

Analytical Specifications

Detection Limit	SEM: < 10 ppb (without peak interference)
Reproducibility	Main components (> 1000 ppm) < 0.5 % Side components (> 100 ppm) < 1.0 %
Mass Range	1 – 300 u, 1 – 512 u
Mass Resolution	Unit resolution

Technical Specifications

Number of Channels	Up to 1024 channels per run	
Gas Connections	Calibration Gas	Individually customized for the specific application
Device Chamber	Piercing Chamber In Situ Chamber	Vacuum chamber volume according to sample requirements Project specific design
Communication Interfaces	Ethernet to PC, IoT-enabled OPC UA, PROFIBUS, PROFINET, MQTT, others on request	
Dimensions	System Electronics Rack	700 x 1270 x 920 mm (w x h x d), 28 x 50 x 36 in. (w x h x d) 600 x 1700 x 810 mm (w x h x d), 27 x 67 x 32 in. (w x h x d)

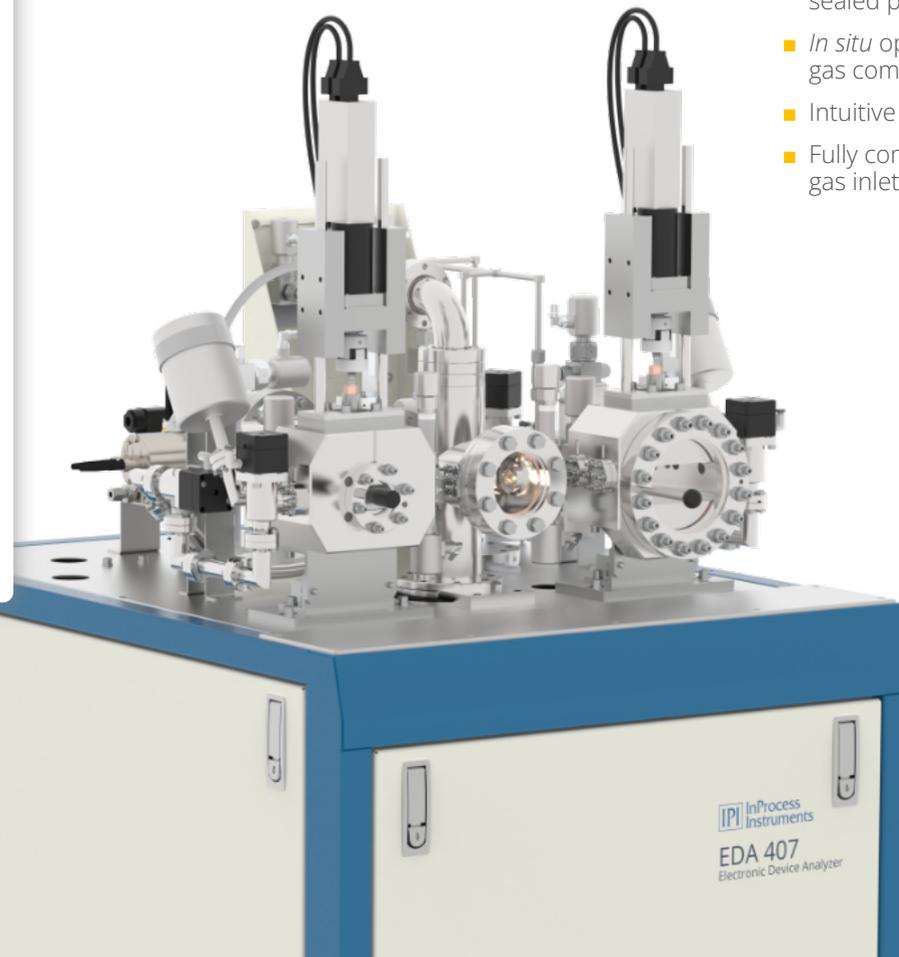
System Requirements

Gas Quality (Calibration Gas)	Temperature Humidity Particles	> Dew point Not condensing < 4 µm particle size
Environmental Conditions (During Operation)	Temperature Humidity	+15 to +35 °C (59 to 95 °F) < 75 %, not condensing
Power	230 VAC, 50 Hz, approx. 1.2 kVA (115 VAC, 50/60 Hz on request)	
Cooling	Closed cycle water cooling with external chiller Optional: forced air cooling	
Exhaust	KF16 high vacuum flange for connection to customer's exhaust system	
Compressed Air	Min. 6 bar, filtered and oil-free	

