

BioPhotometer plus  
analysis system

# The Plus for your lab!

The easy, rapid and reliable BioPhotometer plus analysis system

**eppendorf**

# See it clearly!

## UVette®

### Precision in plastics

The patented\*1 UVette is the first commercially available fully UV-transparent disposable cuvette—and a perfect example of Eppendorf's expertise in precision optical parts production.

#### ● Pure

- Clean room production
- Optional individually packaged
- Lot specific certificates available
- Recovery of samples without the risk of degradation or contamination

#### ● Convenient

- Small sample volume  $\geq 50 \mu\text{l}$
- Frosted grip for labeling
- No cleaning necessary (disposable cuvette)

#### ● Precise

- UV- and VIS-transparent between 220 nm and 1,600 nm
- Tapered cuvette base for accurate filling

#### ● Flexible

- Two optical path lengths (2 mm and 10 mm)
- Adapters for use with other spectrometers available

### Applications

- Measurements of precious samples, e.g., RNA applications
- Quantification of low concentrations
- Recovery of samples for downstream applications



## UVette® routine pack

#### ● Simple

- Convenient access to each cuvette
- Easy filling of multiple cuvettes
- Perfect for routine applications

### Applications

- Protein quantification using 280 nm
- Measurement of small sample volumes ( $\geq 50 \mu\text{l}$ )
- Cell density ( $\text{OD}_{600}$ ) measurement

- Useful information about material compatibility, certificates, or application notes on the Eppendorf UVette are available at [www.eppendorf.com/uvette](http://www.eppendorf.com/uvette)

\*1 US-Patent 6249345.

# Focus on the small things!

## Hellma® TrayCell\*\*

### Small volume, great results

Hellma is a leading manufacturer of high precision optical products. The Hellma TrayCell, along with our BioPhotometer, allows a highly reproducible photometric analysis in the microliter scale. Filling, measurement and cleaning is done in just a few seconds. If required, samples can even be completely recovered for further usage.

#### ● Reproducible

- No cross contamination due to easy cleaning
- No error-prone dilutions needed
- Wide dynamic range

#### ● Versatile

- Suitable for all routine applications
- Works with 0.7 µl to 5 µl sample volume
- Suitable for a wavelength range from 190 nm to 1,100 nm

#### ● Compatible

- Fibre optic microliter cell
- Equivalent size to standard cuvette
- Optimized for use in Eppendorf BioPhotometer

### Applications

- Nucleic acid analysis, protein quantification and other applications with small sample volumes
- Quantification of high concentrated samples



- The optical light path is defined by the gap between cap and the surface of the optical window on which the sample is directly applied.

\*\* This product is sold by Hellma GmbH & Co. KG.

#### Ordering information:

Hellma TrayCell, 68.5 mm, 8.5 mm, (incl. 0.2 mm and 1 mm cap)	105.800-UVS Z 8,5 mm
Cap for TrayCell, light path 1.0 mm	665.703
Cap for TrayCell, light path 0.2 mm	665.704
Cap for TrayCell, light path 0.1 mm	665.706
Cap for TrayCell, light path 2.0 mm	665.705

For detailed technical information please visit [www.hellma-worldwide.com](http://www.hellma-worldwide.com)

# Please press here!

## BioPhotometer plus

### An advantage for your lab!

The BioPhotometer plus is a compact UV/VIS photometer for flexible applications in molecular biology, biochemistry or cell biology. Routine work is done reliably and the results are calculated at a glance and adapted to your needs.

#### ● Flexible

- 9 wavelengths for 32 methods (9 freely programmable)
- Optimized for small sample volumes using microliter cells

#### ● Small

- Space saving device
- High stability
- Easy to transport

#### ● Reliable

- Calculation of all results, factoring in dilutions
- Storage of the last 100 results

#### ● Fast

- Precise results without pre-warming of the instrument
- Quick measurement of single wavelengths

### Methods

- **Nucleic acids:** dsDNA, ssDNA, RNA, Oligo
- **Protein:** 280 nm, Bradford, Lowry, BCA
- **Cell density:** OD<sub>600</sub>
- **Dye 550/650:** Frequency of incorporation of fluorescent dyes (e.g., Cy3, Cy5)
- **Assays:** endpoint measurements at 340 nm, 405nm, 490 nm, e.g., enzymatic activities and cell biological methods
- **Absorption:** direct measurement of single wavelengths without further processing



```
dsDNA #006
209.7 ng/µL
010+090µL 0.248A230
0.419A260
1.80260/280 0.233A280
1.69260/230 0.000A340
```

```
DYE 550-ssDNA #006
11.6 µg/mL ssDNA
0.910 pmol/µL CY3
26.6 DYE/kb FOI
```

