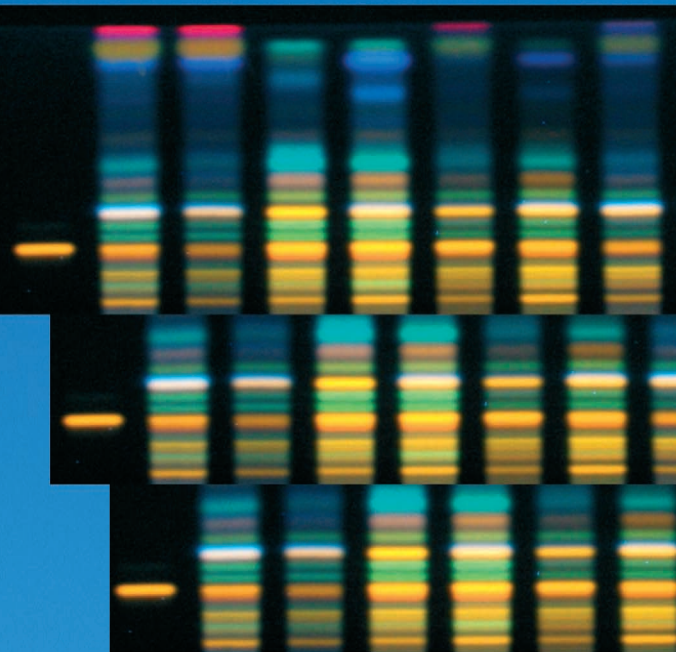


CAMMAG

World leader in Planar Chromatography

ADC 2

Automatic Developing Chamber

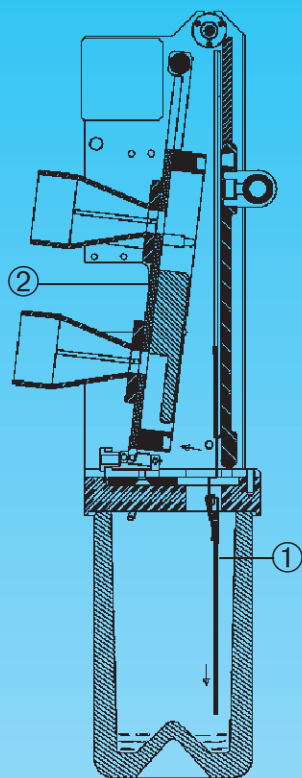


Chromatogram development
with standardized conditions

The Automatic Developing Chamber ADC2

The Automatic Developing Chamber offers reproducibility, safety and convenience for isocratic development of TLC/HPTLC plates and foils in the formats of 20×10 and 10×10 cm.

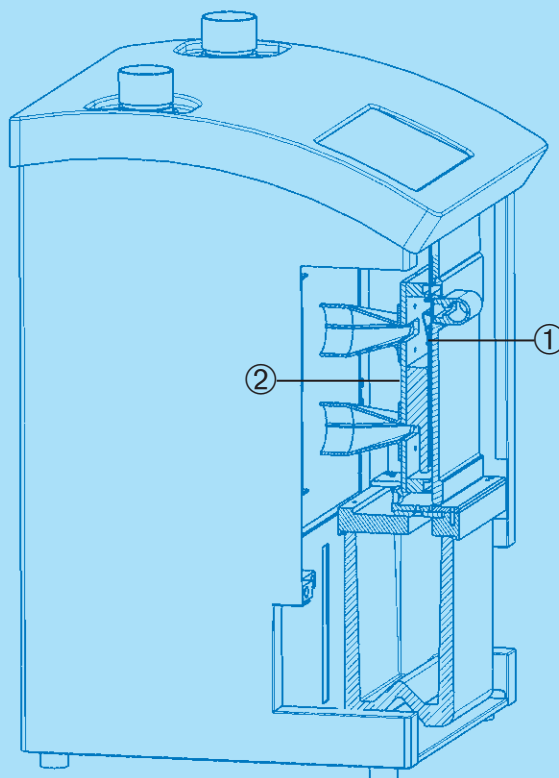
Chromatogram development is the most critical step of Thin-Layer Chromatography. In the Automatic Developing Chamber ADC2 this step is fully automatic and reproducible, independent of environmental effects. The activity and pre-conditioning of the layer, chamber saturation, developing distance and final drying can be pre-set and automatically monitored by the ADC 2. Two modes of operation are possible: stand-alone with input of parameters via keypad, or PC control from winCATS with process monitoring, documentation of operating parameters and reporting.



Key features of the Automatic Developing Chamber ADC2 at a glance:

- Fully automatic development of 20×10 cm and 10×10 cm TLC/HPTLC plates
- A conventional CAMAG 20×10 cm Twin Trough Chamber is used for development. With such chambers existing analytical procedures can be used without change, while at the same time, environmental effects and operator errors are eliminated.
- Operation in stand-alone mode or under winCATS
- The user is free of all monitoring responsibilities, the operation being fully traceable
- The option "Humidity Control" allows reproducible chromatography at defined activity of the layer.

