



LARGE DESK TURBO- PUMPED CARBON COATER - DCT-300



The Large Desk Turbo-Pumped Carbon Coater – DCT-300 system with a spacious chamber, perfect for prepping samples for FE-SEM, EDS/WDS, TEM, EBSD analysis, and thin film use. This top-notch coater delivers uniform carbon films of exceptional quality, featuring fine grain sizes ideal for specimens needing top-notch resolution and characterization.

The Large Desk Turbo-Pumped Carbon Coater – DCT-300 features a cylindrical chamber with a diameter of 300 mm, enabling extended deposition periods for samples up to 15 cm in diameter or multiple small specimens. Its fully automated programmable carbon coating procedure ensures effortless, accurate, and consistent performance.

Customers have the option to install carbon fiber threads or rods on distinct chamber heads to coat samples using various flash, pulsed, or ramped modes. The ramped mode is exclusively available for carbon rods and can be operated manually or automatically during the deposition process.

APPLICATIONS

The Large Desk Turbo-Pumped Carbon Coater – DCT-300 facilitates fine-grain structural deposition of carbon films, ideal for sample preparation in SEM, FE-SEM, EDX, and TEM applications. Additionally, it enables the creation of conductive layers.

For enhanced hydrophilicity, users have the option to perform TEM grid plasma treatment, though this feature is optional.

- **SEM & FE-SEM Sample Preparation** – Produces uniform, fine-grain carbon coatings for high-resolution imaging and structural characterization.
- **EDS/WDS Elemental Analysis** – Enhances microanalysis accuracy by delivering stable, conductive films with minimal contamination.
- **TEM & EBSD Research** – Supports advanced crystallographic and transmission electron microscopy with ultra-thin, consistent coatings.

- **Thin Film Preparation** – Suitable for depositing fine carbon layers for thin film and surface science applications.
- **Conductive Layer Formation** – Provides reliable conductive coatings for non-conductive specimens, improving imaging performance.
- **Optional Plasma Treatment** – Enables TEM grid plasma treatment to enhance hydrophilicity and optimize imaging conditions.

FEATURES

Hardware

- High vacuum level achieved with a built-in turbo pump featuring a pumping speed of 90 liters per second (manufactured by Leybold).
- Equipped with a two-stage rotary vane backing pump, which can be either a diaphragm or scroll pump.
- 500-watt switching DC power supply included for carbon fiber deposition.
- Optional 1.2-kilowatt high-current DC power supply available for carbon rod deposition.
- Quartz crystal thickness monitor with a precision of 1 nanometer and a resolution of 1 angstrom.
- Automatic venting valve for convenience.
- Sample rotation, height, and tilt are adjustable, catering to the requirements of small sample holder stages.
- Optional planetary sample holder for added versatility.
- Electronic shutter for enhanced control.
- Specimen stages are easy to change, with a rotation stage provided as standard.
- Comes with a two-year warranty and conforms to CE standards.

Automation

- Intuitive touch screen interface for seamless control of the coating process and swift data input.
- User-friendly software that can be updated via the network for ongoing enhancements.
- Optional semi-full automatic coating process available.
- Coating process is repeatable and programmable in automatic mode, ensuring consistent results.
- Offers pulsed or flash carbon fiber coating modes.
- Optional pulsed or ramped carbon rod coating modes.
- Automatically deposits carbon fiber/rod according to the specified thickness value.
- Records and plots graphs of coating parameters for analysis.
- Capable of storing coating recipes for easy retrieval and repeatable depositions.

Large Desk Turbo-Pumped Carbon Coater DCT-300 pulsed carbon fiber evaporation

PULSED CARBON FIBER EVAPORATION

- Performs pulsed carbon fiber evaporation with short, controlled pulses.
- Provides precise deposition for consistent coating results.
- Reduces debris compared with conventional carbon coating methods.

Large Desk Turbo-Pumped Carbon Coater DCT-300 with optional carbon rod head

CARBON ROD EVAPORATION (OPTIONAL)

- Optional carbon rod head available for specific applications.

- Requires external 0–100 A high current power supply.
- Replaces internal supply designed for carbon fiber evaporation.

Large Desk Turbo-Pumped Carbon Coater DCT-300 clean vacuum chamber

CLEAN VACUUM

- Pyrex cylindrical chamber with durable construction.
- Equipped with 90 L/s turbo molecular pump.
- Optional 6 m³/h two-stage rotary vane pump for extra capacity.
- Eliminates oil contamination seen in diffusion pump systems.

Large Desk Turbo-Pumped Carbon Coater DCT-300 touch screen interface

TOUCH SCREEN CONTROL

- 7-inch color touch screen with automatic software control.
- Displays vacuum levels and coating sequences as data or curves.
- Saves history of last 300 coatings for reference.
- Easy data transfer to PC via integrated USB port.

Large Desk Turbo-Pumped Carbon Coater “ DCT-300

Sample Holder Stages of DCT-300

The Large Desk Turbo-Pumped Carbon Coater – DCT-300 offers various sample stage configurations to cater to different user needs. These sample stages are rotatable, adjustable in height and angle, and are easy to swap out. For uniform coating of porous specimens, users may opt for the optional rotary planetary sample stage. For deposition on large samples, it is recommended to use the optional 6-inch rotatable sample holder stage. However, please note that this stage does not include angle adjustment.

Sample Holder Stages of DCT-300 - Standard Sample Holder

Standard Sample Holder

Sample Holder Stages of DCT-300 - Planetary Sample Holder

Planetary Sample Holder

Sample Holder Stages of DCT-300 - 6-inch Rotatable Sample Holder Stage

6-inch Rotatable Sample Holder Stage

TECHNICAL SPECIFICATIONS

- Full range vacuum gauge (Leybold)
- 300 mm OD× 200 mm H vacuum chamber

- Ultimate vacuum: Less than 8×10^{-6} Torr
- Dimensions: 580 x 500 x 630 mm (H x W x D)
- Utilities: 220/110 V, 50/60 HZ – 2 kW
- Automatically controlled pressure-independent coating
- Fine control of vacuum pressure with automatic leak valve
- Real-time plots of coating parameters
- Simple transfer of coating data plots via USB port to PC
- Shipping weight: 46 Kg

Options and Accessories

- Head and power supply for carbon rod
- Plasma rod and high voltage power supply for plasma treatment
- Quartz crystal sensor
- Planetary sample rotation
- Spare cylindrical vacuum glass chamber
- Carbon fiber
- Sealing gaskets



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