


**Metavision 1008i<sup>3</sup>**



**Finest mid-range OES**  
offering accurate analyses  
of all gaseous elements





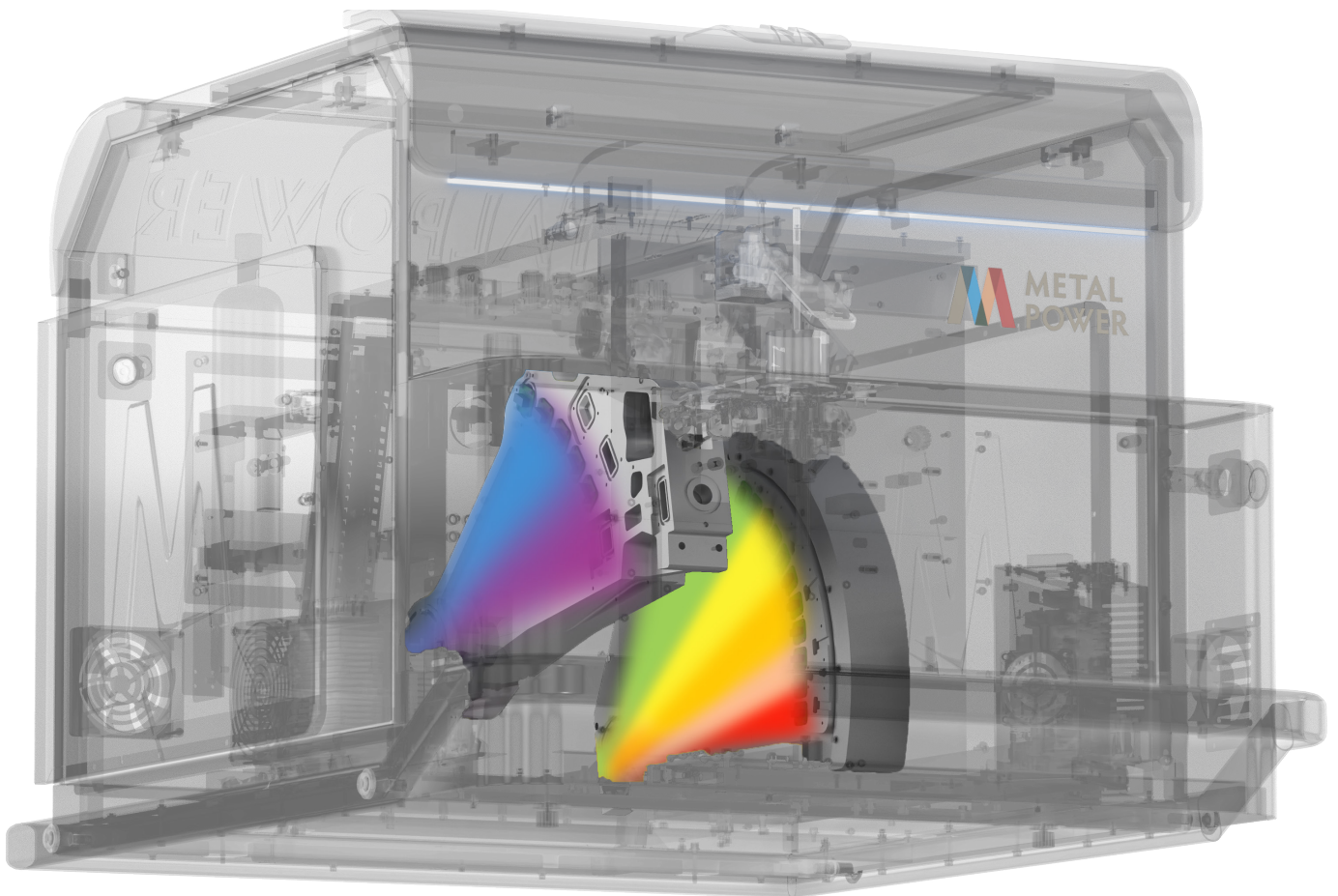
The image shows a dark grey, boxy laboratory instrument, the Metavision 1008i<sup>3</sup>. It has a large 'M' on the front left panel and 'METAL POWER' on the front right. A sample introduction system is visible on top. The instrument is surrounded by ten callout boxes, each with an icon and a text description of a key feature.

