

TLC

Thin-Layer Chromatography

3000 Series



EPC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

Plate Preparation

TLC Plate Cutter

The scoring and cutting of glass TLC plates is a routine in many chromatography laboratories either to economise on plate usage or to cut the plate following separation for further derivatization.

The TLC plate cutter consists of a high quality carbide scribe mounted into a movable plastic head. It is designed to cut glass-backed TLC plates up to a size of 200 x 200 mm.



Drying Rack

This is a handy space-economizing light alloy rack for 10 TLC plates with the formats 200 x 200, 200 x 100 and 200 x 50 mm. After prewashing, the TLC plates are pushed into the horizontally standing drying rack. The TLC plates are dried in vertical orientation so that the moisture can easily escape upwards.

The drying rack fits into standard desiccators to protect the plates against environmental influences.



Simultan Separating Chamber

This chamber is commonly used to wash TLC plates before use and then to store them in protected manner. This procedure is used in particular for quantitative trace analysis.

The vertical grooves in the transverse walls will hold up to five 200 x 200 mm TLC plates. Specific features of this separating chamber are the plain ground flange edge and the flat chamber floor. The glass lid can be used as cover during the prewash of TLC plates.



Accessories

Simultan separating chamber with knob lid

Simultan separating chamber with glass lid

Desiccator Opener

Desiccator lids that have become stuck can be pulled off with this desiccator opener safely and without any need to exert force.

This opener is suitable for all sizes of desiccators.



Sample Application

Capillary Dispensing Pipettes and Micro Capillaries

For manual sample application

Application Pipettes and Capillaries

- a** = Short Capillaries
- b** = Micro Capillaries 0.5 µl with holder
- c** = Capillary Dispensing Pipettes



Capillary Dispensing Pipettes

These pipettes fill automatically when they are dipped into the sample liquid. By virtue of the capillary widening, the liquid column automatically adjusts itself to the nominal volume. The short filling and run-out times permit very quick working.

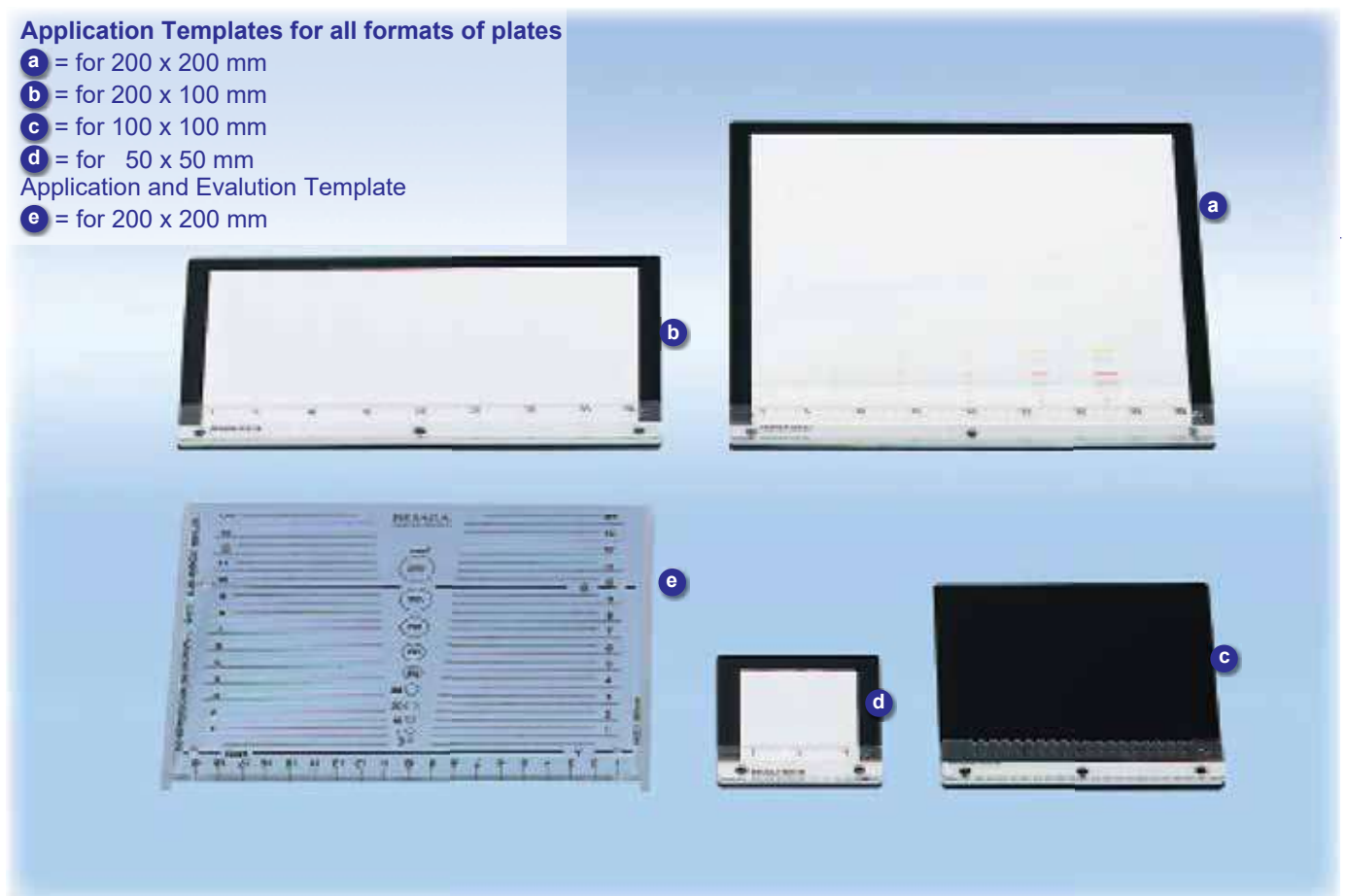
Micro Capillaries

These capillaries are intended for single use only. They automatically fill themselves right from one end to the other. Their accuracy is better than 1%. A capillary holder is provided with each pack of these capillaries. This holder consists of the guide for the capillary and a small bulb with an opening which must be mounted on the capillary. Pressing on this bulb is an effective means for assisting filling and emptying of the capillary.

Accessories
Capillary dispensing pipette 1 μ l
Capillary dispensing pipette 2 μ l
Capillary dispensing pipette 5 μ l
Capillary dispensing pipette 10 μ l
Capillary dispensing pipette 20 μ l
Capillary dispensing pipette Set of 1, 2, 5, 10 and 20 μ l
Micro capillaries 0,5 μ l
Micro capillaries 1 μ l
Micro capillaries 2 μ l
Micro capillaries 5 μ l
Micro capillaries 10 μ l

Application Templates for all formats of plates

- a** = for 200 x 200 mm
- b** = for 200 x 100 mm
- c** = for 100 x 100 mm
- d** = for 50 x 50 mm
- Application and Evaluation Template
- e** = for 200 x 200 mm



Application Templates (a - d)

These templates are available for TLC plates having the formats 50 x 50, 100 x 100, 200 x 100 and 200 x 200 mm.

