



OmniStar™/ThermoStar™

**The Efficient Solution for Gas Analysis.
Intelligent Software. Wide Range of Applications.**

**The Efficient Solution for Gas Analysis.
Intelligent Software. Wide Range of Applications.**

What are OmniStar™ and ThermoStar™?

OmniStar and ThermoStar are compact benchtop analysis systems for sample gases at below atmospheric pressure. They are the perfect complete solution for gas analysis, especially in chemical processes, the semiconductor industry, in metallurgy, fermentation, catalysis, laser technology and environmental analysis.

The analysis systems consist of an inlet system, a PrismaPlus mass spectrometer, a dry-compressing diaphragm vacuum pump and a HiPace turbopump.

The gas inlet is equipped with a capillary that can be heated to 350°C; this capillary is made of stainless steel in the OmniStar and of quartz glass in the ThermoStar. The heated capillary prevents vapors from condensing during analysis of the process gas.

Its capillary inlet enables a quasi segregation-free gas supply. A pressure-regulated gas inlet is optionally available for varying inlet pressures of down to 10^{-3} mbar.

The Quadera mass spectrometer software enables both qualitative and quantitative analyses to be performed on up to 128 different masses. The systems cover the mass ranges of to 1 to 100 amu, 1 to 200 amu and 1 to 300 amu.

ThermoStar™ – Spezial solution

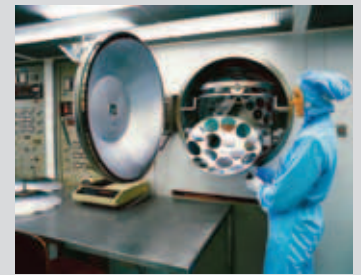
The ThermoStar solution was specifically developed for coupling with thermo balances. The inlet system incorporates a quartz capillary and gold orifice, assuring that even minute concentrations can still be analyzed. In contrast to competitor analysis methods, such as FTIR and IR, it is possible to detect all gases within the mass range.



Laser technology



Catalysis



Semiconductor industry



Advantages at a glance

- Qualitative and quantitative gas analysis, connection port for calibration gas inlet systems
- Low detection limit (< 1 ppm), even for condensable gases
- Compact, easy-to-operate analysis unit
- Heated capillary inlet, up to 350 °C
- Bakeable all-metal sealed high vacuum chamber for low backgrounds
- Utmost sensitivity thanks to enclosed ion source and field axis technology
- Reliable identification of unknown gases with the aid of spectral libraries
- Monitoring of up to 128 masses
- Mass ranges of 1 to 100 amu, 1 to 200 amu and 1 to 300 amu
- Applications from vacuum up to atmospheric pressure
- Gas analysis under varying sample pressures – pressure-regulated gas inlet (optional)
- Fast, reliable and precise measurement of covalent noble gases

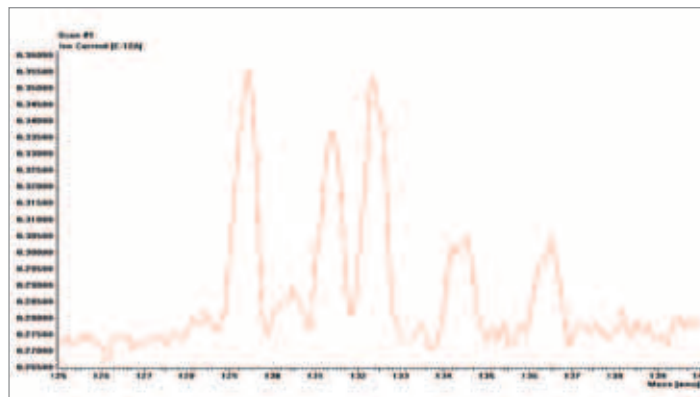
Analysis Software for Total Analysis

Quadera® analysis software

The Quadera analysis software enables you to easily monitor your processes on a PC in realtime. The unit's short response time enables the process analysis to be swiftly conducted. With its modular design, the Quadera software offers a clearly organized, user-friendly platform for the capture and presentation of measurement data and parameter records. Complete measurement procedures can be programmed.

