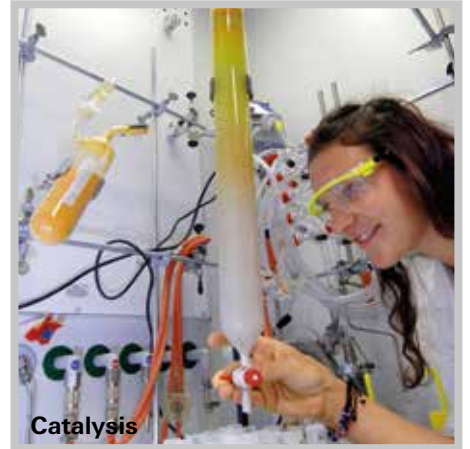




Freeze drying



Catalysis



Environmental analysis



# OmniStar<sup>®</sup>/ThermoStar<sup>®</sup>

The efficient solution for gas analysis.

# OmniStar®/ThermoStar®

The efficient solution for gas analysis.



Intelligent software

Your added value



Compact design

## What are OmniStar® and ThermoStar®?

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

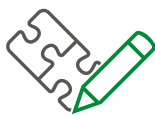
The analysis systems consist of an inlet system, a PrismaPro mass spectrometer, a dry-compressing diaphragm vacuum pump MVP and a HiPace turbopump.

The gas inlet is equipped with a capillary that can be heated to 350 °C; this capillary is made of stainless steel as standard in the OmniStar and of quartz glass in the ThermoStar. The heated capillary prevents vapors from condensing during analysis of the sample gas. This 2-stage inlet enables a quasi segregation-free gas supply.

The PV MassSpec mass spectrometer software enables qualitative and quantitative analyses. The systems cover the mass ranges of 1-100 u, 1-200 u and 1-300 u



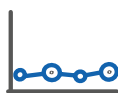
**Easy operation**



**Customized variants**



**Low gas consumption**



**Low detection limit**

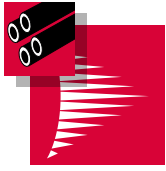


**Fast measuring time**

### **ThermoStar® – Special solution**

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

### PV MassSpec – Software for total analysis



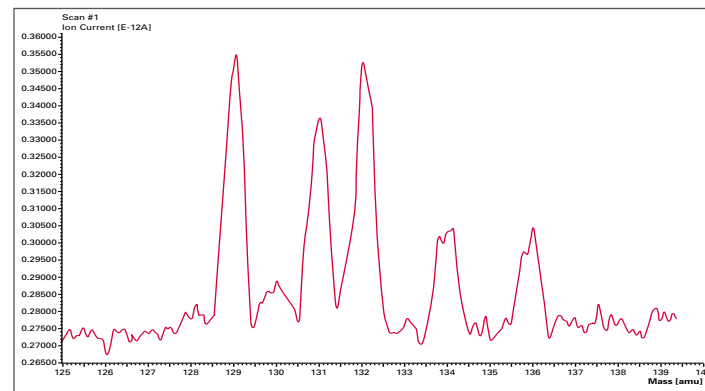
#### Analysis software

The PV MassSpec software has been specifically developed for the PrismaPro and offers an easy-to-read, user-friendly platform for capturing and visualizing measured data and parameter records. Complete measurement procedures can be programmed.

#### Advantages at a glance

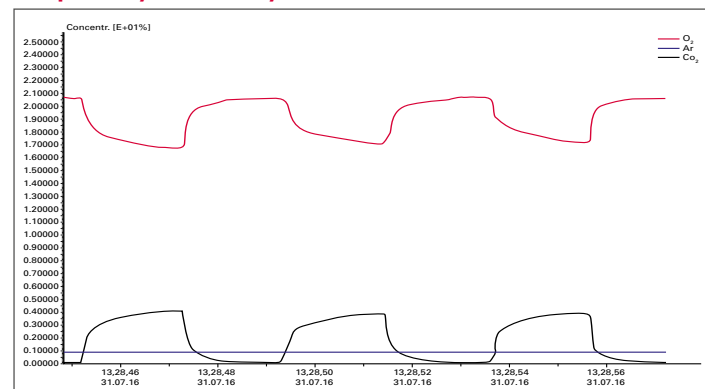
- User-friendly, intuitive operation
- Automated measurement routines via included sequencer
- Leak detection and vacuum diagnosis with just one click
- Automatic calibration and tuning
- Simple definition of measurement recipes
- Mass spectrometer data can be linked with external signals (e.g. external trigger signal)

#### Xe in air/OmniStar<sup>®</sup>



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

#### Respiratory Gas Analysis/OmniStar<sup>®</sup>



Three breathing cycles of an endurance test. The breath is characterized by the gases O<sub>2</sub> and CO<sub>2</sub>. 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.

