Metavision 10008X

METAL POWER

Empowering industry leaders

with unmatched accuracy
and performance

www.metalpower.net

Metavision 10008X

Single-sample smart restandardisation/ recalibration

Unmatched analysis of O, N, and H down to single PPM

Covers 60+ elements across ferrous and non-ferrous bases

Peltier-cooled dual optics with 750 mm focal length

118 – 800 nm wavelength coverage

Reciprocal linear dispersion (RLD) of 0.32 nm/mm

Sealed optics with multi-stage Argon repurification

Programmable soot removal and low-maintenance spark stand for minimal downtime

Specialised for samples of all geometries and sizes

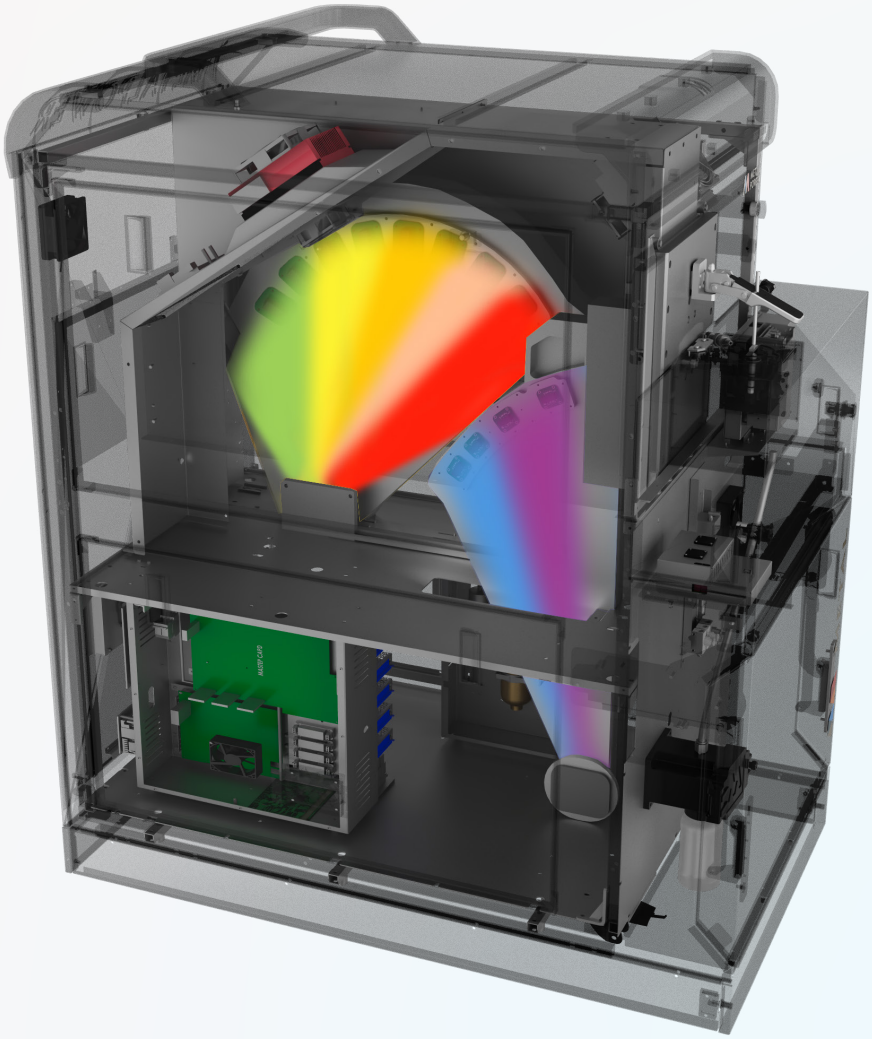
State-of-the-art software for efficient analysis and processing

Metavision 10008X

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 24×7 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.