EDA 407

Quality Control of
Electronic and
Optoelectronic Devices

- Accurate gas analysis of sealed packages
- *In situ* optimization of gas compositions
- Intuitive software suite
- Fully computer controlled gas inlet system



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IPI InProcess
Instruments
EDA 407
Electronic Device Analyzer

EDA 407

The Standard in Filling Gas Analysis

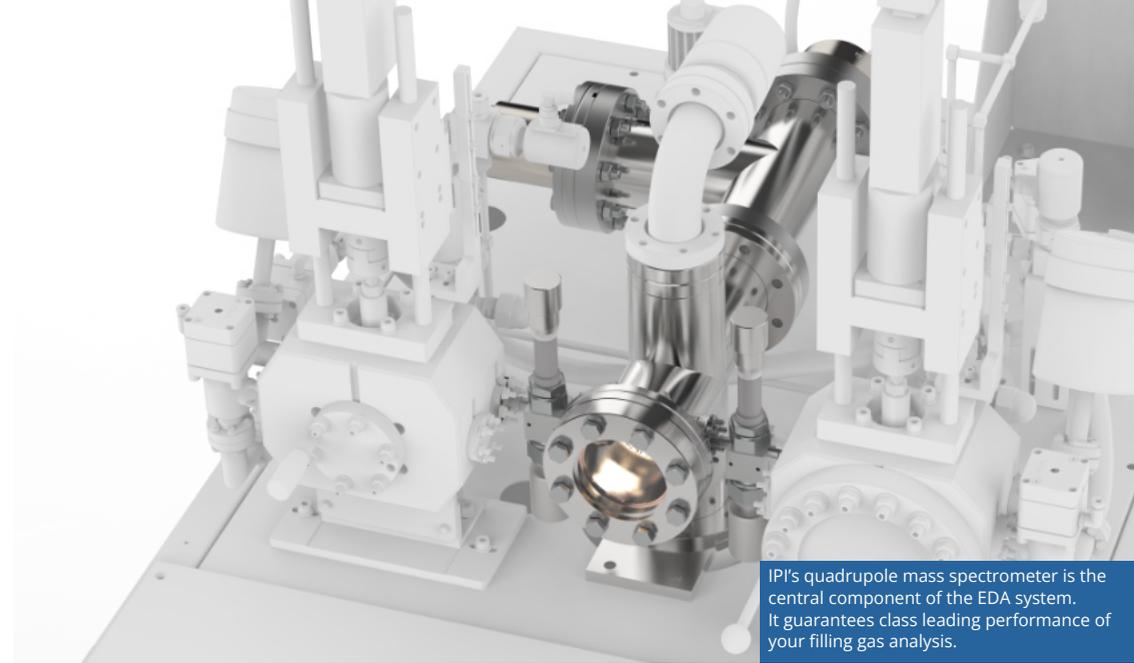
Mass spectrometry is a well-established and respected analytical technique in all fields of quality control, research and development and industrial process monitoring. It is used throughout the chemical, pharmaceutical, biotechnological and steel industry and many more.

To optimize production processes or tune and stabilize product quality, analytical results must be accurate and reliable. The mass spectrometer is the central component in each of our gas analysis systems. IPI's high performance quadrupole mass spectrometers are state-of-the-art analytical components that you can rely on.

