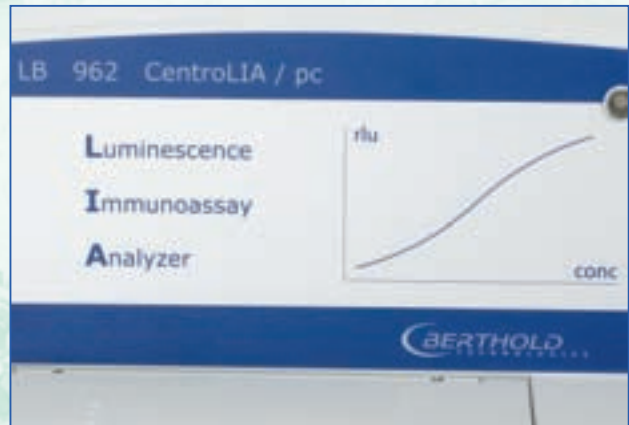


detect and identify



## CentroLIApc LB 962

Microplate Luminometer

# CentroLIApc LB 962

## Microplate Luminometer

### The Essence

Over the past two decades RIA has, to a large extent, been replaced by none-radiometric assays such as ELISA, FIA and LIA. ELISA assays have been a popular choice for immunoassays, because of their relatively low cost and open instrument platforms.

In recent years, luminescent substrates for horseradish peroxidase and phosphatases have been developed with the potential to replace chromogenic substrates directly, resulting in substantial gains in sensitivity, speed and dynamic range.

There was just one element missing so far: a luminometer specifically designed for immunoassays, developed and manufactured by a leading instrument company, bringing out the best possible performance for your assays, with world-wide service capabilities, and, last but not least, at reasonable cost.

This challenge is now met with the LB 962 CentroLIApc, designed and manufactured by BERTHOLD TECHNOLOGIES, the company that has successfully built thousands of luminometers for use in diagnostics and research.

### Instrument Concept

Detector sensitivity and stability are the result of BERTHOLD TECHNOLOGIES' experience with thousands of photon counters. True photon counting has the benefit that no user parameters need to be set, ensuring the same conditions are used for every measurement during the instrument's life time. The fast photon counting circuitry provides a dynamic range in excess of six orders of magnitude, which complements the concentration range of the latest assays.

A patented design of the optical system achieves absolute minimization of cross-talk (down to  $10^{-6}$ , depending on the type of microplate).

Solid 96 well plates, as well 8 well and 12 well strip plates can be measured.

Inside the instrument precise x and y drives ensure exact positioning of the wells with respect to the detector.



### The Kit Manufacturers' Perspective

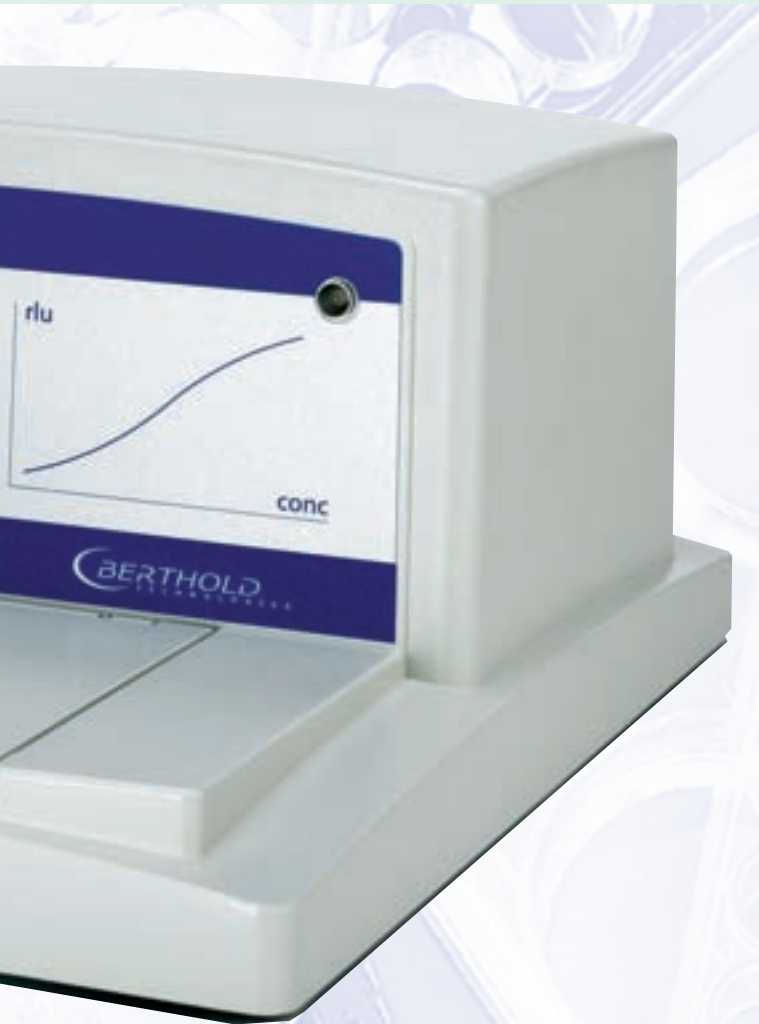
The CentroLIApc is distinguished by its exceptionally high sensitivity, thereby allowing clinically significant detection limits with low reagent consumption. A wide selection of high-quality standardization procedures ensures optimum accuracy and precision in the measurement of assays.

