



ULTRASENSITIVE. RELIABLE. COMFORTABLE.

The Lumat Tube Luminometer

FLEXIBLE. EASY-TO-USE. RELIABLE RESULTS.

Ultra-sensitive flash and glow assay readings



The Lumat is a high-performance, easy to use tube luminometer for both, flash and glow luminescence applications.

The optimized optical system provides true single photon counting combined with a low-noise photomultiplier tube for up to 6 decades of linear dynamic range.

Ready to meet your application needs

Due to its superior sensitivity of <1 zmol firefly luciferase and <1 amol ATP/tube (high sensitivity model), the Lumat is ideally suited for

- luminescent reporter gene assays
- immunoassays (LIA, ILMA)
- ATP assay (hygiene monitoring)
- enzyme measurements
- water toxicity
- DNA probe assays
- and many more

Lumat benefits at a glance

- **Have confidence in your results:** ultrasensitive design (<1 amol ATP/tube high sensitivity model) and broad dynamic range (up to 6 orders of magnitude) for superior performance.
- **Designed to support your research:** the system provides the flexibility to use Lumi vials as well as Eppendorf tubes®, can be equipped with up to 2 JET injectors (either 10-100 μ L or 25 – 300 μ L) for reagent dispensing and offers a convenient sample switching mechanism.
- **Easy operation:** the ICE software has a modern workflow-oriented user interface that's intuitive and easy to learn for everyone in the lab.



Figure 1: the Lumat has a motor-driven revolving magazine mechanism for convenient sample switching.

BUILT SMARTLY TO MEET YOUR REQUIREMENTS

Technology to support your application needs

The Lumat provides a range of options and technologies to address specific assay needs and to simplify operation:

- **Superior detector technology:** low noise photon counting photomultiplier (PMT) providing a better signal-to-noise ratio and a more stable signal.
- **Reagent dispensing:** up to two independently controlled JET injectors providing highest precision and accuracy (>98 %) over the entire volume range.
- **Convenient sample switching mechanism:** motor-driven revolving magazine mechanism (figure 1) based on a rotating chamber for two tubes (one for measuring and one for loading and unloading), so you can prepare and insert the next sample while the previous one is still measuring.
- **Sample format flexibility:** works with all types of 12 mm lumi vials or Eppendorf tubes® in 1 mL to 2 mL sizes to meet your workflow needs.



Figure 2: the system can be equipped with up to two JET injectors and supports Lumi vials as well as Eppendorf tubes®.

INTUITIVE OPERATION

Easy to learn software

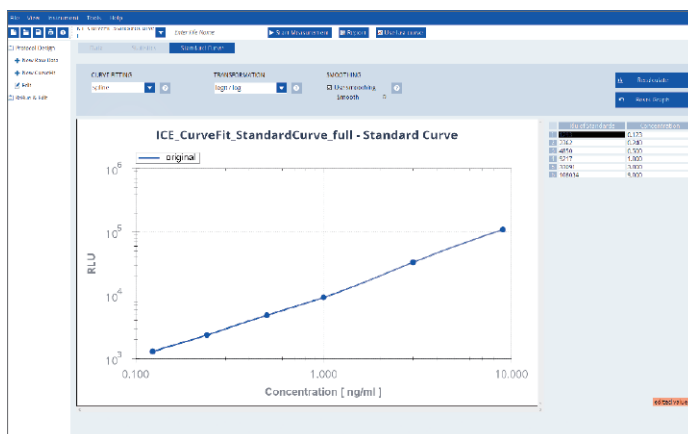


Figure 3: various curve-fitting features and easy definition of cut-off values support your immunoassay applications.

The ICE software is an intuitive, wizard-guided software that walks you through the entire process of setting up your system, collecting your data and reporting the results.

The software package is as flexible as your research thanks to the many setting options and freely configurable combinations of operating sequences.

The software supports single and dual end-point measurements (e.g. DLR®) as well as kinetic measurements which are useful to monitor enzymatic reactions.

TECHNICAL SPECIFICATIONS

Detection Unit	Low-noise photomultiplier tube in single photon counting mode Spectral range: 380 – 630 nm
Sensitivity	Standard models: 5 amol ATP 5 zmol firefly luciferase High sensitivity model: 1 amol ATP 1 zmol firefly luciferase
Dynamic range	≥6 orders of magnitude
Injection unit	Up to 2 injectors JET injection technology Variable volumes: 10 – 100 µL or 25 – 300 µL Speed 200 – 440 µL/sec Accuracy better 2 % Precision better 2 %
Measuring chamber	Motor driven rotating chamber for two tubes (one for measuring and one for loading/unloading)
Tube formats	Luminescence tubes, 12 × 47 mm Luminescence tubes, 12 × 55 mm Luminescence tubes, 12 × 75 mm Microcentrifuge tubes, 1, 1.5 and 2 mL
Interface	USB
PC operating system	Windows 10 (32/64 bit)
PC requirements	Pentium like CPU (2 GHz or better / Intel Core iX recommended), 1 free USB port
Power supply	100 – 240 VAC ±10 %, 50/60 Hz External auto ranging mains adaptor
Operating voltage	24 VDC ± 5 %
Power consumption	2.0 A
Regulations	CE, NRTL
Temperature range	Storage: 0 °C to 40 °C Operation: 15 °C to 35 °C Transport: –20 °C to 50 °C
Humidity	10 – 80 % non-condensing Maximum relative humidity of 80 % for temperatures up to 31 °C; decreasing linearly to 50 %, relative humidity up to 40 °C
Altitude	max. 2000 m (above sea level)
Dimensions	240 × 280 × 220 mm (W × D × H)

Weight	4 kg
ICE Software	• Wizard support for parameter entries • Single and dual endpoint • Kinetic measurements • Ratio and subtraction calculations • Standard curve calculation: cubic spline, linear regression, point-to-point • Selection of axis transformation: log/log, logit/log, lin/lin • Master curve (universal standard curve with calibrators) • Reference curve (measured curve becomes master curve) • Use of last curve • Support of lot numbers of kits (GLP) • Cut-off measurements • Multiple options for report setup • Export as EXCEL, PDF, RTF or DOC formats • Touchscreen enabled

ORDERING INFOS

Models	71450-10	Lumat LB 9510 incl. ICE Software
	71450-20	Lumat LB 9510 Reporter Gene, 2 injectors (100 µL) incl. ICE Software
	71450-30	Lumat LB 9510 Immunoassay, 2 injectors (300 µL) incl. ICE Software
	71450-21	Lumat LB 9510 High Sensitivity, 2 injectors (100 µL) incl. ICE Software
Accessories	56729-S	Adapter for 75 mm tube, set of 2
	57064-S	Adapter for microfuge tubes, set of 2
Consumables	26152	Lumi vials, 3.5 ml, 12 mm × 55 mm (2,000 pcs./box)
	9777	Lumi vials, 3 ml, 12 mm × 47 mm (1,000 pcs./box)
	9778	Lumi vials, 5 ml, 12 mm × 75 mm (3,000 pcs./box)
	45218	Cleanit Daily – Injector cleaning solution (2 × 250 ml)
	43193	Reagent filter set (10 pieces)
Validation Tools	55658-01	LB 9517 luminescence test tube for QC of Lumat, incl. storage box and charging device with external power supply
	55101	Luminescence Performance Kit

Berthold Technologies GmbH & Co. KG

Calmbacher Straße 22
75323 Bad Wildbad
GERMANY
phone: +49 7081 177 0
email: bio@berthold.com

www.berthold.com/bio

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