- User manual, application notes and many useful tips can be found at [www.eppendorf.com/detection](http://www.eppendorf.com/detection)

# Expand your prospects!

## BioPhotometer Data Transfer Software

### Effortless Data Storage

The BioPhotometer Data Transfer Software transfers all measurement and calibration data to a PC. This allows you to archive the measurements and to export the results easily into a data processing software.

#### ● Easy

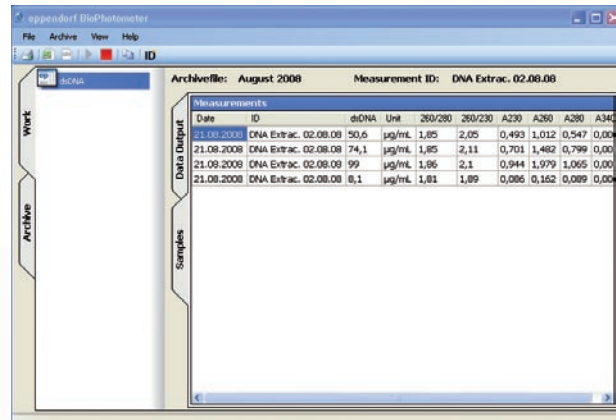
- User-friendly operation
- Clearly arranged data
- Data export

#### ● Save

- Long-term data storage
- User administration (optional)
- Transmission of all measurement and calibration data

### Applications

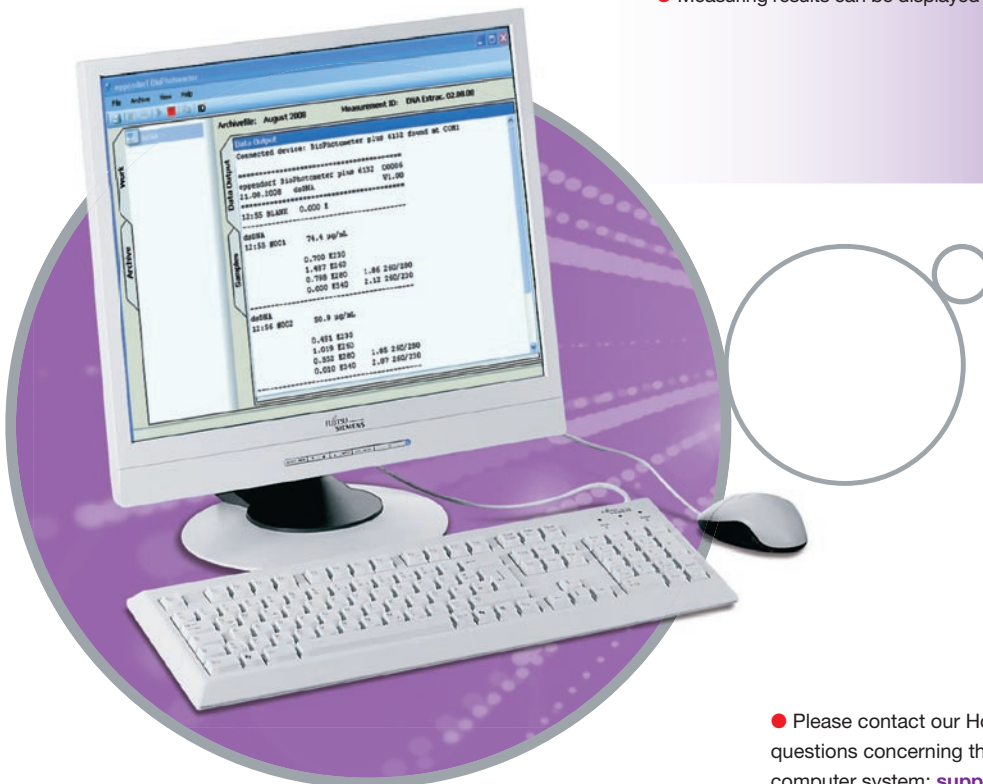
- Data transfer for further data processing
- Long term storage of measurement results



The screenshot shows the 'BioPhotometer' software window. The title bar reads 'eppendorf BioPhotometer'. The menu bar includes 'File', 'Archive', 'View', and 'Help'. The main window is titled 'Archivfile: August 2008' and 'Measurement ID: DNA Extrac. 02.08.08'. It features a 'Data Output' table with columns for Date, ID, diDNA, Unit, and several numerical columns (260/280, 260/230, A230, A260, A280, A340). The table contains four rows of data for measurements on 21.08.2008 and 21.09.2008. On the left side, there are vertical tabs for 'Work', 'Archive', 'Data Output', and 'Samples'.

