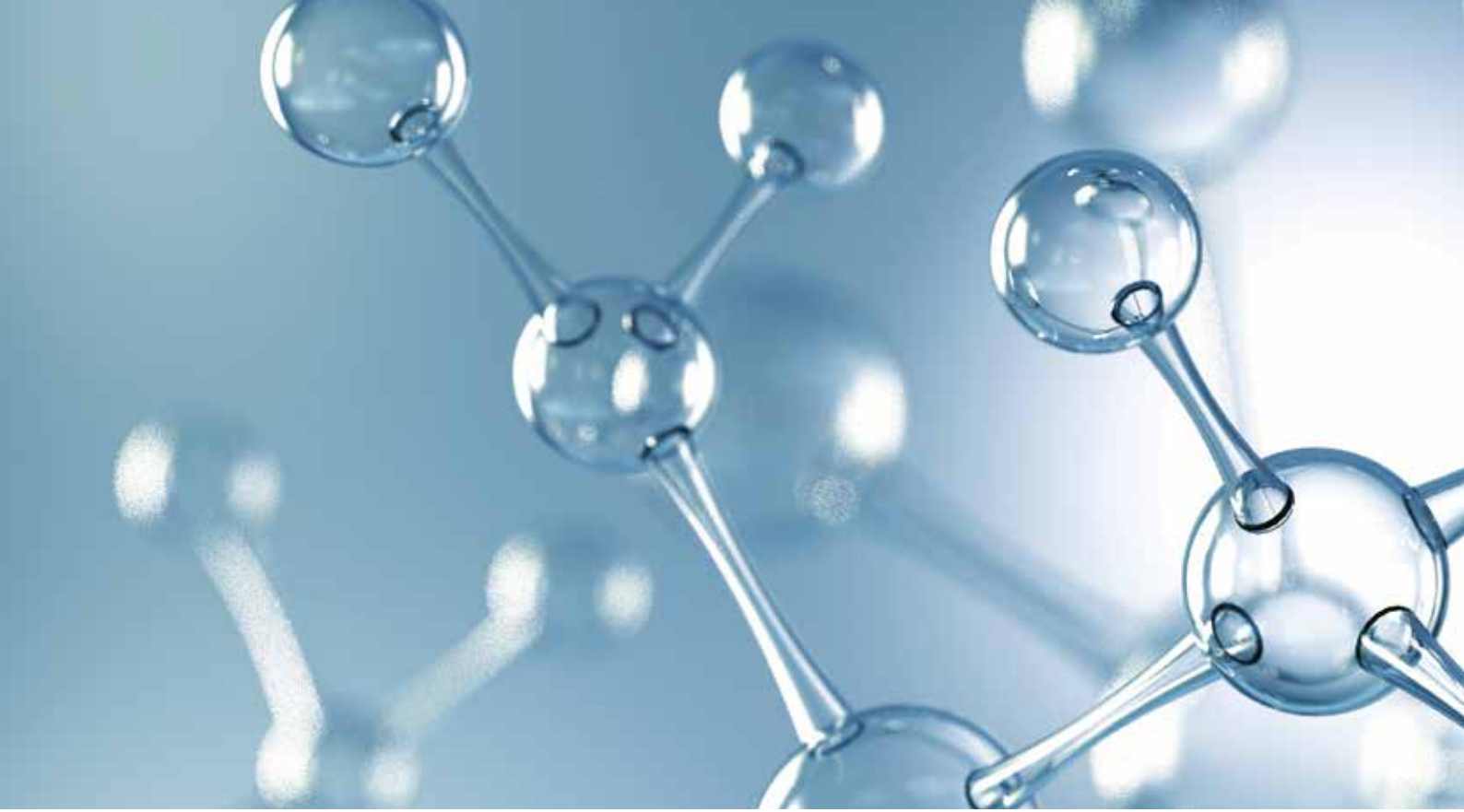




# LEYSPEC Residual Gas Analyzer

Experience deepest visibility





## Why use the LEYSPEC Residual Gas Analyzer?

Introducing the new Leybold LEYSPEC Residual Gas Analyzer - the all in one device with integrated control and display from the market leader in vacuum technologies.

The LEYSPEC product family offers simple and intuitive operation with an on-board control and display unit. Simple residual gas analysis is possible without even connecting the device to a computer.

