

Dip coaters



KN4001
Single vessel

KN4004
Single vessel/
medium/large

KN4005
Single vessel/
extra large

KN4012
Multi vessel/
medium/large

Our dip coaters are robust computer controlled instruments for precise thin film deposition. We provide solutions for the dip coating of small to large samples in either single or multiple vessels which are suitable for both simple and complex vessel sequencing.

Applications

Dip coaters are ideal instruments for a number of applications ranging from the development of functional coatings to the study of smart surfaces. Dip coating is used in a number of industries and fields of research including electronics, paints and biomaterials. Dip coaters are designed to deposit layers of materials in a controlled and repeatable way. It is possible to deposit films of various thicknesses, from monolayers to multi-layered structures. The following surface coatings can, for example, be created:

- Sol-gel coatings
- Layer-by-layer assemblies
- Self-assembled monolayers

Product range

KSV NIMA dip coaters range from compact instruments for coating small samples in a single vessel to more complex systems enabling horizontal and vertical movement for multi-vessel operations and coating of large samples. Their range is divided into two types, either single or multiple vessel systems. Single vessel dip coaters are used to deposit from one solution while the multiple vessel dip coaters allow using many solutions which can include cleaning or rinsing. The "single vessel" and "multi-vessel" categories offer small, medium and large systems to cater for a large range of sample sizes. A single vessel dip coater is also available for extra large samples. You can choose from the dip coater systems for your required sample weight, sample size, number of samples, dipper movements and number of vessels required.

Single vessel dip coaters				
	KN4001 (KN4002) small	KN4003 medium	KN4004 large	KN4005 extra large
Substrat specification				
Weight (g)	0...150	0...500	0...500	0...2500
Height (mm)	15...140	25...300	25...500	25...1000
Width (mm)	5...150	5...400	5...400	5...600
Thickness (mm)	0.15...3	0.15...15	0.15...15	0.15...15
Number of samples	1, 2*, 3* (*as option)	1, 6*, 10* (*as option)	1, 6*, 10* (*as option)	1, 6*, 10* (*as option)
Other instrument specification				
Dipping speed (mm/min)	0.1...100 (0.2...200)	1...1000	1...1000	1...1500
Dimension (LxWxH mm)	275 x 154 x 420	490 x 410 x 1200	490 x 410 x 1800	690 x 606 x 2650

KN4001/4002 Single vessel dip coater, small

It is a compact dip coater enabling precise coatings of small samples (max. H140 x W150 x T3, 150 g). The computer controlled dipping mechanism can be equipped with 1 to 3 sample holders for simultaneous dipping of several samples. The adjustable dipping speed (0.1 to 100 mm/min) can be doubled as an option to reach up to 200 mm/min. This dip coater comes with one sample holder (two additional sample holders can be added as an option) and a 70 mm diameter glass vessel.

KN4003/4004 Single vessel dip coater, medium/large

These dip coaters are intended for coating large samples in one vessel. The only difference between the two systems is their height enabling coating of a 300 mm high sample with the medium version (max. H300 x W400 x T15, 500g) and up to 500 mm high with the large version (max. H500 x W400 x T15, 500g). A single sample clip is provided with the instrument. A multi-sample clip is available as an accessory to enable simultaneous coating of 6 or 10 samples. The space available between the 2 legs of the dip coater stand is 400 mm. The dip coater comes with the KSV NIMA interface unit.

KN4005 Single vessel dip coater, extra large

The XL version is built for precise coating of very large and/or heavy samples (max. H1000 x W400 x T15 mm, 2.5 kg). A single sample clip is provided with the instrument. A multisample clip is available as an accessory to enable simultaneous coating of 6 or 10 samples. The space available between the 2 legs of the dip coater stand is 600 mm. It comes with the KSV NIMA interface unit.

The **interface unit** connects the computer with the dip coaters (excepted KN4001/4002). It displays real time dipper position and speed and has a spill-proof membrane keyboard. It allows convenient control right next to the instrument. The system includes a temperature probe for liquid temperature measurement. The software and interface unit have built in capabilities for a pH probe and magnetic stirrer.