The numbered triangular cut-outs at 5 mm intervals provide exact guidance for the pipette. This gives 9, 19 or 39 spotting positions, depending on the size of the template. The non-slip underside prevents unintentional displacement on the table.

Application and Evaluation Template (e)

This template can be used with TLC plates up to 200 x 200 mm. It has 19 markings with 10 mm spacing. Holes are provided for marking the starting line and the standard separation distance of 100 mm. The good hand rest permits spotting, writing and line ruling with minimum effort required. The R_f-values can be read-off directly on the template.

The marked circular areas ranging from 3 to 200 mm² permit immediate comparison of spot sizes without further aids.

Accessories
Application template 50 x 50
Application template 100 x 100
Application template 200 x 100
Application template 200 x 200
Application and evaluation template 200 x 200

HPTLC-Applicator AS 30

The HPTLC-Applicator AS 30 is a decisive contribution towards modern thin-layer chromatography and works according to the spray-on-technique. A stream of gas carries the sample from the cannula tip onto the HPTLC plate - therefore, compressed air is needed.

This proven principle prevents damage to the layer and allows the application tower to be moved during sample ejection. The samples can be applied on TLC plates, HPTLC plates or foils up to the size of 200 x 200 mm as dot or line. During the filling process, the dosing syringe is positioned over the tray which collects rinsing and flushing solvent and excess sample

The sample is injected into the body of the syringe through a lateral opening. After the syringe has been filled, a stepping motor moves the piston downwards to close the fill port. A second stepping motor moves the tower sideways across the TLC plate. The microprocessor controls the two stepping motors and the gas valve for accurate application, as dot or as line. All parameters for the application of up to 30 samples are entered via the keyboard. The user is guided through the clearly structured menu by the 2-line LCD display. After entering all parameters, the data will be checked for plausibility such as compliance of limit, clear assignment of lane or clear assignment of name.



One method contains the plate size, number, length and distance of the path, the volume applied as well as the rate of application. The sample number and volume factor can be indicated for each path.

The battery-buffered memory holds ten different methods which can be loaded, edited and printed out at any time.

Accessories
HPTLC-Applicator AS 30, 230 V, incl. 10 µl dosing syringe, 25 µl filling syringe, fillport, 2.5 m pressure tubing Ø 4 mm, filter cardboard 40 x 40, 25 pcs.
HPTLC-Applicator AS 30, 110 V, incl. 10 µl dosing syringe, 25 µl filling syringe, fillport, 2.5 m pressure tubing Ø 4 mm, filter cardboard 40 x 40, 25 pcs.
Dosing syringe 10 µl for AS 30
Filling syringe 25 µl for AS 30
Dosing syringe 100 µl for AS 30
Filling syringe 250 µl for AS 30
Filter cardboard 40 x 40, 25 pieces
Autosampler for AS 30, 230 V incl. PTFE hose connection, connecting cable to HPTLC-Applicator AS 30 and 144 sample containers 1.5 ml
Autosampler for AS 30, 110 V, incl. PTFE hose connection, connecting cable to HPTLC-Applicator AS 30 and 144 sample containers 1.5 ml
Software for HPTLC-Applicator AS 30, incl. connecting cable
IQ / OQ for HPTLC-Applicator AS 30
Compressor 230 V, max. 8 bar, 17 l/min
Compressor 110 V, max. 8 bar, 17 l/min

Separation

Standard Separating Chamber

This is the separating chamber which has accompanied thin-layer chromatography worldwide since its introduction, it has been proven a hundred thousand times. The standard separating chamber is used for TLC plates up to format 200 x 200 mm.

Specific features of this separating chamber are the plain ground flange edge and the flat chamber floor. The heavy knob lid with plain ground surface ensure a gastight seal of the separating space. The standard separating chamber is also available with glass lid.



Accessories
Standard separating chamber with knob lid
Standard separating chamber with glass lid
Standard separating chamber without lid

Simultan Separating Chamber

The simultan separating chamber has all the advantages as well as dimensions of the standard separating chamber. The lids are interchangeable. The additional vertical grooves in the transverse walls will hold five 200 x 200 mm TLC plates.

This chamber is commonly used to wash TLC plates before use and then to store them in protected manner. This procedure is used in particular for quantitative trace analysis.



Accessories
Simultan separating chamber with knob lid
Simultan separating chamber with glass lid
Simultan separating chamber without lid
Filter paper for gas space saturation, 460 x 190 mm, 25 sheets
Knob lid
Glass lid

Round Separating Chamber

These inexpensive cylindrical separating chambers with overhanging lid are available in two sizes. They are used for the TLC plate formats of 200 x 100 and 200 x 50 mm.

These separating chambers are very easy to use. Complete gas space saturation is easily and quickly achieved by standing a rolled-up piece of filter paper in the chamber. Only a very small quantity of flow medium is required, by virtue of the plain floor.



Another advantage is their limited weight compared to the Standard/Simultan chambers.

Accessories
Round separating chamber with lid, 200 x 100
Round separating chamber with lid, 200 x 50

Nano Separating Chamber

Nano and HPTLC layers are being used to an increasing extent for quantitative TLC.

The nano separating chamber has been developed for the preferred plate format of 100 x 100 mm. This separating chamber has all the advantages of the AnalCHROM[®] standard separating chamber.



Accessories
Nano separating chamber 100 x 100 mm with knob lid
Nano separating chamber 100 x 100 mm with stainless steel lid
Nano knob lid for chambers 100 x 100 mm
Nano stainless steel lid for chambers 100 x 100 mm
Filter paper for gas space saturation, 230 x 105 mm, 25 sheets
Filter paper for gas space saturation, 180 x 75 mm, 25 sheets

Twin-Trough Chamber

The twin-trough chambers have all advantages for the chromatographic development of TLC / HPTLC plates.

The low solvent consumption makes the chromatography extremely economical and reduces the solvent waste. Reproducible chromatography by means of calculated pre-equilibration is reached.



Accessories

Twin-trough chamber 200 x 100 mm with stainless steel lid

Twin-trough chamber 100 x 100 mm with stainless steel lid

Conditioning top

With the help of the conditioning top, TLC/HPTLC plates can be adapted to the chamber atmosphere - time-controlled! It can be put on any separating chamber of AnalCHROM[®].

After reaching the pre-chosen conditioning time (max. 1 hour), the plate is automatically inserted into the solvent. As soon as the required height of the front is reached, the unit must be taken out of the chamber manually.



Accessories

Conditioning top for chambers 100 x 100 mm

Conditioning top for chambers 100 x 200 mm

Conditioning top for chambers 200 x 200 mm

Horizontal Separating Chambers (H-separating) and TLC-Quicktest Set

The H-separating chamber exploits the advantages of the high performance TLC layer in optimum manner: small grain size of 5 μm , improved packing and greater number of theoretical plates. This separating chamber is price-worthy and intended for the time and cost saving TLC-plate format of 50 x 50 mm and the common format of 100 x 100 mm. Optimum separation is obtained on shortest possible runs.

The H-separating chamber permits good control of developing conditions, optionally with flow medium vapour saturated atmosphere or without pre-expose vapour.