Date	ID	diDNA	Unit	260/280	260/230	A230	A260	A280	A340
21.08.2008	DNA Extrac. 02.08.08	50,6	µg/mL	1,85	2,05	0,493	1,012	0,547	0,000
21.08.2008	DNA Extrac. 02.08.08	74,1	µg/mL	1,85	2,11	0,701	1,482	0,799	0,000
21.09.2008	DNA Extrac. 02.08.08	99	µg/mL	1,86	2,1	0,944	1,979	1,065	0,000
21.09.2008	DNA Extrac. 02.08.08	8,1	µg/mL	1,81	1,89	0,086	0,162	0,089	0,000

- Measuring results can be displayed either in tabular or display view.



- Please contact our Hotline if you have any questions concerning the compatibility with your computer system: [support@eppendorf.com](mailto:support@eppendorf.com)

# BioPhotometer plus

## Technical Specifications

Optical system:	Absorption single-beam photometer with reference beam
Light source:	Xenon flash lamp
Light beam height:	8.5 mm
Measuring wavelengths:	230, 260, 280, 340, 405, 490, 550, 595, 650 nm
Spectral bandwidth:	5 nm at 230–340 nm, 7 nm at 405–650 nm
Wavelength systematic error:	±1 nm at 230–280 nm, ±2 nm at 340–650 nm
Photometric measuring range:	0 to 3 A (2 A at 340 nm); Dye Methods: 2 A at 550 nm/650 nm
Photometric random error:	±0.002 A at 0 A; ±0.005 A at 1 A
Photometric systematic error:	±1% at 1 A
Method-dependent calculation:	Absorbance, Concentration via factor, Concentration via calibration with 1 to 10 standards, One-point calibration (1 standard), Linear regression (2 to 10 standards), Non-linear regression (3rd degree polynom; 4 or 5 to 10 standards), 1 ×, 2 × or 3 × determination, Ratio 260/280, ratio 260/230, molar concentration, total yield, Ratio 260/280, ratio 260/230, molar concentration, total yield, For dye methods: FOI (frequency of incorporation)
Calibration memory:	For all calibration procedures
Results memory:	For 100 results with absorbance and ratio values, sample number, sample dilution, date and time
Interface:	RS-232 C, serial, PC connection optional
Power requirement:	Approx. 20 W in operation, approx. 10 W in Standby mode
Power supply:	100–240 V, ±10 %; 50–60 Hz, ±5 %
Dimensions (W × D × H):	20 × 32 × 10 cm
Weight:	3 kg
Accessories:	Thermal printer DPU 414, 40 characters/line; Secondary UV-VIS filter set for verifying photometric and wavelength accuracy (NIST traceable)
Cuvettes:	UVette, Hellma TrayCell*, and common rectangular cuvettes of suitable glass or plastic materials

Technical specifications subject to change.

\* For further information on the Hellma® TrayCell, please visit [www.hellma-worldwide.com](http://www.hellma-worldwide.com) or contact your local Eppendorf representative.

## Ordering information

Description	International Order no.	North America Order no.
<b>BioPhotometer plus</b>	6132 000.008	952000006
<b>Secondary UV-VIS filter test set</b> for verifying photometric precision and wavelength accuracy (NIST traceable)	6131 928.007	952010221
<b>Thermal printer DPU 414</b> , incl. power supply 230 V and printer cable	6131 011.006	952010140
<b>Thermal paper</b> (5 rolls)	0013 021.566	952010409
<b>UVette®</b> , individually packaged single cuvettes, Lot specific certificates available, 80 pcs.	0030 106.300	952010051
<b>UVette routine pack</b> , Eppendorf Quality purity level, reclosable box, 200 pcs.	0030 106.318	952010069
<b>BioPhotometer Data Transfer Software</b>	6132 854.007	952000500



Your local distributor: [www.eppendorf.com/worldwide](http://www.eppendorf.com/worldwide)

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