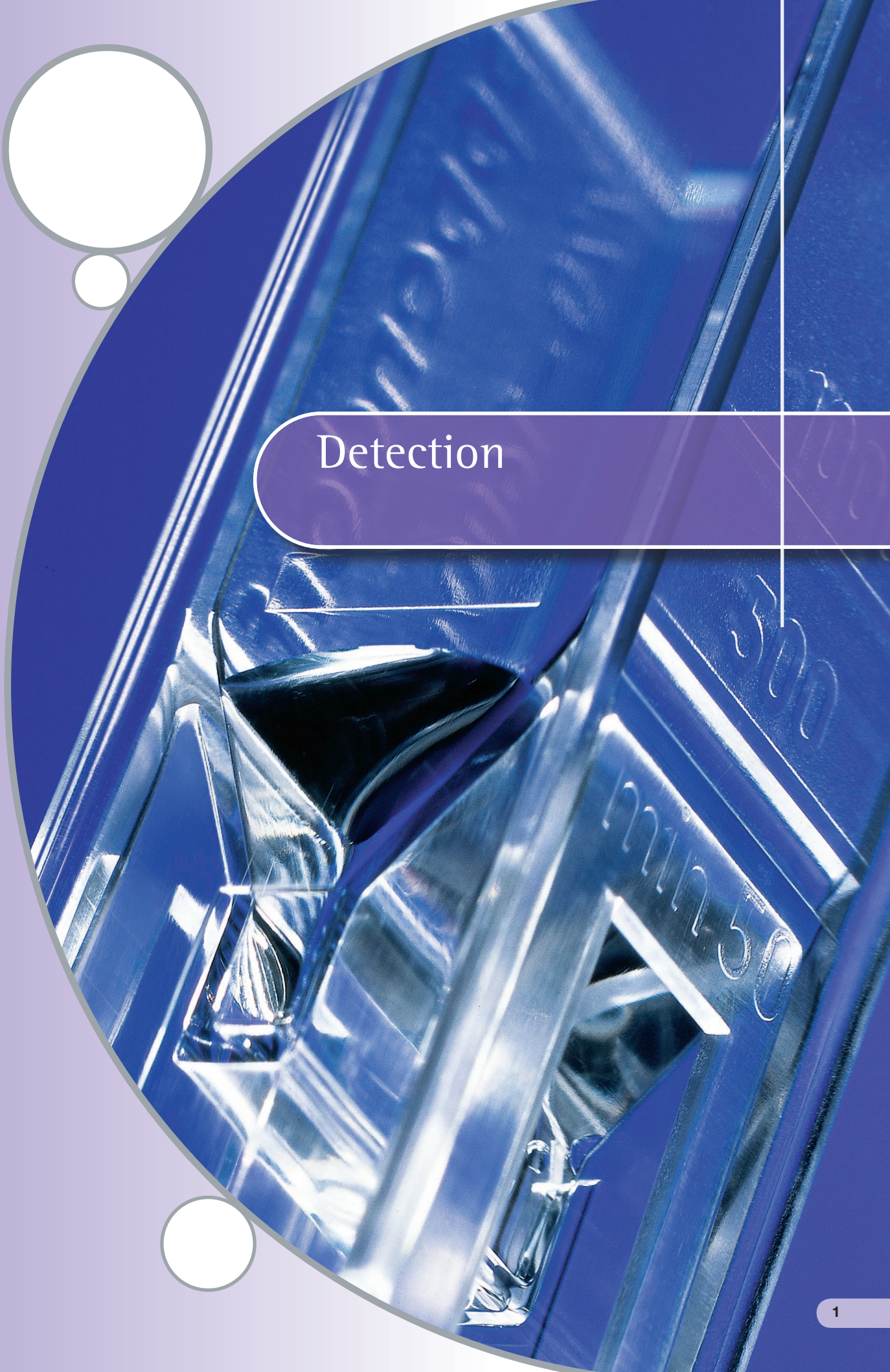


Detection

BioPhotometer

Application

● Rapid and reliable analysis of ds/ssDNA, RNA, oligonucleotides, proteins and bacterial cell density/turbidity measurement

Product features

● Ready to use at all times
● Measurement cycle of approximately 2 seconds
● Storage of the last 100 results and all calibration data
● Compact design, easy to transport
● High-quality components ensure high operating safety
● Metal housing ensures high stability
● Xenon flash lamp has extremely long life span (10 years)
● Preprogrammed methods: dsDNA, ssDNA, RNA, oligos, proteins and OD600; Lowry, Bradford and BCA (plus micro methods)
● Automatic calculation of sample dilution
● Simple molar conversion using the “Conversion” key
● Up to 10 standards for colorimetric processes

Description

Sophisticated technology in a compact format, our BioPhotometer minimizes your workload for everyday routines in the fields of molecular biology and biochemistry. Its easy to use keypad greatly facilitates and accelerates operation of the device: each method has its own key, and parameters, such as wavelengths and conversion factors, are set automatically when the method is selected.

