



DENTON VACUUM Explorer®

The Explorer® thin film deposition platform, offers the widest range of configurations and deposition modalities in the industry. The result is a flexible and versatile coating system to meet your application requirements.

The Explorer® is specifically designed and engineered to provide a robust environment for R&D activities and pilot scale production. All capabilities are seamlessly integrated into a stand-alone system that allows the user to focus on thin films rather than the operation of multiple, disjointed subsystems.

State-of-the-art automation and controls packages previously only available on larger systems are now available on the Explorer. This enhances the user's process development and production capabilities.

Your Explorer® Can Be Configured For:

- Electron Beam Evaporation
- Resistance Evaporation
- Sputtering
- Ion Plating
- Ion Assisted Deposition (IAD)



Explorer® for Sputtering

When you select Denton as your supplier for a sputtering system, you are gaining access to many years of deposition experience. Our engineers can help you configure the system to meet your application. Our knowledge of sputtering processes and characteristics assures that you will have a system which meets all of the requirements for your application.

The Explorer® offers you single or multiple cathode designs executed in stainless steel chambers or glass bell jars.

Typical Applications

- Materials research
- Product QC & QA
- Semiconductor failure analysis
- CD Mastering
- Nanotechnology
- Compound Semiconductors
- OLEDs

Cathode Options

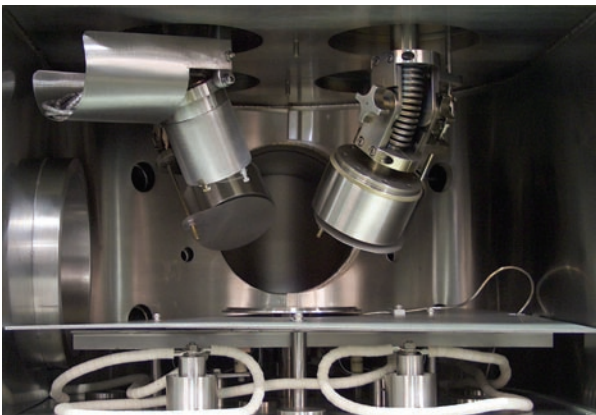
- 1, 2 or 3 cathodes
- 2", 3" or 4" cathode diameters
- Enhancements to process thick magnetic targets
- Flex cathodes to adjust impingement angle

System Options Available

- Chamber customization - size, ports, water cooling, wall heating, pumping, instrumentation
- Loadlocks - signal carrier or cassette
- Co-sputtering
- RF / DC / pulsed power supplies
- Power switchboxes to allow multiple cathode operation from a single power supply
- RF biasable substrate stage
- Substrate heat up to 500C
- Computer controlled, data acquisition, remote operation and diagnostics - ProcessPro®



Angstrom Science cathodes



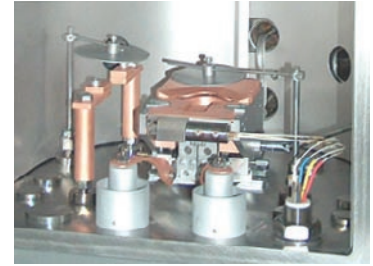
Flexible cathode

3-cathode chamber with flange to support future loadlock upgrade



Explorer® for Evaporation

Denton's Process Group has many years of deposition experience. In conjunction with our Coating Division, new designs and experience are constantly being added. This knowledge is available to you. Our engineers can help you to configure the system to meet your application. Our experience in evaporation processes and characteristics means that you will have a system which meets all of the requirements for your application.



E-beam gun and thermal source

The Explorer® offers you a range of chamber sizes and deposition options, including powerful controls that ensure reliable processes and simple recipe design.



Chamber showing Knudsen Planetary and Electron Beam Gun

From manual deposition defined by quartz crystal monitoring to advanced process control capability, there is a system to fit your cost and performance requirement.

Fixturing Options

- Dome
- Single Flat Plate
- Flip Tooling
- Knudsen planetary
- DC/RF Bias

Typical Applications

- Materials Research
- Ion Assisted Deposition (IAD)
- Medical devices
- Telecommunications
- CD Mastering
- Lift-Off
- Protective Coating
- Optical interference coatings

System Options

- Chamber customization [size, ports, water cooling, wall heating, pumping, instrumentation]
- Loadlocks [signal carrier or cassette]
- Quartz Crystal Monitoring
- Quartz Crystal Rate Control
- ProcessPro® Automation
- Ion Source
- Substrate heat up to 500C
- LN₂ - cooled sample stage
- Glass bell jars
- Application specific tooling
- Resistance sources
- Single or multi-pocket electron beam guns



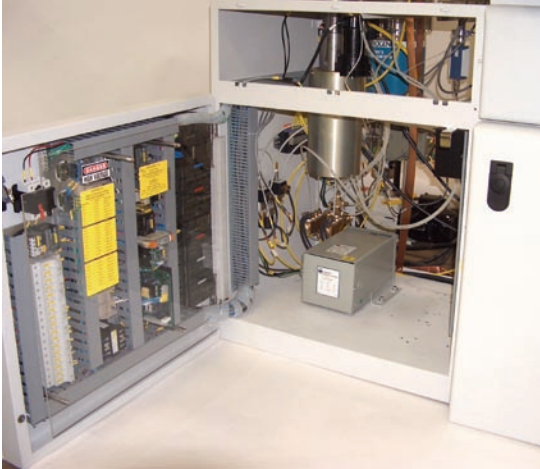
Explorer® with Denton Vacuum CC-105 Ion Source fitted externally to chamber



Resistance sources for thermal evaporation

Explorer® for Equipment, Controls, Process

We want the Explorer® to meet your thin film requirements. To tailor the system for your application, please contact your local Denton Vacuum office to discuss your requirements and needs.



Easy Access for Service

Pumping Configurations

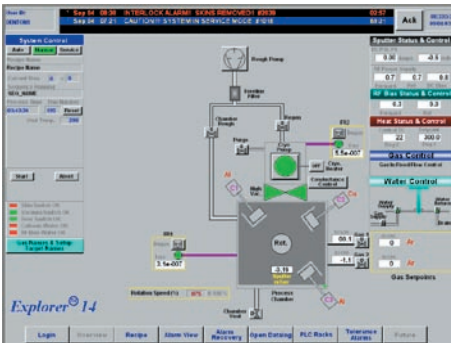
Denton offers a range of diffusion, cryogenic and turbo pump configurations which are selected to satisfy application requirements.

In addition, oil-free and dry-scroll pumps can be supplied as an alternative to the standard mechanical pump.

Pumps can be fitted either at the rear or at the back of the deposition chamber

Controls & Automation

All Explorer® systems are supplied with standard Programmable Logic Control [PLC] that offers single button control and automation for simple/straightforward coating processes.



The Explorer® can also be equipped with Denton's proven ProcessPro® controls package. This offers full multi-step automation, network ability and infinite recipe options.

ProcessPro® also offers Denton's real-time support facility by Modem. This allows Denton engineers to access your system in real-time and fault-find and offer process support.



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Engineering Solutions for Thin Film Applications