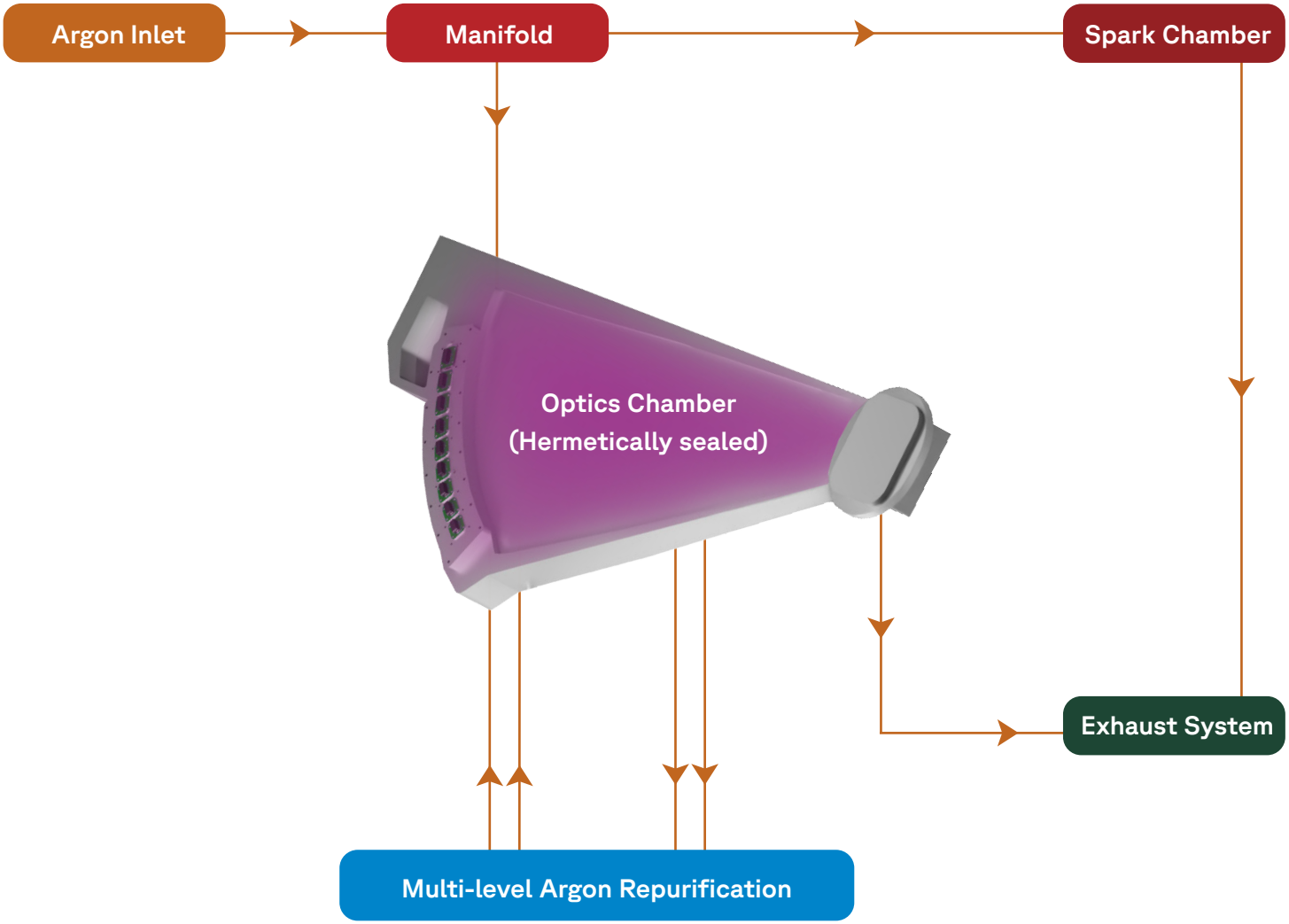
Best in Class Optics

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 – 800 nm, ensuring it also offers coverage for the analysis of Lithium (Li), Sodium (Na), and even Potassium (K).