- 60+ elements in standard calibration, including low N, O, C, H, etc.** (Icon: Erlenmeyer flask with '60+')
- Multi-stage internal Argon repurification for DUV optics** (Icon: Recycle symbol)
- Current-controlled digital PWM source for plasma generation** (Icon: Lightning bolt)
- Low and single PPM detection limits across 60+ elements** (Icon: Microscope)
- Hermetically sealed Peltier-cooled optics** (Icon: Shield)
- Specialised for samples of all geometries and sizes** (Icon: Gear with arrows)
- State-of-the-art software for efficient analysis and processing** (Icon: Award ribbon)
- Analysis of RoHS elements like Cd, Pb, and Hg** (Icon: Test tubes)

The Metavision-1008i<sup>3</sup> is a powerhouse in elemental analysis, offering unmatched performance for ferrous and non-ferrous applications, including alloys. It's tailored for round-the-clock operations in industries like automotive, foundries, steel manufacturing, and similar sectors. Each element has been designed to deliver exceptional accuracy and precision with low and single-ppm detection limits.

## Optics

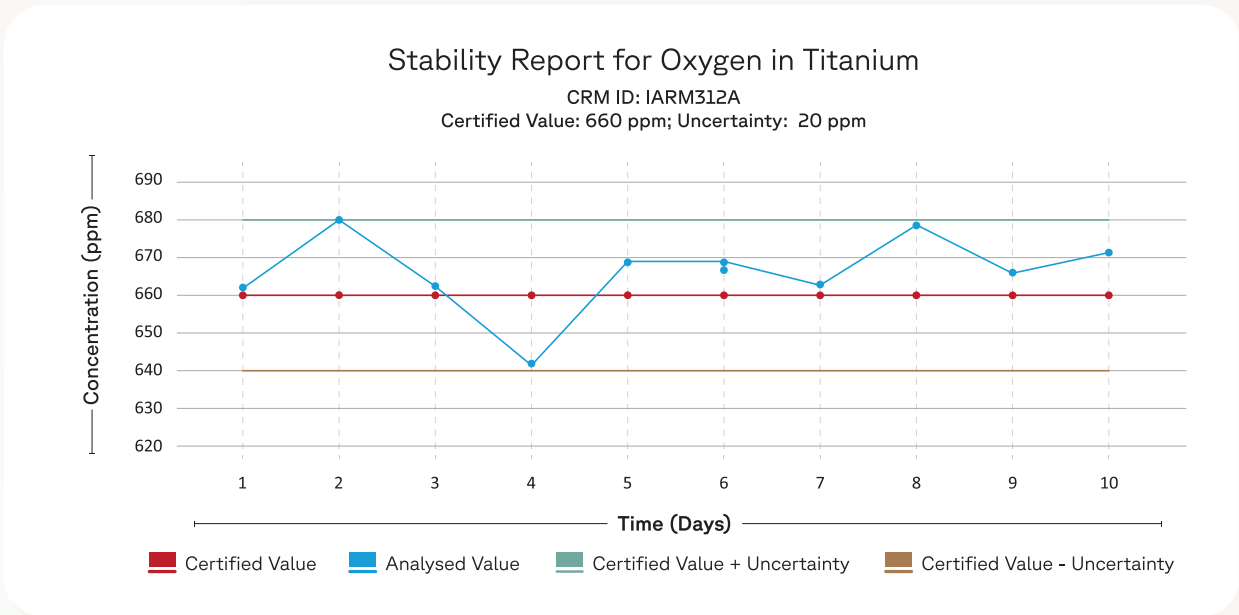
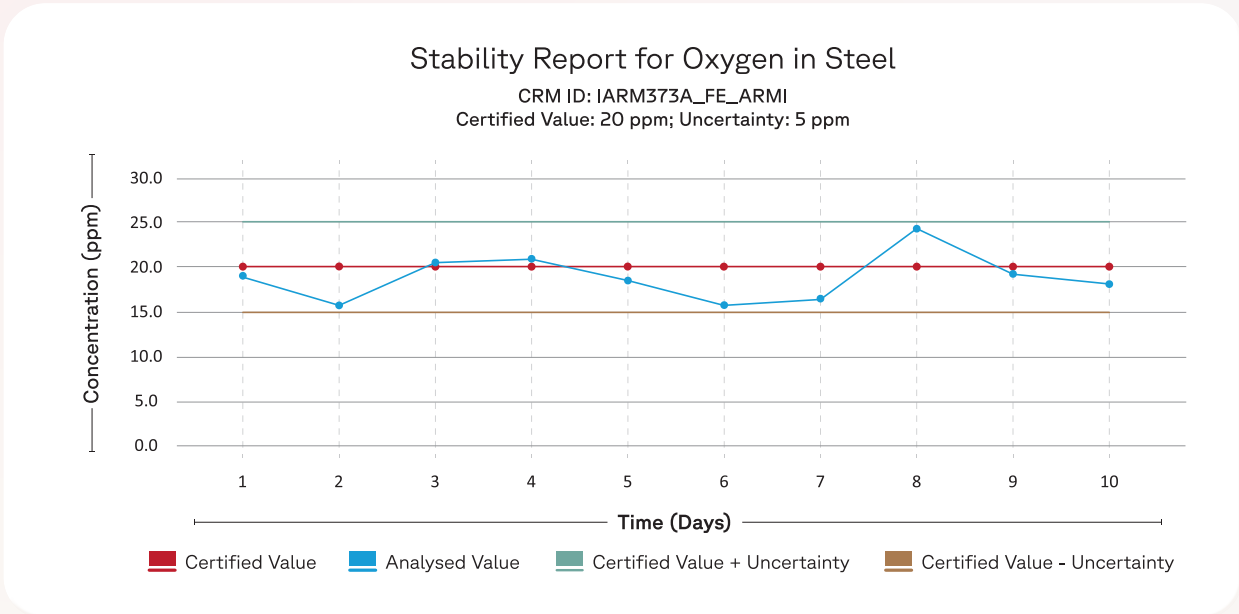
The Metavision-1008i<sup>3</sup> features ultra-high-resolution dual optics, employs the latest generation CMOS detector system, and uses custom-developed optical components to ensure the very best levels of accuracy and stability. It also offers class-leading optical resolution, directly translating into lower detection limits, higher stability, and better elemental coverage than any OES in its class. The optical system is hermetically sealed and thermally stabilised to a low temperature and features multi-stage internal argon repurification, which minimises thermal noise and optimises transparency, further improving analytical performance.