Due to the intuitive interface, the Residual Gas Analyzer (RGA) is very easy to operate. At the push of a button, you can display the partial pressures of key gases and if your process involves an additional gas, you can assign it to the spare display channel. Due to the high bake-out temperatures achievable, the RGA is ideal for use in demanding high vacuum and ultra high vacuum applications.

The LEYSPEC RGA offers greatest sensitivity combined with an intuitive software that allows all basic and advanced test procedures.









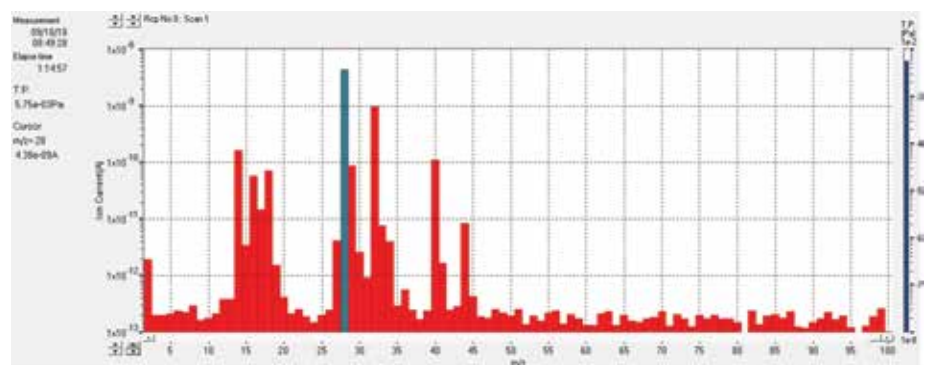
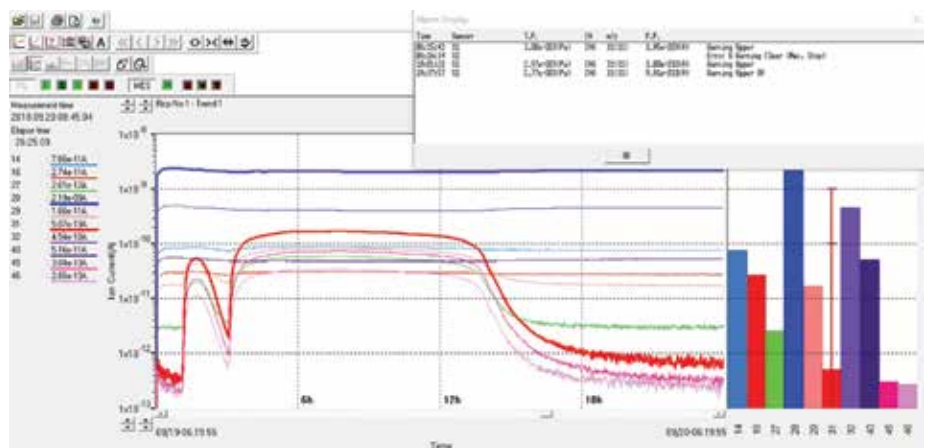
## LEYSPEC for accurate measurement

### Intuitive software:

The intelligent and intuitive LEYSPEC software completes the offering. The easy user interface allows a wide range of use cases, from simple operations to complex analysis. Creating recipes is as easy as it should be: Quick and convenient. During operation the total pressure is displayed and different views can be chosen to fit the view for the purpose of the analysis. Choose between the scan mode, trend mode or analog mode.

### Highest Sensitivity:

The LEYSPEC product family offers the highest sensitivity for the most accurate residual gas analysis. This allows detecting even the smallest traces of contaminants or process gases.



### Highest bake-out:

With its high bake out temperatures of up to 300°C, the LEYSPEC ultra is perfectly suited for sophisticated high and ultra high vacuum

applications. The LEYSPEC ultra range offers highest bake-out temperature so even in harsh environments reliable gas analysis can be performed.