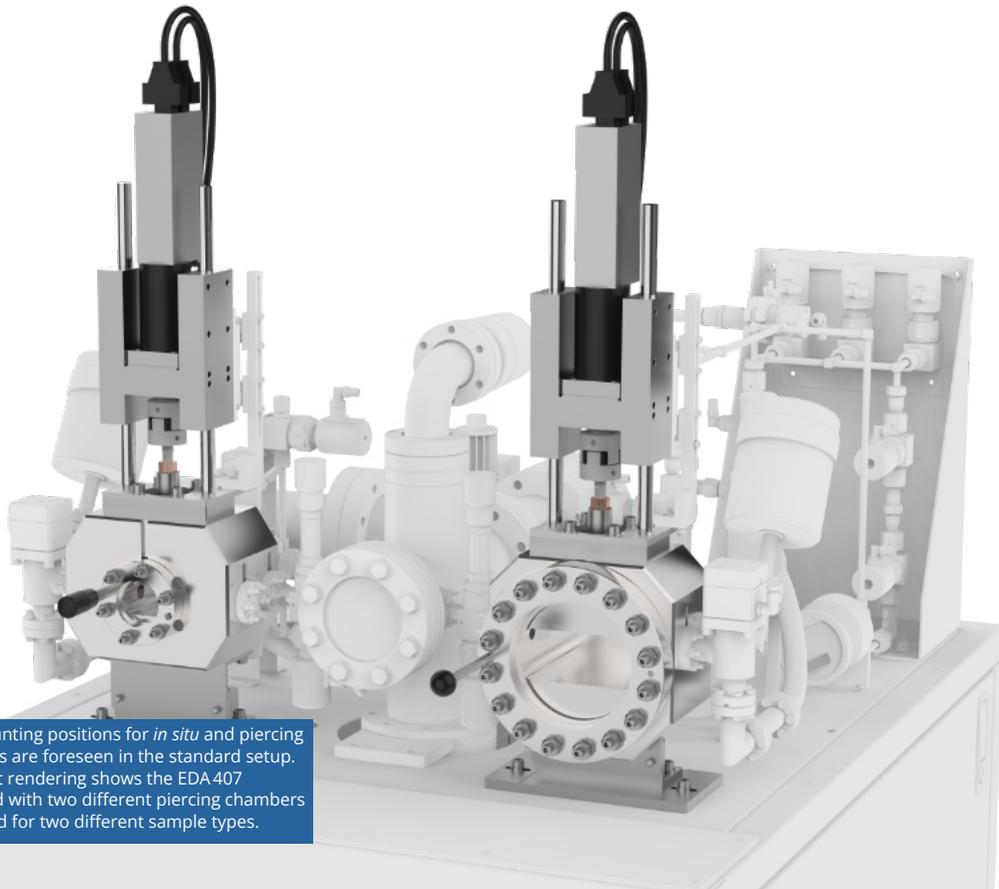
Combining first class analytical data acquisition hardware and a sophisticated software suite allows to extract crucial data from production processes and to control them to reach the best solution, product and experimental result.

The outstanding feature of the EDA407 is the possibility to mount specialized chambers to simulate different environmental conditions and gaseous atmospheres with tunable concentration and humidity that can be monitored *in situ* with the system's mass spectrometer.

Custom-built piercing chambers allow to analyze gas trapped in hermetically sealed packages, containers or cavities with ease.



IPI's quadrupole mass spectrometer is the central component of the EDA system. It guarantees class leading performance of your filling gas analysis.



Two mounting positions for *in situ* and piercing chambers are foreseen in the standard setup. The artist rendering shows the EDA407 equipped with two different piercing chambers optimized for two different sample types.

Bench Setups

The EDA407 is a highly customizable solution for all tasks in quality control of device packaging or research and development, when it comes to tune the filling gas of hermetically sealed devices to extend lifetime or increase overall performance.

EDA systems are designed together with the customer which allows us to build a one-of-a-kind customized system well prepared for decades of operation.

The adaptable platform that can be customized to the specific requirements of the samples to be analyzed or the environments to be optimized. In conjunction with its customized gas inlet system, it can be tailored to a wide variety of process gases, pressures and gas flows.

Chamber Types

The piercing chambers utilize high performance stepper motors to control the positions of the piercing devices and to guarantee reproducible results in quality control applications.

EDA407 *in situ* chambers allow the device under investigation to be operated in controlled environments with an open enclosure.

The gas filling of a device package can alter the lifetime or degrade the performance of the sample device in specific environmental conditions. Therefore, before selecting the right composition of these gas fillings it is crucial to understand how changes in the gas composition, quality or humidity can alter the performance of the device inside the enclosure.



Two examples for different piercing devices used in quality control of electronic device packaging applications. The piercing devices can easily puncture electronic device packages to release the filling gas.



More Information