safematic


*make it visible*

Provider
of high-vacuum coating
systems

# CCU-010 Compact Coating Unit

## compact – modular – innovative

**Two models**
The CCU-010 coating unit is available in two versions. ***CCU-010 LV*** for fine-vacuum applications and ***CCU-010 HV*** for high-vacuum applications.
The modular concept makes it easy to convert the unit from a pre-vacuum unit into a high-vacuum unit later on.

**A smart device**
Whether you wish to sputter, vaporise or apply plasma treatment to carbon – you can configure the device for each of these applications by simply changing the process head.

**No unnecessary downtime**
The device is ready to operate almost immediately. The use of high-quality materials and components in combination with innovative ideas results in extraordinarily short process times. The automatic mode allows for reliable and consistent thin coatings.

**Compact and practical**
Save valuable space thanks to small dimensions. Weight has been reduced to a minimum. Thanks to the consistent use of standardised vacuum-connection flanges, the unit also works with third-party devices.

**Easy start-up and servicing**
Unpack, connect, start! Do away with high start-up costs. The plug-and-play concept allows you to start up the device by yourself. You only need to connect the power supply and process gas.
Thanks to the integrated USB service interface, a service technician can run a quick error analysis on site or remotely via an Internet connection. The modular set-up allows defective components to be replaced in a targeted manner.

| **Technical data** | |
|---|---|
| Dimensions (depth x width x height) | 57 x 36 x 35 cm |
| Weight | 26 kg |
| Power supply: | 90 to 260 VAC; 50/60 Hz |
| Power consumption | max. 6 A |
| Power requirement | max. 500 W |
| Noise level | max. 40 dB(A) |

# Highlights and features

- Sputtering, vaporising of carbon thread and plasma treatment (hydrophilic/hydrophobic) with one single device.
- Use of targets with a diameter of 54 mm and a thickness of up to 3 mm, which can be changed quickly and easily.
- Long live targets
- The magnetron sputter head allows for fine-grained sputtering for high-resolution FE-SEM applications.
- Sputtering of indium tin oxide (ITO) and carbon possible.
- Glass reaction cylinder Ø120mm (DIN 100 ISO-KF compatible) with implosion guard and safety monitoring.
- Automatic target shutter
- Electronically regulated process vacuum with Pirani and cold cathode measuring system
- Automatic valve control for two process gases and venting
- Target cooling with temperature monitoring
- Round stage, height-adjustable and tiltable (Ø80mm) to hold your samples. The table can be easily removed without tools for cleaning purposes (sandblasting).
- Speed-controlled rotary or planetary gear table with a range of options for holding samples
- Film-thickness measurement via double-quartz measuring system (for small samples at the centre, for large samples at the edge)
- Integrated ‘MD 1 Vario-SP’ membrane pump (HV version)
- Integrated ‘Hi Pace 80’ turbo pump (HV version)
- Wide-range power supply (90VAC to 260VAC)
- 5.7’’ TFT-Touch graphical display
- Intuitive user software with many useful features
- Easy creation of coating recipes, which guarantee reproducible results
- Storage/view of the last ten processes
- Graphical representation of process data with Windows-based software **Coating LAB**.
- Feature for automatically venting the system in the event of power loss. This prevents the system from getting contaminated by backing pump oil (LV version).
- USB interface for easy process analysis and software update
- Uniform interface for different process heads
- Automatic process head recognition
- 6mm Legris connections for two process gases and a venting gas
- Flange connection (DN 25 ISO-KF) for connecting an external backing pump (LV version)
- Can be used as a pure pumping unit
- Small size and low weight
- Swiss quality

# SP-010 SPUTTERING MODULE

The **SP-010** sputtering module for the CCU-010 LV and CCU-010 HV Compact Coating Units has a small form factor, yet offers all the features required for **high-quality sputter coating** in a vacuum.

The module **fully integrates** a magnetron, target, shutter, process pressure regulator and power electronics in a unique, robust unit that is guaranteed to be ready for operation and easy to maintain.

An **innovative interface** with power and gas supply as well as signal transmission allows the modular system to be configured to work as a sputtering unit with just a single hand movement.

## Highlights

- Electronically controlled process vacuum ensures stable pressure in the receptacle.
- Circular gas orifice ensures homogeneous process gas distribution.
- Detection and monitoring of splinter protection guarantees safe operation.
- Target cooling with temperature monitoring ensures smooth operation.
- Uniform electrical and pneumatic interface for use with basic units CCU-010 HV and CCU-010 LV.

| **Technical data** | |
|---|---|
| Dimensions (L x W x H) | 250 x 160 x 80mm |
| Weight | 3.1kg |
| Targets | Ø54mm and thickness up to 3mm |
| Electrical connections | DSUB |
| Gas connections | DSUB |

# CT-010 CARBON THREAD MODULE

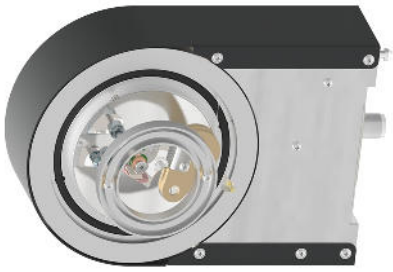
As a small, compact module, the **CT-010 carbon yarn head** has all the technical characteristics required for **reproducible vaporisations** and subsequent **surface modifications**.