The H-separating chamber is ideal for all kinds of work, particularly where little time is available yet clear results must be obtained in the laboratory, in the dispensing chemist shop, in tuition and student practicals. Experiments can be repeated still within the time allowed for the practical session and each person obtains an evaluable result. Ambient atmospheric pollution with solvent vapours is minimized, even under congested working conditions.



The chambers are made of solvent-resistant PTFE, precision milled to the required dimensions. It is closed with a 4 mm thick glass lid. An easily cleanable glass frit rod brings the flow medium to the layer. Frit rod and glass lid are included in scope of supply.

Literature regarding H-separating chamber

The H-separating chamber was developed by Prof. Dr. Kraus of Hamburg University, who has also written a guide for practicals containing many working examples and suggestions. This book aims to introduce a time saving separating method which can be mastered very quickly even by beginners.

The separating examples – updated from edition to edition – have been chosen in order to make this subject readily accessible even to inexperienced persons who are thereafter able to separate complicated mixtures of substances such as natural products, synthetic drugs, conservation agents and herbicide residues.

In future Analytical Technologies Limited deals with the techniques with which chemical reactions are performed with the substances on the layer or with which the course of the reaction (methylation, acetylation, etc.) can be monitored with the aid of chromatography.

A series of coloured illustration documents the good reproducibility of the separation results.

TLC-Quicktest Set

The TLC-quicktest set has been designed not only for thin-layer chromatographic work in schools, but also for practicals, drug store laboratories, etc. The advantages of the H-separating chamber for time and cost saving work have been exploited for this set.

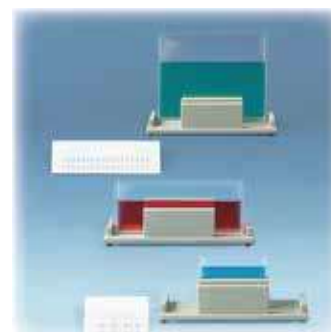
Accessories
TLC-Quicktest Set Consisting of 1 H-separating chamber 50 x 50, 1 application template 50 x 50, 100 micro capillaries 0.5 µm with holder, 10 ml each of lipophylic and hydrophylic test solution, 100 HPTLC ready-to-use plates K 60 F 254, 50 x 50 mm and the Concise Practical Book of TLC
H-separating chamber 50 x 50
H-separating chamber 100 x 100
Concise Practical Book of Thin-layer Chromatography
Frit rod, 50 mm, 5 pieces
Glass lid for H-separating chamber 50 x 50
Glass lid for H-separating chamber 100 x 100
Application template 50 x 50
Application template 100 x 100

Derivatisation

Dipping Chamber

The dipping chamber is an alternative to spraying for avoiding environmental pollution. These chambers fulfil the established requirement: rapid and uniform implementation of a precise detection reaction. Special advantages of the dipping method are the improved uniformity of reagent distribution and the quick, reliable operation. The reagent is brought onto the plate - not into the air! All familiar spray reagents can also be used for dipping.

The chambers are made of high-inert glass and available in three formats: 200 x 200; 200 x 100 and 100 x 100 mm. They have a clear width of only 5 mm. This allows manual immersion without difficulties and requires only small volumes of reagent: 100 ml for 200 x 200, 50 ml for 200 x 100 and 25 ml for 100 x 100 mm plate format.



A rack made of polypropylene enables safe holding during dipping as well as easy storage.

Accessories
Dipping chamber 100 x 100
Dipping chamber 100 x 200
Dipping chamber 200 x 200
PP-Rack for 2 dipping chambers

Sprayer SG e1

Spraying without CFC – an alternative for the environmental conscious laboratory

The Sprayer SG e1 works with a built in, quietly operating, high performance pump. Independent of mains ultrafine spray mist is generated. Liquids with viscosities up to those of light oils are atomized simply by pressing a button. The droplet diameter is 5 - 10 µm.



The closable container for the spray reagents is made of borosilicate glass and can hold 50 ml. It is screwed into the spray head which is made of high-quality PTFE and can be replaced within seconds. The handy and modern form of the Sprayer SG e1 was designed under ergonomical aspects.

Accessories
Sprayer SG e1B, battery operated
Sprayer SG e1, 230 V, incl. accumulator and charging unit
Sprayer SG e1, 110 V, incl. accumulator and charging unit
Reagent reservoir, 50 ml, 10 pieces

Atomizers

Test tube atomizer - glass spraying device for spraying very small reagent quantities. The atomizer insert is fitted in a 12 ml test tube with standard taper and secured with springs.

Special atomizer - glass spraying device with rubber ball for producing reagent mists. When using this atomizer, the spray reagent comes into contact only with glass. The atomizer insert is fitted in a conical flask with ground joint and secured with clips. The capacity of the flask is 100 ml. If requested, the provided rubber ball can be replaced by other compressed air sources.



Accessories
Test tube atomizer, 12 ml
Special atomizer with rubber ball, 100 ml

Spray Box with Ventilator

The spray box functions as protective device when spraying TLC plates with aggressive solutions.

A built-in low noise ventilator leads the spray mist via the pipe connector on the rear into a fume cupboard. The pipe adapter of the ventilator leads upwards. It can be connected to standard installation tube NW 110. This converts the spray box into a small exhaust cupboard on the bench. The air feed is 400 m³/h.



Any reagent run-off is collected into a separate trough. The spray box is made of acidresistant PVC and can hold plates up to 200 x 200 mm.

Technical Data	
Air feed	400 m ³ /h air
Dimensions (W x H x D)	620 x 580 x 610 mm
Pipe adapter	NW 110
Weight	7 kg
Spray box with ventilator, 230 V	
Spray box with ventilator, 110 V	
Tube for spray box	

Thermoplate S

The Thermoplate S is an electronically controlled hotplate for detection reactions in thinlayer chromatography and for precise heating and drying operations in the laboratory.

The set nominal temperature of the Thermoplate S is held constantly within 2 K. The operating range is between 25 and 199 °C. However, the lowest possible controlled temperature is 10 K above ambient temperature. The unit operates with a platinum resistance thermometer. Temperature read-out is on a large 2.5 digit numerical display.



The nominal temperature which has been set with the control knob is displayed after pressing the key. When the nominal temperature has been reached, the controller switches the heater on and off as required to maintain the temperature. A symbol in the display indicates when the heater is working. The heating surface is made of high conductivity aluminium which, together with the ultralarge area of the heating element, ensures a uniform temperature distribution.

Technical Data	
Temperature range	25 - 199 °C
Heating area	240 x 240 mm
Heating rate (at 50 °C)	10 K/min
Fluctuation range of controlled temperature	2 K
Power supply	100 - 240 V, 50 – 60 Hz, 500 W
Dimensions (W x H x D)	340 x 245 x 110 mm
Weight	4.6 kg
Thermoplate S, 230 V	
Thermoplate S, 110 V	

ChromaJet DS 20

The ChromaJet DS 20 presents a completely new derivatization concept. Reagents are sprayed on thin-layer plates or foils with the highest precision under microprocessor or computer control. The distinction from manual spraying lies in the great reduction in the quantity of reagent required, the almost complete absence of aerosol formation and the evenness of the spray pattern.



It is possible to create and store up to 4 spray methods specifically adapted to individual chromatography schemes and call them up as required. The integrated software has been specifically developed for Windows XP/VISTA/7.