BERTHOLD TECHNOLOGIES world-wide customer service network is available for OEM-partners and users alike, so in the unlikely event of something going wrong, support is available.

### The Researcher's Perspective

An affordable instrument with excellent performance and a small footprint is ideally suited for selected applications such as reporter gene, ATP, caspase and kinase assays.





## Software

The software has been designed with the routine clinical laboratory in mind and offers protocols for all types of immunoassays.

An unlimited number of protocols can be stored. Protocol types are Immunometric (ILMA), Competitive (LIA), Cutoff and Raw Data.

	1	2	3	4	5
A	Spl 1/1	Spl 2/1	Spl 3/1	Spl 4/1	Spl 5/1
B	Spl 1/1	Spl 14/1	Spl 15/1	Spl 16/1	Spl 17/1
C	Spl 25/1	Spl 26/1	Spl 27/1	Spl 28/1	Spl 29/1
D	Spl 37/1	Spl 38/1	Spl 39/1	Spl 40/1	Spl 41/1

Automatic Performance Test  
with optional test plate

Flexible definition  
of wells to be measured

Sequence selection  
for column or row strip assays

Multiple assays  
per plate

Full support  
of kit lot numbers

Storage of assay results  
allowing off-line re-evaluation

Shaking  
variable amplitude and speed

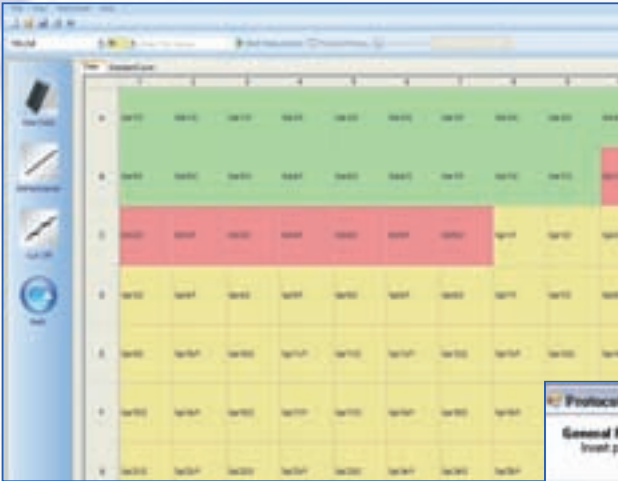


## detect and identify

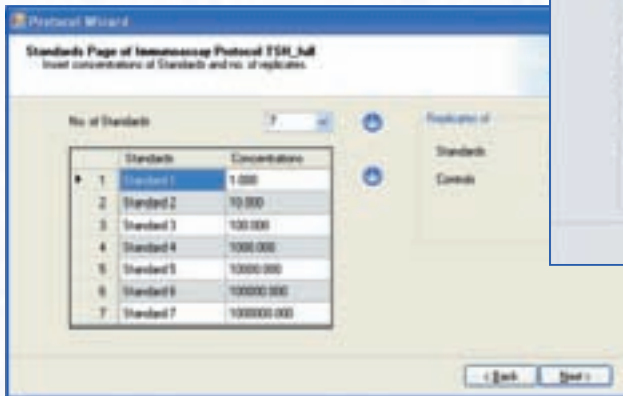
### Simple, intuitive menus

Intuitive wizard-driven menus guide the user through all the instrument set up parameters and assay definitions. The user just follows the screen menus and enters the required parameters for the specific assays. Clear understandable dialogues make the CentroLIApc an extremely user-friendly, easy-to-use, instrument.

