

Compact visible Spectrophotometer

Visible spectrophotometer

PRIM

Light & Advanced



PRIM Light & PRIM Advanced spectrophotometers combine a high level of performance with a simple and intuitive user interface. Compact and light, these new spectrophotometers are ideal for standard applications in education or in the laboratory.

Choose between 4 PRIM units

PRIM Light : Basic internal software including standard spectrophotometric applications in absorbance, transmission and single standard concentration.

PRIM Advanced : Advanced applications for absorbance, transmission, multi-standard concentration, kinetics, multi-wavelength and spectrum scanning.

For low concentration samples, PRIM Light and PRIM Advanced are also available with a 50 mm path length cell holder.

EXCLUSIVES PRIM ADVANTAGES

Internal Applications

All applications, basic or standard, are included as standard and are immediately available on each spectrophotometer.

50 Methods Memory

All PRIM spectrophotometers can store up to 50 methods in memory. Stored applications can be recalled at any time without re-programming the method parameters. Prior to running a method, it is possible to check the stored parameters using only one button from the navigator keys.

Giant Display

2 lines of 16 digits, back-lit with excellent contrast for best readability. Real-time and permanent display of wavelength and absorbance in any measurement mode.

1 Key = 1 Function

The keyboard is clearly and simply organized and every button corresponds to one specific single function. Operation is therefore simpler and faster.

Safety - Low Voltage Power Supply

Mandatory in education for pupil protection and increasingly recommended in every laboratory where risks exist due to the presence of water, the low voltage supply avoids any risk of electric shock.

Internal Calibration Filter

In order to certify accurate and repeatable results, the spectrophotometer calibrates itself automatically at each start-up using the internal didymium filter; a complete report is automatically printed on the external printer if connected.

Pre-adjusted Halogen Lamp

Located at the rear side of the instrument, the lamp is pre-adjusted and can be replaced quickly and easily without any tools.

Compact

Light at only 2.5 kg and compact A4 size footprint, PRIM can be handled very easily.

SECOMAM CE

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For more information
www.secomam.com

Compact visible Spectrophotometer

PRIM

Light & Advanced

A wide choice of measuring modes

Absorbance / % Transmittance

Automatic wavelength selection from 330 to 900 nm, in increments of 1 nm, with the absorbance value and the % of transmission monitored in real time.

Concentration Calculation

Concentration measurement of unknown samples. Spectrophotometer calibration using a factor or up to 8 standards of known concentration.

Kinetics

Analysis of absorbance variation as a function of the time. Program to include lag time and reaction time. Automatic calculation of absorbance variation during each segment of time or the total time can be programmed.

Spectrum Scan*

A curve of absorbance values as a function of the wavelength with detection of absorbance maxima and minima. User-definable scan mode using the entire or partial visible range: 330 to 900 nm, in 1nm steps, with automatic recording of the baseline.

Multi-Wavelength Mode

Measure of ratio and difference of absorbance at 2 wavelengths. Simultaneous display of calculation results as well as individual absorbance values at each wavelength

*On optional external printer.

PRIM, a spectrophotometer suitable for all kinds of applications

Education

Designed to fit into various vocational areas, from senior high school to university level. Resident measuring modes made it easy to teach the Beer-Lambert law, concentration, kinetics, colorimetry or spectrum measurement.

Laboratory

Thanks to its wide choice of analytical modes, PRIM spectrophotometers can be used for most routine spectrophotometric laboratory applications.

Industry

Its small size and ruggedness makes PRIM an ideal spectrophotometer for the industrial environment. Used in Quality Control, it can easily be placed at the delivery point as well as at all stages of the manufacturing chain.

Environment

Delivered standard with Absorbance and Concentration measuring modes, the PRIM cell-holder can be replaced with the optional 16 mm-tube holder to run classical COD tests. For weak absorbance samples, PRIM 50 mm with a standard 50 mm cell-holder, offers enhanced sensitivity.

Clinical Biology

PRIM 500, a special version equipped with auto-aspiration system, micro flowcell, thermo-controlled cell-holder (37°C), is suitable for biochemical assays. (A separate brochure is available upon request.)