Dip coaters

Multi vessel dip coaters			
	KN4010 small	KN4011 medium	KN4012 large
Substrat specification			
Weight (g)	0...150	0...500	0...500
Height (mm)	10...70	25...300	25...500
Width (mm)	5...45	5...950	5...950
Thickness (mm)	0.15...3	0.15...15	0.15...15
Number of samples	1	1, 6*, 10* (*as an option)	1, 6*, 10* (*as an option)
Other instrument specification			
Dipping speed (mm/min)	0.1...108	1...1000	1...1000
Horizontal motion type	rotating dipper	linear (0...800 mm)	linear (0...800 mm)
Horizontal speed (mm/min)	fixed rotational speed	0.1...1500	0.1...1500
Dimension (L x W x H mm)	330 x 330 x 341	1210 x 510 x 1200	1210 x 510 x 1800

KN4010 Multi vessel small dip coater

The KN4010 is a unique instrument for coating small samples (max. H70 x W45 x T3, 150 g) when multi-vessel sequencing is required. The unique design has a central mounted dipping mechanism that rotates around eight stationary vessels (diameter 48 mm, height 80 mm, contain up to 100 ml) for multi programmable deposition/rinse cycles. Due to the unique design we are able to offer, as an option, tem-



perature control on the vessels. A sample holder is attached to the dipping arm with a locking screw for easy substrate clamping and removal. It has an adjustable starting height to maximize the available submersion depth. The software enables control of the upper and lower resting positions and resting periods, up and down stroke speeds, number of dips and dipping positions. The KSV NIMA interface unit and a magnetic stirrer that rotates with the dipping mechanism are included.

KN4011/KN4012 Multi vessel medium/large dip coater

It is designed for coating medium to large samples up to H500 x W950 x T15, 500g. Both systems offer programmable dipping speed and horizontal motion for precise and versatile sequencing. A single sample clip is provided with the instrument. A multi-sample clip is available as an accessory to enable simultaneous coating of 6 or 10 samples. The space available between the 2 legs of the dip coater stand is 950 mm. The dip coater comes with the KSV NIMA interface unit.



Ordering information Single vessel dip coaters	
Partnumber	Description
KSV-KN4001	Dip coater KN4001, dipping speed 0,1 to 100 mm/min, infinitely adjustable, incl. software and sample clip
KSV-KN4002	Dip coater KN4002, dipping speed 0,2 to 200 mm/min, infinitely adjustable, incl. software and sample clip
KSV-KN4003	Dip coater KN4003, extended system with digital display and control unit. Extendable to multi vessel system. Dipping speed 1 to 1.000 mm/min, infinitely adjustable, height up to 300 mm, max. sample weight 500 g, incl. software and sample clip
KSV-KN4004	Dip coater KN4004, same as KN4003, but: height up to 500 mm
KSV-KN4005	Dip coater KN4005, dipping speed 1 to 1500 mm/min., height up to 1000 mm, max. sample weight 2500 g

Ordering information Multi vessel dip coaters	
KSV-KN4010	Dip coater with rotating dipping mechanism for multi vessel sequencing, maximum sample height: 70 mm
KSV-KN4011	Dip coater with horizontal motion for precise and versatile sequencing maximum sample height: 300 mm
KSV-KN4012	same as KN4011, but maximum sample height: 500 mm

Ordering information Accessories	
KSV-T705	Thermostatic vessel Thermostatic jacket for temperature control of the liquid sample. A heat exchange vessel with water jacket construction. Fits glass sample vessel 70 mm in diameter
KSV-T104	sample vessel 70 mm
KSV-KN0054	Temperature measurement probe
KSV-KN0011	pH measuring probe
KSV-KN0012	Magnetic stirrer
KSV-CABI-DC	Cabinet for KN4001/4002 A dust and draft excluder to protect the instrument from airborne particles and airflow.
KSV-KN4020	Additional sample clip holder for KN4001/4002
KSV-KN4021	Multiple sample clip holder with 6 clips for KN4003/4004/4005/4011/4012
KSV-KN4022	Same as KN4021, but with 10 clips