



Vacuum Process

Compact Mass Spectrometer System for Vacuum Process Monitoring

ReacTorr-V

From ESS Ltd

The ReacTorr-V from ESS represents the very latest in technology for a range of Vacuum Process monitoring applications, including:

- **Sputter Coating**
- **Solar Panel research/ manufacture**
- **Freeze Drying**
- **Glass Coating / Special treatments**
- **Vacuum Coating**
- **Baseline RGA monitoring**
- **Curing**



ReacTorr-V is unique in that it offers true monitoring throughout the entire process stage. A special automated inlet valve is regulated by means of direct feedback control; the inlet valve adjusts automatically irrespective of the process pressure, maintaining a constant pressure in the Mass Spectrometer system at all times. With its very small footprint, ReacTorr-V is a highly effective solution as it can be positioned directly adjacent to the vacuum process with minimal length connection line, meaning that true process parameters are measured.

At the heart of the instrument is a highly sensitive Quadrupole Mass Spectrometer, which is equipped with an enhanced enclosed ion source, giving ppb detection levels coupled with superb stability and fast response time. The design of the system is further underpinned by ESS legendary reliability.

The compact design means that the system can be mounted directly onto the vacuum tool so true monitoring conditions are met, and a powerful, easy to use software suite operates and controls the system. The software package has been specifically designed for vacuum process applications, and allows the user individually selectable operating modes for a particular process application.

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Some of the capabilities are highlighted here:

- **Real leaks** - By tracking the ratio of N₂ to O₂ during the pump-down phase, it is quick to establish if a leak is real or virtual. In the event of a real leak, the system will alert the operator to enter a dedicated leak detect mode to locate the source of the leak
- **Material outgassing** - Establish better quality control by monitoring outgassing characteristics and creating a 'profile'
- **Bakeout outgassing**
- **Statistical Process Control**
- **Yield Improvement**
- **VOC monitoring and control**
- **Baseline Monitoring**
- **Materials outgassing**
- **Rack Mount Option**

ReacTorr-V provides in-situ monitoring of all process parameters, and the compact field proven electronics connects via a LAN Ethernet cable to the control PC, preloaded with simple, recipe driven easy to use software, allowing for operation of simple RGA baseline studies to complex statistical process control capabilities.

A lower budget instrument with manually operated inlet is also available.



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