

New  
Double Beam  
Spectrophotometers



# Biochrom Libra

## UV-Visible Spectrophotometers

High performance instruments with added application value  
for academia, research and industry

## Biochrom Libra – Real Choice in Spectrophotometry



### Biochrom Libra - why compromise?

The Biochrom Libra range is about freedom to work the way you want to. Don't settle for anything less than your perfect solution. From academia to industry, Biochrom has the spectrophotometer to suit your particular application needs - without requiring you to compromise on performance or overspend.

The Biochrom Libra range of UV/Visible spectrophotometers extends from the practical, split beam laboratory workhorse, to high performance, variable bandwidth, double beam systems ideal for the highly regulated pharmaceutical environment. With common hardware and software platforms, all Biochrom Libra instruments provide flexible, robust, reliable measurements and are easy to use and afford.

Our new instruments are designed to be flexible with a choice of software and a range of interchangeable accessories that are easy to install. Select the configuration that fits your needs and don't pay for unnecessary features that you won't use.



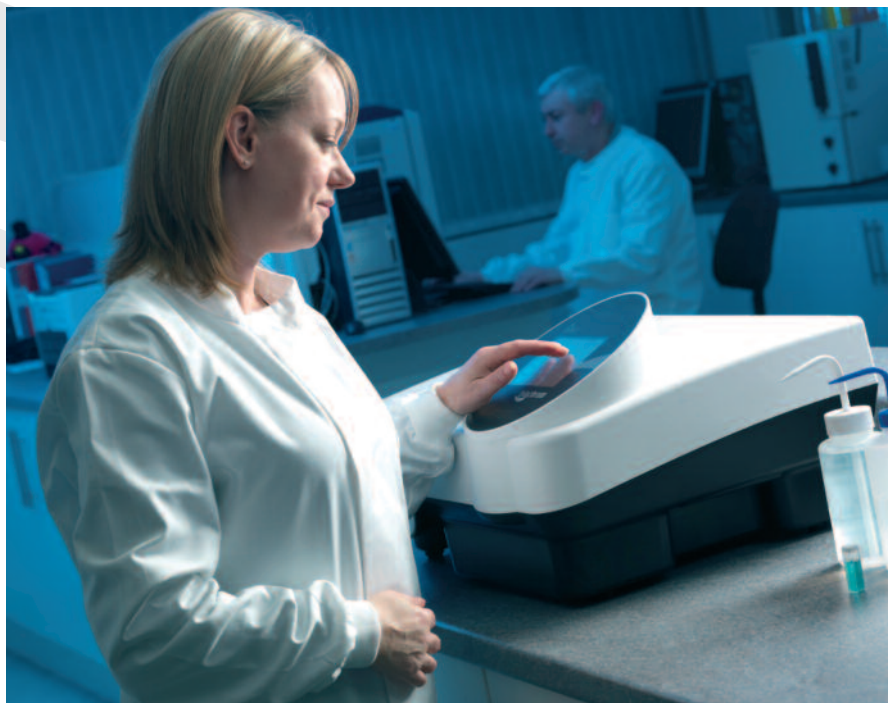
Biochrom are experts in spectrophotometry and have manufactured quality scientific instruments for forty years.

Our spectrophotometry ranges include not only Biochrom Libra spectrophotometers but also Biochrom WPA spectrophotometers and colorimeters for education and life sciences. As LKB Biochrom we launched the now famous Ultrospec® range in 1982 followed by the GeneQuant® range of spectrophotometers.

Our name may not be familiar but our instruments are found in hospitals, universities and industrial laboratories worldwide. We supply our instruments through a global network of independent distributors and also manufacture for some of the world's finest scientific companies.

All Biochrom instruments are CE marked and are manufactured under a rigorous quality system.

## Stand-Alone Instruments



Many sample measurements taken on a spectrophotometer are straightforward and benefit from the speed and ease-of-use offered by a stand-alone instrument. The wide ranging applications found within today's laboratories call for flexibility. Now Biochrom Libra instruments deliver high function application capabilities in a stand-alone instrument. By incorporating the latest technology and custom written, application-led software, Biochrom Libra spectrophotometers have the advanced features to meet your laboratory's needs, bringing you the benefits of both flexibility and walk-up efficiency without compromise.