Accessories

- A complete range of accessories: printer, tube-holder, auto-aspiration system, manual aspiration system, thermostatted cuvette holder are available on option.

Ordering Information

- 70CI0377 PRIM Light 10 mm cell
- 70CI0430 PRIM Light 50 mm cell
- 70CI0381 PRIM Advanced 10 mm cell
- 70CI0432 PRIM Advanced 50 mm cell

Standard Delivery

- PRIM spectrophotometer, 115/230V - 50/60Hz transformer, box of 100 plastic cuvettes, operation manual.

TECHNICAL SPECIFICATIONS PRIM LIGHT AND ADVANCED

Spectral range	330-900 nm
Bandwidth	10 nm
Accuracy	+/- 1.5 %
Precision	+/- 1 nm
Photometric range	-0.3 - 2.5 Abs 0 -200 %T
Accuracy	+/- 2 %
Drift	< 0.003 A/h @ 500 nm
Stray light	0.5 %T @ 340 & 400 nm
Display	Alphanumeric LCD back-lit 2 lines height 8 mm 16 characters
Zero	Automatic
Light source	Halogen
Detector	Silicon diode
Interface	Serial RS232C
Cell holder	1 cuvette 10 mm
Power	115/230V - 50/60Hz
H x W x D	180 x 280 x 220 mm
Weight	2.5 kg

SOFTWARE EQUIPEMENT PRIM LIGHT AND ADVANCED

PRIM	Light	Advanced
Absorbance	Yes	Yes
% Transmission	Yes	Yes
Concentration with factor	Yes	Yes
Concentration with 1 standard	Yes	Yes
Concentration with 1 to 8 standards	No	Yes
Kinetics	No	Yes
Multi-wavelengths	No	Yes
Spectrum scanning	No	Yes
Peaks and valleys detection	No	Yes
Multi-language	Yes	Yes
Automatic stand-by	Yes	Yes

SECOMAM products are available from

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Uvi Light

A Complete range of UV-Vis Spectrophotometers

NEW



- 8 models for maximum flexibility
- Standard software for routine or advanced applications
- Photometric range 190 to 900 nm
- Available with 5 or 2 nm bandwidth

Flexible & Evolutive



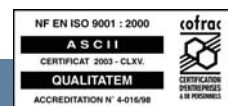
8 Uvi Light models for all laboratory applications

SECOMAM

SECOMAM is an ISO 9001-2000 company. All products are CE compliant.

More information on SECOMAM : www.secomam.com

CE



Uvi Light

A Complete range of UV-Vis Spectrophotometers



Uvi Light XS

- Routine applications
- Easy to use but powerful

Analysis modes Absorbance / %Transmission /Concentration • 50 memories • 2 lines LCD backlit display • RS232C connection

Available in 2 or 5 nm bandwidth



Uvi Light XTD

- Advanced applications
- Comfort of use
- PC flat screen connection

Advanced analysis modes Abs/%T/Conc/Kinetics/ Multiwavelength /Spectrum scanning • Parallel and RS232C connection • Mouse port • 3"5 floppy drive • Keyboard, mouse & TFT or CRT screen¹

Available in 2 or 5 nm bandwidth



Uvi Light XT

- Advanced applications
- Compact, built-in components
- 7"5 VGA LCD display
- 3"5 floppy drive

Advanced analysis modes Abs/%T/Conc/Kinetics/Multiwavelength /Spectrum scanning • Giant built-in 7"5 VGA LCD backlit display • Parallel and RS232C connection • PS/2 mouse • 3"5 floppy drive • Optional external keyboard

Available in 2 or 5 nm bandwidth



Uvi Light PC

- Advanced applications
- Windows ease of use
- Software PC controlled

Delivered with Windows LabPower Jr software² • Advanced analysis modes Abs/%T/Conc/ Kinetics/Multiwavelength /Spectrum scanning • All standard photometric applications.