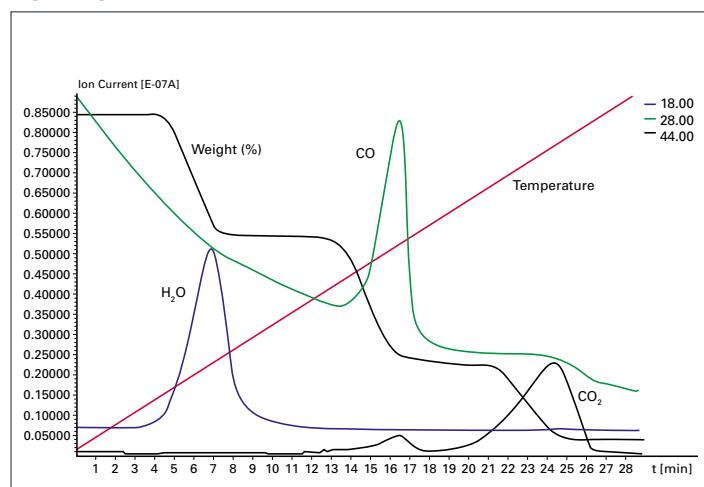
### ThermoStar – The special solution in connection with thermo balances.

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

#### 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

#### TGA-MS



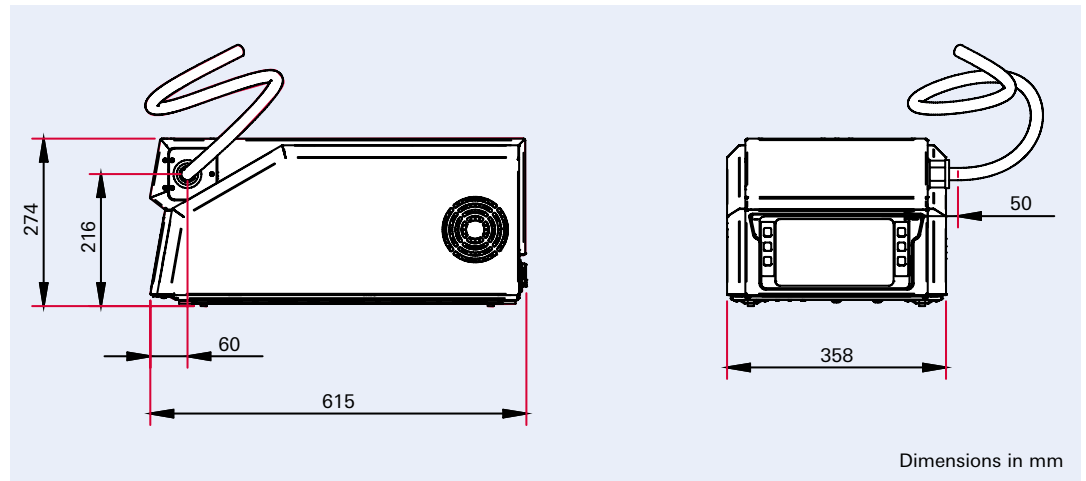
The gases water vapor (18), carbon monoxide (28) and carbon dioxide (44) that evolve when conducting a thermal analysis of calcium oxalate are shown as a function of time together with weight and temperature.



# OmniStar®/ThermoStar®

## Technical data

### Dimensions



### Technical data

Gas analysis system	GSD 350 – OmniStar®	GSD 350 – ThermoStar®
Mass ranges, u	1–100 / 1–200 / 1–300	
Gas connection	Stainless steel or quartz 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, hPa (mbar)	Up to 1,000	
Capillary operating temperature, °C	Up to 350	
Operation	7" colored touch screen or Web User Interface	
Rod system, material / diameter / length, mm	Stainless steel/6/125	
Detector	C-SEM/Faraday	
Mass spectrometer electronics	PrismaPro®	
Software	PV MassSpec	
Contribution to neighboring mass: 40 to 41	<10 ppm / <20 ppm / <50 ppm	
Min. detection limit, C-SEM	<100 ppb	
Resolution, adjustable at 10 % peak height, u	0.5–2.5	
Dwell time	1 ms–16 s/u	
Dimensions (L x W x H), mm	615 x 358 x 274	
Weight, kg	23–26	
Mains requirement: voltage, VAC	100–240	
Interface	Ethernet Analog input: 5x ± 10 V / 16 bit Analog output: 4x 0...10 V / 16 bit Digital input: 4x Digital output: 7x sink, optical insulated, 24 V	

### OmniStar/ThermoStar

<100 ppb

Detection limit

7" touch screen

Operation





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