

detect and identify



AutoLumat LB 953 Flash & Glow LB 955

Automatic Tube
Luminometers

AutoLumat LB 953 / Flash & Glow LB 955

Ultra Sensitive Automatic Tube Luminometers

The BERTHOLD TECHNOLOGIES automatic tube luminometers AutoLumat and Flash & Glow are unique instruments 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 and 30 samples respectively 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 370 to 620 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 luminometers 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 μ l.

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.



Easy sample loading

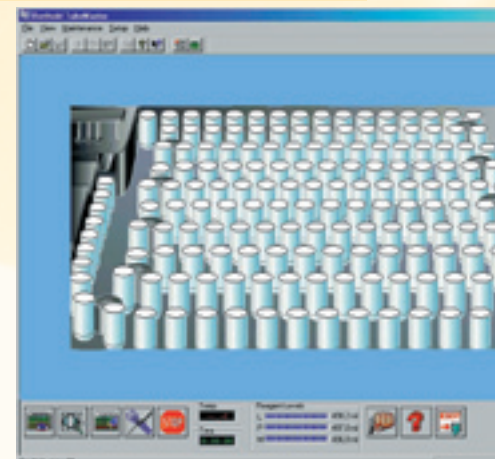
Operation is remarkably easy: You simply insert the samples and they will be automatically processed by the instrument once the start button has been pressed.



AutoLumat LB 953

The automatic luminometer for all chemo- and bio-luminescence applications can be filled with up to 180 samples. 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.

- Up to 180 tubes
- Temperature control
- Up to 3 injectors





Flash & Glow LB 955

The Flash & Glow LB 955 is an automatic tube luminometer, ideal for reporter gene assays, ATP/NADPH measurements and enzyme assays. The luminometer can be filled with up to 30 samples. The measured and calculated sample values are output to the built-in printer.

- Up to 30 tubes
- Built-in printer
- Up to 3 injectors

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:

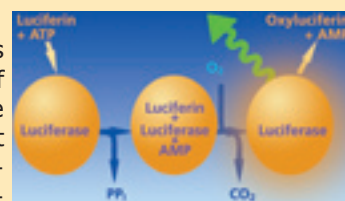
- Raw data protocol
- Dual label protocol (incl. Dual reporter gene assays)
- Kinetic measurements
- Cut-off protocol
- Immunoassay protocol (LIA, ILMA) incl. evaluation

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

Applications

■ ATP determination

A detection of less than 5 attomoles of ATP per tube make both instruments best suited for the determination of cell viability, e.g. in tumour chemosensitivity assays, cell proliferation, antibiotic susceptibility testing or bacterial detection.

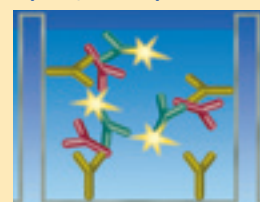


■ Reporter Gene Assays

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 and the Flash & Glow are 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)

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Technical Specification and Order information

Detection unit	State-of-the-art ultra fast photomultiplier in single photon counting mode; spectral range: 370-620 nm
Sensitivity	< 5 amol ATP
Dynamic range	> 6 orders of magnitude
Injection unit	Up to 3 (variable volume: 25-300 µl); JET injection technology
Sample chain	180 sample capacity (LB 953) 30 sample capacity (LB 955)
Tube format	12 x 55 mm (Ø x height) 12 x 75 mm (Ø x height)
Display	2 x 40 characters alpha-LCD display
Internal printer	40-character thermal matrix printer with graphic capability (only LB 955)
Temperature control	Optional: +5 °C above RT to 42 °C (only LB 953)
Interfaces	2 x Serial RS 232
Software	built-in software operated with alphanumeric keyboard; Tubemaster PC Software (Win 98, Win 2000, Win NT, Win XP)
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

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
LB 955 Flash & Glow with injector in measurement position, thermal printer and Tubemaster software	31986-10
Flash & Glow injector in pre-position 1, 25-300 µl	INJ955P
Flash & Glow injector in pre-position 2, 25-300 µl	INJ955L
Paper for thermal printer, 20 pcs	05386
Lumivials 5 ml, 12x75 mm, 2000 pcs	09778
Lumivials 3.5 ml, 12x55 mm, 2000 pcs	26152
Reagent filters, 5 pcs	43193
Luminescence test kit	45366
Cleanit Daily, injector cleaning solution	45218

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