	0.030	<0.0005	0.0059	0.0005	91.698									
SD	0.0015	0.0000	0.0015	-	0.0005	0.0000	0.077									

Image: Al-B Master Alloy Analysis

## Key Features and Benefits

- **Minimised Downtime:** Programmable soot removal and low-maintenance spark stand minimise downtime, enabling 24×7 operations.
- **State-of-the-art Software:** Bespoke software with algorithms that optimise frames, spectral lines, interference, and matrix effect corrections and features like low noise and rapid analysis for efficient data processing for your analysis.



- **Cooled Optics:** Featuring Peltier-cooled optics to control heat and cooling both the visible and DUV optics, it maintains a low noise level and reduced signal-to-noise ratio to enable lower detection limits accurately.
- **Current Controlled Plasma Source:** The *Metavision-10008X* features a fully current-controlled plasma source with multi-parameter control.
- **Special Applications:** It is capable of analysing ultra-fine wires as thin as 0.1 mm and thin foils down to 20 microns and is equipped with adaptors for special applications on samples of all sizes and geometries.

## SmartSTD Advantage



Traditional spectrometers require about 30 minutes and multiple samples for standardisation, causing delays and variability in results.



MPA's **SmartSTD** uses just a single SUS for the standardisation process and delivers a productivity upside of ~85%, along with substantial cost savings.

The **SmartSTD** feature by Metal Power Analytical enhances the speed, accuracy, and consistency of the process. This efficient approach minimises handling variability, reduces time and material costs, and optimises resources for greater ROI.

## Colour Options



Classic grey

Cool grey

Matte black

Space grey

Warm grey

## Technical Specifications

Parameter	Specification	Benefit
Wavelength Coverage	118-800 nm	Comprehensive analysis across 60+ elements, including trace elements.
Detector Type	CMOS	Superior precision with high resolution and reduced noise for accurate results.
Resolution (RLD)	0.32 nm/mm	Ultra-high resolution ensures exceptional sensitivity and stability.
Optics Configuration	Dual vacuum-free optics	Provides superior performance without the need for vacuum pumps, reducing operational costs.
Plasma Source	Fully digital PWM	Stable plasma generation with granular control, delivering consistent results across applications.
Peak Discharge Current	100 A	Ensures high-energy sparks for better analysis and enhanced accuracy, even for complex materials.
Max Discharge Frequency	1,000 Hz	Fast analysis with minimal delay for high throughput testing and productivity.
Argon Consumption	Low, optimised for extended use	Reduced operational costs through efficient Argon consumption and extended system life.
Spark Stand	Heavy-duty, low-maintenance design	Minimises downtime, ensuring continuous operation and durability over long-term use.
Standardisation Time	< 5 minutes	Boosts productivity by 85%, significantly reducing setup time and costs.
Size	1261 mm (L) x 724mm (W) x 1507 mm (H)	Compact footprint for space-efficient installation without compromising on performance.
Weight	Approx. 280 kg	Robust design for high stability and reliable operation even in demanding environments.
Software Compatibility	<b>MetaLib Pro:</b> World's largest library for metal grade identification. <b>MPALabTab:</b> Access your OES data anytime, anywhere. <b>[FP]-LIMS:</b> Advanced data integration and analysis tool. <b>FRP®.melt:</b> Real-time melt process optimisation tool.	



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



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

## Armour Safe

Protect your OES  
against unstable power  
and temperature for  
optimal performance

## FRP<sup>®</sup>.melt

Integrated IT solution  
for best practice in  
melting and furnace  
operations

## [FP]-LIMS

Digitise and connect  
your analysis  
instruments to manage  
data seamlessly