The results of your analysis and all accompanying data are available at a glance: a large, easy-to-read display provides immediate information on sample concentration, all absorbance readings, purity ratios A $^{260}/_{280}$ and A $^{260}/_{230}$ and sample dilution. The BioPhotometer automatically calculates all of these parameters, therefore, the results are always error-free.

**Quantification made easy:
For further information on photometric quantification, see page 288.**

Technical specifications subject to change.

Ordering information for other voltage options can be found in the appendix on page 304.

BioPhotometer

Interactive BioPhotometer CD

The Virtual BioPhotometer is an interactive CD that offers you a guided tour of the Eppendorf® BioPhotometer. It also contains application notes, the user manual and other useful tips and tricks. Order your free copy at **www.biophotometer.info.**

Technical specifications

Optical system:	Absorption single-beam photometer with reference beam
Light source:	Xenon flash lamp
Wavelengths:	Xe 230; 260; 280; 320; 562; 595 nm
Spectral bandwidth:	5 nm: 230–320 nm; 7 nm: 562–595 nm
Photometric measuring range:	0.000–3.000 A
Systematic error:	±1% at 1 A
Random error:	≤0.5% at 1 A
Method-dependent evaluation:	– Absorbance/concentration using conversion factor – Concentration using calibration with 1 to 10 standards – Endpoint calibration (1 standard) – Linear regression (2–10 standards) – Nonlinear regression (polynom, 3rd degree; up to 10 standards), single, double or triple determ. – Ratio A $^{260}/_{280}$, ratio A $^{260}/_{230}$, molar concentration, total yield – Warburg formula for protein direct A_{280}
Calibration memory:	For all protein standard calibrations
Results memory:	For last 100 results: absorption and ratio values, sample number, dilution, date and time
Interface:	RS 232 C, serial, for printer or PC
Power requirement:	Approx. 20 W in operation; 10 W in standby mode
Power supply:	120–240 V/50–60 Hz
Dimensions (W x D x H):	20 x 32 x 10 cm
Weight:	Approx. 3 kg
Optional accessories:	Thermal printer DPU 414, 40 characters/line Secondary UV-VIS-Filter set for verifying photometric and wavelength accuracy

Ordering information

Description	Order no
BioPhotometer	6131 000.012
BioPhotometer PC online, software package for online data transfer to PC	6131 810.006
Secondary UV-VIS-Filter, test set for verifying photometric and wavelength accuracy (NIST-traceable)	6131 928.007
Thermal Printer DPU 414 serial printer, incl. power supply 230 V unit and printer cable	6131 011.006
Printer Paper (5 rolls)	0013 021.566
Aspirating pump ECOM-P 4153, for rapid emptying of aspiration cuvettes, with integrated outgoing air filter	4153 000.013

UVette®

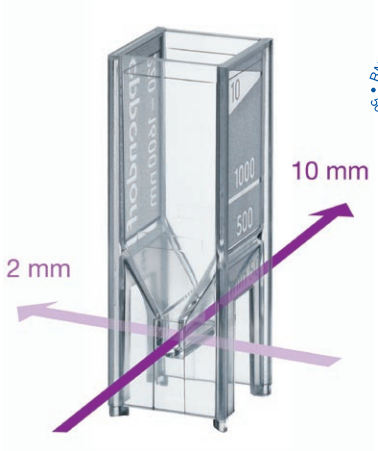
Application

- Spectrophotometric analyses in the UV and visible range ≥220 nm

Product features

- Suitable for measuring small volumes (≥50 µl)
- UV and VIS-transparent between 220 nm and 1,600 nm
- Volume markings for 500 µl and 1,000 µl
- Two optical path lengths: 10 mm and 2 mm
- Available in individually packaged RNase-, DNA- and protein-free quality
- Deep-lying optical window prevents scratches
- Tapered cuvette base for optimal filling
- Frosted grip for labeling
- Ideal for use in the BioPhotometer
- Adapters available for use with other common spectrophotometers (see page 256)

*1 US Patent 6249345



Description

Since its introduction as the first fully UV-transparent disposable cuvette, the Eppendorf UVette*1 has become an indispensable tool for a wide variety of applications. Our vast experience and expertise in the manufacturing of optical precision parts is evident in the UVette's every detail:

Clearly the safest

The plastic of the UVette provides a transparency range from 220 nm to 1,600 nm. Pipetting can be monitored clearly and easily through the bubble-free, crystal-clear plastic—even with samples as minute as 50 µl in size. The funnel-shaped base prevents any capillary effects and ensures that the liquid constantly remains in the center of the measuring area. Deep-lying optical windows provide vastly superior protection against scratches when the UVette is inserted into a photometer.

A perfect design

Choose between two optical path lengths with a single rotation! Samples with a normal concentration can be measured using the 10 mm optical path length. For samples with a higher concentration, simply rotate the UVette by 90° and use the shorter, 2 mm optical path length.