The ADC 2 with winCATS is compliant with the requirements of GMP/GLP and can be IQ/OQ qualified. If the device is to be used in a 21 CFR Part 11 environment, each winCATS workstation requires option 21 CFR Part 11 "compliance ready".



◀▲ Cross section of ADC2 showing plate lift (1) and drying mechanics (2).

ADC2 – Reproducibility, Safety and Convenience

Thin-Layer Chromatography is an open system and therefore easily influenced by environmental effects and operator skills. This is particularly true if the activity of the layer, chamber saturation, or pre-conditioning of the layer is important for the specific separation.

Reproducible results can only be achieved, if all such influencing factors are kept constant. In routine analysis these parameters should be standardized.

The Automatic Developing Chamber is universally applicable and gives results of unsurpassed reproducibility. It is designed to automate all manual operations necessary during chromatogram development. It is one of the strengths of the ADC 2 that it utilizes the CAMAG 20×10 cm Twin Trough Chamber, which permits analytical procedures based on such chambers to be employed without any changes.

The complete TLC development process in the ADC 2 is automated:

- 1 Prior to chromatography the activity of the layer can be adjusted to a selected level with the option "Humidity Control" (see page 4).
- 2 Chamber saturation is established at the same time (time controlled).
- 3 The plate can then be lowered into the chamber without making contact with the developing solvent, effecting a time controlled pre-conditioning of the layer with the vapor phase of the developing solvent.
- 4 Finally chromatography is started by lowering the plate into the solvent.
- 5 During chromatography the position of the solvent front is monitored.
- 6 As soon as the solvent front has reached a pre-defined position (developing distance), the plate is removed from the solvent and dried under flow-optimized conditions.
- 7 When operated with winCATS all chromatographic parameters are recorded in compliance with GMP/GLP as part of the analysis and can be printed at any time.

The opening of the chamber during manual development as well as all other human and environmental influence factors have been eliminated in the ADC 2.





The Option “Humidity Control”

Chromatographic separation on silica gel can be affected by stationary phase activity, which in turn is dependent on the relative humidity in the laboratory. Relative humidity varies tremendously around the world by season and by region, causing differences in the results of chromatogram development.

With the option “Humidity Control” the activity of the stationary phase is adjusted with air of a defined relative humidity. This facilitates the possibility to standardize all developments either to a fixed relative humidity or to select a specific humidity for a specific task.

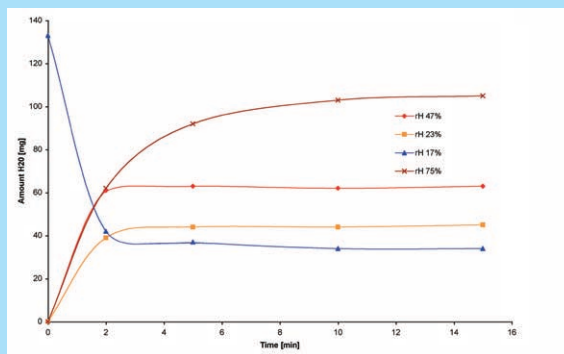
With the ADC 2 and the option “Humidity Control” favorable chromatogram comparisons can be ensured at all times and all places. As a result, chromatography performed in humid summers or coastal climates can be compared to those performed in dry winters or in the highlands

Adjustment of activity is performed automatically in the ADC 2:

- 1 The specifically designed module “Humidity Control” is connected to the ADC 2 to form a closed circuit in which a stream of air with defined humidity is generated by means of a saturated salt solution.
- 2 The desired activity of the stationary phase is established within 2 to 5 minutes and the on-line detection of humidity and temperature allows permanent process control.

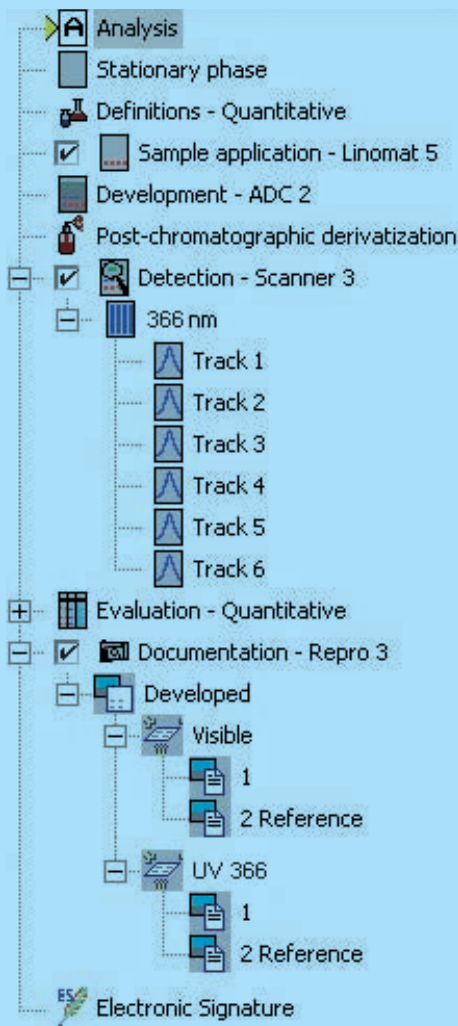
By selecting a suitable salt solution almost any relative humidity can be established. For an average relative humidity of about 47 % Potassium thiocyanate (KSCN) has proven effective. For very low relative humidities a molecular sieve instead of the salt solution can be used.

