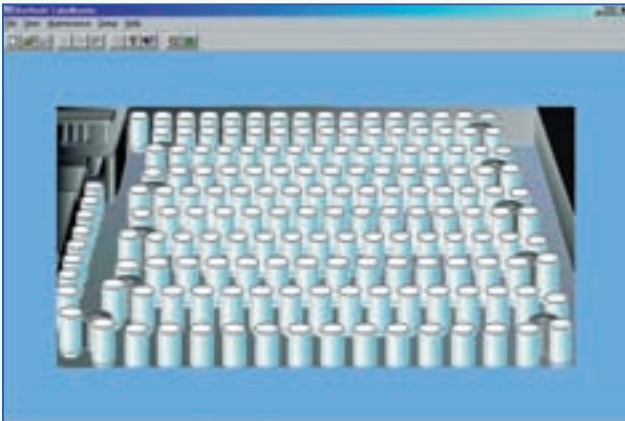


detect and identify



AutoLumat LB 953

Automatic Tube
Luminometer

AutoLumat LB 953

Ultra Sensitive Automatic Tube Luminometer

The BERTHOLD TECHNOLOGIES automatic tube luminometer AutoLumat is an unique instrument for the measurement of all current bio- and chemiluminescence applications. The applications include Reporter Gene assays, ATP monitoring, luminescent immunoassays, enzyme measurements or cellular luminescence.

Up to 180 samples placed in a chain can be measured once or sequentially many times over a long period.

Peltier cooled detector

For detection an ultra fast single photon counter with an extremely large dynamic range is used. The spectral sensitivity ranges from 380 to 630 nm. Overload detection ensures all measurements are valid. Peltier cooling of the detection unit ensures extremely low background noise resulting in unsurpassed sensitivity.

Variable volume injectors

Liquid handling can be done easily using variable volume injectors. The luminometer can be equipped with up to 3 injectors providing optimum reliability and simplicity.

Based on the proprietary JET injection technology the injectors combine high speed and reliable mixing of reagents with outstanding precision. The injected volume can be adjusted within the range 25 to 300 μL .

The materials used are able to withstand even corrosive substances which are often used in chemiluminescence assays. The "Unload" operation helps the user to save expensive reagents by returning them to the reagent reservoirs.

Temperature control

To establish ideal conditions for all cell based applications the measuring chamber can be temperature controlled making the AutoLumat the instrument of choice for cellular luminescence assays.

Easy sample loading

Operation is remarkably easy: You simply insert the samples and they will be automatically processed by the instrument once the start button has been pressed.



Software

The built-in software has been developed to provide easy, intuitive operation of the instrument's powerful features. You can choose from a variety of basic measurement protocols:

- Raw data protocol
- Dual label protocol (incl. Dual reporter gene assays)
- Kinetic measurements
- Cut-off protocol
- Immunoassay protocol (LIA, ILMA) incl. evaluation

For users preferring operation via PC the Tubemaster software can be used for instrument operation, protocol management, data evaluation and data transfer to EXCEL®.



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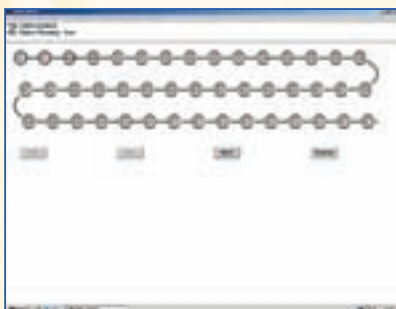


LBIS immunoassay evaluation software

The LBIS software is a Windows® based instrument operation and data evaluation software with a graphical user interface.

It supports all common types of competitive (LIA) and immunometric (ILMA) assays with superior curve fitting algorithms increasing the reliability of the calculated results at the lower concentrations.