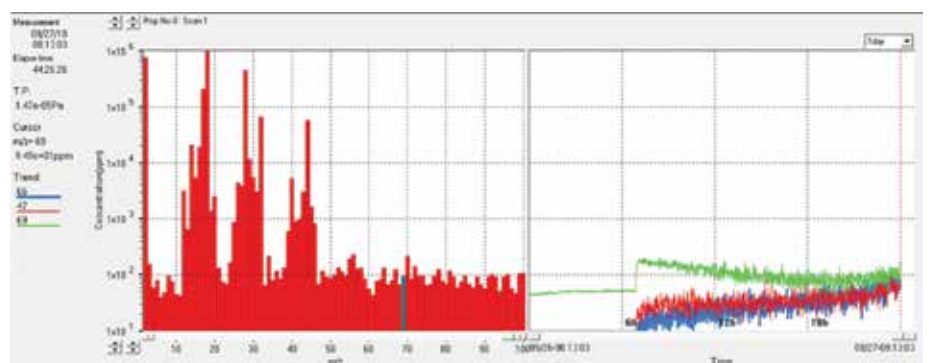
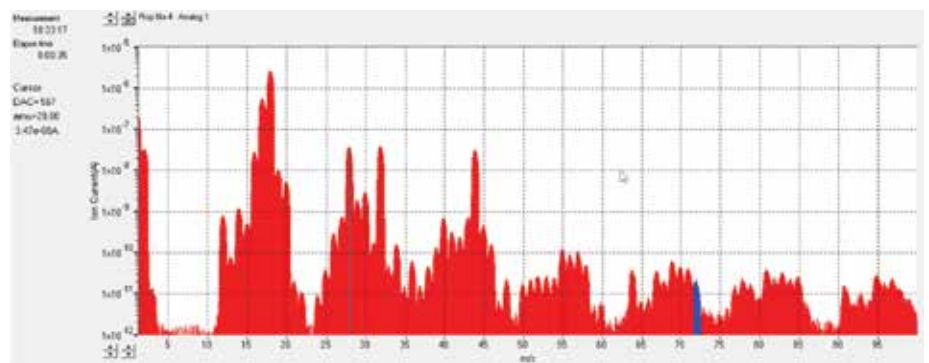


### Advanced features:

Preinstalled software functions allow many additional functionalities and test procedures such as a helium leak test or setting of warnings and error levels for selectable gases. A programmable degas function is implemented for simple process degassing after start or exposure to atmosphere. The background suppression allows focussing on the important peaks.

### Different product types:

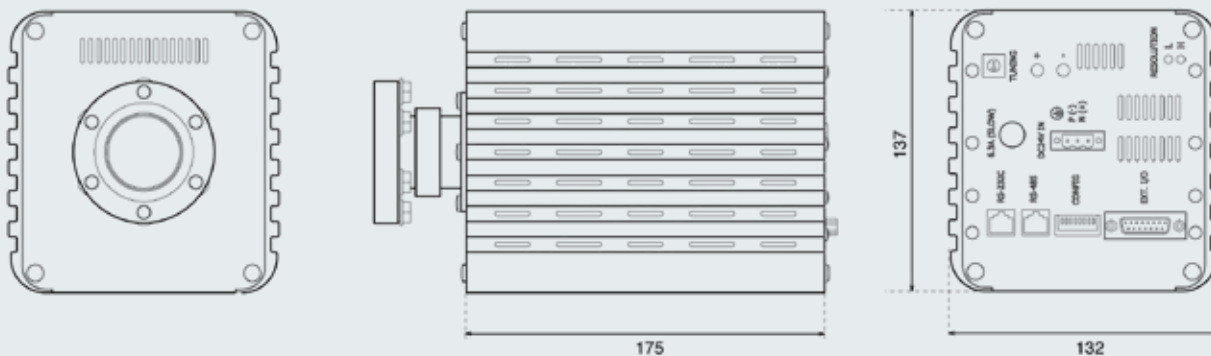
The new LEYSPEC range offers the perfect solution for any application in mass spectrometry. Focusing on residual gas analysis the product range offers solutions for 100, 200 or 300 amu – depending on the process requirements. All products come with the integrated display for easy and quick operations as well as the LEYSPEC software