Available in 2 or 5 nm bandwidth

Technical specifications

Band width	2 or 5 nm
Spectral range	190-900 nm
Accuracy	+/- 1 nm
Reproducibility	+/-0.1 nm
Display resolution	0.1 nm
Photometric range	-0.1 to 3.000 A 0.1 to 110 %T
Accuracy	+/-0.005 A
Drift	< 0,003 A/h at 500 nm
Stray light	< 0.4 % at 200 nm < 0.002 % at 220 and 340 nm
Base line stability	+/-0.001 A
memories	50 methods on XS, unlimited on XT, XTD and PC
Zero	Automatic
Light source	Visible tungsten-halogen pre-adjusted lamp UV deuterium pre-adjusted lamp
Monochromator	Jobin Yvon with concave holographic grating resolution 1200 lines/mm
Detector	Silicon diode
Cell holder	10 to 100 mm single cell
Output	RS232C & Parallel
Power	115V/60Hz to 230V/50Hz
Dimensions	H x L x D 295 x 500 x 415 mm (11,6 x 19,7 x 16,3 inches)
Weight	7,5 kg (15 lbs)
Waranty	1 year

1 - Should be purchased separatly
2 - PC not included

Ordering information

Uvi Light XS

70ST0552 Uvi Light XS 5 nm
70ST0522 Uvi Light XS 2 nm

Uvi Light XT

70ST0554 Uvi Light XT 5 nm
70ST0524 Uvi Light XT 2 nm

Uvi Light XTD

70ST0553 Uvi Light XTD 5 nm
70ST0523 Uvi Light XTD 2 nm

Uvi Light PC

70ST0551 Uvi Light PC 5 nm
70ST0521 Uvi Light PC 2 nm

Options & accessories

Windows software

70MI0510 LabPower Junior software

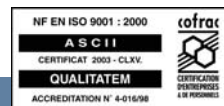
Cuvette holders

Round tube holder
Thermostatable cell holder
Peltier thermostated cell holder
Automatic 9-position cell changer
Automatic aspiration system

Printers

Thermal, dot matrix or inkjet printers

SECOMAM products are available from



SECOMAM

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More information on SECOMAM : www.secomam.com

Absolutely symmetrical Double Beam Spectrophotometer

UVIKON^{XS}

High purity spectral optics

- **Optimized reflecting surface optics, Seya Namioka* monochromator, Carl Zeiss* grating.**
 - Extremely low stray light
 - Symmetrical beam separator by chopper to concentrate more than 80% optical energy
- **Watchmaker mechanics tradition.**
 - Precision 0,3 nm
 - No drift with time
- **Cast iron optical bench from lamp to detector.**
 - Incomparable measuring stability as well as in wavelength.
- **Software driven accessories for various application**
 - Liquid or solid samples.
 - A unique multicuvette system, the one and only in the market
 - Thermostated cell holder
 - An exclusive quick-lock fixing system
 - Auto samplers
- **Versatile LabPower Jr or LabPower Premium software for applications in :**
 - Chemistry, Pharmacy, Cosmetics, Agro-food, Biotechnology, Clinical Biology, Environment, Research and Vocational
- **State-of-the art electronics**
 - Acquisition using advanced DSP technology
 - Optimized measuring signal



Sample Compartment

- 140 mm depth, 332 mm width, 162 mm height, with 120 mm beam separation.
- Easy access: front top and back covers are quickly removable.
- Three point positioning of accessories for high reproducibility of results.
- Quartz windows at the beam entrance and exit to the sample compartment prevent the optics from being contaminated.

Accessories

- Thermostatable standard cell holder directly useable with micro and ultramicro cells for small samples.
- Large family of optional Quick Lock accessories including a variety of cell holders, stirrer, thermostatable automatic cell changer, temperature sensor, thermostatable sipper, Thermopack and Thermosystem (Peltier technology).
- Integrating sphere for turbid samples and data acquisition in reflection mode (solid sample and powders).

Environment

- Operating temperature: 15 to 30°C.