The individual working steps of the spraying procedure, including date and running number, are stored with the spray method.

That permits operation in conformity with GxP for the first time in the field of documentation, as a result of the exact reproducibility and documentation.

The spray methods define all important parameters, such as spray rate, volume to be sprayed and reagent selected. The free selection of X-Y coordinate direction means that it is possible to spray evenly, either individual tracks or areas of any size up to 200 x 200 mm.

The integrated reagent changer selects from 4 possible reservoirs of the desired spray medium depending on the spray program. An integrated rinsing process stops any carry-over. The transparent protective cover permits close inspection during the spray process and prevents the escape of aerosols. Excess spray mists are evacuated continuously and lead, for instance, into a fume cupboard, via an optional exhaust hose. The spray protocol includes all individual parameters of the spray program and is issued completely with date, time, user name, a plate designation assigned to the chromatogram and any comments that might have been entered.

Accessories
ChromaJet DS 20, reagent spraying device, 230 V
ChromaJet DS 20, reagent spraying device, 110 V
Exhaust hose, viton with connector, 250 cm
Screw tubes with closures, PP, 40 ml, 1 pack of 50 pieces
Filter for ChromaJet DS 20, 1 pack of 20 pieces
IQ / OQ for ChromaJet DS 20

UV Detection

UV Viewing Systems

The UV detection methods belong to the most sensitive methods for the detection in Thin-layer chromatography. At long-wavelength UV light 366 nm substances fluoresce brightly on a dark background. This method becomes more sensitive when the light intensity increases. In order to boost the contrast, it is important that the visible light is filtered out with a special filter. At 254 nm, when using TLC plates containing a fluorescent indicator, the substances reveal themselves as dark spots on a bright fluorescent background. Light intensity and the filtering out visible light are less critical for this form of detection.



CabUVIS

The CabUVIS UV-lamp is the standard device for the observation and documentation of Thin-layer chromatograms in UV light 254 nm and 366 nm as well as in white light, even when the room is not darkened. Two white light tubes, two 8 Watt low pressure Hg tubes for 254 nm and four 8 Watt low pressure Hg tubes for 366 nm, are symmetrically arranged in the CabUVIS for incident illumination purposes and guarantee the uniform illumination which is necessary for documentation. The visible -

light emitted by the low pressure tubes is interrupted by special UV filters. The measurements and electrical specifications of the tubes are identical and interchangeable with each other. The observation plate of polyacrylate glass provides adequate protection from reflecting short-wavelength UV light. However, the protective goggles included with each unit should be worn for your own safety. For transmission light illumination, the CabUVIS has a special white light 8 Watt tube that is built-in the base. It is covered by a matted polyacrylate glass plate and allows the uniform illumination of objects up to 200 x 200 mm in size.

Documentation tops

It is possible to combine the CabUVIS analysis lamp with digital and CCD cameras. The interface is a documentation top. This is composed of a cover plate with camera mounting and can be easily interchanged with the polyacrylate glass plate. The documentation top excludes stray light from the system completely. The special filter for UV work, supplied in scope of supply, can be mounted in the integrated filter magazine or is implemented into the camera, depending on the system.

Technical Data			
Illumination from above		Illumination from below	
White light	2 x 1 white light tube	White light	1 x 1 white light tube
366 nm	2 x 2 Hg low pressure tube	Light scattering	200 x 200 mm
254 nm	2 x 1 Hg low pressure tube	window	
Illumination strength (Distance 10 cm)		Dimensions (W x D x H)	395 x 390 x 290 mm
254 nm	2.0 mW/cm	Weight	11.3 kg
366 nm	4.8 mW/cm	Power Supply	110 - 230 V, 50 - 60 Hz

Accessories
CabUvis analysis lamp, 230 V incl. safety glasses
CabUvis analysis lamp, 110 V incl. safety glasses
Documentation top VD 80
Documentation top DD 70
White light tube, 8W
White light tube, 8W, transmission
Hg low pressure tube 366 nm, 8 W
Hg low pressure tube 254 nm, 8 W
UV filter 254 nm for CabUVIS

HP-UVIS

Cabinet for UV analysis without a darkroom

The HP-UVIS combines two UV-tubes for 254 and 366 nm in one unit. Two inclined plate tables with non-slip surface are positioned one above the other. Incident stray light is minimized by the cabinet which is closed on three sides, so that observation is possible without requiring a darkroom.



Through the use of a high pressure mercury vapour discharge lamp, the HP-UVIS provides a very high radiation intensity at 366 nm for fluorescence evaluation of thin-layer chromatograms. In this respect, it is superior to all analyzing lamps with cold light tubes. Fluorescent substances can still be detected on the chromatogram in nanogram quantities.

A selected SCHOTT filter and an 8 Watt low pressure mercury discharge tube give optimum contrast at 254 nm.

For security reasons, the HP-UVIS is now equipped with a UV protection shield.

Accessories
HP-UVIS UV-Cabinet, 230 V, incl. UV safety glasses and UV protection shield
HP-UVIS UV-Cabinet, 110 V, incl. UV safety glasses and UV protection shield
Hg high pressure tube 366 nm, 125 W
Hg low pressure tube 254 nm, 8 W

UV-Box

The UV-Box combines two UV-tubes for 254 and 366 nm in one unit and allows inspecting thin-layer chromatograms in an undarkened room.

Visible light compounds being held back by a selected filter of SCHOTT

The viewing window is made of polyacrylate glass and provides adequate protection from reflected short-wavelength UV-light. For safety reasons, there is an automatic UV cut-off when opening the door.



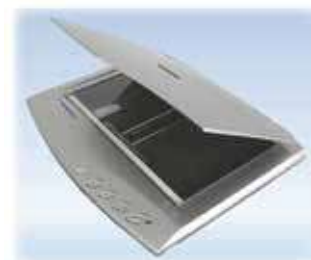
If requested, safety glasses can be worn additionally, but it is not definitely needed anymore due to the newly integrated UV cut-off functionality.

Accessories
UV-Box, 230 V, incl. UV safety glasses
UV-Box, 110 V, incl. UV safety glasses
Hg low pressure tube 366 nm, 8 W
Hg low pressure tube 254 nm, 8 W
UV filter 254 nm for UV-Box

Documentation by Scanner

TLC/HPTLC Scanner ViewPix[®] 100/300

The scanners of the series AnalCHROM[®] 100/300 are inexpensive documentation systems for colorimetrically-stained HPTLC plates. The systems are characterized by a slim and compact design. Therefore, they only need little space and can easily be used. The power supply is directly carried out via the USB interface without an additional mains adapter.



The HPTLC plate with the stained side is put in a frame on the glass surface of the scanner and will be scanned using the method-based control software. This direct control without the need of a TWAIN-interface guarantees a very high reproducibility in connection with a very open serviceability.

The ViewPix[®] scanners are optimally suitable for use in TLC laboratories due to the sealing of the glass plate in the scanner. The TLC/HPTLC plates can be scanned and saved in a very high colour fastness. Furthermore, all samples also can be taken as a greyscale image. In this mode, the ViewPix[®] scanners can be calibrated by means of a greyscale wedge.

