

# Spin coaters

## Spin coaters for laboratory use

These Spin coaters are ideal tools for the preparation of thin and ultrathin films especially for spectroscopic applications (optical, IR, X-ray, dielectrical etc.). The common design of all spin coater models is a housing made of solid anodized aluminum, a stainless steel worktop and a detachable PTFE protection cover.

- Rotational speed up to 13.500 rpm
- Passive or active vacuum hold-down of substrate
- Programmable
- Easy-to-use and maintenance-free design
- High-quality/good value-product
- 2-year warranty

## Spin coater SCI-225 mini



Spin Coater SCI-225mini

The Spin Coater SCI-225mini is designed for routine applications with a speed range of 5 to 225 rps (300 to 13,500 rpm) and efficient speed control to  $\pm 1$  rps, the last selected speed is stored in non-volatile memory. The device has an all-metal housing with stainless steel tank and PTFE cover, as

well as an OLED display (white font color) with a large reading angle. Due to the special design of the rotational tables a passive (no pump needed) vacuum hold-down of the substrate is achieved at medium to high rotational speeds. For heavier substrates or at slower rotational speeds an additional fixing of the substrate may be required. Delivery includes a standard rotational table with a diameter of 10 mm. Custom-designed tables with diameters up to 38 mm are available. The tables can easily be exchanged.

## Spin Coater SCR



Spin Coater SCR

The SCR offers the possibility of active vacuum fixation of samples. The devices have newly developed electronics and an OLED display with a large viewing angle. A short, fixed ramp is built in. The speed can be set between 5 and 100 rps (300 and 6000 rpm), the last set speed value is stored in non-volatile

memory and is available again even after the operating voltage is switched off. The chuck diameter is limited to a maximum of 50 mm. A standard rotary table with a diameter of 30 mm is included.

## Spin coater SCE-150

The spin coater model SCE-150 is based on  $\mu$ -controlled electronics incl. intuitive one-knob control. We offer rotational tables from 25 mm to 90 mm in diameter; its max. speed is 150 rps (9000 rpm). It features non-volatile storage of all plateau



Spin coater SCE-150

and speed settings (adjustable from 3 s to 600 s) so that work can continue as before even after voltage interruption. The quick-response, high-efficiency rotation speed control keeps the speed fixed at  $\pm 2$  rps and allows fast acceleration even when larger tables are used. All accessories can

be used with all models of the spin coater family. Delivery includes the spin coater, a 30-mm-diameter rotational table, a vacuum hose with quick coupler, a power supply and manual.

## Spin coater SCC-200



Spin coater SCC

The SCC-200 spin coater features a programmable ramp function with the option to store up to 10 routines in a non-volatile memory. An intuitive one-button-control and an easy-to-read display keep routine lab applications as simple as possible.

# Spin coaters

The electronic core of the new series is a  $\mu$  control unit based on Z80. Rotational speeds of up to 200 rps (12000 rpm) permit the manufacturing of thin and ultra thin films ( $\mu\text{m}$  to nm). A variety of tables ranging from 30 to 90 mm in diameter allow for a variety of different substrates. For very small substrates of approx. 5 mm in length we offer a 25 mm table with a plane surface. Where technically feasible, we will also provide custom-made tables for special substrates. The substrates are gently held down by vacuum suction.

## The new SCC series features:

- housing made from anodised aluminum with stainless steel worktop and PTFE cover
- modern, cost and energy efficient, user-friendly, intuitive design
- alphanumeric four-line display (20 characters/line)
- an extra large range of rotational speeds
- two rotational speed ramps (acceleration/deceleration)
- programmable ramp duration: 3 to 600 s
- two rotational speed target values
- programmable dwell time: 3 to 600 s
- 10 rotational speed sequences storable in non-volatile memory
- total process times: 12 s to 40 min
- display of the remaining process time
- highly efficient, quick-response speed regulation to  $\pm 1$  rps
- quick response time even with large tables
- wide range of accessories (tables, pumps, lines, power supplies)
- full compatibility with all SCR and SCE coaters
- EU conformity (CE, RoHS)
- a great price/performance ratio

Delivery includes a standard table model VT-30, power supply, vacuum line with quick couplers and a quick reference guide. All spin coaters are delivered in a foam packing that may be used as storage box for accessories.

## Vacuum pump MVP

The vacuum pump fits all spin coaters of the SCR, SCE, and SCC series. The vacuum is 675 mbar with a flow volume of 7 l/min. The noise level is 40 dB(A) max. The vacuum hose is connected by quick couplers.

Ordering information Spin coater without vacuum port	
Part number	Description
KL-SCI-225mini	Spin coater model SCI-225mini Max. rotational speed 13.500 rpm Min. rotational speed 300 rpm Rotational table for 10 mm substrates

Ordering information Spin coater with external vacuum port (Vacuum pump needs to be ordered separately)	
Part number	Description
KL-SCR	Spin coater model SCR Max. rotational speed 6.000 rpm Rotational table diameter 30 mm
KL-SCE-150	Spin coater model SCE-150 Max. rotational speed 9.000 rpm Rotational table diameter 30 mm
KL-SCC-200	Spin coater model SCC-200 Max. rotational speed 12.000 rpm Rotational table diameter 30 mm

Ordering information Rotational tables for spin coater SCI [Outer/inner diameter specified in mm]	
Part number	Description
KL-ST-20	Rotational table $\varnothing$ 20 mm for substrates up to $\varnothing$ 10 mm for all SCI models
KL-ST-20QCM	Rotational table $\varnothing$ 20 mm for QCM substrates up to $\varnothing$ 14,1 mm, stainless steel
KL-ST-20K	Rotational table $\varnothing$ 20 mm for substrates $\varnothing$ 10-17 mm, custom design
KL-ST-40	Rotational table $\varnothing$ 40 for substrates up to $\varnothing$ 20 mm, aluminum, for all SCI models
KL-ST-40K	Rotational table $\varnothing$ 40 for substrates $\varnothing$ 20-38 mm, custom design, aluminum