Optical Design

- Well proven true symmetric double beam optics with only 6 reflecting surfaces per beam.
- High-energy diffraction Zeiss™ monochromator design using a holographic blazed grating with 1300 lines per mm.
- Very sensitive photomultiplier with a rotating chopper providing 100% energy in sample and reference beams plus dark current correction.
- External source bench providing thermal insulation with optical bench and isolation of the whole photometric assembly against contamination by ozone emitted by deuterium lamp.
- Optical bench base manufactured to a tolerance of 0.01 mm in 1 meter.
- Complete optical system sealed against atmospheric contamination from dust and volatile compounds.

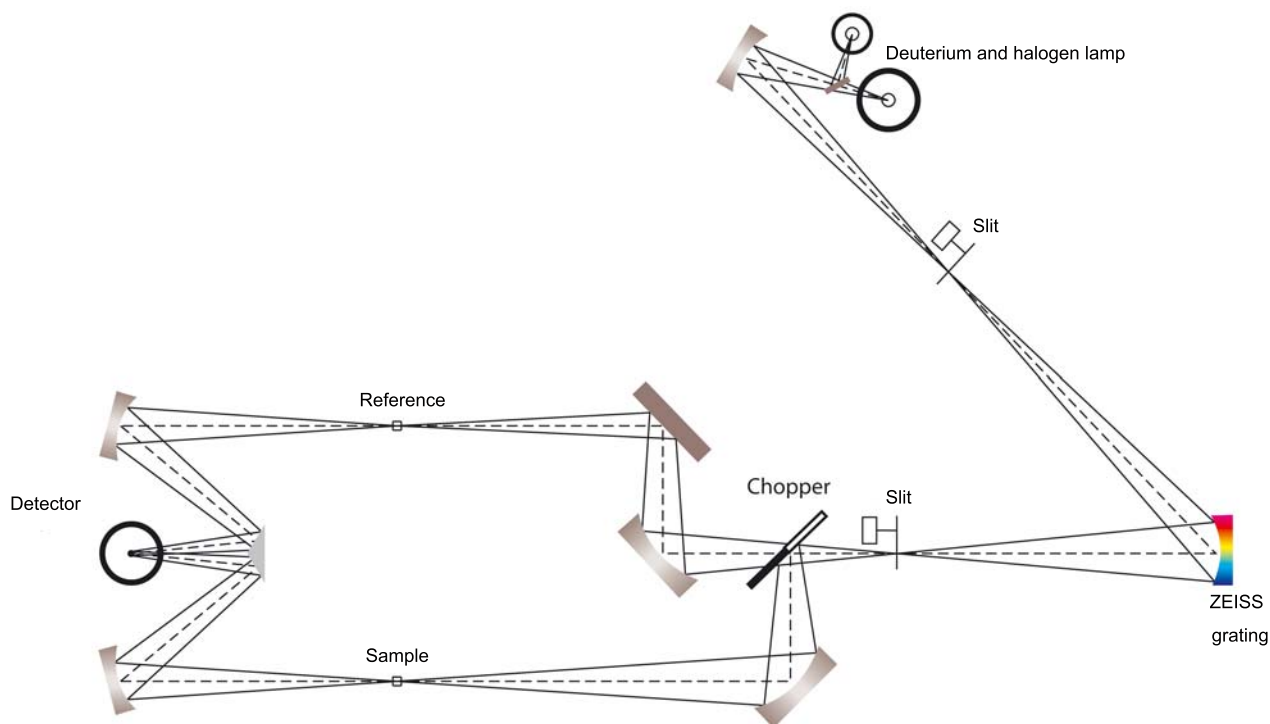
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Absolutely symmetrical Double Beam Spectrophotometer