The creation and administration of different acquisition methods ensure a high flexibility for the users and save reliably specific applicative settings. Already during the acquisition, the quality can be assessed, e.g. by checking the over/underexposure and by controlling the detection sensitivity.

The systems ViewPix[®] 100 and ViewPix[®] 300 each consist of

- Especially sealed A5 scanner with 4 sample frames (200 x 100 mm, 100 x 100 mm, 100 x 50 mm and 50 x 50 mm)
- Control software and
- Effective greyscale wedge for the calibration of the system.

The main difference of both systems is the software equipment as well as the type of the greyscale wedge. While the ViewPix[®] 100 is controlled via the software ViewPix[®] Control and contains a standard greyscale wedge, ViewPix[®] 300 is controlled by the software argusX1[®] - particularly favourable is the included database function. Additionally, this system is equipped with a calibrated greyscale wedge for quantification purposes.

In combination with the modules User Administration and GxP, the system ViewPix[®] 300 is perfectly suitable for applications which have to comply to 21 CFR part 11. Using, the images can be evaluated for quantification purposes.

Technical Data	
Max. scanning area	21.6 x 14.0 cm
Resolution in dpi // in μm	600 dpi // 42.3 μm
Spectral range	420 - 765 nm
Max. dynamic range	255 greyscales (8 Bit), 16.78E6 colours (24 Bit)
Port	USB 1.1
Power supply	via USB port
Dimensions (W x H x D)	22.3 x 27.6 x 3.3 cm
Weight	0.95 kg

For the optimal printout of the acquisitions taken by our scanner or camera systems, the following printers have been successfully tested and are recommended: Solid ink printer Color Qube 8570ADN of Xerox and colour thermal sublimation printer CP 3800DW of Mitsubishi.

Accessories
ViewPix® 100 system, incl. scanner, greyscale wedge (standard), 4 frames, software ViewPix® Control
ViewPix® 300 system, incl. scanner, greyscale wedge (calibrated), 4 frames, software with additional modules User Administration, GxP
Greyscale wedge, reflective, 22 steps, standard
Greyscale wedge, reflective, 22 steps, calibrated
Colour solid ink printer ColorQube 8570ADN
Digital colour thermal sublimation printer CP 3800DW

A modern computer-supported system must fulfil the following requirements:

- An image-recording model with the best possible resolution, high replay quality and adequate speed, which can operate on all types of subjects.
- Easily operated and rapidly mastered software which is adapted to scientific requirements but avoids all unnecessary programmatic embellishments.
- A uniform illumination with visible and UV-light at 254 and 366 nm.
- A documentation module that reproduces even the finest nuances correctly, without loss of detail and in true colour.

Our camera-based systems are based on the CabUVIS (please see page 13) and mainly differ in their cameras and the appropriate documentation top. They are either equipped with a cooled CCD or a digital reflex camera.

ProViDoc® System VD 80

* NEW: cooled, 16 bit camera *

For perfect documentation in thin-layer chromatography and electrophoresis with high resolution 16 bit CCD camera.

The documentation of thin-layer chromatograms, electropherograms, DNA/RNA fragments and many other objects in visible and UV light has entered a new dimension with the VD 80 imaging system of. It is easily possible to record specimens in their true colours and in an environmentally friendly manner. The advantages of this advanced technique are the rapidity and favourable priceperformance- ratio.



This top version uses a high-resolution, peltier-cooled 16 bit CCD camera for the acquisition of objects up to 200 x 200 mm. As alternative, a 24 mm lens serves for taking small objects up to 100 x 100 mm.

The camera is connected via USB interface and achieves problem-free image transfer. The camera with a resolution of **4 Mpixels** produces accurately detailed images of real evidential value in excellent colour brilliance.

The high light-sensitivity and maximum exposure time of 10 minutes enables the record of very weak fluorescence, even hardly visible for human eyes. The preliminary assessment on the control monitor avoids unnecessary print-outs. You get the image you see.

The documentation program ProViDoc® developed by DESAGA, makes it possible to process the images recorded, in conformity with GxP, and to archive them without problems. This extraordinarily powerful 32 bit software running under Windows XP/7/8 can be readily operated also by users who are not familiar with computers and its functions can be learned in a very short time. Each image is automatically allotted an unequivocal identification number together with the date, time and user name and so saved in a data base in accordance with – if necessary, it can also be password-protected. The ProViDoc® document is a file format specially developed by DESAGA for image, comments and other information. The integral file manager allows the assignment of meaningful file names, the search function makes it possible to find the stored images rapidly.

Recommended colour printers for perfect results taken by scanner or camera can be found on page 15, see order information.

Accessories
ProViDoc® system VD 80, incl. CabUVIS 230 V, documentation top, CCD camera and UV filter, ProViDoc® software
ProViDoc® system VD 80, incl. CabUVIS 110 V, documentation top, CCD camera and UV filter, ProViDoc® software
Positioning aid for CabUVIS
25 mm lens for objects smaller than 100 x 100 mm
IQ / OQ for ProViDoc® system, incl. validation plate
Validation plate for documentation system

ProViDoc® System DD 70

A modern digital documentation work station consists of the following:

Illumination

2x white light tubes, 2x 8W tubes of 254 nm and 4x 8W of 366 nm are arranged symmetrically in the CabUVIS for incident light applications and guarantee the uniform illumination which is very important for documentation. The visible light component of the low pressure tubes is kept back by means of selected UV filters. A special 8 W white light tube is fitted in the base for transmitting light applications. It is covered by means of an acrylic sheet and, thus, allows the observation of objects up to 200 x 200 mm.



Documentation head

Our digital camera can be attached to the CabUVIS without difficulties. The special documentation top serves as interface. It consists of a cover plate with camera mounting and completely protects the system from stray light. The special filter for UV task is included in scope of supply and can be mounted in the integrated filter magazine if requested. This special filter of high quality optical glass suited to digital imaging yields stable colour results with high resolving power.

Digital camera

The core of the image collection system consists of a high resolution **digital reflex camera** equipped with a high-performance objective, motor zoom and auto-focus over the whole focal range for razor-sharp images. This camera with a resolution of **18 Mpixels** produces accurately detailed images of real evidential value in excellent colour brilliance. The high light sensitivity makes it possible to record weak fluorescence. Once the desired detail of the object has been selected, the camera settings follow with stored standardized parameters. A high quality objective glass filter, specially selected for the requirements of digital image processing, yields stable colour results with the highest resolution. The image is either taken manually or without contact via an IR shutter. The images so obtained are stored on the memory card provided. Image output can either be direct using a suitable printer or by downloading via the USB interface onto a computer using the camera-specific software.

Software and Printer

The **ProViDoc® software** supports the GxP editing and problem-free archiving of the taken images. This extraordinarily high performance 32 bit software operating under MS Windows XP/Vista/7 can easily be operated - even by users who have no computer experience, and, hence it is easy to learn to use in a short time. The image displayed on the monitor can be edited, labelled and marked. There is a free choice of type size and font. A zoom function is available to increase the image format. Any desired number of windows with images can be opened at the same time. The arrangement of the images is a matter of choice. They can automatically be superimposed, overlapped or, for purposes of comparison the images can be displayed next to each other. Each image is automatically labelled with the date, user name and an unequivocal identification number and thus it is stored in conformity with GxP guidelines – it can even be protected by means of a password if desired. The ProViDoc® document so generated is a file format specially developed by DESAGA for image, comments and other information. The user can add comments of any desired length to each image. This is stored directly with the image and can be printed out with every laser or inkjet printer that is supported by Windows. The integral file manager allows the assignment of meaningful file names, the search function makes it possible to find the stored images rapidly in the data base.