The option “Humidity Control” can easily be installed by the customer at any time. It will be automatically recognized by the instrument as well as by the optional software winCATS.



▲ The desired activity is set in only a few minutes

ADC 2 and winCATS



winCATS is based on a novel integrated software concept, which combines according to your needs the individual steps of instrumental Thin-Layer Chromatography as modules to a complete solution. Thus, select ADC 2 for the “Development” step and all parameters for the control of the development process are automatically included.

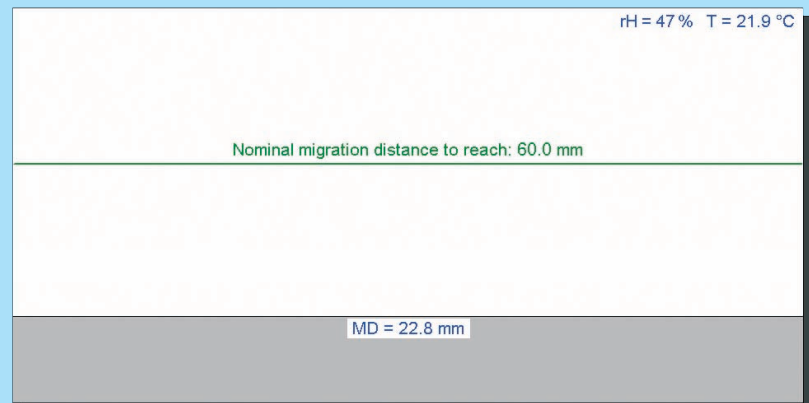
To ensure high reproducibility of the development the following parameters are employed:

- Control of time for chamber saturation, pre-conditioning and drying
- Control of solvent introduction for chamber saturation, pre-conditioning, and chromatography
- Recording of detected developing distance and -time
- Recording of temperature and humidity

What does this mean for routine use?

The TLC/HPTLC-plate is put into the ADC2 and the development step is started in winCATS. The process then continues automatically and the operator is free of the responsibility of monitoring the process, i.e. watching and waiting.

The ADC 2 Option “Humidity Control” is automatically detected by winCATS. The control of the humidity control parameters in winCATS can be selected “Automatic” or “Manual” (timer controlled).



▲ The window “ADC2” displays the current status of the program

Ordering information

022.8350 **CAMAG ADC 2 Automatic Developing Chamber** for fully automatic development of TLC/HPTLC plates of 20 ×10 and 10 ×10 cm. Operation possible in stand-alone mode or under winCATS (option). Including Twin Trough Chamber for 20 ×10 cm plates, EquiLink for winCATS, but without winCATS basic software.

022.8360 **Option "Humidity Control"** for CAMAG ADC 2 provides for control of layer activity by controlling the relative humidity in the developing chamber. This is done by means of salt solutions (salt solution not included).
This optional module can be easily installed and connected by the user.

027.6300 **Software winCATS** "Planar Chromatography Manager" license including one year Internet update service

Spare parts, accessories

- 022.5251 Additional twin Trough Chamber 20 ×10 cm
- 022.8370 Filter paper for chamber saturation, pack of 100
- 027.6380 winCATS Option 21 CFR Part 11 "compliance ready"

Technical Data

Dimension W × D × H: 330 × 330 × 520 mm
Weight: 18.5 kg
Electrical connections: 100–240 V AC 50/60 Hz, 20 W

Training, Service, Support:


Training courses also in combination with specific courses are offered at the CAMAG locations in Switzerland, Germany, USA, India and China. More information at www.camag.com

Try out winCATS free and without obligation: Order the demo version on CD-ROM

For efficient work with winCATS we recommend (February 2005):

Personal Computer with CD-ROM and 3.5" diskette drive, printer and Ethernet connection, operating system Windows XP/SP1, at least 512 Mbytes RAM, graphic adapter with at least 16 Mbytes RAM, True Color 32 bit, and a display with 1024×768 pixel.

Sole Distributor in China and Hong Kong : NIKYANG Enterprise Limited

 **Hong Kong** • 852-2569 2154
Shanghai • 86-21 6351 1828

Guangzhou • 86-20 8329 2451
Beijing • 86-10 6527 8522

 info@nikyang.com

 www.nikyang.com