UVIKON^{XS}



UVIKON XS features the following specifications

Wavelength range	190-1100 nm	Photometric precision @ 590 nm/400	± 0.5 mAbs
Wavelength step	0.05-10 nm	Noise (RMS), measured at 580 nm	30 µ Abs
Scan speed	5-2000 nm/min	Drift, 580 nm	< 0.1 mAbs/h
Transfer speed	5000 nm/min	Response time	0.02-10 sec
Spectral bandwidth	< 1.8 nm	Light sources lamps	Deuterium and Tungsten-Halogen
Wavelength accuracy	± 0.3 nm	Monochromator	High energy, low stray light diffraction grating with 1300 lines/mm, 175 mm focal length
Wavelength reproducibility	± 0.03 nm	Dimensions	W 680 mm x D 565 mm x H 275 mm
Baseline flatness, 200-1100 nm	≤ 1 mAbs	Weight	35 Kg net
Stray light, NaI, 220 nm, 1 nm, 1 sec	< 0.03 %T	Mains Power	100/240VAC ±10% 50/60 Hz
Linearity, 250 nm, 2 nm, 1 sec	≥ 3.0 Abs (r ² > 0.999)	Power Consumption	Max. 200 VA
Photometric range	± 3.5 Abs		
Photometric accuracy @ 590 nm/400	± 3 mAbs		

Ordering information

• 70/99-90289 UVIKON XS (CE) (UL/CSA)

Includes LabPower Junior Software Package*,
Standard Thermostatable Cell Holder
compatible with Micro and Ultra Micro
Cells, Accessory Controller to allow
connection of all UVIKON accessories.

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SECOMAM products are available from

Absolutely symmetrical Double Beam Spectrophotometer

UVIKON[®]
XL



High purity spectral optics

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- Very sensitive photomultiplier with a rotating chopper providing 100% energy in sample and reference beams plus dark current correction.
- External source bench providing thermal insulation with optical bench and isolation of the whole photometric assembly against contamination by ozone emitted by deuterium lamp.
- Optical bench base manufactured to a tolerance of 0.01 mm in 1 meter.
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Sample Compartment

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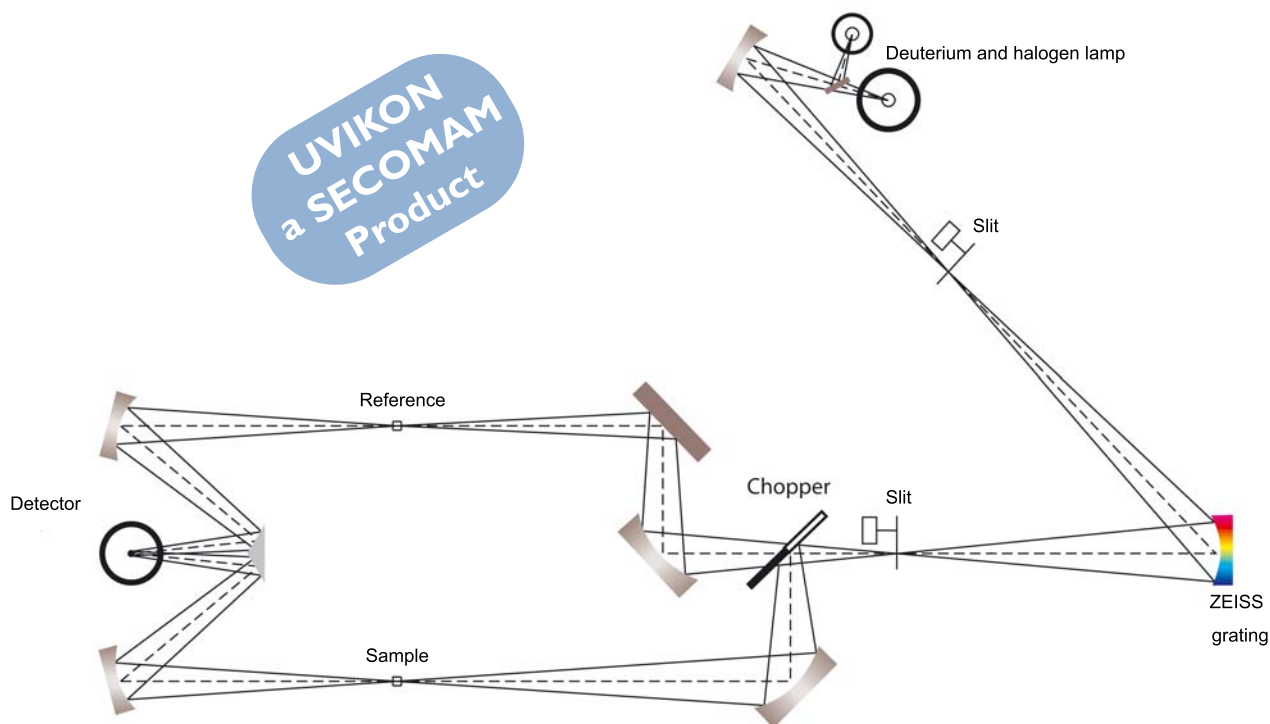
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Absolutely symmetrical Double Beam Spectrophotometer

