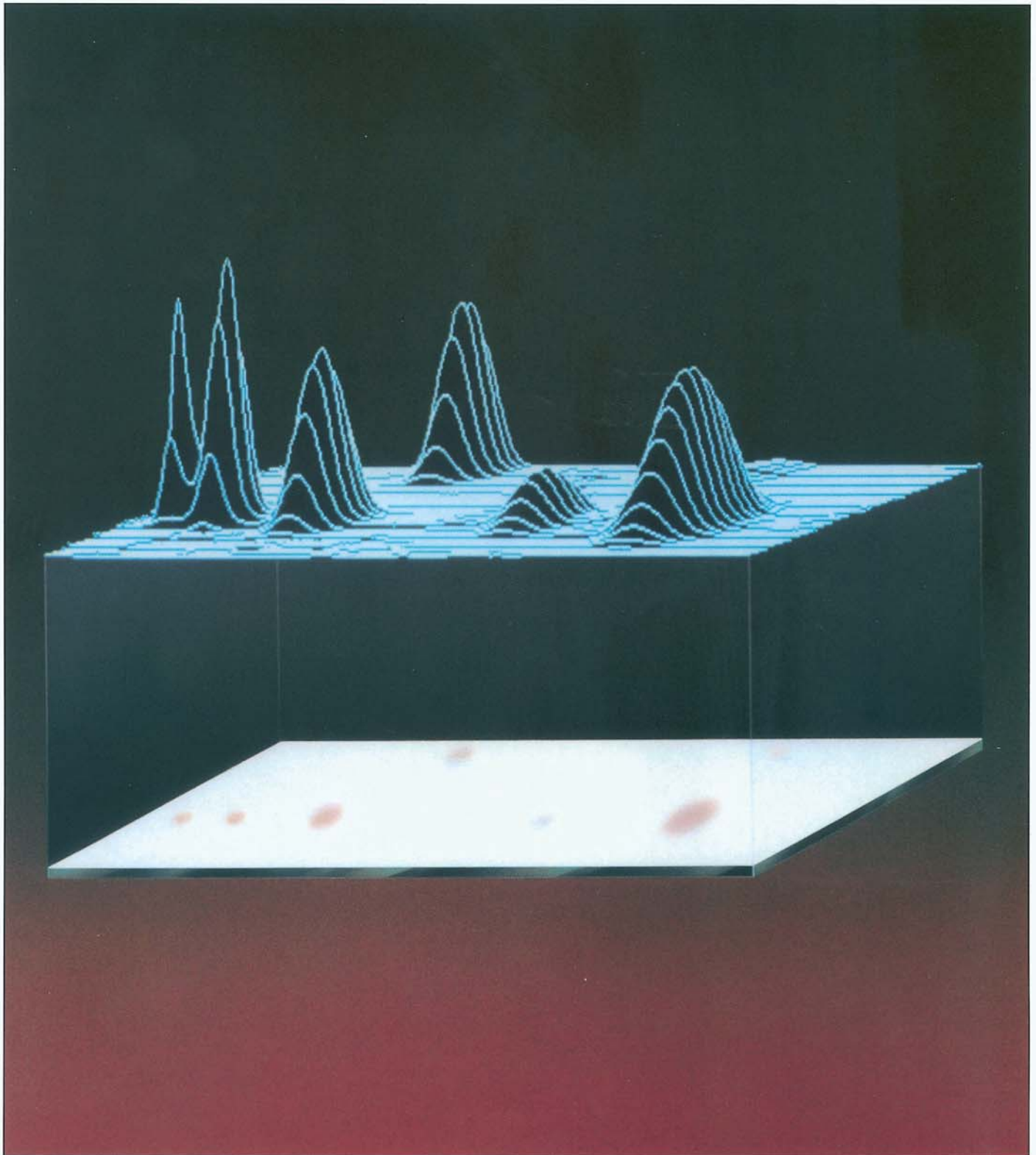


# HPTLC Densitometer CD 60

Technology of today – systematically exploited



# HPTLC Densitometer CD 60 with ProQuant® Windows software

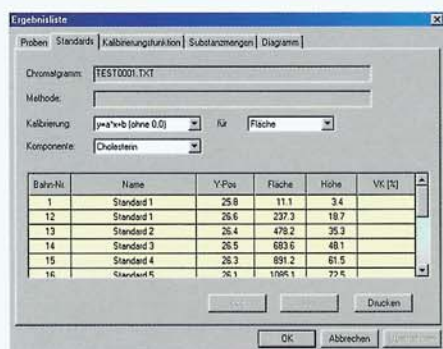
The compact, intelligent measuring instrument for reliable results and ease of operation

