

# GEMStar XT ARR-851900-C QCM



Molecular Innovation™



*The Arradiance GEMStar XT QCM module is a Quartz Crystal Microbalance engineered for GEMStar XT systems and provides for real-time process monitoring to assist reducing the time to develop new processes*

In-situ monitoring of film growth, desorption/absorption and other surface studies can be performed using a quartz crystal microbalance (QCM). This powerful technique is based on the excellent and well documented piezoelectric properties of quartz. When a certain mass is deposited on a quartz crystal, the change in resonant frequency of the crystal provides a mass change. This process is extremely sensitive and can detect the deposition of sub-monolayer films. Compared to stand alone characterization techniques, such as ellipsometry, QCM can provide detailed information about an ALD process such as growth rate, surface reaction kinetics and mass gain per cycle. Furthermore, QCM can be used to rapidly optimize a process and determine ideal pulse and purge times for an ALD recipe.

- ◆ Engineered specifically for GEMStar XT and XT-P for optimum crystal location
- ◆ Easily attaches to GEMStar XT's standard NW-40 metrology port
- ◆ Real time measurement and logging in GEMFlow software for mass and thickness growth rate
- ◆ All mounting hardware and cables provided
- ◆ Includes 10 QCM Crystals
- ◆ Allows tool-less replacement of QCM Crystal
- ◆ Allows process measurement up to 300 °C
- ◆ Uses our hot-walled reactor radiant heating for optimum process matching

GEMStar XT QCM Specifications	
Compatibility	All XT System
Metrology Port Interface	NW-40
Arradiance QCM Crystal Mount	No exposed wires in vacuum
QCM Crystal 6 MHz gold 300 °C	QTY 10
UHV Bakeable Sensor	300 °C
QCM Controller	Inficon STM-2 or Colnatec EON LT
DC Power Adapter	Supplied
Seal Materials at NW-40 fitting	Kalrez