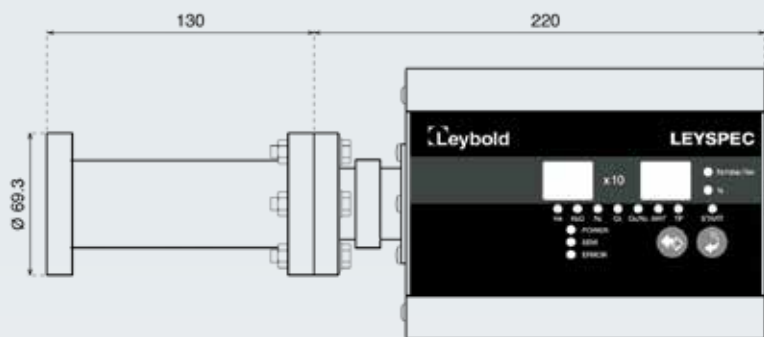
for sophisticated test procedures and residual gas analysis. Compact in size and mountable in any orientation, the LEYSPEC product range is perfectly suited for different built-in situations.

# Dimensional drawings

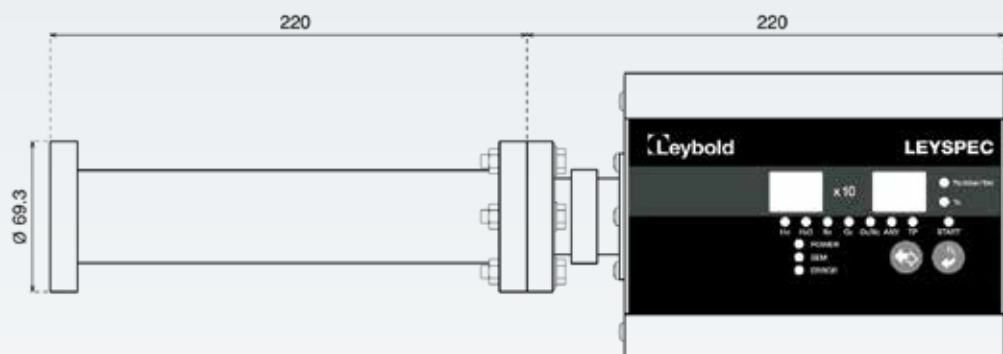
## The electronics



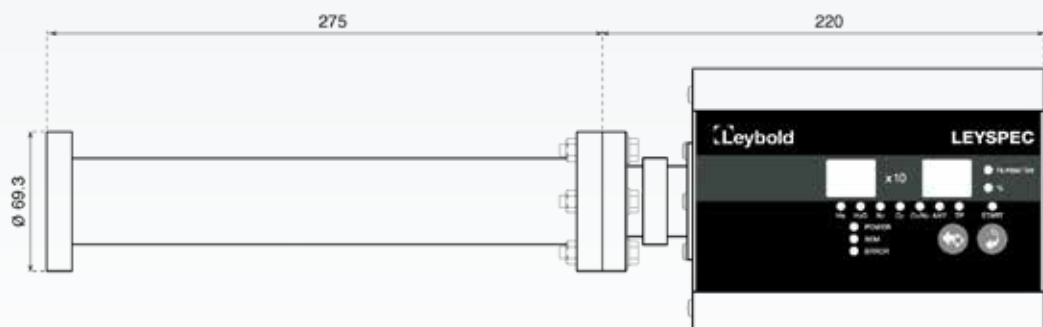
## LEYSPEC view100/200



## LEYSPEC view 100S/200S



## LEYSPEC ultra 200S/300S



# Applications:

## LEYSPEC view

- Residual gas analysis in high vacuum pumping equipment
- Gas analysis in R&D, freeze drying, analytical systems and many more
- Analysis of organic materials
- Environmental tracking
- Gas impurity analysis

## LEYSPEC ultra

- Advanced range for all residual gas analysis
- For sophisticated residual gas analysis with higher sensitivity
- Reliable detection of very low partial pressures
- Suited for higher bake-out temperatures

## RGA Working Principle

### ■ Ion beam

The measurement cell is a hot cathode ionization vacuum gauge.

Electrons are emitted from the hot filaments and accelerated toward the source via an electrical bias.

The fast moving electrons collide with the gas molecules, dislodging electrons, thus ionizing them.

Positive gas ions provide their current to the negative loaded ion collector.

Ion current is proportional to pressure. The more ions, the higher the ion current.

### ■ Mass Filters

The quadrupole array is composed of four stainless steel rods. A direct current and high frequency voltage is applied to all rods. This creates a complex magnetic field. By varying the voltage the magnetic field is controlled.

