

Microvolume Spectrometer **ATP**
ELISA Assays Luminometer
Detection Microplate Washer
Luciferase **miniWorkstation** Reader
A 260/280 Liquid Handling Tube Luminometer
Microplate Coating

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Berthold Detection Systems GmbH in Pforzheim, Germany



Manufacturing

Titertek-Berthold is specialized in the development, manufacturing and distribution of high performance instruments for the Life Science laboratory. We provide high-quality, reliable and easy-to-use instruments for worldwide biomedical, pharmaceutical, biotechnological and fundamental research communities.

Titertek-Berthold has its roots in two renowned, powerful companies:

Titertek Instruments Inc. and Berthold Detection Systems GmbH. Titertek became famous for the precision, microliter-range liquid handling products. Berthold Detection Systems established the most complete range of luminometers for single sample formats and microplates. The new combined company has powerful resources in all areas, from product development, world-class manufacturing to worldwide customer support. Titertek-Berthold products and services are available all over the globe. In addition to expert advice from the German headquarter, you can expect reliable sales and after sales support by our network of certified partners, present on all continents.

Quality management is top priority in the company: The EN ISO 9001 certification has been held since 1998. In addition, the company was awarded the EN ISO 13485 and CAN/CSA ISO 1348 certification, qualifying the company as a dependable supplier to medical diagnostics markets.



Final Inspection



Service Training

For DNA, RNA, Protein and More.



1 Optical-grade mirror behind sapphire glass 2 Permanent hydrophobic coating for easy sample placement



Onboard computer: Powerful software and color touchscreen



Comprehensive report, convenient printout format

Colibri Microvolume Spectrometer

Fast operation in less than 5 seconds

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Colibri is a microvolume spectrometer for measuring smallest volumes of DNA, RNA, Proteins and more. Colibri comes out of the box and is ready for measurement. The on-board software offers 9 ready to use protocols and is operated by colour touchscreen.



Technical Data	Sample Volume	1–5 μ l
	Sensitivity dsDNA	2 ng/ μ l
	Pathlength	0.2 mm and 1 mm, autoselect function
	Wavelength Range	200–850 nm
	Lamp	Xenon flashlamp
	Detector	2048 pixel linear silicium CCD array
	Display	3.7" color touchscreen
	Interfaces	3 USB ports
	Additional Data Input	Mouse and keypad options
	Data Export	By USB memory stick, CSV format, data and graph
	Dimensions (H x W x D)	27.5 x 16.5 x 13.5 cm / 10.4 x 6.5 x 5.3 inch
	Weight	2.25 kg / 4.9 lb
	Printer	External printer (optional)
Ordering Info	110 501 40	Colibri Microvolume Spectrometer with on-board computer, software, touchscreen and softkeys
	155 200 60	Colibri licence for activation of 1 additional language. Available languages: Chinese, Russian, Spanish, Portuguese, German, French, Italian, Polish, Turkish

FB 14 Tube Luminometer

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Portable single tube luminometer

The FB14 is a very small, portable single tube luminometer that combines excellent performance with ease of use and versatility. Its built-in software is ideal for field measurements. When used in the lab, a powerful PC software can be added for numerous data analysis functions.



Technical Data	Sample Format	Tubes up to 12 mm in diameter, length 75 mm
	Detector	State-of-the-art photon counter with a spectral range of 300–600 nm
	Measurement Chamber	Swinging drawer with high efficiency reflector
	Sensitivity	50 attomoles ATP
	Dynamic Range	5.5 decades
	Operating Software	Operation via three soft keys: sets delay and measurement time in 0.1 s increments.
	<small>(Microprocessor Controlled)</small>	Measurement modes: Single Read and Dual Assay
	Interface	USB interface for PC connection
	Power Requirements	Rechargeable NiMH batteries; Power supply 100–240 VAC, 7.5 V/min. 1.33 A DC
	Dimensions (H x W x D)	14 x 17.5 x 11.2 cm / 5.5 x 6.9 x 4.4 inch
	Weight	1.35 kg / approx. 3 lb
Optional PC Software	Protocol Manager with Quick Measurement, Single and Dual Assay, Single and Multiple Kinetics and Cut-off Assay (not included)	
Ordering Info	110 300 10	FB14 Portable Single Tube Luminometer, rechargeable battery
	155 200 11	PC software for Microsoft Windows, includes all protocols
	140 001 30	Luminescence TestTube for validation
	135 001 00	IQ/OQ/PQ Qualification Package
	132 005 00	5 ml vials, 75 x 12 mm, 500 pieces

FB 12 Single Tube Luminometer

Compact and Flexible

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The FB12 tube luminometer is the ideal choice for glow luminescence measurements. It combines a very small footprint with excellent sensitivity. A variety of sample formats can be loaded. Your measurement will be automatically started by closing the sample drawer.