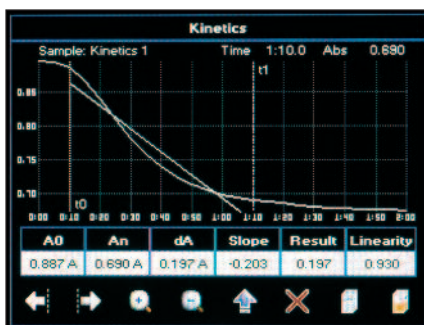
All stand-alone instruments offer:

### ■ Colour touchscreen display

- Full control of all instrument parameters
- Overlay of multiple wavelength scans and kinetic curves
- Post run manipulation of data

### ■ USB interfaces for data storage and export

- Interface for USB memory stick next to the display allows storage of methods and data in secure and ASCII formats
- Interface for USB cable connection to PC



### ■ Full suite of software applications provided as standard

- Single wavelength measurement in Absorbance, % Transmission and concentration measurements using factors
- Wavelength scanning
- Calibration curves
- Kinetics
- Pre-stored Life Science applications
- Trace Manager for manipulation of data stored on the instrument or USB memory stick

### ■ Software security features

- Method storage including all instrument and accessory parameters with password protection
- Multi-level user login

### ■ Multiple language options

### ■ Equation Editor

Turn your instrument into a "custom application analyzer" by setting up stored methods including calculations based on measured sample data, for example: Absorbance difference and ratios. Application examples include: olive oil and chlorophyll analysis and toluene in hexane resolution check.

### ■ Choice of data export methods

All stand-alone Biochrom Libra instruments offer users a choice in export and print functionality with selection parameters stored as part of any method

- Export to PC via USB cable (standard)
- Built in printer (optional)
- Export to a PC via Bluetooth® (optional)



For many users having an external PC to control their spectrophotometer and manipulate data gives them the ultimate in flexibility and control. Whether looking for small differences in multiple spectral overlays, carrying out post-run manipulations on large numbers of samples or simply fulfilling regulatory requirements, Biochrom's Resolution software has the flexibility to work in the way you want.

Resolution software is supplied in different modules to meet the application requirements of different customer groups and offers a simple upgrade path should your requirements change.

Choose:

- **Resolution Lite** for Quick Read and fast scanning only
- **Resolution** for all routine measurements
- **Resolution Life Science** for nucleic acids, proteins and cell density measurements
- **Resolution CFR** if you need full 21 CFR part 11 compliance

Offering the familiar look and feel of Microsoft® Office 2007, Resolution software is compatible with Windows® XP, Windows Vista and Windows 7 operating systems. Data export options include Microsoft Word and Excel® plus Adobe® PDF formats.

## European Pharmacopoeia (EP) Compliance

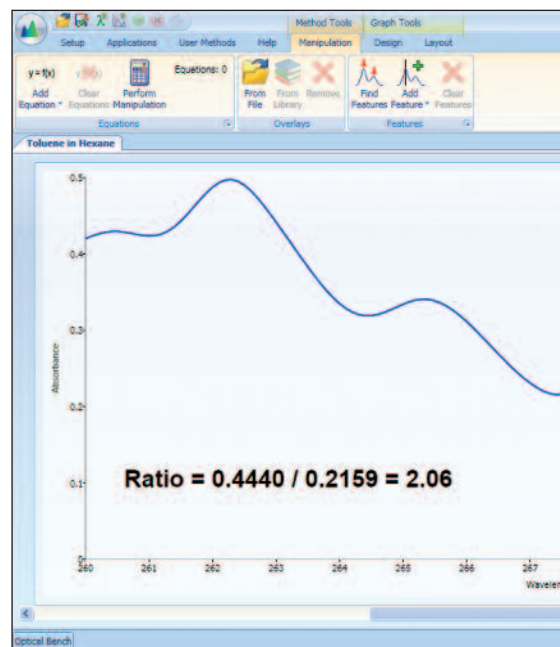
Customers manufacturing pharmaceutical products in compliance with the EP look for a UV/Visible spectrophotometer that meets the specifications defined in EP 2.2.25. This publishes specifications for the control of wavelength, Absorbance, stray light, resolution and spectral slit width.

The specification for resolution states "When prescribed in a monograph, measure the resolution of the apparatus as follows: record the spectrum of a 0.02 % V/V solution of toluene R in hexane R. The minimum ratio of the absorbance at the maximum at 269 nm to that at the minimum at 266 nm is stated in the monograph." EP version 6.8 includes seven product monographs that prescribe this ratio.

**To claim full compliance an instrument should give a ratio greater than 2.0.**

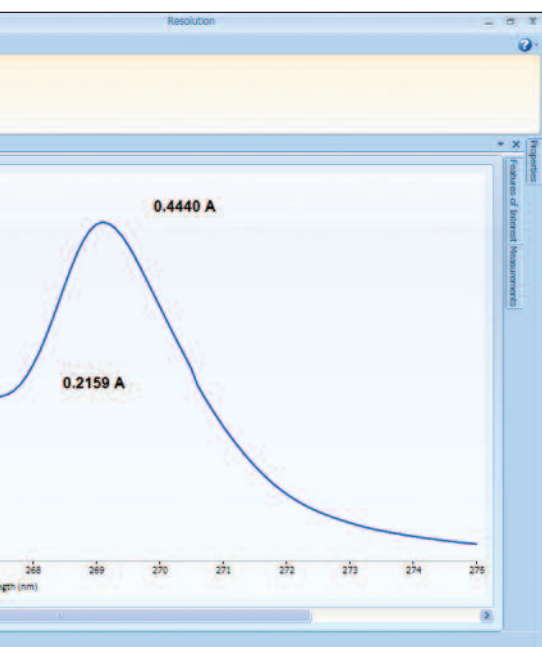
The Libra S70 with its fixed 1nm bandwidth and the S80 with its variable bandwidth both achieve this specification.