## Enhanced Elemental Analysis

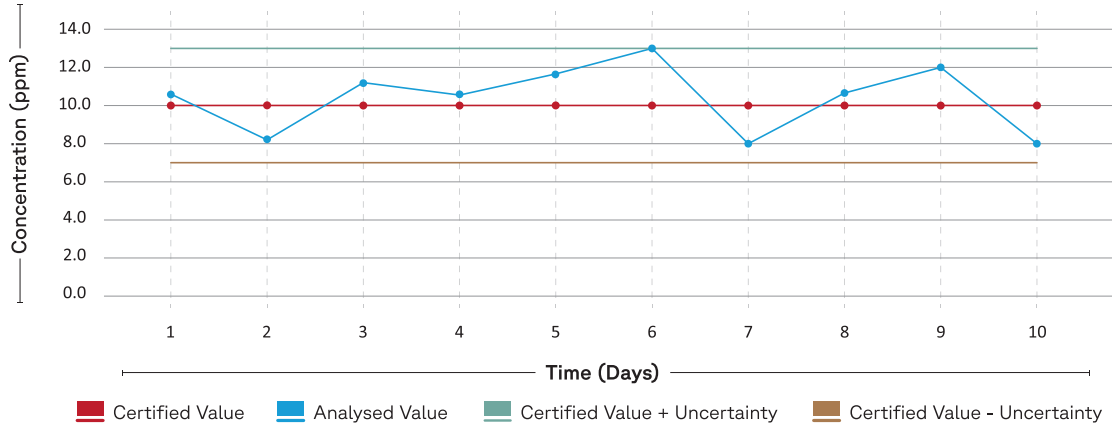
With a wavelength range of 118 – 671 nm, extendable to 800 nm, the Metavision-1008i<sup>3</sup> analyses 60+ elements across multiple bases with expansion potential. Featuring an RLD of 0.8 nm/mm, it is the only instrument in its class to offer Oxygen analysis in Fe, Cu, and Ti bases down to 10 ppm with high accuracy. It also ensures low-level detection of key trace and alloying elements, including C, S, P, B, Ni, Cr, Li, and Na, as well as 99.995%+ purity analysis.