Ordering information Rotational tables for spin coaters series SCR, SCE and SCC	
Part number	Description
KL-VT-25-PLAN	Rotational table, 25 mm diameter, plane surface, aluminum
KL-VT-30	Rotational table, 30 mm diameter, aluminum
KL-VT-50	Rotational table, 50 mm diameter, aluminum
KL-VT-70	Rotational table, 70 mm diameter, aluminum
KL-VT-90	Rotational table, 90 mm diameter, aluminum

Ordering information Vacuum pump	
Part number	Description
KL-MVP-01	Vacuum pump
KL-VSO-40	Vacuum line 0.4 m for models SCR, SCE and SCC to connect customer vacuum pumps
KL-VSO-100	Vacuum line 1.0 m for models SCR, SCE and SCC to connect customer vacuum pumps

# Spin coaters

## PC controlled Spin Coater



The CaLCTec Fr10KPA spin coater series is a robust, fully automatic spin coating system ideal for the deposition of thin films with any kind of material (photoresist, polyimides, sol-gel, varnish etc...) of finely controlled and reproducible thickness, over any kind of substrate (copper, silicon, glass, plastic, etc...).

All Fr10KPA systems feature a rock-solid stainless steel case with a stainless steel bowl of 26 cm Ø allowing the accommodation of large and heavy substrates, a built-in vacuum pump for substrate holding, and a pneumatically operated cover with safety interlock system. Intuitive and easy-to-use software for remote control and programmable ramp function with an arbitrary number of steps is also available.

We provide heated rotational tables (chucks) which allow precise temperature control from RT to 200°C during spinning. Additionally, we offer a large selection of special, custom-designed rotational tables for flexible substrates (PET sheets, copper foils, etc.), uneven and non-planar substrates, furthermore tables with an adjustable suction area, and more.

All systems are delivered in a robust wooden case which can be re-used for system protection and transportation.

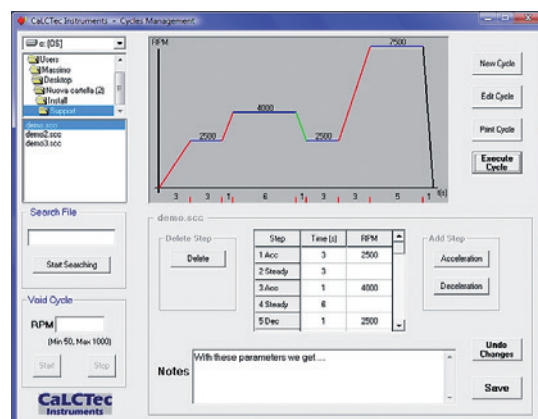
## FR10KPA main features

- Robust design with stainless steel case
- Built-in vacuum pump for substrate holding
- Manual operation (on-off)
- Fully automatic, PC-controlled option
- Interlock safety system
- Emergency stop button
- Spinning of heavy substrates allowed
- Easy and quick maintenance
- Rotational tables (chucks) of any size and type

## FR10KPA control software

The intuitive and easy-to-use software allows the remote control of the spin coater system and programmable operating cycles with an arbitrary number of steps. Recipes can be loaded, executed and modified at any time with just a mouse click.

- O.S. Windows 2000, XP, Vista, Windows 7, Windows 8
- Quick and easy installation
- Operating cycles with an arbitrary number of steps
- Straightforward cycle programming
- Precise definition of starting speed, acceleration/deceleration, target speed, rotation time at steady speed for every individual step
- Notes and comments of arbitrary length can be added to the recipe
- Search function for recipes based upon comment contents
- Easy management of recipes data base
- Recipe files in ASCII format



Software for remote control

# Spin coaters

## Temperature controlled °K-chuck option:

CaLCTec spin coaters from Fr10KPA series feature the unique °K-chuck option which allows the precise temperature control of the rotational table during both spinning and pausing. Film baking during the spinning process and "in situ" pre-curing of polymeric materials is now possible.

This exclusive feature expands the capabilities of standard spin-coating techniques by allowing the deposition of thermoplastic materials and oversaturated solutions.

The °K-chuck option includes:

- Digital PID temperature controller
- IR sensor for temperature readout
- Temperature range: RT to 200 °C
- Temperature resolution: 0,1 °C
- Dimensions rotational table (chuck): 6 cm diameter (~2.4")
- Materials: black anodized aluminium, ceramics



Temperature controlled chuck

## Additional special options:

- External vacuum pump
- Vacuum pump exhaust valve for glove box operation
- Chuck without washers with adjustable suction area (samples from 10 to 70 mm diameter)
- Chuck for uneven and not perfectly planar substrates
- Porous chucks for flexible substrates
- Special chucks available on request

Specification	
Large stainless steel bowl	up to 26 cm Ø
Rotating speed	100 – 10000 rpm
Acceleration	1 – 12000 revolution/s <sup>2</sup>
Voltage/frequency	AC 230 V/50 Hz
Dimensions	380 x 340 x 300 mm (LxWxH)
Weight	20 kg

Ordering information Spin Coaters Fr10KPA	
CT-Fr10	Spin coater system with manual operation (software for remote control <b>NOT</b> included; can be upgraded at a later stage)
CT-Fr10-PC	Spin coater system with software for remote control
CT-Fr10-HC	Spin coater system with software for remote control and °K-chuck option