Modules	Resolution Lite	Resolution	Resolution Life Science	Resolution CFR
Quick Read and Quick Scan	✓	✓	✓	✓
Wavelength Scanning, Kinetics, Quantitative Calibration Curves		✓	✓	✓
Validation	✓	✓	✓	✓
Method Developer		✓	✓	✓
Life Science Methods			✓	✓
21 CFR Part 11 Compliance				✓
Accessory Control		✓	✓	✓



## Accessories

With a large sample compartment the instrument can be configured with quick change accessories including sipper, temperature control accessories, long pathlength, test tube, and film holders. For the complete range of accessories please see our website.



## Biochrom Libra Software Functionality Comparison

Software Modules	Stand-Alone Instrument Software	Resolution Lite	Resolution	Resolution Life Science	Resolution CFR
Single Wavelength Measurement	Fixed wavelength, Abs/%T, Concentration (factor)		Single or multiple wavelength measurements in Absorbance, % Transmission or concentration including full instrument control, batch processing of sample data and calculations on collected data		
Wavelength Scanning	Sample overlays, automatic feature detection and post run data manipulation		Sample overlays, automatic feature detection and post run data manipulation, spectral scans and spectral arithmetic manipulations		
Concentration Standard Curve	Quantitation using calibration curves with multiple standards and a choice of curve fits		Generation of calibration curves including full instrument and accessory control, choice of line fit, QC limit testing and statistical analysis of sample data		
Kinetics	Serial (or parallel) measurements with the optional cell changer including sample overlays and post run data manipulation		Absorbance versus time measurements on single or multiple cells (with optional cell changer), multiple sample overlays, batch processing of sample data and post run sample calculations and manipulations		
Validation			Software module that allows users to enter and store full details of their Certified Reference Materials (CRMs) and schedule tests to be carried out at defined intervals to meet their Standard Operating Procedures. Users are prompted to insert the specified CRM at the scheduled time and the system automatically checks the performance against the instrument specification.		
Life Science Methods	DNA, RNA & Oligo concentration and purity measurement with optional wavelength scanning. CyDye™ DNA quantitation. Tm calculation. Protein concentration by direct UV measurement or Bradford, Biuret, Lowry or BCA colorimetric methods			DNA, RNA & Oligo concentration & purity measurement  Protein quantitation via direct UV methods or BCA, Biuret, Bradford, Lowry & Colloidal Gold methods  Cell Density measurement	
Custom Method Development	Equation Editor allows the set up of stored methods that can include calculations based on measured sample data e.g. Absorbance ratio and difference.			The Method Developer module allows custom methods to be set up in all applications. These can include sample prompts containing information such as method SOP timings and the ability to lock individual method parameters	
21 CFR Part 11 Compliance					Ability to set up different users as part of defined groups. Audit trail. Electronic signature

[www.biochrom.co.uk/select-a-spectrophotometer/](http://www.biochrom.co.uk/select-a-spectrophotometer/)  
This website tool helps you to find the ideal Biochrom spectrophotometer

## Application Sectors

### MULTI-USER LABORATORIES

*"We need a flexible system that scientists can walk up to and use for their individual projects. It needs to be easy to use, hardworking and robust, but have the flexibility to cover the whole range of applications"* Academic PhD supervisor.

#### TAKE A LOOK AT THE BIOCHROM LIBRA S50 OR S60

- Long life Xenon lamp technology for low cost of ownership
- All application software is built in - no extra modules to buy
- Multi-user analytical instrument with secure login
- Custom calculation facility using Equation Editor
- Large sample compartment making changing accessories easy
- Built in Life Science methods including nucleic acid concentration and purity

The Biochrom Libra S50 and S60 models are robustly designed to deliver reliable, low maintenance UV/Visible spectrophotometry in environments with multiple users. Users can quickly and easily walk up to the instrument, set up a sample, select the appropriate measurement protocols and collect the results. The convenient USB port enables individual users to load personal methods and transport data. Good Laboratory Practice (GLP) performance qualification across multiple user accounts is facilitated via a different security level access.

The Biochrom Libra S60 offers the additional flexibility and familiarity of a double beam optical design. For more advanced data manipulation features consider adding Resolution software.