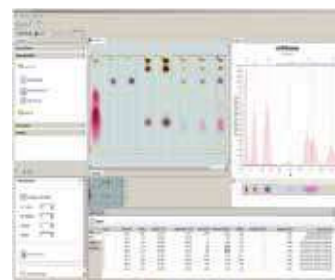
Accessories
ProViDoc® system DD 70, incl. CabUVIS 230 V, documentation top with UV filter, digital reflex camera, ProViDoc® software
ProViDoc® system DD 70, incl. CabUVIS 110 V, documentation top with UV filter, digital reflex camera, ProViDoc® software
Positioning aid for CabUVIS
IQ / OQ for ProViDoc® system, incl. validation plate
Validation plate for documentation system

Documentation - Analysis Software

AnalCHROM® TLC - Analysis Software for TLC/HPTLC

The product series AnalCHROM® TLC consist of 4 functionally graduated software solutions for the analysis of TLC and HPTLC samples which have been acquired with the imaging systems ProViDoc® and ViewPix®.

The software is logically structured and intuitively usable. German or English can be selected as user language.



The single steps for the evaluation of the TLC/HPTLC samples are logically structured in one workflow. This includes the following areas in AnalCHROM®: Preprocessing, Runs & Peaks, Calculation, Reporting.

The respective versions are graduated in their functionalities and can be upgraded if requested.

AnalCHROM® TLC 410 is an entry version for the manual analysis of TLC/HPTLC plates. This version has especially been developed for users with low sample through-put as well as for educational institutions.

AnalCHROM® TLC 420 includes all features of the version 410 and is additionally equipped with functions for the automated analysis.

Based on powerful AnalCHROM® algorithms, an automatic Run and Peak detection as well as an automated background correction is possible. In addition, a comfortable quantity calibration as well as normalisation are available. The analysis results can be shown and printed in a configurable report and also be exported as PDF file. Due to this equipment, AnalCHROM® TLC 420 is an optimal software for users with a medium sample through-put and routine tasks.

At a very high sample through-put, a fully-automated analysis of the complete sample batch is recommended. Furthermore, a method-based, automated analysis facilitates work for the user at always recurring samples – e.g. in quality control and also leads to an increase of the reproducibility of the results

AnalCHROM[®] TLC 430 includes all features of the version 420 and is additionally equipped with functions for the analysis, Rf-calibration, quantification, normalisation as well as modern visualisation technologies. The results of the analysis can be presented in various ways. Especially the 3D gel display, 3D lane profile and comprehensive possibilities of the report creation are nice features. The export into other Windows applications is made via clipboard or as saved file. Particularly for applications in the production environment, parameters for Runs have been established in addition to the important information about the peaks (e.g. Rf value, volume, area). The quality factor for the judging the quality of the analysis has been proved in praxis. AnalCHROM[®] TLC 430 is a professional analysis software for TLC/HPTLC. It is the premium choice for users in science, clinical and pharmaceutical production. There is always the possibility of upgrading the software with the module 21 CFR Part 11 in order to comply to GxP.

AnalCHROM[®] TLC 440 contains the specific module „Automation/Batch Processing“ for this requirement. This module together with the possibility of defining several ROIs (Region of Interest) are the main add-ons compared to version 430. There is also the possibility of upgrading the software with the module 21 CFR Part 11 in order to comply to GxP.

Accessories
AnalCHROM [®] TLC 410, single licence
AnalCHROM [®] TLC 420, single licence
AnalCHROM [®] TLC 420, network licence 3 user
AnalCHROM [®] TLC 430, single licence
AnalCHROM [®] TLC 430, network licence 3 user
AnalCHROM [®] TLC 430 21 CFR Part 11, single licence
AnalCHROM [®] TLC 430 21 CFR Part 11, network licence 3 user
AnalCHROM [®] TLC 440, single licence
AnalCHROM [®] TLC 440, network licence 3 user
AnalCHROM [®] TLC 440 21 CFR Part 11, single licence
AnalCHROM [®] TLC 440 21 CFR Part 11, network licence 3 user

Documentation by Densitometer

HPTLC Densitometer CD 60

DESAGA has been active in the field of quantitative Thin-layer chromatography for more than 20 years. The measurement station CD 60 incorporates this knowhow and the current state of the art. The computer serves as interface between the user and the measuring instrument and controls all of the functions of the densitometer, even the basic version is equipped for absorbency and fluorescence measurements in reflectance and transmittance on objects with dimensions up to 265 x 200 x 4 mm.



Three light sources are provided, a deuterium lamp, an incandescent halogen lamp and a mercury vapour lamp.

The usable spectral range extends from 190 to 900 nm, whereby the monochromator, the lamps and the filters are automatically switched over. The size of the scanning light beam can also be adjusted from the computer. Slit widths from 0.4 to 10 mm and slit heights from 20 µm to 2 mm are possible.

There are many application possibilities in conjunction with the (DESAGA) ProQuant program. This extraordinary 32-bit software operating under Windows XP/VISTA/7 is also easy to use by those without computer experience, so that its use can be learned in very short time. This combination of densitometer and computer can be used to process chromatograms and compile result and peak lists in a simple, reliable manner that conforms with GxP. You rapidly acquire reproducible results and data of real evidential worth.

Software option

Provalid®

Software Program for Automatic Validation

The scanner validation program provides an automatic check on and, if necessary, re-adjustment of the mechanical, optical and electronic systems of the densitometer. The following are individually checked.

- The accuracy of the wavelength adjustment of the monochromator
- Tests on the slit module
- The positioning of the plate table
- The condition of and adjustment of the electronic system
- The condition and adjustment of the lamps and the lamp mirror

The results are evaluated, printed out and stored.

AnalCHROM® TLC

Software Program for Analysis - please see page before

Accessories
CD 60 HPTLC Densitometer, 230 V, Transmission/Remission incl. interface, cable, control/evaluation software ProQuant
CD 60 HPTLC Densitometer, 110 V, Transmission/Remission incl. interface, cable, control/evaluation software ProQuant
CD 60 HPTLC Densitometer, 230 V, only Remission, incl. interface, cable, control/evaluation software ProQuant
CD 60 HPTLC Densitometer, 110 V, only Remission, incl. interface, cable, control/evaluation software ProQuant
Provalid®, Program for automatic validation
IQ / OQ for HPTLC-Densitometer CD 60
Carrier plate with magnetic strips for foils up to 265 x 200 mm
Densitometer cuvette for flat gels and films up to 250 x 170 mm
PC - specifications upon request

Radio-TLC

CR35bio/HD-CR35bio - Densitometry for X-ray Applications in TLC

Today radiography is not done anymore by X-ray film but uses modern technology of phosphor image plates in combination with laser excitation and latest photomultiplier tube technology to generate a digital image with much higher dynamic range. Second, unlike film, a phosphor image plate can be reused: plates can be „erased“ by exposing the plate to red light.