Argon Repurification

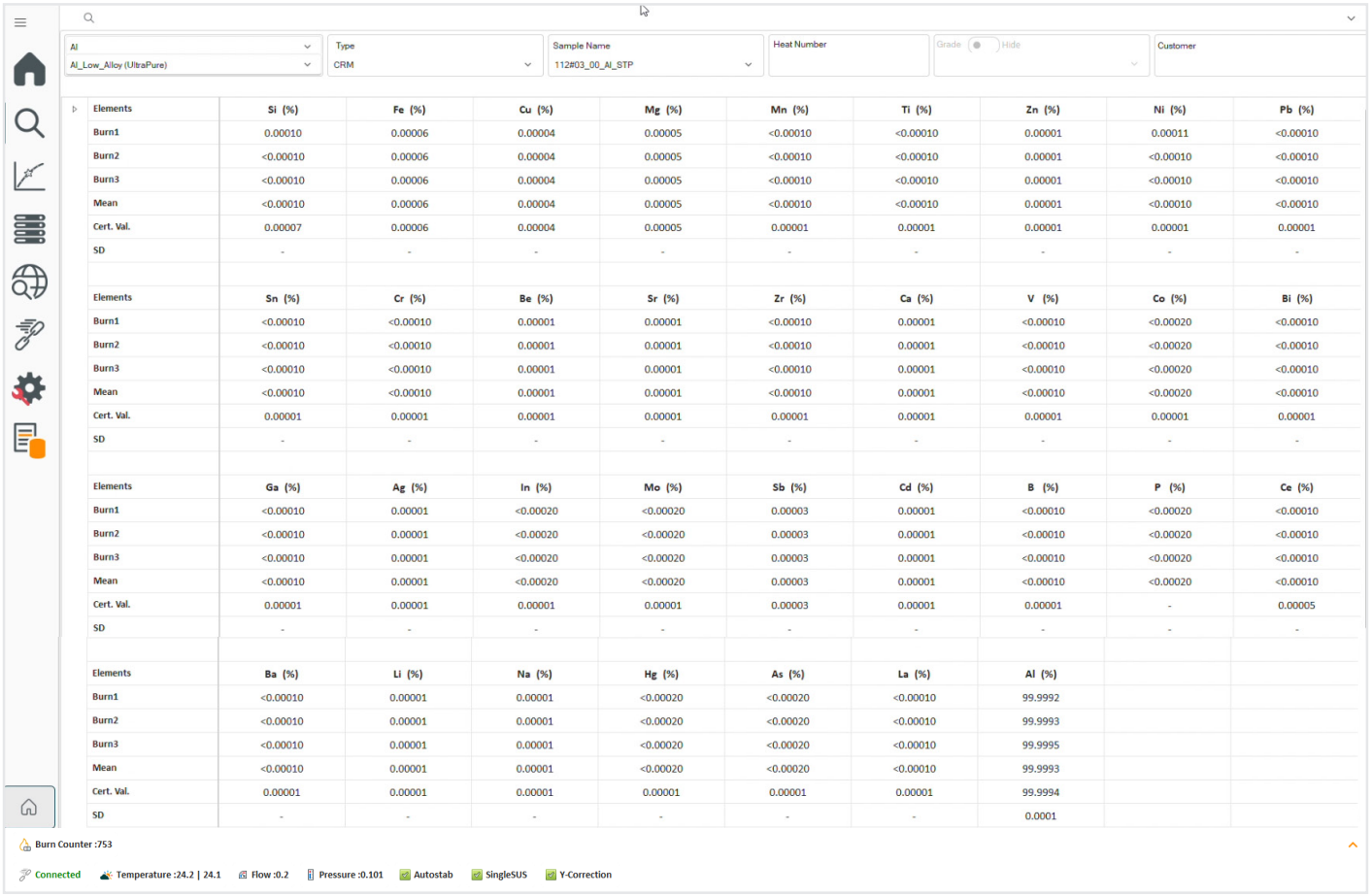
The entire optical system and its associated electronics are hermetically sealed in a thermally stabilised and cooled atmosphere, ensuring the very lowest levels of noise. Additionally, the DUV optics feature a multi-stage internal Argon repurification system, ensuring that not only is Argon consumption 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.



Metavision 10008X

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%.



Al | Type: CRM | Sample Name: 112#03_00_Al_STP | Heat Number | Grade | Hide | Customer
Al_Low_Alloy (UltraPure)

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 (%)	Be (%)	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 (%)	Na (%)	Hg (%)	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