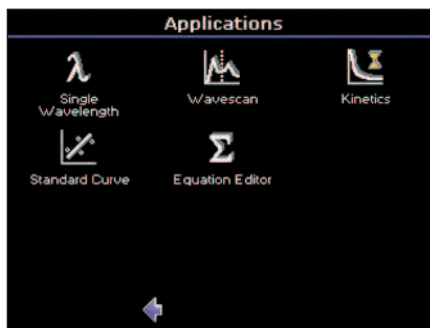
### QUALITY CONTROL

*"Our profitability relies on precise analytical data. To keep production running at optimal efficiency we need high throughput measurements and results must be entirely dependable across the long term"* Manufacturing quality control (QC) manager.

#### TAKE A LOOK AT THE BIOCHROM LIBRA S70

- Fully European Pharmacopoeia compliant system
- Password login to protect methods
- High performance system with narrow bandwidth for precise analysis (toluene hexane ratio of >2.0)
- Optional validation logbook for IQ/OQ/PQ

The Biochrom Libra S70 is an affordable, high specification instrument with a 1 nm bandwidth intended for busy, multi-user analysis in pharmaceutical, QC, analytical and research laboratories. For laboratories requiring high performance and 21 CFR compliance consider adding Resolution CFR module.



### RESEARCH/METHOD DEVELOPMENT

*"We develop methods for our factories worldwide so we need a high performance system and worldwide regulatory compliance with full traceability is an absolute must. However we can't predict the future, so we need the flexibility to handle all UV-Vis applications"* Pharmaceutical method development scientist.

#### TAKE A LOOK AT THE BIOCHROM LIBRA S80PC UPGRADED WITH RESOLUTION CFR

- High performance variable bandwidth UV-Visible spectrophotometer
- Full European Pharmacopoeia compliance
- 21 CFR part 11 compliance using Resolution CFR
- Custom calculation facility for method development in the Resolution Software
- Wide range of accessories that are easily changed

Biochrom's new 'top of the range' high performance instrument. The Biochrom Libra S80 gives consistent results of the highest quality. Satisfying all requirements for European Pharmacopoeia (EP) and optional system qualification. The Biochrom Libra S80 delivers Biochrom's ultimate resolution and precision.

## Biochrom Libra Options and Order Codes

	S50	S50PC	S60	S60PC	S70	S70PC	S80	S80PC
Beam Configuration	Split beam (with reference beam compensation)		Double Beam					
Lamp	Xenon				Deuterium/Tungsten			
Wavelength Range	190-1100nm							
Bandwidth	2nm				1nm		Variable (0.5,1,2,4nm)	
Detector	Dual Solid State Silicon photodiode							
Photometric Range	-4.000A to 4.000A							
Colour Touch Screen	✓		✓		✓		✓	
Built in Software	✓		✓		✓		✓	
Resolution PC Control Software	Optional	Standard	Optional	Standard	Standard	Standard	Standard	Standard
USB Storage	✓		✓		✓		✓	
Accessories	✓	✓	✓	✓	✓	✓	✓	✓
Built in Thermal Printer	Optional		Optional		Optional		Optional	
Method Storage	Up to 90 on-board, unlimited via USB	Unlimited on PC	Up to 90 on-board, unlimited via USB	Unlimited on PC	Up to 90 on-board, unlimited via USB	Unlimited on PC	Up to 90 on-board, unlimited via USB	Unlimited on PC
CE Mark	✓	✓	✓	✓	✓	✓	✓	✓
EP Compliance					✓	✓	✓	✓
IQ/OQ/PQ	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Languages	English French German Spanish	English	English French German Spanish	English	English French German Spanish	English	English French German Spanish	English
Cell Compatibility	Cuvette, Microcell*, 1-100mm Pathlength Cell*, Test Tube*, Film*							
Power Requirement	100-240V AC, 50/60Hz, 150VA							
Weight	17kg (37.5lb)							
Dimensions (WxDxH)	54 x 46 x 32cm (21.3 x 18.1 x 12.6 inches)							

### Order Codes

	S50	S50PC	S60	S60PC	S70	S70PC	S80	S80PC
Instrument only	80-7000-01	80-7000-00	80-7000-11	80-7000-10	80-7000-21	80-7000-20	80-7000-31	80-7000-30
With Thermal Printer	80-7000-02		80-7000-12		80-7000-22		80-7000-32	
With Bluetooth®	80-7000-03		80-7000-13		80-7000-23		80-7000-33	
With Thermal Printer and Bluetooth®	80-7000-04		80-7000-14		80-7000-24		80-7000-34	

**For a full list of accessories and technical specifications for all instruments see [www.biochrom.co.uk](http://www.biochrom.co.uk)**

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\* optional accessories