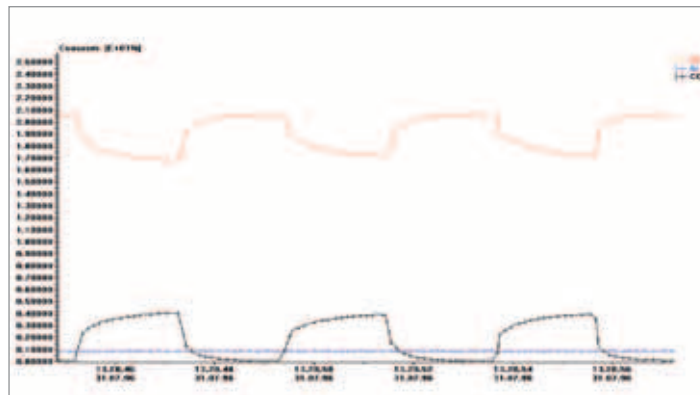


Xe in air/OmniStar™



The graph (mass range 125–140 amu) shows the xenon isotopes and the excellent detection limit of the OmniStar. Xenon has stable isotopes at 129, 131, 132, 134 and 136 amu. The concentration of ¹³⁶Xe in air is 7.8 ppb.

Respiratory Gas Analysis/OmniStar™



Three breathing cycles of an endurance test. The breath is characterized by the gases O₂ and CO₂. The argon in the air serves as a reference gas for demonstrating the stability of the system. Very quickly measured by the OmniStar at atmospheric pressure in the Multiple Concentration Determination (MCD) mode.

Advantages at a glance

- User-friendly, intuitive operation
- Customer-specific user interface
- Automated measurement procedures, programmable by means of the integral Microsoft® VSTA® script editor
- I/O module for exchanging measurement data
- Integral library of mass spectral data
- Simple definition of measurement recipes
- Mass spectrometer data can be linked with external signals

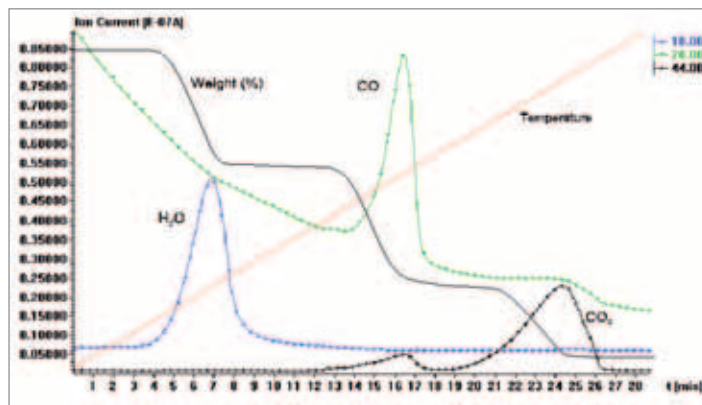
The Special Solution in Connection with Thermo Balances.

ThermoStar™

The ThermoStar gas analysis unit is a version that is specially designed for being coupled with thermo balances. High-temperature gas samples can be admitted by means of a quartz capillary.



Thermal Analysis/ThermoStar™

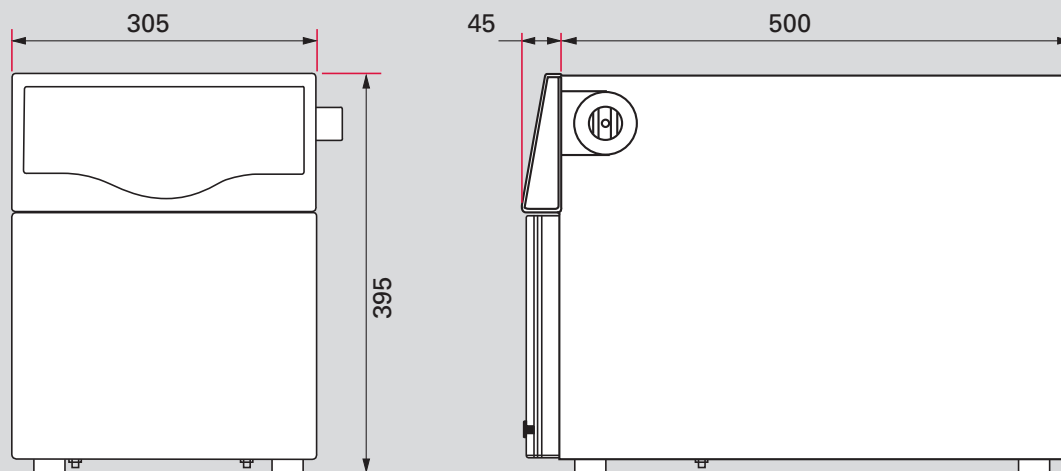


The gases water vapor (18), carbon monoxide (28) and carbon dioxide (44) that evolve when conducting a thermal analysis of calcium oxalate are shown as a function of time together with weight and temperature.