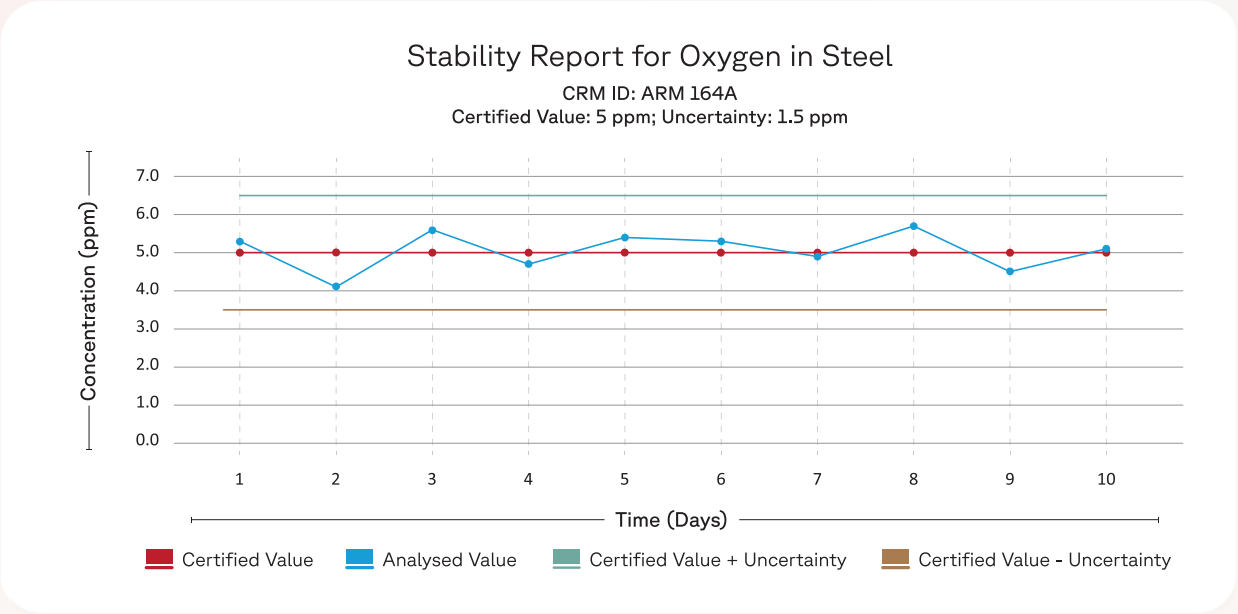
Connected | Temperature :24.2 | 24.1 | Flow :0.2 | Pressure :0.101 | Autostab | SingleSUS | Y-Correction

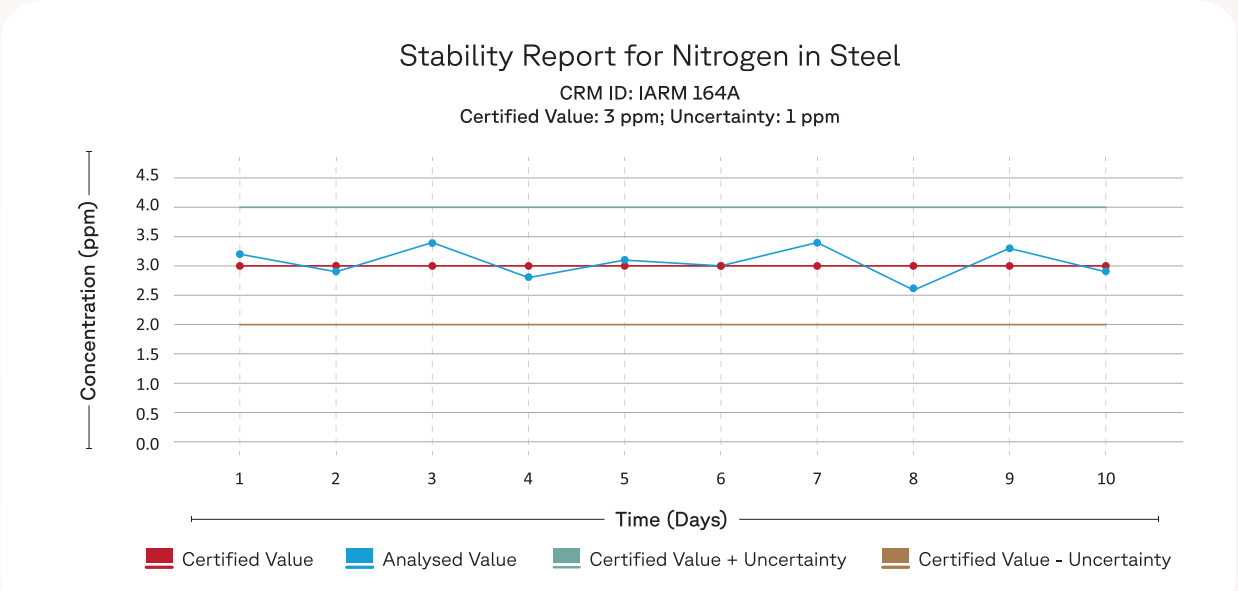
Image 1: Analysis of ultra pure Aluminium CRM