Universal

The UVette is ideal for use with the Eppendorf® BioPhotometer. In other photometers and/or spectrophotometers, the UVette is inserted with the aid of an adapter. This adapter aligns the UVette to the corresponding height of the optical light path in the instrument (adapter/instrument reference list on page 256).

Further technical information on absorbance/transmission and material resistance data can be found at www.eppendorf.com/uvette.

Technical specifications

Material:	UV-transparent plastic, free of fluorpolymers and other halogenated hydrocarbons
Spectral range:	220–1,600 nm
Volume:	50–2,000 µl
Light center height:	8.5 mm
No. of optical windows:	4
Optical path lengths:	10 and 2 mm
Basic absorbance:	≤0.5 A at 260 nm
External dimensions (W x D x H):	12.5 x 12.5 x 36 mm

Technical specifications subject to change.

UVette®

UVette—certified purity

Clean-room production and individual packaging ensures that our UVettes are RNase-, DNA- and protein-free as well as protected against contamination and dust. These cuvettes are ideal for RNA applications and work that is required to be contamination-free. You can even recover your samples without the risk of contamination or degradation.

- Individually packaged for contamination-free work and sample recovery
- Certified RNase-, DNA- and protein-free

UVette routine pack—safety in numbers

An economical choice for applications that do not necessarily require clean-room purity, our new UVette routine pack gives you convenient access to each UVette while still safeguarding them against dust and/or scratches.

- Ideal cuvettes for routine applications
- Safe storage in a reclosable box

Quantification made easy:
For further information on photometric quantification, see page 288.

Ordering information

Description	Order no
UVettes, individually packaged single cuvettes, certified RNase-, DNA- and protein-free, 80 pcs.	0030 106.300
UVette routine pack, Eppendorf Quality purity level, reclosable box of 200 pcs.	0030 106.318
UVette Starterset, includes 80 individually packaged cuvettes (certified RNase-, DNA- and protein-free) and one universal adapter for 8.5 mm and 15 mm light path heights (e.g. GeneQuant® I/II)	4099 100.007
Adapter* for photometer/spectrophotometer with light path height:	
8.5 mm	4099 001.009
10 mm	4099 002.005
15 mm	4099 003.001
20 mm	4099 005.004
GeneQuant I/II	4099 004.008
Cuvette stand	4308 078.006

* Additional adapters on page 256.

UVette® adapters

The UVette is ideal for use with the Eppendorf® BioPhotometer. In other common photometers and/or spectrophotometers, the UVette is inserted with the aid of an adapter, which performs two functions:

- It aligns the UVette to the height of the photometer's light beam
- Its aperture function optimally guides the light beam through the UVette

Quantification made easy: For further information on photometric quantification, see page 288.

Compatibility list—which adapter for which device?*[1, 2]

Manufacturer	Device	UVette adapter/size	Comments
Amersham Biosciences®	GeneQuant® I/II	GeneQuant I/II	–
	GeneQuant devices other than GeneQuant I/II	15 mm	–
	Ultrospec series	15 mm	–
Analytik Jena	SPECORD series	8.5 mm or 15 mm	When using the adjustable cuvette holder for 8.5 mm or 15 mm light path height.
	SPEKOL series	8.5 mm	When using the adjustable cuvette holder for 8.5 mm or 15 mm light path height.
Biochrom®	Libra S21/S22	15 mm	–
	Libra S32/S32PC	15 mm	–
Bio-Rad®	SmartSpec 3000	8.5 mm	–
Eppendorf	BioPhotometer	–	No adapter is required.
Hitachi®	U-series	UBA 410–1500	Only available in Europe. For further information: support@eppendorf.com
	GeneSpec I/II	UBA 410–1500	Only available in Europe. For further information: support@eppendorf.com
Jenway	Genova	Adapter from Jenway	Please contact your local Jenway or Techne representative.
PerkinElmer®	Lambda series, except EZ series	15 mm	–
	Lambda EZ 201 and EZ 210	8.5 mm	When using the micro cell holder.
Secomam	UVIKON series	15 mm	When using the single-cell holder. For models 943 and XL, the 15 mm adapter can also be used for multi-cell holder 6 x 6.1.
Shimadzu®	UV-series	15 mm	When using the standard cell holder.
	UV Multispec-1500	15 mm	–
	BioSpec®	15 mm	–
Techne®	Genova	Adapter from Jenway	Please contact your local Techne or Jenway representative.
	Specgene	Adapter from Jenway	Please contact your local Techne or Jenway representative.
Thermo	Spectronic® BioMate 5	15 mm	When using the single-cell holder.
	Spectronic Helios series	15 mm	When using the single-cell holder.
	Unicam® UV 1	15 mm	–

*[1] Recommended by the manufacturer. Eppendorf AG assumes no responsibility for the accuracy and completeness of the manufacturer information. Technical specifications subject to change! September 2003
*[2] So far tested devices. For an updated compatibility list please refer to our homepage or contact the Eppendorf Application Support team.