Once the parameters for an assay have been defined the protocols are stored and can be re-called at any time for editing and measurement.



During routine operation, the user selects the required protocol, then simply loads the plate and starts the measurement.



### The curve fitting

provides full standardization allowing multiple replicates of Standards, Totals, B<sub>0</sub> and NSB (Blanks)

### Sophisticated curve-fitting

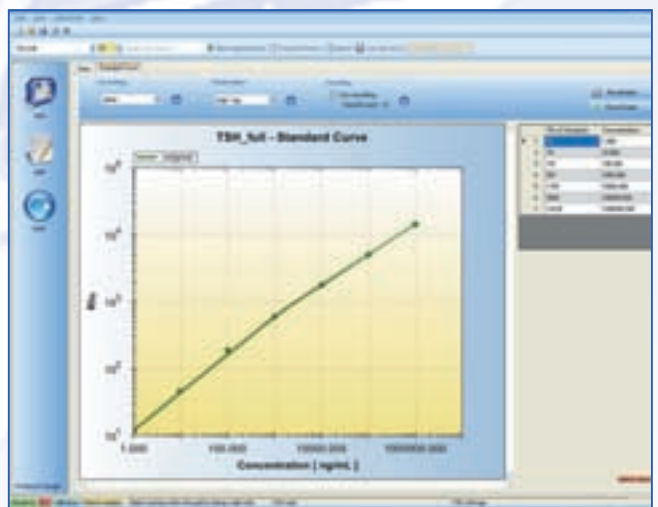
mathematics including logit-log or log-log transformation followed by curve-fit algorithm based on third-orderspline functions with optimized automatic or manual smoothing or linear regression

### Storage of standard curves

is also possible by manual data entry (Master curve), or measurement of a reference curve, or simply storing the last curve used

### Two point calibration

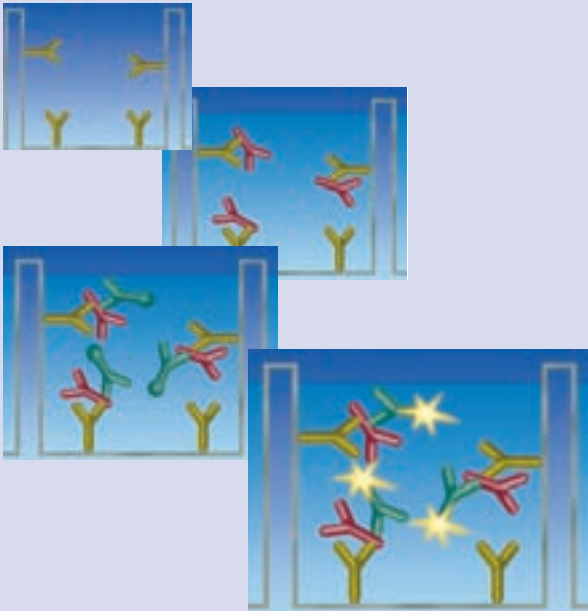
using Stored Curve or Master Curve



## Applications

### ■ Luminescent Immunoassays

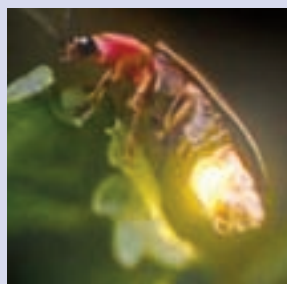
Specially designed for Luminescence Immunoassays the CentroLIApc is the ideal instrument for all types of immunoassays. By replacing colorimetric substrates of horseradish peroxidase or phosphatases with luminescent labels an increase in sensitivity up to 100-fold can be achieved. The software with curve fitting option adds convenient and extensive data evaluation capabilities to the superb instrument performance.