Metavision 10008X

Accurate Gaseous Element Analysis

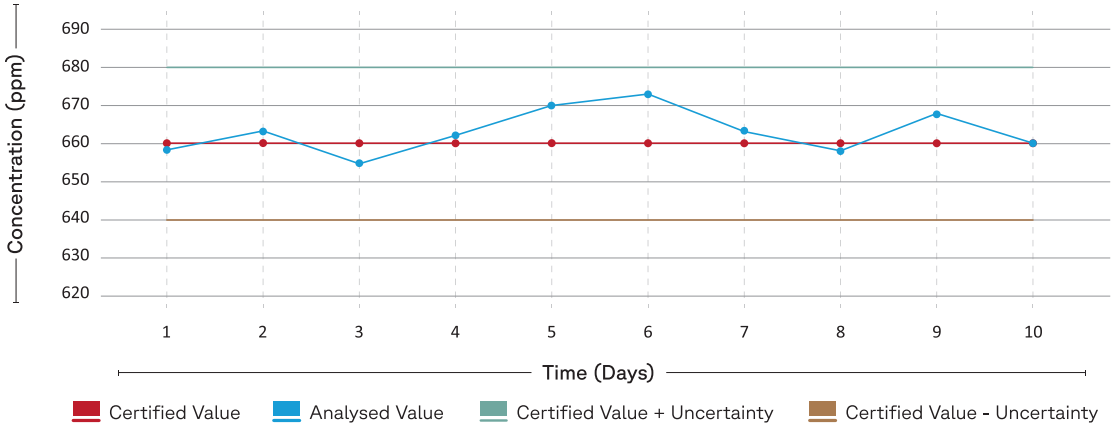
The Metavision-10008X provides accurate detection of critical gaseous elements—Hydrogen, Oxygen, and Nitrogen—at single-ppm levels, essential for ensuring optimal material properties in high-performance metal applications. Detection of Hydrogen in Titanium (down to 5 ppm), Oxygen in steels, Nickel, Copper,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





