



# GAM 3000

## **GAM 3000**

Precise Online Gas Analysis in Industrial Process, Product and Environmental Control

**GAM 3000** – Quadrupole Mass Spectrometer for fast and reliable online gas analysis to control industrial processes in chemistry, pharmacy, metallurgy and biotechnology, customized for specific applications.

Robust quality of vacuum system and long-time stability of ion source, analyzer, detection and calibration with safe protection versus environmental hazards are base for uptimes close to 100 percent in demanding industrial process control.

**GAM 3000** supplied with embedded control system and IPI-QMS system and application software to execute fully automated all routines for quick calibration and online process monitoring, available with auto start after power-off.



# GAM 3000

„The Next Generation Mass Spectrometer“

## System

- Process gas quadrupole mass spectrometer for fast automated online gas analysis in industry and research.
- Hyperbolic quadrupole analyzer with pre-filter, patented for optimal analyte ion transfer into the analyzer.
- Electronics: Patented digital regulation of the HF-generator with automated resonance alignment. Digitally controlled analyzer parameters for fast mass change, precise mass identification, measurement and online evaluation.
- Fast, embedded control system with WINDOWS® based IPI-QMS system and application software for automatic calibrations and process gas measurements.
- IPI process gas valve battery with ports for two process gases (response time <300 ms), six calibration gases and flange for safe waste disposal, control of bypass pressure and system tightness with independent pressure gauges.

## Technical Data

Mass Range: Standard 1 – 300 amu  
optional 1 to 512 amu available

Mass Resolution 1 amu

Dynamic Range of Measurement  
up to 8 Decades

Speed of Measurement:  
10 ms to 60 s per mass

Detection limit: 10 ppb

Reproducibility of Measurements of Air:  
Major components > 10 % better than 0,1 % rel.  
Side components > 0,5 % better than 0,2 % rel.  
Traces > 100 ppm better than 1,0 % rel.

Dimensions / Weight  
600 x 800 x 1105 mm (w x d x h) / approx. 190 kg

## Benefits

**GAM 3000** – System with embedded controller. Complies with IP 54 protection class and will be delivered with heat exchanger for internal cooling.

Optional: Special GAM 3000 version with ATEX certificate for installation in explosive areas of Zone 1 or Zone 2

**GAM 3000** – Configuration is customized according to specific requirements of the analytical application.

**GAM 3000** – Standard inlet system for the measurement of constant concentrations of gas mixtures allows to connect six calibration and two process gas lines with 6 mm or 1/4 inch plugs.

**GAM 3000** – Analysis of reactive, corrosive or condensing gas components possible  
Optional: heatable gas inlet

**GAM 3000** – Optional connection to the laboratory data (LIMS) or other process control systems.

**GAM 3000** – Connection to user PLC through OPC (OLE for Process Control)  
Digital: PROFIBUS, PROFINET, other bus systems or analog signals on request

**GAM 3000** – Low cost of ownership as a result of long service intervals and short response times, as well as longtime stability characterize our system.

**IPI InProcess Instruments**

**InProcess Instruments**  
Gesellschaft für  
Prozessanalytik mbH

Sophie-Germain-Str. 1  
28201 Bremen  
Germany  
Tel. +49 (0) 421 52593-0  
Fax. +49 (0) 421 52593-10  
mail@in-process.com  
www.in-process.com