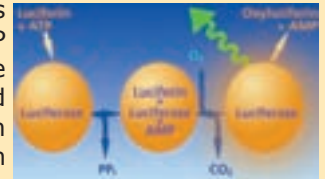
LBIS supports worklist download and sample data upload to host computers. Up to 4 instruments connected to one PC can be run with one LBIS software.



Applications

■ ATP determination

A detection of less than 1 attomol of ATP per tube makes the Autolumat best suited for the determination of cell viability, e.g. in tumour chemosensitivity assays, cell proliferation, antibiotic susceptibility testing or bacterial detection.



■ Reporter Gene Assays

In basic research of gene regulation as well as in drug discovery the use of luciferases, β -galactosidases, β -glucuronidases and secreted alkaline phosphatases have become a standard tool offering the highest sensitivity.

■ Luminescent Immunoassays (LIA, ILMA)

By replacing colorimetric substrates of horseradish peroxidase or phosphatases with luminescent ones an increase up to 100-fold in sensitivity can be achieved. For immunoassay data evaluation the AutoLumat is equipped with sophisticated and easy-to-use software including the use of measured standards, master curves and controls.



■ Cellular chemiluminescence

Cellular chemiluminescence is the production of light occurring upon chemical reaction of activated cells like neutrophil granulocytes, monocytes or macrophages when phagocytosis as the first immune response is activated in order to protect the organism from invaders.

After ingestion of the external object, reactive oxygen species such as H_2O_2 , OH^- and O_2^- are produced resulting in luminescence of a very small intensity. To enhance the chemiluminescent effect, substrates like Luminol and Lucigenin can be added.

■ DNA probe assays

Several diagnostic DNA probe assays based on acridinium ester labelled oligo-nucleotides are commonly used providing the most sensitive detection and diagnosis of infectious diseases.

■ Enzyme activities

■ Environmental monitoring (Vibrio fischeri test)

AutoLumat LB 953

Technical Specification and Order information

Detection unit	ultra low noise photomultiplier in single photon counting mode; spectral range: 380-630 nm
Sensitivity	< 1 amol ATP; < 1 zmol firefly luciferase, equals less then 550 molecules
Dynamic range	> 6 orders of magnitude
Injection unit	Up to 3 (variable volume: 25-300 µL); JET injection technology
Sample chain	180 sample capacity
Tube format	12 x 55 mm (Ø x height) 12 x 75 mm (Ø x height)
Display	2 x 40 characters alpha-LCD display
Language	English and German (software selectable)
Temperature control	Optional: +5 °C above RT to 42 °C
Interfaces	2 x Serial RS 232
Software	built-in software operated with alphanumeric keyboard; Tubemaster PC Software (Win 2000, Win NT, Win XP, Win Vista); optionally LBIS immunoassay evaluation software
Data storage	Internal RAM and flash EPROM
Power supply	110-230 V; 50/60 Hz; 60 VA
Regulations	CE, UL
Temperature range	Storage: 0-40 °C Operation: 15-35 °C
Humidity	10-85 % non condensing
Dimensions	480 x 570 x 380 mm (WxDxH)
Weight	34 Kg

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Order information	Order number
LB 953 AutoLumat, basic unit with Tubemaster software	34622
AutoLumat injector in measurement position, 25-300 µL	INJ953M
AutoLumat injector in pre-position 1, 25-300 µL	INJ953P
AutoLumat injector in pre-position 2, 25-300 µL	INJ953L
AutoLumat temperature control	14663
Lumivials 5 mL, 12x75 mm, 3000 pcs	09778
Lumivials 3.5 mL, 12x55 mm, 2000 pcs	26152
Reagent filters, 5 pcs	43193
Luminescence test kit reagents	43345
Luminescence test kit label	43346
Cleanit Daily, injector cleaning solution	45218



BERTHOLD TECHNOLOGIES GmbH & Co. KG

P.O. Box 100 163
75312 Bad Wildbad
Germany

Phone: +49 7081 177-0
Fax: +49 7081 177-100
E-mail: Bio@Berthold.com
Internet: www.Berthold.com/bio