Moreover, it accurately detects Nitrogen in all forms of Steel down to 8 ppm, Oxygen in Steel, Nickel and Copper down to 10 ppm, and Hydrogen in Titanium down to 10 ppm.



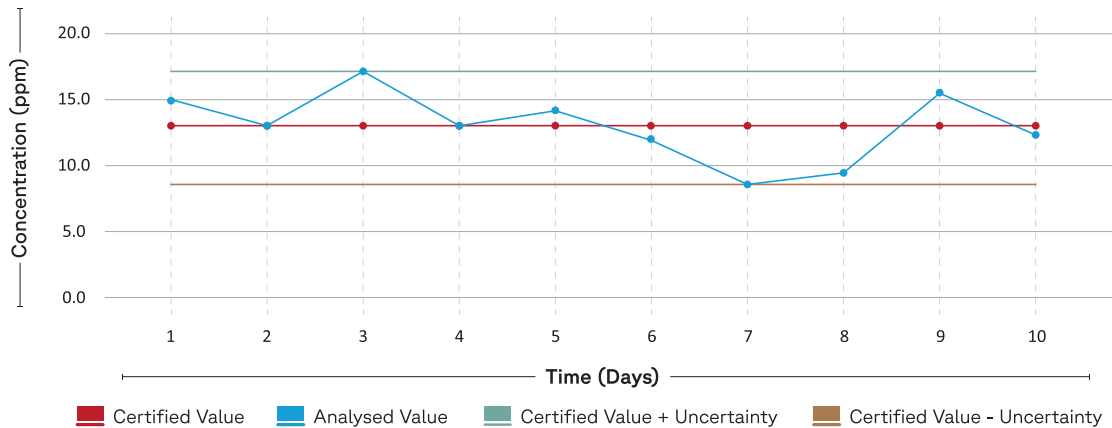
### Stability Report for Nitrogen in Steel

CRM ID: 1765\_FE\_NIST  
 Certified Value: 10 ppm; Uncertainty: 3 ppm



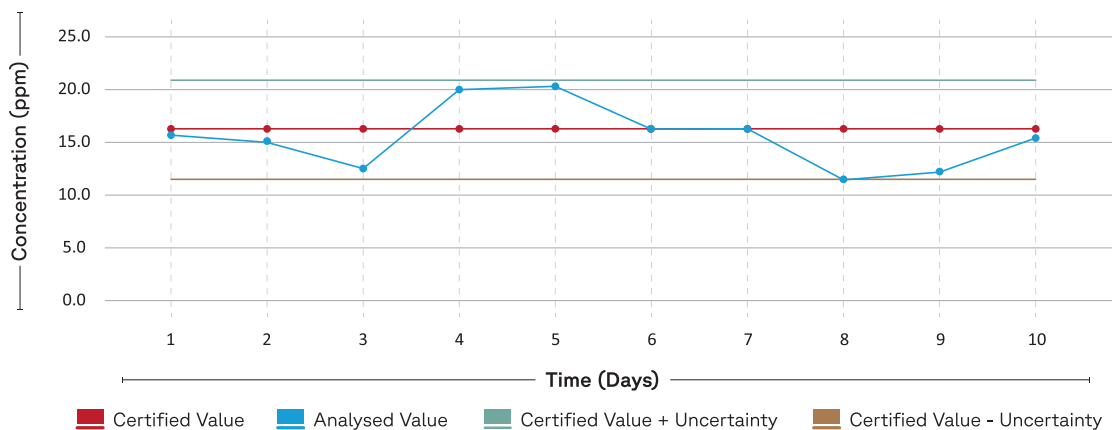
### Stability Report for Oxygen in Nickel