### ■ Reporter Gene Assays

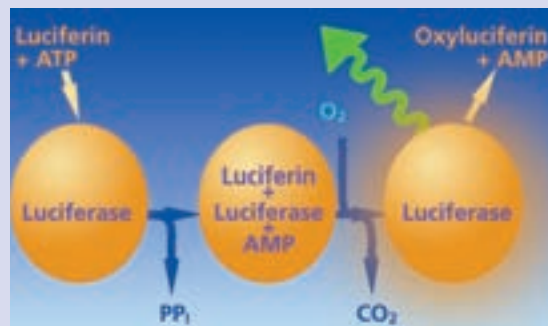
All common glow type reporter gene assays can be measured with the CentroLIApc. Especially in basic research of gene regulation as well as in drug discovery the use of luciferases,  $\beta$ -galactosidases and  $\beta$ -glucuronidases and have become a standard tool offering the highest sensitivity.

Even the dual luminescence type assays, e.g. Dual-Glo<sup>®</sup> Reporter Assay, can be measured with the CentroLIApc with manual reagent addition. Those assays have become a favourite means as they provide an internal control for transfection efficiency or general expression level.



### ■ ATP determination

Glow type assays for ATP determination - based on the light generating firefly reaction - can be measured with the CentroLIApc. Since all living cells contain ATP, cell proliferation assays or bacterial detection assays can be measured with the instrument, too.



### ■ Caspase and Kinase Assays

Monitoring the activity of Caspases - a group of cysteine-aspartic acid peptidases - is a key method in apoptosis research. The assays are designed around specific peptide substrates for Caspase 3, 7, 8 and 9 respectively which will be cleaved when Caspases are present indicating cells are in an apoptotic state.

Assay technologies are available with luminescent readout through the release of Luciferin which acts as the substrate for the subsequent light generating Luciferase reaction.



The Luciferase reaction can be used as well for monitoring kinases. Kinases are modifying the activity of specific proteins and are extensively used to transmit signals and control complex processes in cells.

Their enormous diversity and their role in signal transduction make them attractive targets for research and drug design.



# CentroLIApc LB 962

## Technical Specification and Order Information

Detection unit	Low-noise photomultiplier tube in single-photon counting mode
Sensitivity	0.03 mIU/L TSH 20 amol ATP ~ 7.5 zmol firefly luciferase
Dynamic range	> 6 orders of magnitude
Crosstalk	Low crosstalk through cross-talk reduction design < 10 <sup>-6</sup>
Plate formats	96 well opaque microplates and strip plates with outer dimensions: (WxLxH) 85.48 x 127.76 x 14 mm
Interface	USB
PC operating system	Win 2000, Win NT, Win XP, Win Vista
PC requirements	Pentium processor, 500 MHz (or better), CD ROM drive, display 1024x768 (or better), USB
Power supply	110-240 V, 50/60 Hz, 30 VA External autoranging mains adaptor
Regulations	CE, UL, CSA
Temperature range	Storage 0 - 40 °C Operation 15 - 35 °C
Humidity	10 - 85% non condensing
Dimensions	300 x 400 x 200 mm (W x D x H)
Weight	6 kg

Patents: EP 1 279 948 A 1 (pending), DE 101 36 866 A 1 (pending)



### Operation Modes

Measurement time	0.1 to 600 sec
Measurement	by row or column
Delay	up to 600 sec
Shaking	variable amplitude and speed

### Software

- Wizard support for parameter creation
- Input of plate layout (NSB/blanks, B<sub>0</sub>, standards, controls) and replicates (up to 10)
- Raw data assays (e.g. reporter gene assays)
- Cut-off measurements
- Immunometric (ILMA) and competitive (LIA) immunoassays
- Selection of axis transformation: log/log, logit/log
- Standard curve calculation with cubic spline function, linear regression or 4PL
- Full standardization (up to 10 standards)
- Master curve (universal standard curve taken from kit adjusted with calibrators)
- Reference curve (measured curve becomes Master curve)
- Use of last measured curve
- Support of kit lot numbers in accordance to GLP

### Order information

### Order number

CentroLIApc LB 962	52180-10
Microplate Luminometer	
Luminescence testplate for CentroLIApc	40105-50

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