Advantages at a glance

- Even small concentrations of reactive and condensable gases can be detected
- Inert inlet, no change in gas composition
- Gas inlet heatable up to 350 °C
- Multi-gas analysis

Dimensions



Dimensions in mm

Technical data

Gas analysis system	OmniStar™	ThermoStar™
Mass ranges, amu	1–100 / 1–200 / 1–300	
Gas connection	Stainless steel capillary	Quartz capillary
Gas inlet	Via software-controlled inlet valve, or user interface	Continuously open
Pressure reduction	2-stage, segregation-free	
Gas flow rate, sccm	1–2	
Sample gas pressure, mbar	Up to 1,000	
Capillary operating temperature, °C	Up to 350	
Analyzer	QMA 200 M	
Rod system, material / diameter / length, mm	Stainless steel/6/100	
Detector	C-SEM/Faraday	
Mass spectrometer electronics	QME 220 M	
Software	Quadera®	
Contribution to neighboring mass: 40 to 41	< 10 ppm / < 20 ppm / < 50 ppm	
Min. detection limit, C-SEM	< 1 ppm / < 1 ppm / < 1 ppm	
Min. detection limit, Faraday	< 20 ppm / < 40 ppm / < 100 ppm	
Resolution, settable at 10 % peak height, amu	0,5–2,5	
Dimensions (L x B x H), mm	545 x 305 x 395	
Weight, kg	35	
Mains requirement: voltage (range), VAC	100 – 230	
Interface	Ethernet Analog input: 5x ± 10 V / 12 bit Analog output: 4x 0...10 V / 12 bit Digital input: 4x Digital output: 7x sink, optical insulated, 24 V	

PT M a bc def g h

a – System

- 8 – OmniStar
- 9 – ThermoStar

h – Front panel

- 1 – OmniStar
- 2 – ThermoStar

bc – Analyzer/Corrosive

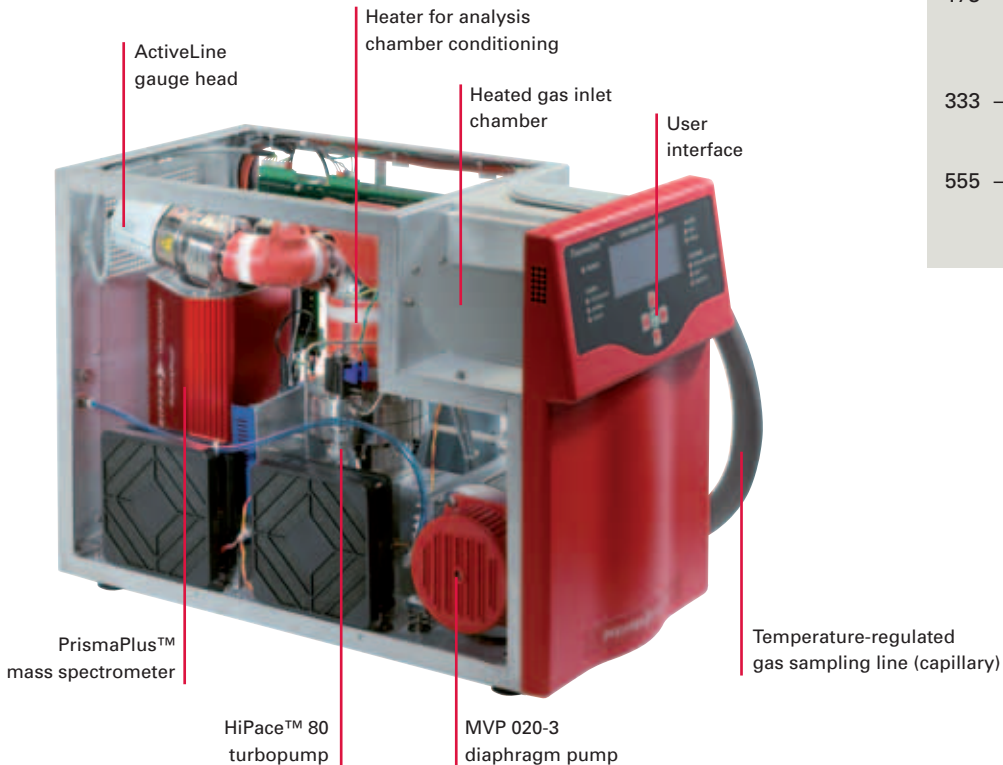
- 01 – Yttriated iridium, calibration system
- 02 – Yttriated iridium
- 05 – Tungsten, calibration system
- 06 – Tungsten
- 11 – Yttriated iridium, calibration system, corrosive gas version
- 12 – Yttriated iridium, corrosive gas version
- 15 – Tungsten, calibration system, corrosive gas version
- 16 – Tungsten, corrosive gas version