The core of the bio is manufactured by More than 25,000 units of this instrument were sold in the field of veterinary under the label CR35vet. AnalCHROM[®] optimized the system for soft beta- and gamma emitters and developed special software packages, for example an integrated eraser for applications in nuclear medicine, radio-TLC and other blotting technologies and sells it under the label. Two versions are available, the standard-version with a resolution of 30 μm and the high-resolution version HD-CR35bio with a resolution down to 12,5 μm .

Applications

The main application for radio-TLC is today the quality control of PET-tracers. FDA and other equivalent organizations recommend that a radiochromatogram scanner should be used to measure radioactivity distribution in the developed thin layer chromatography plate. The scanner should have sufficient sensitivity and spatial resolution for the intended discriminatory and quantitative objective. Another field for radio TLC is metabolism studies. In both cases the TLC plate is coupled with the phosphor image plate in a cassette for “writing” the image. In a second step - scanning by 635 nm laser wavelength -, the image is „read“ and “digitized”.

Dark box with integrated eraser

Erasing image plates to a low level requires a radiation time of more than 10 min. For optimizing this process and avoiding unnecessary runs at the scanner, the darkbox is equipped with an integrated erasing unit. Another important aspect for the darkbox is the detection of weakly exposed image plates whose signal-noise-ratio is below the lower detection limit. In connection with this, the darkbox protects from surroundings and scattered lighting effects.

Software Option

Professional analysis software TotalLab Quant with modules for a comprehensive analysis for 1D gels, blots and TLC, autoradiographies and unspecific structures. For GxP conformity, just use the additional module 21 CFR part 11.

Technical data and Features			
Dynamic range	65.536 greyscales (16 Bit)	Weight	21 kg
Resolution	from 12.5 μm up to 200 μm (pixel size)	Dimensions	390 x 380 x 520 mm
Scan Time	approx. 5 min (IP size 20 x 25, 100 μm)	Port	USB 2
Max IP size	width 35 cm, length up to 50 cm	Power Input	120 W
Laser	LED laser (635 nm)	Laser category	I (EN60 825.1)

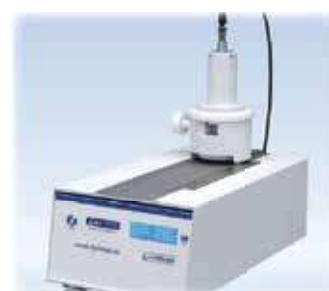
Accessories
Image plate scanner CR35-bio, 230 V, incl. control software
Image plate scanner CR35-bio, 110 V, incl. control software
Image plate scanner HD-CR35bio, 230 V, incl. control software
Image plate scanner HD-CR35bio, 110 V, incl. control software
Darkbox with integrated eraser unit
Image plate IP size 18 x 24 cm
Image plate IP size 24 x 30 cm
Image plate IP size 30 x 40 cm
Image plate cassette IPC size 24 x 30 cm
Image plate cassette IPC size 30 x 40 cm
Image plate cassette IPC size 35 x 43 cm
Analysis software TotalLab Quant, single licence
21 CFR part 11 Module for TotalLab Quant

Scan RAM - Compact Radio-TLC Scanner for PET/SPECT

The Scan-RAM is a modern, high-duty and very compact detection system for the direct measurement of radioactively-marked samples on TLC plates, foils and membranes. The scanners are mainly used in nuclear-medical environment among others for PET and SPECT.

For adapting to different applications und therefore different isotopes, there are several types of detectors available:

- NaI / PMT for low energy Gamma (e.g. 125I), enery range 10 keV - 60 keV
- NaI / PMT for medium up to high energy Gamma (e.g. 99mTc), enery range 50 keV – 1,5 MeV
- Plastic / PMT for detection of high-energy Beta emitters and PET radionuclides
- PIN Diode for high count-rate capability and low sensitivity to provide linear pulse counting from 10 μCi to 1 Ci



In order to reduce the influence of background radiation to a constant and low background, the detectors are protected by a lead shielding. Additionally, a lead collimator is put in front of the sensor for minimising the lateral irradiation and for being able to detect the peaks in the real sensitivity. Different sample thicknesses are no challenge for the Scan-RAM as the complete detection unit can be adjusted in its height for ensuring an optimal distance to the sample surface. On the scanning area, the samples can be placed exactly next to a ruler for precisely positioning the start and front area and record it in the detection. The positioning of samples on a rigid carrier material (e.g. TLC plates on glass basis) can be carried out without aids. Samples on a flexible carrier material (e.g. foils, membranes, paper) frequently tend to roll and get waved. For an accurate fixation of this kind of samples, there are 2 frames made of stainless steel available which can easily be decontaminated by cleaning after the measurements. These frames are included in the scope of supply

The control of the system, the acquisition and evaluation of the data are carried out by the radiochromatography software Laura. This very efficient and well structured software is characterized by various functions and expandabilities:

- Creation and administration of methods for the sample detection
- Complete control of the Scan-RAM
- Half-life correction
- Functions for the manual and fully-automated analysis (among others automatic peak detection)
- Various possibilities for the representation and comparison of the results
- Comprehensive report functions
- Optional add-ons, e.g. module for 21 CFR part 11 / GxP
- > Scalability of a single-user system to a multi-user network licence
- Interface to PET-LIM system PETra

Technical data and Features:

Detectors	different types of detectors	Maximum size of the TLC plate	20 x 5 cm
High voltage range	0 - 2000 V	Collimator aperture slit	3 mm (standard)
Upper level discriminator range	0 - 4095 mV		(optional.: 1 or 2mm)
Analogue output BNC	0 - 1 Volt	Lead shield	1.4 cm
Counter input	2 x 16 Bit	Control port	USB
Digital Input/Output	4 digital channels	Dimensions (D x L x W)	15 x 38 x 23 cm

Accessories
Scan-RAM Radio-TLC system for GxP, 230 V, includes Laura full version software - requires detector and PC
Scan-RAM Radio-TLC system for GxP, 110 V, includes Laura full version software - requires detector and PC
Scan-RAM Radio-TLC system for non GxP, 230 V, includes Laura Academia software - requires detector and PC
Scan-RAM Radio-TLC system for non GxP, 110 V, includes Laura Academia software - requires detector and PC
NaI PMT remote detector suitable for detection of high-energy Gamma radionuclides (Nuclear Medicine/PET)
PMT/Plastic scintillator remote detector suitable for detection of high energy Beta radionuclides
PMT/NaI remote detector for 125I and other low energy Gammas
Miniature PIN Diode remote detector for high activity monitoring up to 1 Curie

TLC/HPTLC Equipment

Dyestuff Test Solutions

The functions of the mobile phase and the stationary phase can be checked and demonstrated impressively for tuition and practical work using the multidye test solutions. In order to check the development conditions, it is useful to run a test mixture together with every Thin-layer chromatographic separation.