A newly developed **automatic carbon yarn tracking system** enables the unit to generate up to 50 carbon films without the user having to adjust the carbon yarn vaporiser.

A **high-performance combination** of **carbon coating** and subsequent **glow discharge treatment** without interrupting the vacuum conditions ensures exceptionally efficient generation of hydrophilic carbon-carrying films.

## Highlights

- An innovative, automatic tracking system (patent pending) manages up to 2m of carbon yarn, which is deployed using a spool.
- Pulsed electrical surges in ‘regular’ and ‘gentle’ mode meet every need, from rapid coating processes through to high-precision carbon coatings that are exceptionally easy on the samples.
- A process gas controller delivers the air for the glow discharge precisely on the surface of the substrate.
- Precise control of plasma output allows for a broad range of applications for modifying the surface properties of samples.
- Uniform electrical and pneumatic interface for use with basic units CCU-010 HV and CCU-010 LV.



| **Technical data** | |
|---|---|
| Dimensions (L x W x H) | 250 x 160 x 70 (110)mm |
| Weight | 2.6kg |
| Coating material | Filament or yarn on a spool, up to 2m |
| Electrical connections | DSUB |
| Gas connections | DSUB |

# RS-010 ROTARY STAGE

# PLANETARY STAGE PS-010

An **integrated plug connection** for the motor and layer thickness sensor allows the sample table to be exchanged in seconds.

Universal, **smooth adjustment of table height, tilt angle** and **rotational speed** guarantee exceptionally homogenous films even on very jagged samples.

Samples can be arranged optimally on the table thanks to the **intelligent layout** of mounting holes for SEM stubs.

**Compact pancake design** enables handy preparation and sample transport with a height of just 23 mm with an 80 mm diameter.

# COATING-LAB

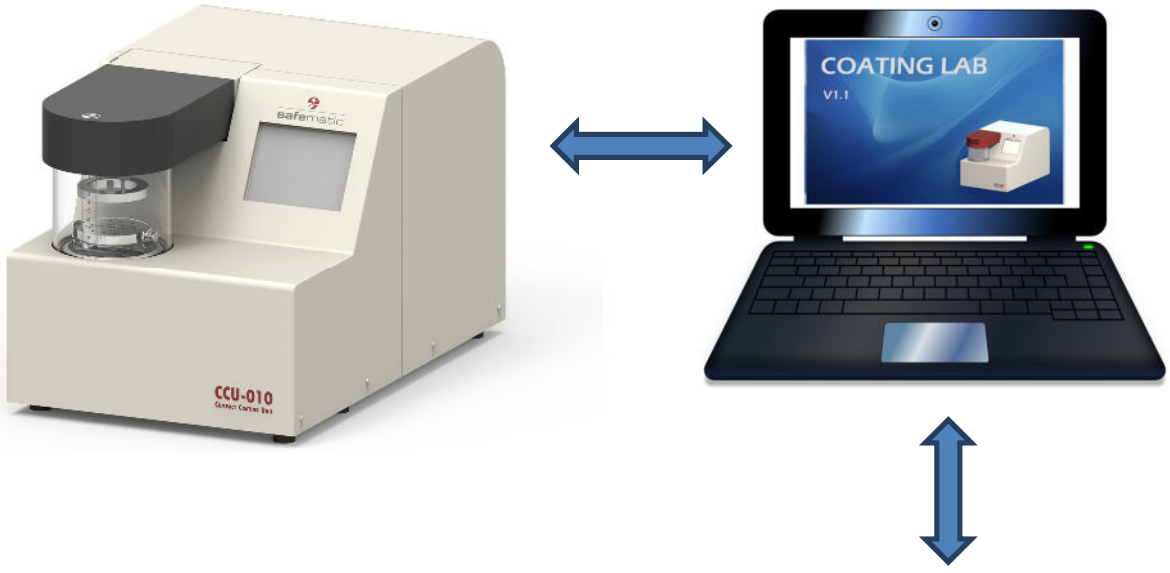
This Windows-based software is easy to install on your laptop and offers **diverse** options for **monitoring and documenting processes.**

Fully automatic logs with selectable charts containing all **process-related data** can be exported as **screenshots or CSV files** for your Office applications.

Other outstanding features include **parameter management**, intuitive **software upgrades** and **where-used lists** for the system.

## Highlights

- Auto-connect functionality automatically connects the laptop and coating unit via a USB interface.
- The last 10 processes executed by the unit are stored and depicted in the history function.
- The pressure, current and voltage for the process are displayed along with the film thickness and coating rate.
- An extensive parameter database enables users to tailor the system to fit the application environment like a glove.
- With an Internet connection, Coating-LAB can easily establish remote access for error diagnosis and process optimisation.




Remote Services

safematic

## THE COMPANY

safematic GmbH is a dynamic company, a leader in innovative compact high-vacuum coating systems.

The company is located in St. Gallen in the Rhine Valley, a region full of experts in the field of vacuum and coating technology.

Products by safematic GmbH are manufactured in Switzerland.

**swiss made**

Your coating solution
Apart from our standard products, we also offer customised extensions and options.

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