g – Mass ranges

- 1 – 100 amu
- 2 – 200 amu
- 3 – 300 amu

def – Gas inlet system

- 111 – ThermoStar, quartz, 1 m temperature-regulated gas sampling line, 200 °C
- 112 – ThermoStar, quartz, 2 m temperature-regulated gas sampling line, 200 °C
- 113 – ThermoStar, quartz, 1 m temperature-regulated gas sampling line, 350 °C
- 161 – OmniStar, stainless steel, gas sampling line
- 171 – OmniStar, stainless steel, 1 m temperature-regulated gas sampling line, 200 °C
- 172 – OmniStar, stainless steel, 2 m temperature-regulated gas sampling line, 200 °C
- 173 – OmniStar, stainless steel, 1 m temperature-regulated gas sampling line, 350 °C
- 333 – Pressure-regulated gas inlet, 3 decades, 1 mbar up to atmospheric pressure
- 555 – Pressure-regulated gas inlet, 5 decades, $5 \cdot 10^{-3}$ mbar up to atmospheric pressure



OmniStar™ and ThermoStar™ are trademarks of INFICON
 Quadera® – An INFICON product
 VSTA® – An Microsoft® product

**Leading. Dependable.
Customer Friendly.**

Pfeiffer Vacuum stands for innovative and custom vacuum solutions worldwide, for German engineering art, competent advice and reliable service.

Ever since the invention of the turbopump, we've been setting standards in our industry and this claim to leadership will continue to drive us in the future.

**Are you looking for a
perfect vacuum solution?
Please contact us:**

Germany (Headquarters)
Pfeiffer Vacuum GmbH
Phone: +49 (0) 6441 802-0
info@pfeiffer-vacuum.de

Austria
Pfeiffer Vacuum Austria GmbH
Phone: +43 1 894 17 04
office@pfeiffer-vacuum.at

Benelux
Pfeiffer Vacuum GmbH
Sales & Service Benelux
Phone: +800-pfeiffer
benelux@pfeiffer-vacuum.de

China
Pfeiffer Vacuum
(Shanghai) Co., Ltd.
Phone: +86 21 3393 3940
info@pfeiffer-vacuum.cn

France
Pfeiffer Vacuum France SAS
Phone: +33 169 30 92 82
info@pfeiffer-vacuum.fr

India
Pfeiffer Vacuum India Ltd.
Phone: +91 40 2775 0014
pfeiffer@vsnl.net

Italy
Pfeiffer Vacuum Italia S.p.A.
Phone: +39 02 93 99 05 1
contact@pfeiffer-vacuum.it

Korea
Pfeiffer Vacuum Korea Ltd.
Phone: +82 31 266 0741
sales@pfeiffer-vacuum.co.kr

Russia
OOO Pfeiffer Vacuum Rus
Phone: +7 495 411 7962
office@pfeiffer-vacuum.ru

Sweden
Pfeiffer Vacuum Scandinavia AB
Phone: +46 8 590 748 10
sales@pfeiffer-vacuum.se

Switzerland
Pfeiffer Vacuum (Schweiz) AG
Phone: +41 44 444 22 55
info@pfeiffer-vacuum.ch

United Kingdom
Pfeiffer Vacuum Ltd.
Phone: +44 1908 500600
sales@pfeiffer-vacuum.co.uk

USA
Pfeiffer Vacuum Inc.
Phone: +1 603 578 6500
contact@pfeiffer-vacuum.com

www.pfeiffer-vacuum.com