The resulting vibration only allows ions of a specific mass to “fly” through it and reach the detection part:

- Ions with an appropriate mass to charge ratio ( $m/e$ ), will oscillate in a stable three dimensional trajectory through the poles.
- Ions of incorrect  $m/e$  will oscillate out of control and collide with the poles.

### ■ **The ions arrive in the ion collector and provide an output current which is a measure of the relative abundance of the ions getting through the filter**

### ■ **The ion current or partial pressure against the $m/z$ ratio is displayed on the unit or in the software**

Based on the described working principle, the RGA verifies the gas purity by finding and displaying the gas composition. This allows to identify gas contaminants and perform further process and equipment control for an overall optimization of process performance and yield.

## Technical data

Model name	LEYSPEC view				LEYSPEC ultra	
	LEYSPEC view 100	LEYSPEC view 100S	LEYSPEC view 200	LEYSPEC view 200S	LEYSPEC ultra 200S	LEYSPEC ultra 300S
Mass range (amu)	1-100	1-100	1-200	1-200	1-200	1-300
Mass filter type	QMS	QMS	QMS	QMS	QMS	QMS
Detector type	Faraday cup	EM/Faraday cup	Faraday cup	EM/Faraday cup	EM/Faraday cup	EM/Faraday cup
Sensitivity (A/mbar)	1 x 10 <sup>-5</sup>	400/1 x 10 <sup>-5</sup>	1x10 <sup>-5</sup>	400/1 x 10 <sup>-5</sup>	400/2.5 x 10 <sup>-4</sup>	400/2.5 x 10 <sup>-4</sup>
Minimum detectable partial pressure (mbar)	1 x 10 <sup>-10</sup>	1 x 10 <sup>-14</sup> / 1 x 10 <sup>-10</sup>	1 x 10 <sup>-10</sup>	1 x 10 <sup>-14</sup> / 1 x 10 <sup>-10</sup>	1 x 10 <sup>-15</sup> / 1 x 10 <sup>-11</sup>	1 x 10 <sup>-15</sup> / 1 x 10 <sup>-11</sup>
Max operating pressure (mbar)	1 x 10 <sup>-4</sup>	1 x 10 <sup>-4</sup>	1 x 10 <sup>-4</sup>	1 x 10 <sup>-4</sup>	1 x 10 <sup>-4</sup>	1 x 10 <sup>-4</sup>
Filament material	Ir/Y2O3	Ir/Y2O3	Ir/Y2O3	Ir/Y2O3	Ir/Y2O3	Ir/Y2O3
Operating temp (°C)	10 - 40	10 - 40	10 - 40	10 - 40	10 - 40	10 - 40
Max sensing temp (°C)	120	120	120	120	250	250
Max bake out temp (elec removed) (°C)	250	250	250	250	300	300
Connection flange	DN 40 CF	DN 40 CF	DN 40 CF	DN 40 CF	DN 40 CF	DN 40 CF
Power input	DC 24 V ±10% 50 W	DC 24 V ±10% 50 W	DC 24 V ±10% 50 W	DC 24 V ±10% 50 W	DC 24 V ±10% 50 W	DC 24 V ±10% 50 W
Weight (kg)	2,6	2,8	2,6	2,8	3,2	3,2
IP	30	30	30	30	30	30
Serial communication	RS232C/RS485	RS232C/RS485	RS232C/RS485	RS232C/RS485	RS232C/RS485	RS232C/RS485
Software	LEYSPEC software	LEYSPEC software	LEYSPEC software	LEYSPEC software	LEYSPEC software	LEYSPEC software
Resolution	M/DeltaM= 1M(10%PH)	M/DeltaM= 1M(10%PH)	M/DeltaM= 1M(10%PH)	M/DeltaM= 1M(10%PH)	M/DeltaM= 1M(10%PH)	M/DeltaM= 1M(10%PH)

## Ordering information

Name	Part Number
LEYSPEC view 100	220010V01
LEYSPEC view 100S	220011V01
LEYSPEC view 200	220012V01
LEYSPEC view 200S	220013V01

Name	Part Number
LEYSPEC ultra 200S	220020V01
LEYSPEC ultra 300S	220021V01



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