ULTRASENSITIVE. RELIABLE. COMFORTABLE.

The Lumat Tube Luminometer

BERTHOLD

FLEXIBLE. EASY-TO-USE. RELIABLE RESULTS.

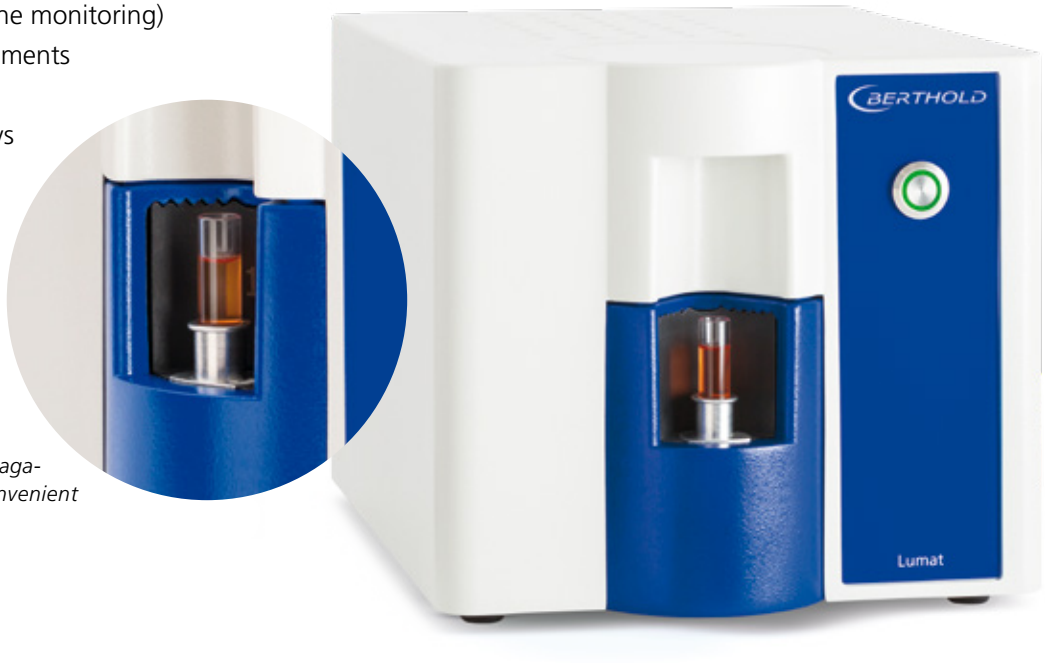
Ultra-Sensitive Flash And Glow Assay Readings

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



The Lumat has a motor-driven revolving magazine mechanism for convenient sample switching.

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.
- **Easy operation:** the LightCompass® software has a modern workflow-oriented user interface that's intuitive and easy to learn for everyone in the lab.
- **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 µL or 25 – 300 µL) for reagent dispensing and offers a convenient sample switching mechanism.

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:

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

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 (< 2 %).

Convenient sample switching mechanism: motor-driven revolving magazine mechanism based on a rotating chamber with two positions (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.

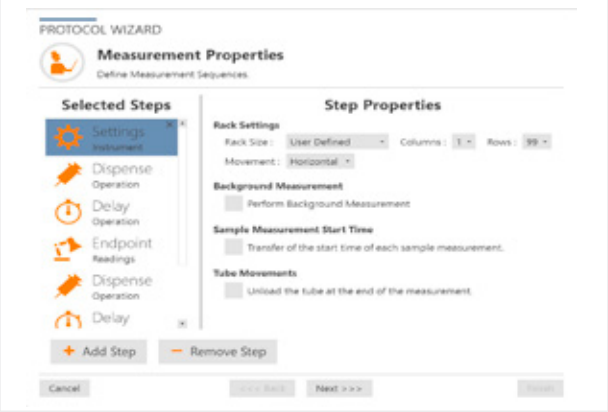
Sample format flexibility: works with all types of 12 mm lumi vials or Eppendorf tubes® in 1 mL to 2 mL sizes to meet your workflow needs.

INTUITIVE OPERATION

The LightCompass® Software

LightCompass® is a flexible software enabling easy data acquisition, analysis and reporting using Berthold Technologies' instruments. It has been optimized for different microplate and tube formats. LightCompass® features all the functions you can expect from an advanced scientific software, such as flexible creation of measurement protocols, curve fitting, qualitative analysis and compliance with FDA 21 CFR Part 11.

LightCompass® allows the flexible creation of measurement protocols, including dispensing of reagents and a fast luminescence readout of all your tubes. It supports different measurement modes



required by modern tube luminometers, e. g. Endpoint and Kinetic measurement.

TECHNICAL SPECIFICATIONS

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 % (@100 µL with destilled water) Precision better 2 % (@100 µL with destilled water)	
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 or higher	
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
LightCompass® Software	Data acquisition: endpoint, kinetics, repeated and scanning Data analysis: quantitative (curve fitting), qualitative (cut-off) Result reporting: fully customizable Multi-user: different access levels

Ordering Information		
Models	71450-10	Lumat LB 9510 incl. LightCompass® Software
	71450-20	Lumat LB 9510 Reporter Gene, 2 injectors (100 µL) incl. LightCompass® Software
	71450-30	Lumat LB 9510 Immunoassay, 2 injectors (300 µL) incl. LightCompass® Software
	71450-21	Lumat LB 9510 High Sensitivity, 2 injectors (100 µL) incl. LightCompass® 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)
Software options	37854-403	LightCompass® Professional
	37854-404	LightCompass® Plus
Validation Tools	55658-01	LB 9517 luminescence test tube for QC of Lumat, incl. storage box and charging device with external power supply

Subject changes without prior notice.

TRANSFORMING SCIENCE INTO SOLUTIONS

Berthold Technologies is a global technology leader in life sciences. Our extensive range of analytical system solutions made in Germany has been trusted by scientists since 1949. These range from small standalone readers, such as microvolume spectrophotometer and luminometers to various dedicated and multimode readers, microplate washers, microplate workstations, ELISA automation products to high-end imaging systems, and HPLC radio detectors. It is our mission to create a healthier world, a safer environment and more efficient manufacturing processes.

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