

Analytical Specifications

Detection Limits	SEM: < 100ppb (without peak interference)
Mass Range	1 – 400 u
Mass Resolution	Unit resolution
Response Time	$t_{90} < 300$ ms (2-stage gas inlet)
Measurement Time	Typical < 1 s for one measurement cycle (process applications with 4 – 6 gas components) 4 ms per channel

Technical Specifications

Number of Channels	Up to 1024 channels per run	
Ion Source Configuration	Standard	Crossbeam ion source with two yttrium filaments (tungsten on request)
Communication Interfaces	Ethernet to PC, IoT-enabled OPC UA, PROFIBUS, PROFINET, MQTT, others on request	
External IO	Optional	Various IO options available through external satellite devices (digital/analog IO, thermocouples, etc.)
Dimensions	700 x 250 (800) x 570 mm (w x h x d), approx. 52 kg 28 x 10 (32) x 23 in. (w x h x d), approx. 115 lbs	

System Requirements

Gas Quality	Temperature	> Dew point
	Humidity	Not condensing
	Particles	< 4 µm particle size
Environmental Conditions (During Operation)	Temperature	+15 to +35 °C (59 to 95 °F)
	Humidity	< 75 %, not condensing
Power	230 VAC, 50 Hz, approx. 0.75 kVA (115 VAC, 50/60 Hz on request)	
Exhaust	6 mm push-in tube fitting to customer's exhaust system	

Titan

High-Resolution Gas Analysis System

- Exceptional high resolution enabling excellent peak separation across eight orders of magnitude
- Versatile design suitable for many applications, including precise stable isotope analysis
- Space-saving bench-top system with fast, sub-second response
- Modern software suite offering easy operation and flexible workflows
- Robust high-temperature gas inlet system supporting operation up to 300 °C



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Titan

Gas Analysis System

Mass spectrometry is a method of determining the mass-to-charge ratio of ions and is frequently used to identify and quantify gaseous or volatile substances.

Titan is a fully digital controlled mass spectrometer with an integrated heatable gas inlet system. The combination of a heated transfer line (up to 300 °C), a heated inlet stage (also up to 300 °C) and the inlet stage's sophisticated mechanical design ensures steady, high-temperature-capable gas transfer all the way to the ion source, free of cold spots.

System calibration becomes a seamless routine with a fully automated calibration workflow enabled by an integrated calibration substance dosing system.

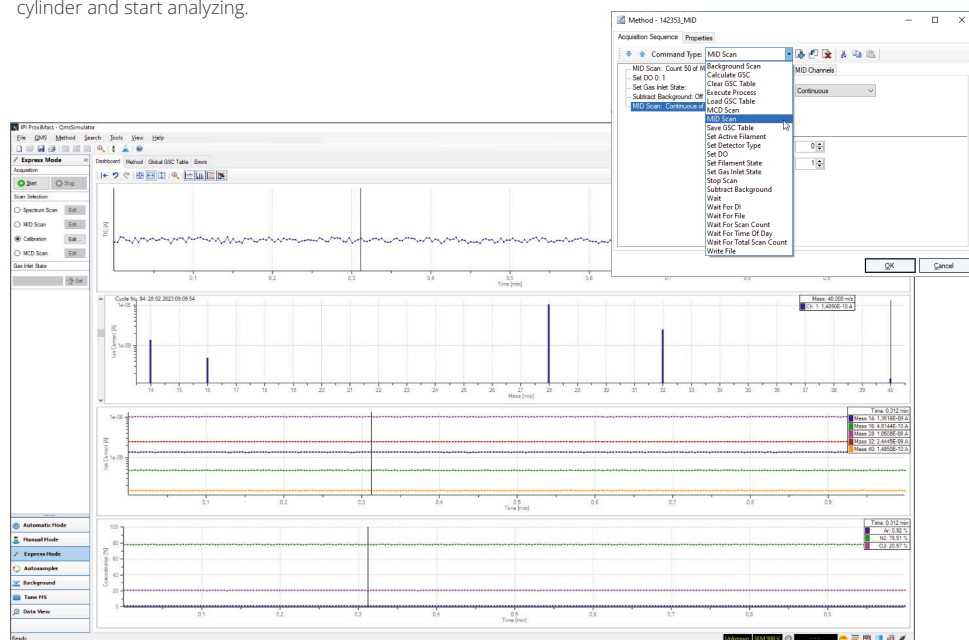
Combined with its high peak separation across eight orders of magnitude and unit mass resolution, Titan is an extremely versatile instrument for measuring substances with high boiling points and even enables precise measurements of stable isotopes. Simply connect your process, bioreactor or gas sample cylinder and start analyzing.

Software

The accompanying software, IPI ProxiMass, serves as the central control and automation platform for the Titan mass spectrometer, offering an intuitive environment for both routine measurements and complex analytical workflows.

The Express Mode allows rapid startup and straightforward routine operation, ideal for users who need fast, reliable results with minimal setup effort. For advanced operation, ProxiMass offers fully customizable methods and sequences for automated measurements or calibrations.

Furthermore, it integrates seamlessly into a wide range of laboratory and process environments, including Modbus (Server/Client), OPC UA via PROFIBUS/PROFINET or MQTT for integration with python™ or LabVIEW™. This flexibility allows Titan to operate as a stand alone instrument or as part of a fully automated laboratory or process control system.



Gas Analysis Made Easy

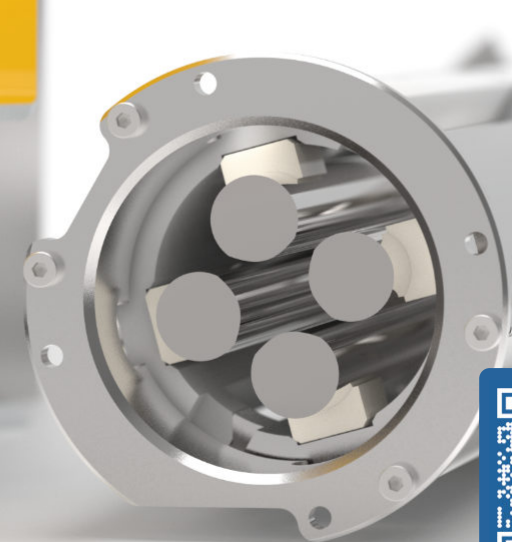
As a compact bench top solution, Titan offers high analytical performance for a wide range of high-precision gas-analysis applications without requiring complex infrastructure.

IPI ProxiMass as a turn-key software solution with its Express Mode guarantees a minimal timespan between system installation and first measurement. Titan is the perfect tool for first-time users who are not familiar with mass spectrometers, but whose projects require a precise gas analysis or even highly accurate determination of stable isotope ratios.

For more experienced users, IPI ProxiMass offers plenty of possibilities to create methods and sequences that can also interact with third party equipment.

Titan

High-Resolution
Analysis System



More Information

IPI ProxiMass system control and automation software offers customizable dashboards and an intuitive user interface. Even complex methods to automate experimental procedures can be set up with ease with the Method Editor.