DESAGA has been working in the field of quantitative thin-layer chromatography for more than 20 years. The recent developments of our measurement station are based on this know-how and on the latest state of the art. For the first time we present control and evaluation software for the quantitative evaluation of TLC, HPTLC and electropherograms under Windows XP/2000/98. The computer acts as interface between the user and the measuring instrument and controls all functions of the densitometer. This, even in its basic version, is equipped for absorbance and fluorescence measurements in transmittance and reflectance on objects up to 265 x 200 x 4 mm. Standard formats can be attached to the measurement table directly. A carrier plate with magnetic strips is used to attach films, electropherograms and foils.

The application possibilities are manifold in conjunction with the DESAGA ProQuant® program. This extraordinarily powerful 32 bit software working under Windows 98/2000/XP is simple to operate and easy to learn, even for users with no computer experience. Chromatograms are readily and reliably processed with this combination of densitometer and computer to yield result and peak lists in conformity with GxP. You rapidly obtain reproducible results and meaningful data.

## High operating comfort as a result of unequivocal monitor operation

A long period of learning the instrument functions is unnecessary. The operator works via the monitor by means of a



The screenshot shows a window titled 'Ergebnisliste' with a table of measurement data. The table has columns for 'Bater-Nr.', 'Name', 'Y-Pos', 'Fläche', 'Höhe', and 'VK [%]'. There are 6 rows of data, including standard samples and a sample labeled 'Cholestein'.

Bater-Nr.	Name	Y-Pos	Fläche	Höhe	VK [%]
1	Standard 1	25.8	11.1	3.4	
13	Standard 1	26.5	237.3	18.7	
13	Standard 2	26.4	479.2	35.3	
14	Standard 3	26.5	663.6	48.1	
15	Standard 4	26.3	891.2	61.5	
16	Standard 5	26.1	1096.1	77.5	

clear and readily understood dialogue, in English, French or in German, as desired. Interactive operation is made easy. All input is via the computer keyboard or the mouse – the output is via the monitor or printer. All the steps involved, from setting up the instrument parameters over optimization of the measurement and integration conditions to selection and evaluation of the calibration curves, can be carried out rapidly and systematically. ProQuant® automatically saves all parameter sets

together with complete data. It is possible to repeat measurements at any time under exactly the same conditions.

## Rapid, reliable data collection and evaluation

Routine measurements are carried out with specific methods, which can be called up at a key stroke. All measurement and evaluation procedures are carried out automatically and are reported on the monitor in real time. Before each measurement the name of the measurement object and of the operator are demanded. A free text commentary can be used to supplement the results and the method. This complete laboratory protocol, which is GxP-compliant, can be transferred to a central computer and centrally administered and processed in the network.



## The universal applicability of the HPTLC Densitometer CD 60

Absorbance and fluorescence can be measured in reflectance or transmittance. Both detectors are part of the basic equipment. An additional reference photomultiplier measures the light intensity of the active lamp and ensures automatic adjustment of the sensitivity of the measurement photomultiplier. The apparatus always operates in the optimum range, independent of the size of the light spot or of the wavelength used. Hence, ageing and shortterm variations of the lamps are compensated, the time the light sources require to warm up and for the signal to stabilize is reduced to a minimum.

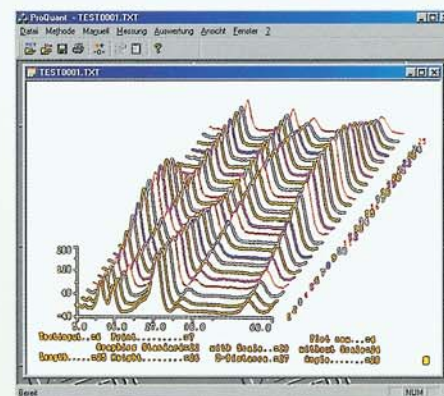
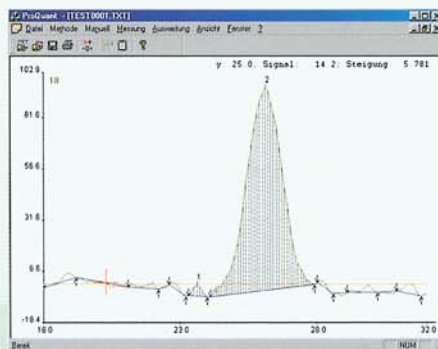
Three light sources are included, a deuterium lamp, a halogen lamp and a mercury lamp. The usable spectral range is from 190 to 900 nm, whereby the monochromator, the lamps and the filters are controlled automatically. The optical components can be flushed with nitrogen, which is to be recommended at wavelengths of less than 200 nm. The size of the sensing light beam is also adjusted by the computer. Slit widths from 0.4 to 10 mm and slit heights from 20  $\mu\text{m}$  to 2 mm are possible.