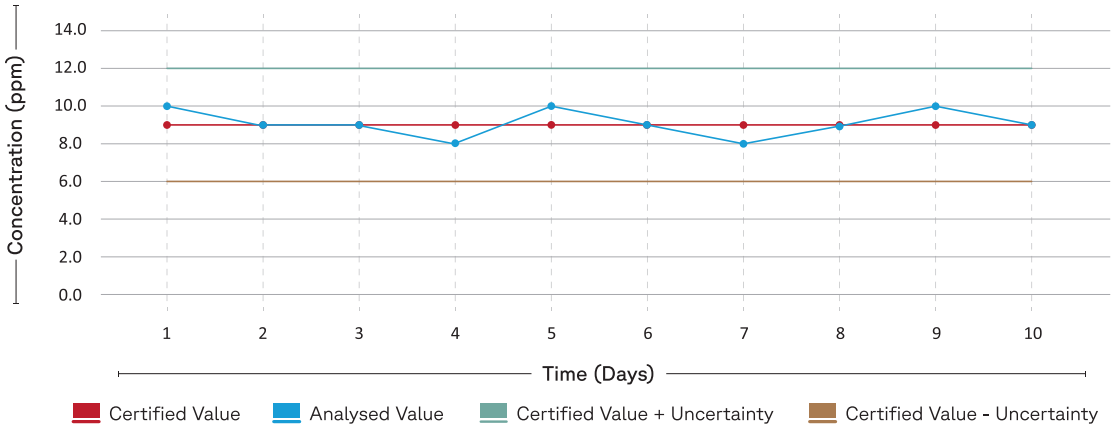
Stability Report for Oxygen in Titanium

CRM ID: IARM312A
Certified Value: 660 ppm; Uncertainty: 20 ppm



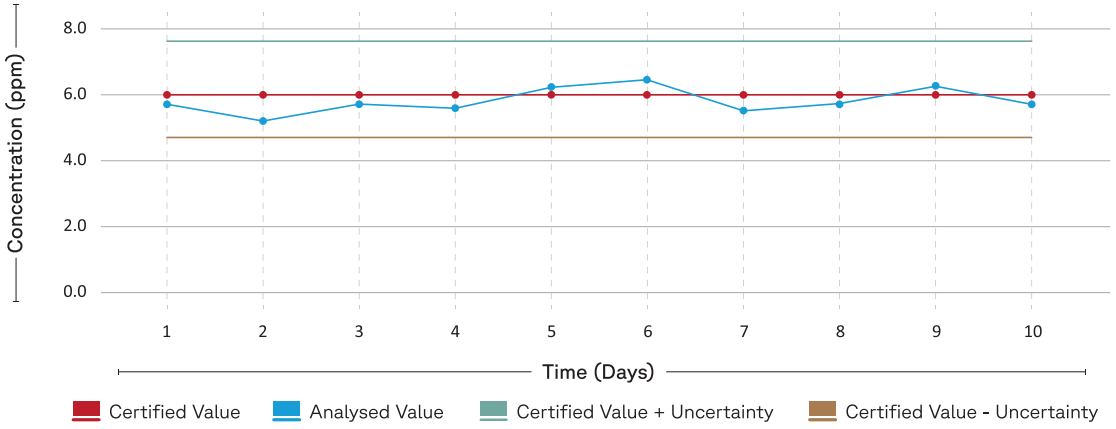
Stability Report for Oxygen in Nickel

CRM ID: IARM68C
Certified Value: 9 ppm; Uncertainty: 3 ppm



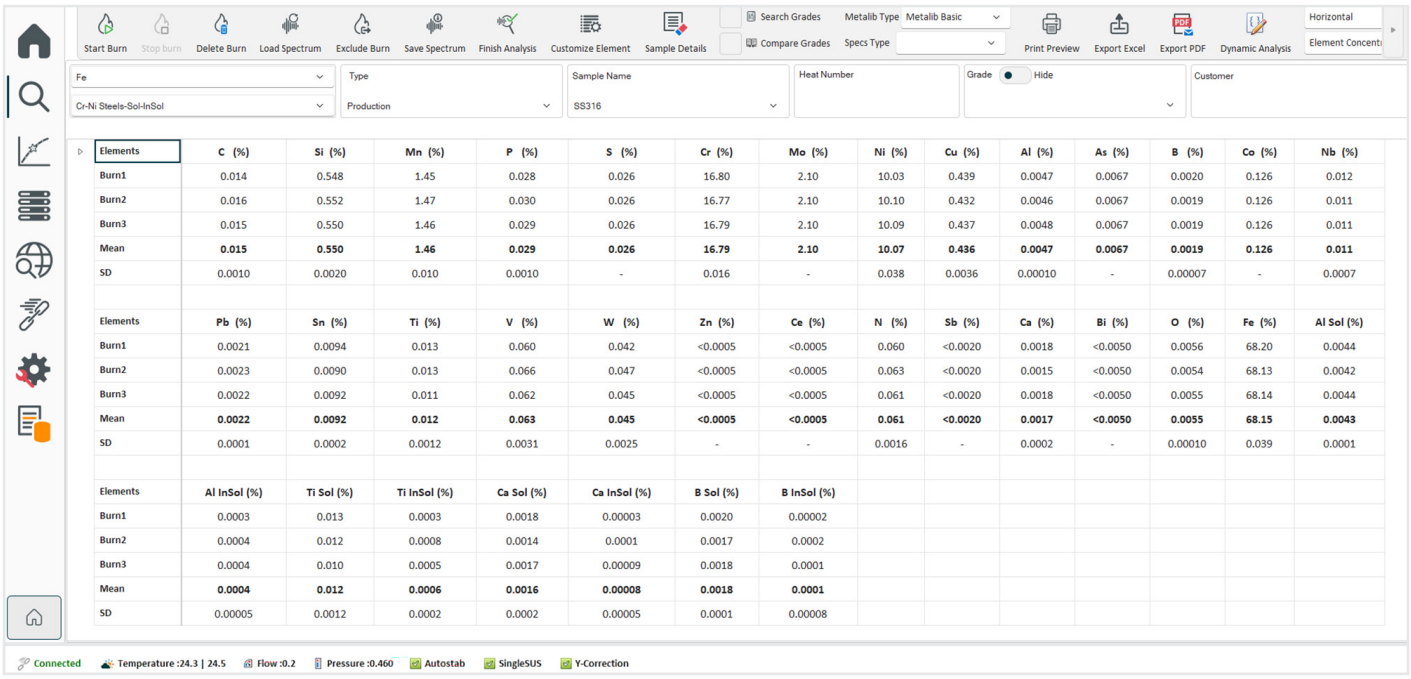
Stability Report for Oxygen in Copper

CRM ID: IARM159A