The **lipophilic** test solution contains three dyes. 4-dimethylaminoazobenzene/butter yellow, which changes colour from yellow to red in the acidic pH-range, Sudan G and indophenol blue, which changes colour from blue to yellow in the acidic pH-range. The dyes are dissolved in toluene.

The **hydrophilic** test solution contains four dyes. Fluoresceine which fluoresces with an intense light green colour when excited with long wavelength ultraviolet light, methyl red whose colour changes from red to yellow in the alkaline pH-range, methylene blue and emerald green. The dyes are dissolved in isopropanol.

Accessories
3-Dyestuff test solution, lipophylic, 10 ml
4-Dyestuff test solution, hydrophilic, 10 ml

Unmodified standard silica layers on glass plates for TLC

TLC glass plates with silica 60, specific surface (BET) ~ 500 m²/g, mean pore size 60Å, specific pore volume 0.75 ml/g, particle size 5 - 17 µl, standard grade, with or without UV254 indicator

Advantages:

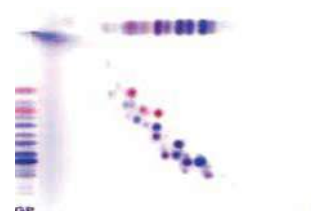
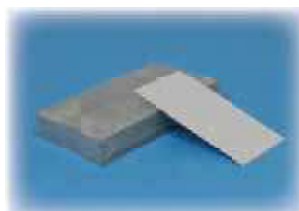
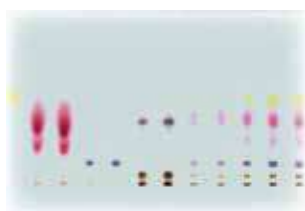
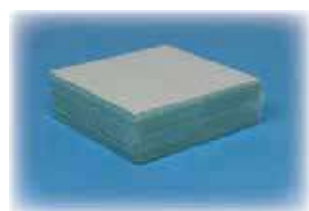
- Outstanding wettability for precise colorization results, even with 100 % aqueous detection reagents
- Excellent separation efficiency and reproducibility from lot to lot
- Easy and reliable cutting due to an optimized binder system, no flaking of silica

Material	Size	UV ₂₅₄	Thickness	Extras	Quantity
Glass plates	50 x 100 mm		0.25 mm		1 pack of 50 pcs
Glass plates	100 x 200 mm		0.25 mm		1 pack of 50 pcs
Glass plates	200 x 200 mm		0.25 mm		1 pack of 25 pcs
Glass plates	50 x 100 mm	x	0.25 mm		1 pack of 50 pcs
Glass plates	100 x 200 mm	x	0.25 mm		1 pack of 25 pcs
Glass plates	200 x 200 mm	x	0.25 mm		1 pack of 25 pcs
Glass plates	200 x 200 mm		1.00 mm	preparative	1 pack of 15 pcs
Glass plates	200 x 200 mm	x	1.00 mm	preparative	1 pack of 15 pcs

Unmodified standard silica layers on glass plates for TLC with concentrating zone

Same specifications as glass plates, please see above

Material	Size	UV ₂₅₄	Thickness	Extras	Quantity
Glass plates	100 x 200 mm		0.25 mm	concentrating zone	1 pack of 50 pcs
Glass plates	100 x 200 mm		0.25 mm	concentrating zone	1 pack of 25 pcs
Glass plates	100 x 200 mm	x	0.25 mm	concentrating zone	1 pack of 50 pcs
Glass plates	100 x 200 mm	x	0.25 mm	concentrating zone	1 pack of 25 pcs



Unmodified standard silica layers on alumina foils for TLC

Same specifications as glass plates, please see on page before

Material	Size	UV ₂₅₄	Thickness	Extras	Quantity
Alumina foils Xtra	50 x 100 mm		0.20 mm		1 pack of 50 pcs
Alumina foils Xtra	200 x 200 mm		0.20 mm		1 pack of 25 pcs
Alumina foils Xtra	100 x 100 mm	x	0.20 mm		1 pack of 20 pcs
Alumina foils Xtra	200 x 200 mm	x	0.20 mm		1 pack of 25 pcs
Alumina foils Xtra	100 x 200 mm		0.20 mm	concentrating zone	1 pack of 20 pcs
Alumina foils Xtra	100 x 200 mm	x	0.20 mm	concentrating zone	1 pack of 20 pcs

Unmodified HPTLC layers on glass plates, particle size 2 - 10 µm

HPTLC glass plates with silica 60, specific surface (BET) ~ 500 m²/g, mean pore size 60Å, specific pore volume 0.75 ml/g, particle size 2 - 10 µl, HPTLC grade, with or without UV254 indicator

Advantages:

- Outstanding wettability for precise colorization results, even with 100 % aqueous detection reagents
- Higher separation efficiency than standard layers and excellent reproducibility from lot to lot
- Easy and reliable cutting due to an optimized binder system, no flaking of silica

Material	Size	UV ₂₅₄	Thickness	Extras	Quantity
Glass plates	100 x 100 mm		0.20 mm		1 pack of 25 pcs
Glass plates	100 x 100 mm	x	0.20 mm		1 pack of 25 pcs
Glass plates	100 x 100 mm		0.20 mm	concentrating zone	1 pack of 25 pcs
Glass plates	100 x 100 mm	x	0.20 mm	concentrating zone	1 pack of 25 pcs

Unmodified HPTLC layers on alumina foils, particle size 2 - 10 µm

Same specifications as glass plates, please see above

Material	Size	UV ₂₅₄	Thickness	Extras	Quantity
Alumina foils Xtra	50 x 100 mm	x	0.20 mm		1 pack of 50 pcs
Alumina foils Xtra	100 x 100 mm		0.20 mm	concentrating zone	1 pack of 25 pcs
Alumina foils Xtra	100 x 100 mm	x	0.20 mm	concentrating zone	1 pack of 25 pcs
Alumina foils Xtra	50 x 200 mm		0.20 mm		1 pack of 50 pcs

Modified HPTLC layers on glass plates, particle size 2 - 10 µm

HPTLC glass plates with silica 60, specific surface (BET) ~ 500 m²/g, mean pore size 60Å, specific pore volume 0.75 ml/g, particle size 2 - 10 µl, HPTLC grade, with or without UV254 indicator, Octadecyl-modified layers, 50% or 100% C-18 silanized (C18-50 or C18-100)

Advantages:

- Outstanding wettability for precise colorization results, even with 100 % aqueous detection reagents
- Higher separation efficiency than standard layers and excellent reproducibility from lot to lot
- Easy and reliable cutting due to an optimized binder system, no flaking of silica

Material	Size	UV ₂₅₄	Thickness	Extras	Quantity
Glass plates	100 x 100 mm		0.20 mm	100 % silanized	1 pack of 25 pcs
Glass plates	100 x 100 mm		0.20 mm	50 % silanized	1 pack of 25 pcs
Glass plates	100 x 100 mm	x	0.20 mm	100 % silanized	1 pack of 25 pcs
Glass plates	100 x 100 mm	x	0.20 mm	50 % silanized	1 pack of 25 pcs

►► Regulatory compliances



►► Corporate Social Responsibility

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2. Improving quality of life by offering YOGA Training courses, Work shops / Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds, souls and body by means of Yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.



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