## Optimal HPTLC evaluation

Differences in plate background and inhomogeneous background can largely be compensated by two-wavelength measurement. Here every track is first measured at a reference wavelength and then at the measurement wavelength. The difference between the two chromatograms is then displayed on the monitor. Multiple wavelength measurements are used for the optical resolution of fractions, which are not adequately separated chromatographically. Chromatograms are recorded automatically at up to 30 different wavelengths. A 3D presentation of this measurement is particularly clear and informative.

## A multiplicity of applications in electrophoresis and isoelectric focusing

Spectral analysis permits the optimization of staining methods and serves to identify the substances. Proteins can be detected in their native states in the UV range. Fluorescence measurement permits enzyme detection and the evaluation of nucleic acid separations. The high resolution demanded for electropherograms and autoradiograms is obtained using measurement steps of 25  $\mu\text{m}$ . The two-wavelength measurement technique compensates for irregularities in gels as well as streaks and bubbles.





## HPTLC Densitometer CD 60

A concave mirror focuses the light from a light source onto the entry slit. The spectral band at the grating is reflected by means of a second concave mirror onto the adjustable measuring slit. A third concave mirror and a plane mirror transmit the measuring beam to the sample being measured. This sample beam is also split and transmitted to the reference detector. The reflectance detector measures the light scattered by the sample, the transmission detector measures the light which is transmitted through the sample. All settings – choice of lamp, filter and grating setting, shutter size and object position – are controlled by the computer program and the resultant signal changes are evaluated.

### Technical data for the HPTLC Densitometer CD 60

<b>Optics</b>	Light sources	Deuterium lamp 190 – 340 nm Halogen lamp 340 – 900 nm High pressure Hg lamp for fluorescence current and voltage stabilized
	Monochromator	Holographic reflectance grating with 1200 lines/mm Band width 10 nm, Motor-operated filter wheel, Connection for nitrogen flushing
	Cut-off filters	370, 420, 450 and 550 nm
<b>Mechanics</b>	Measurement table Speed	For objects up to 265 * 200 * 4 mm 20 mm/s for 50 µm resolution 10 mm/s for 25 µm resolution
<b>Electronics</b>	Detectors High tension AD converter Interfaces	Photomultipliers for reference, reflectance and transmittance, dynamics 1:10 <sup>5</sup> -1500 V, dependent on reference 19 bit Serial RS 232 interface for connection with IBM compatible computer
<b>Operation</b>	Control	ProQuant® control and evaluation software for Windows 98/2000/XP, manual via keyboard or mouse, with own specific stored measurement and evaluation methods
	Output Graphics Program operation	Monitor, plotter and printer 2D, 3D and text input Menu-controlled in German, English or French language
	<b>Measurement methods</b>	Chromatograms Reflectance or transmittance Absorbance or fluorescence Linear scan and Meander scan Two-wavelength measurement Multiwavelength measurement Integration On-line or at the monitor Standards External on any selected tracks Calibration Linear, Polynomial or Michaelis–Menten function Spectra Any desired range between 190 and 900 nm, automatic filter and lamp change
<b>General</b>	Power supply Dimensions Weight	230 V, 50-60 Hz, 150 VA 730 * 550 * 300 mm (W x D x H) 30 kg

### Ordering information

	Order No
<b>HPTLC Densitometer CD 60, 230 V, with Windows-Software ProQuant®</b>	90.131.800
The following user application programs are available: SpectraCalc, Program for creating libraries of spectra	92.131.830
You can compile your special library in a simple manner. The spectrum is unequivocally identified, even when there is a great variation in intensity and high levels of noise. This software permits comparison of spectra, that have been measured on different plates.	
ProValid®, Program for automatic validation	92.131.816
The scanner validation provides an automatic check and, if necessary, readjustment of the mechanical, optical and electronic systems of the densitometer. The results are evaluated, printed out and stored.	
HPTLC-Applicator AS 30, 230 V	90.130.500
PC-Software for HPTLC-Applicator AS 30 incl. connecting cable	92.130.532

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SARSTEDT AG & Co.  
P.O. Box 12 20  
D-51582 Nümbrecht  
Phone +49 22 93 30 50  
Fax +49 22 93 305-122  
E-Mail: info@sarstedt.com  
Internet: www.sarstedt.com