Certified Value: 6 ppm; Uncertainty: 1 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

Image 2: Analysis of Stainless Steel sample with Soluble-Insoluble Analysis activated for Al, Ca, Ti, and B

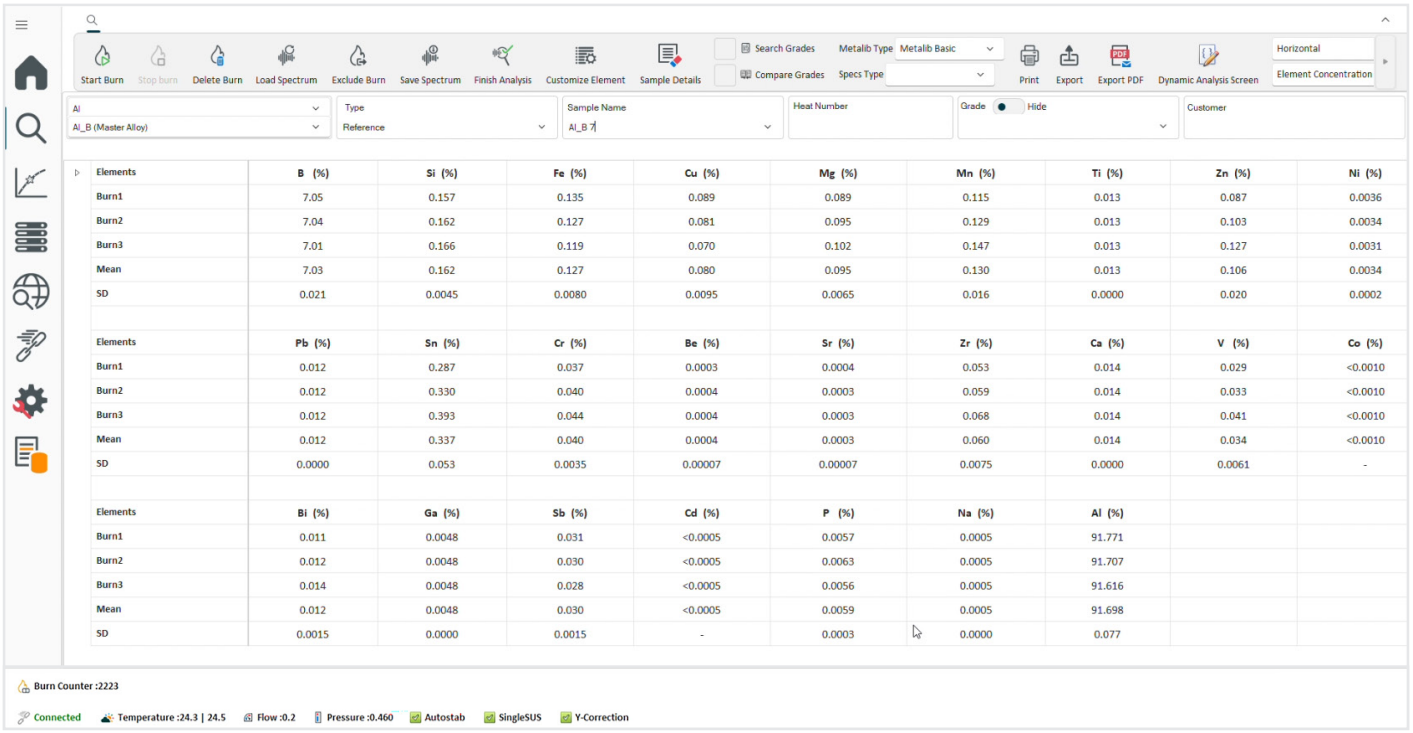
Soluble-Insoluble Analysis Results

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 1: 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.