UVIKON[®] XL

UVIKON
a SECOMAM
Product



UVIKON XL features the following specifications

Wavelength range	180-900 nm	Photometric precision @ 590 nm/400	± 0.5 mAbs
Wavelength step	0.05-10 nm	Noise (RMS), measured at 580 nm	40 µ Abs
Scan speed	5-2000 nm/min	Drift, 580 nm	< 0.1 mAbs/h
Transfer speed	7000 nm/min	Response time	0.02-10 sec
Spectral bandwidth	0.2-0.5-1-2-4-6 nm; 0.5-1-2-4 nm, red height	Light sources lamps	Deuterium and Tungsten-Halogen
Wavelength accuracy	± 0.25 nm	Monochromator	High energy, low stray light diffraction grating with 1300 lines/mm, 175 mm focal length
Wavelength reproductibility	± 0.025 nm	Dimensions	W 680 mm x D 565 mm x H 275 mm
Baseline flatness 200-800 nm	≤ 1 mAbs	Weight	35 Kg net
Stray light, NaI, 220 nm, 1 nm, 1 sec	< 0.015 %T	Mains Power	100/240VAC ±10% 50/60 Hz
Linearity, 250 nm, 2 nm, 1 sec	3.5 Abs (r ² > 0.999)	Power Consumption	Max. 200 VA
Photometric range	± 5 Abs		
Photometric accuracy @ 590 nm/400	± 3 mAbs		

Ordering information

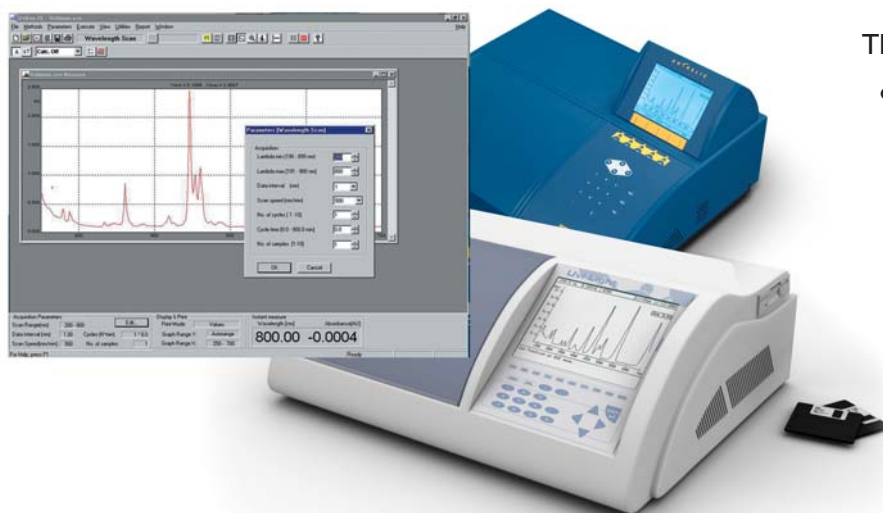
• 70/99-90283 UVIKON XL (CE) (UL/CSA)

Includes LabPower Junior Software Package*,
Standard Thermostatable Cell Holder
compatible with Micro and Ultra Micro
Cells, Accessory Controller to allow
connection of all UVIKON accessories.

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The Multi-Platform Windows
98/NT/2000 or XP compatible
software package LabPower Junior
provides a convenient and easy-to-use
well-proven software environment
basic routine applications including
control of all standard accessories for
the spectrophotometers ANTHELIE
Light & Advanced or Uvi Light XS, XT,
XTD and PC.

