



Transpector® XPR3L Gas Analysis System

LCD AND SOLAR/PV PROCESS YIELD OPTIMIZATION BY GAS MONITORING AND ANALYSIS

Transpector XPR3L gas analysis system makes monitoring process gases and base vacuum conditions affordable and efficient. Use it for PVD process monitoring and get real-time data on process gas pressures, gas ratios, contamination levels, impurities and leaks—information that can maximize both process yield and product quality. In background-monitoring applications, Transpector XPR3L makes preventive maintenance programs more efficient and effective by quickly detecting and diagnosing leaks and contaminants.

COST-EFFECTIVE GAS ANALYSIS

Transpector XPR3L provides dual-purpose functionality, process monitoring, and base vacuum assurance by operating from ultra-high vacuum (UHV) up to 10 mTorr (20 mTorr optional). The miniature quadrupole design of Transpector XPR3L provides this extended pressure range gas analysis capability without requiring any pressure conversion equipment, keeping the size and cost down. This cost-effective solution enables implementation in scalable production designs.

IMPROVE PROCESS YIELD AND PRODUCT QUALITY

Transpector XPR3L improves process yield, reduces scrap, and improves product quality through continuous and automatic monitoring of process gas partial pressures and gas ratios, as well as detecting and identifying possible contaminants.

FEATURES AT A GLANCE

- Provides economical, dual-purpose functionality; process monitoring and base vacuum assurance by operating from UHV up to 10 mTorr (20 mTorr optional)
- Enables implementation in scalable production designs as an affordable, cost-effective process monitor
- Improves process yield, reduces scrap and improves product quality through continuous automatic monitoring of process gas pressures, ratios and possible contaminants
- Speeds up PM recovery and increases productivity by verifying base vacuum conditions, locating leaks and identifying contaminants with high sensitivity and low minimum detectable partial pressure
- Operates across a 1 to 100 amu mass range, protecting your investment and reducing risk by having the ability to detect a broad range of materials, contaminants or byproducts
- Provides reliable, advanced diagnostics and process control thanks to compatibility with the FabGuard® monitoring and analysis system

INCREASE PRODUCTIVITY

Speed up PM recovery with Transpector XPR3L by verifying base vacuum conditions, locating leaks and identifying contaminants. An electron multiplier in Transpector XPR3L enables high sensitivity and low minimum detectable partial pressure for fast and clean base vacuum verification or troubleshooting.

100 AMU MASS RANGE

Transpector XPR3L operates across a 1 to 100 amu mass range, protecting your investment and reducing risk by providing the ability to detect a broad range of materials, contaminants or byproducts.

POWERFUL DATA ANALYSIS FOR BETTER YIELDS

Transpector XPR3L is compatible with TWare32 process characterization software to facilitate gas analyzer control, data collection and display. The system is also compatible with FabGuard, the suite of software products to provide reliable advanced diagnostics and process control. FabGuard offers an easy, intuitive interface, enabling advanced diagnostics, fault detection and classification (FDC) and reliable real-time process control. Its sophisticated algorithms virtually eliminate false alarms due to process changes. FabGuard also offers superior statistical and analytical functions for the next generation of FDC.

APPLICATIONS

- Solar/Photovoltaic Manufacturing
- LCD Manufacturing
- PVD Process Monitoring
- Monitor Process Gas Pressures and Ratios
- Reveal and Identify Contaminants
- Detect and Locate Leaks (air, helium, water, other vapors)
- PM Recovery/Troubleshoot and Verify Base Vacuum

OUR EXPERTISE IS YOUR COMPETITIVE ADVANTAGE

INFICON's worldwide expert applications team brings experience, superior knowledge and problem-solving expertise to manufacturing processes, along with resources for installation, evaluation and support.

SPECIFICATIONS

Mass Range	1 – 100 amu
Resolution (per 1993 AVS Recommended Practice)	< 1 @ 10% measured at mass 4, 20, 28 and 40
Maximum Operating Pressure	
With Pirani Interlock Option	20 mTorr
Without Pirani Interlock	10 mTorr
Linear Operation	10 mTorr
Sensitivity (nominal)	
As FC at 40 eV/200 μ A Emission	$\geq 4E-7$ amps/Torr
As EM at 70 eV/400 μ A Emission	$\geq 8E-3$ amps/Torr
Minimum Detectable Partial Pressure*	
As FC at 40 eV/200 μ A Emission	$\leq 1E-9$ Torr
As EM at 70 eV/400 μ A Emission	$\leq 6E-12$ Torr
Minimum Detectable Concentration	50 ppm
Peak Ratio Stability (28/40) As FC	Better than 2% over 24 hours
Mass Filter Type	Quadrupole
Detector Type	Faraday Cup and Electron Multiplier
Mass Position Stability	
As FC, 1E-4 Torr of Ar, Constant Temperature	< 0.1 amu over 24 hours**
Temperature Coefficient	
As FC, 1E-4 Torr of Ar	< 1% of peak height per °C
Maximum Sensor Operating Temperature	150 °C
Maximum Bake Temperature (Electronics Removed)	200 °C
Operating Temperature (Ambient)	20-50 °C

Notes: All specifications after a 30-minute warm-up.

* MDPP is calculated as the standard deviation of the noise divided by the sensitivity of the sensor measured at a 4-second dwell time.

** Peak Lock active for 24-hour mass position stability.



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Due to our continuing program of product improvements, specifications are subject to change without notice.

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