CRM ID: BS200A\_NI\_BSC  
 Certified Value: 9 ppm; Uncertainty: 3 ppm



### Stability Report for Oxygen in Copper

CRM ID: BSC14500A\_CU\_BSC  
 Certified Value: 17 ppm; Uncertainty: 5 ppm



# Soluble and Insoluble Analysis

The Metavision-1008i<sup>3</sup> 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

Image 1: Analysis of Stainless Steel sample with Soluble-Insoluble Analysis activated for Al, Ca, Ti, and B

## Soluble-Insoluble Analysis Results

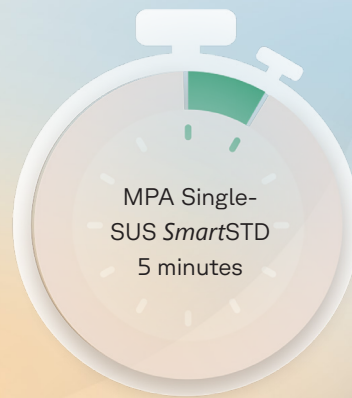
CRM Name	Certified			Burn 1			Burn 2			Burn 3		
	Al (Total)	Al Sol	Al Insol	Al (Total)	Al Sol	Al Insol	Al (Total)	Al Sol	Al Insol	Al (Total)	Al Sol	Al Insol
22-c	0.095	0.092	0.003	0.0965	0.094	0.0025	0.0954	0.093	0.0024	0.0972	0.094	0.0032
23-c	0.0453	0.045	0.0003	0.0432	0.043	0.0002	0.0464	0.046	0.0004	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

## SmartSTD 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 *SmartSTD* uses just a single sample for the restandardisation/recalibration process and delivers a productivity upside of ~85%, along with substantial cost savings.

*SmartSTD* 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
<b>Wavelength Coverage</b>	118 – 671 nm (expandable up to 800 nm)	Comprehensive analysis across 60+ elements, including trace elements.
<b>Detector Type</b>	CMOS	Superior precision with high resolution and reduced noise for accurate results.
<b>Resolution (RLD)</b>	0.8 nm/mm	Ultra-high resolution ensures exceptional sensitivity and stability.
<b>Optics Configuration</b>	Dual vacuum-free optics	Provides superior performance without the need for vacuum pumps, reducing operational costs.
<b>Plasma Source</b>	Fully digital PWM	Stable plasma generation with granular control, delivering consistent results across applications.
<b>Peak Discharge Current</b>	100 A	Ensures high-energy sparks for better analysis and enhanced accuracy, even for complex materials.
<b>Max Discharge Frequency</b>	1,000 Hz	Fast analysis with minimal delay for high throughput testing and productivity.
<b>Argon Consumption</b>	Low, optimised for extended use	Reduced operational costs through efficient Argon consumption and extended system life.
<b>Spark Stand</b>	Heavy-duty, low-maintenance design	Minimises downtime, ensuring continuous operation and durability over long-term use.
<b>Standardisation Time</b>	<5 minutes	Boosts productivity by 85%, significantly reducing setup time and costs.
<b>Size</b>	920 mm (L) x 760 mm (W) x 1,360 mm (H)	Compact footprint for space-efficient installation without compromising on performance.
<b>Weight</b>	Approx. 210 kg	Robust design for high stability and reliable operation even in demanding environments.
<b>Software Compatibility</b>	<b>MetaLib Pro:</b> World's largest library for metal grade identification. <b>MPALabTab:</b> Access your OES data anytime, anywhere. <b>LIMS:</b> Advanced data integration and analysis tool. <b>Charge Correction:</b> Real-time melt process optimisation tool.	