Available Analytical Methods

- **Fixed Wavelength** provides data in Abs, log Abs, %T or concentration and calculates calibration curves using up to 33 standards via linear and quadratic regression or linear integration. All standard curves can be stored on hard disk for later concentration measurements.
- **Wavelength Program** allows data acquisition at 2-14 wavelengths with a high slewing speed. Real time as well as Post run calculations of ratios and differences can be made in single mode or repeated at user defined time intervals.
- **Wavelength Scan** provides a variety of scan speeds to acquire spectra from your individual samples. Spectrum rescaling is automatic or user defined. Scanning can be automatically repeated at user selected time intervals. Real time as well as post run calculations include automatic baseline subtraction,

peak and/or valley determination, overlay of curves and derivative calculation.

- **Time Drive** provides a selection of sampling rates to allow acquisition of kinetic data at very high speed (up to 2000 data points per minute) or over a long period of time (15 hours). Real time as well as post run calculations are available similar to wavelength scan plus kinetic activity calculations.

Calculation Functions

- Enzyme activity calculations by linear regression.
- Calibration function via linear or quadratic regression as well as linear interpolation.
- Curve addition, subtraction, multiplication and division.
- 1st to 4th derivatives.
- Wavelength ratio, difference and base point.
- Multi cursor with coordinate values

displayed.

- Zoom function.
- Detection of peaks and/or valleys
- Overlaid curves in graphical or tabular format.

Report Capability

- Customization and storage of individual analytical reports, automated print feature.

Routine Power in UV/Vis Spectroscopy

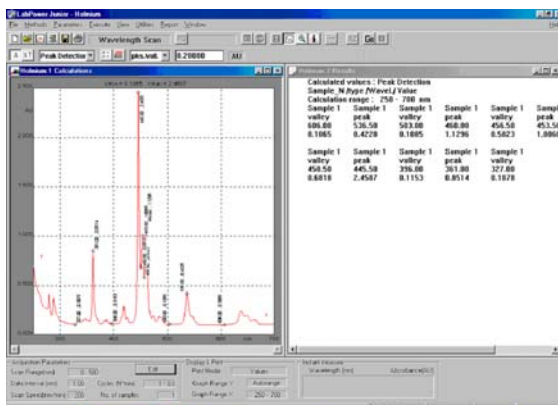
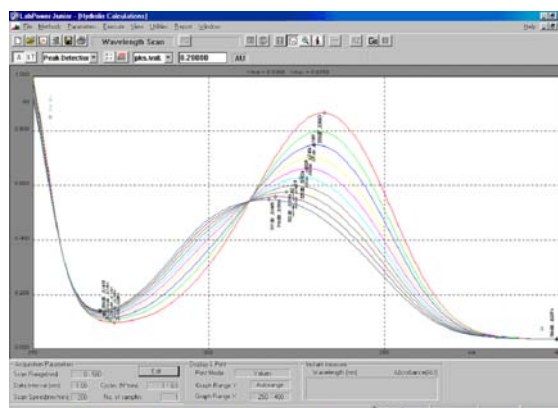


File Conversion

- For direct use with spreadsheets, numerical analysis or desktop publishing software packages
- Data file conversion into ASCII
- Data file conversion into EXCEL
- Graphic formats

Data Storage Capabilities

- Data from all analyses are stored on hard disk with specific file extensions to allow easy post run procedures.
- Data and method files are stored with identification and comments



System requirements

- Pentium PC with 64 MB of RAM minimum, 50 MB of free disk space, 1 free RS232 Port and Windows 98/NT/2000 or XP as Operating System, Desktop Computer or Notebook
- Optional Printers: all standard Windows Printers

Ordering information

- 70MI0510 LabPower Junior Windows software for ANTHELIE Light & Advanced or Uvi Light XS, XT, XTD & PC.

Standard delivery

- CD-ROM LabPower Junior software, RS232C connection cable DB9/DB9, safety software key, operation manual.

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SECOMAM est certifiée ISO 9001-2000. Tous les produits sont conformes CE.

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