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

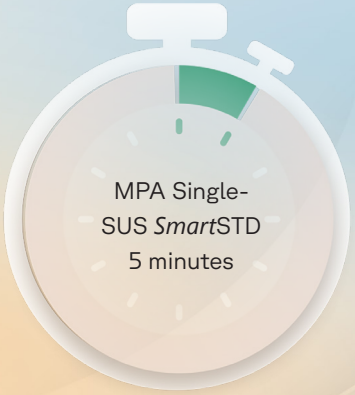
Elements	Pb (%)	Sn (%)	Cr (%)	Be (%)	Sr (%)	Zr (%)	Ca (%)	V (%)	Co (%)
Burn1	0.012	0.287	0.037	0.0003	0.0004	0.053	0.014	0.029	<0.0010
Burn2	0.012	0.330	0.040	0.0004	0.0003	0.059	0.014	0.033	<0.0010
Burn3	0.012	0.393	0.044	0.0004	0.0003	0.068	0.014	0.041	<0.0010
Mean	0.012	0.337	0.040	0.0004	0.0003	0.060	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	-	0.0003	0.0000	0.077

Image 3: Al-B Master Alloy Analysis

*Smart*STD Advantage

Traditional multi-point standardisation/ recalibration methods require about 30 minutes across multiple samples for restandardisation, resulting in delays, higher costs, and loss of productivity.



MPA's *Smart*STD uses just a single sample for the restandardisation/ recalibration process and delivers a productivity upside of ~85%, along with substantial cost savings.

*Smart*STD comes accompanied with in-built intelligence to identify the optimal burn quality, eliminating the risk of operator errors, delivering a process that is not merely accurate, fast, and economical, but also user-friendly.

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 724 mm (W) x 1,507 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	**MetaLib Pro:** World's largest library for metal grade identification. **MPALabTab:** Access your OES data anytime, anywhere. **LIMS:** Advanced data integration and analysis tool. **Charge Correction:** Real-time melt process optimisation tool.	

Metavision 10008X

Sample Preparation Machine

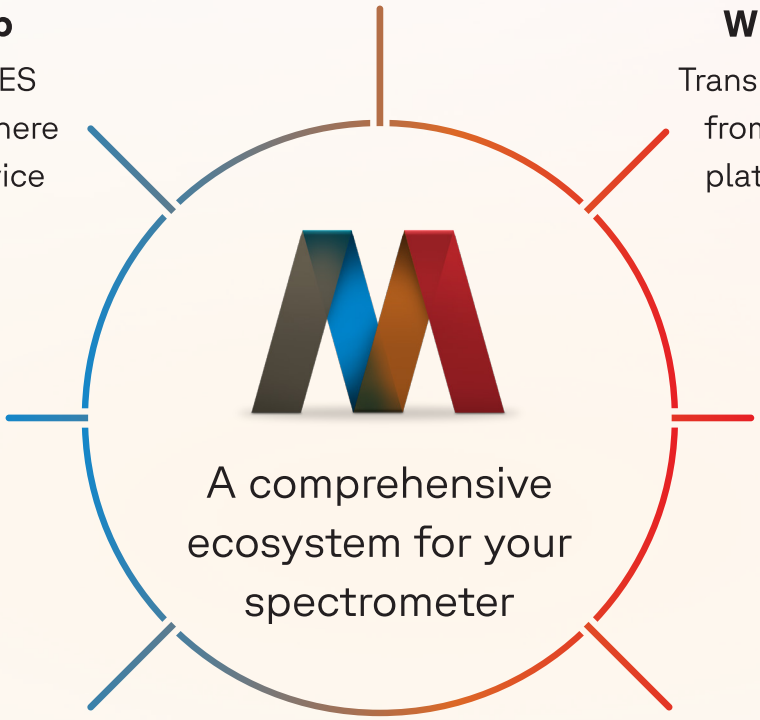
Prepare sample surfaces for quality analysis

MPALabTab

Access your OES data from anywhere and on any device

WirelessRTDS

Transmit your readings from lab to melting platform wirelessly



ArmourSafe

Safeguard your instruments against power anomalies in real-time

MetaLib Pro

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

Charge Correction

Integrated IT solution for best practice in melting and furnace operations

LIMS

Digitise and connect your analysis instruments to manage data seamlessly

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