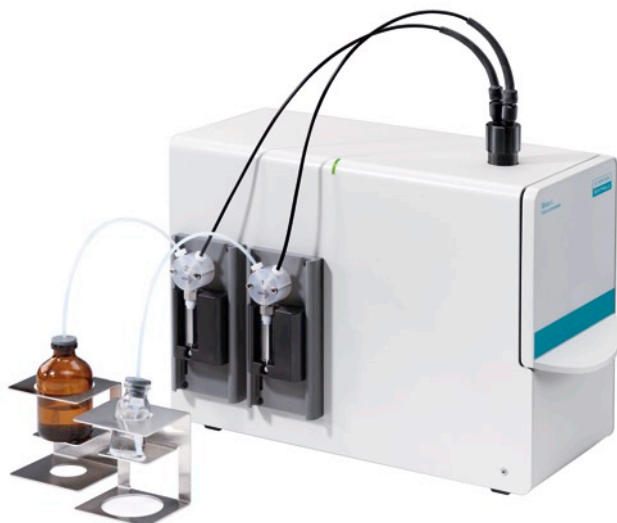


Technical Data	Detector	Photon counting PMT, spectral range: 300–600 nm
	Sensitivity	Better than 1000 molecules firefly luciferase
	Dynamic Range	6 decades
	Sample Format	12 mm diam. tubes, microfuge tubes, 35 mm culture dishes, liquid scintillation vials up to 20 ml
	On-board Software	Raw Data, Single Assay, Dual Assay, Cut-off Assay
	PC Software	Quick Measurement, Single Assay, Dual Assay, Kinetics, Cut-off Assay
	Data Port	RS-232 (serial interface), USB
	Printer	External printer optional
	Power Requirements	100–240 V AC, 12 V/0.6 A DC
	Dimensions (H x W x D)	22 x 22 x 20 cm / 9 x 9 x 8 inch
Weight	2.5 kg / 5.5 lb	
Ordering Info	110 101 02	FB12 Single Tube Luminometer, printer option
	110 491 30	Sample incubation for FB12 and Sirius Single Tube Luminometer
	155 200 11	Licence for PC software, Microsoft Windows, includes all protocols
	140 001 30	Luminescence TestTube for validation
	135 001 00	IQ/OQ/PQ Qualification Package
	132 005 00	5 ml vials, 75 x 12 mm, 500 pieces
153 001 00	External printer	

Sirius L Single Tube Luminometer

Page 08 The Allrounder

Sirius L is a compact and supersensitive tube luminometer. It is upgradeable with up to two injectors making the instrument perfect choice for luminescence flash assays. A variety of sample formats can be loaded and used for injection.



Technical Data	Detector	Photon counting PMT, spectral range: 300–600 nm
	Sensitivity	1 attomol ATP
	Dynamic Range	6 decades
	Sample Format	12 mm x 75 or 55 mm tubes, 1.5 and 2 ml microfuge tubes, 35 mm culture dishes, liquid scintillation vials up to 20 ml. Injection operation with tubes 12 mm x 75 or 55 mm and microfuge tubes 1.5 and 2 ml
	Injection Volume	20–500 µl adjustable in steps of 1 µl
	PC Software	Protocol Manager, Quick Measurement (basic package) Single Assay, Dual Assay, Kinetics, Cut-off Assay (optional)
	Data Port	RS-232 (serial interface), USB
Power Requirements	Desktop power supply and power cord. 100–240 V AC, 24V/2.5A DC	
Dimensions (H x W x D)	24.1 x 34.9 x 15 cm / 9.5 x 13.7 x 5.9 inch (without injection tubings)	
Weight Approx.	3.6 kg / 7.9 lb	
Ordering Info	110 401 10	Sirius L Single Tube Luminometer, PC controlled
	110 401 11	Sirius L Single Tube Luminometer, one reagent injector, PC controlled
	110 401 12	Sirius L Single Tube Luminometer, two reagent injectors, PC controlled
	110 491 30	Sample incubation
	155 200 15	Sirius L licence for PC software, Microsoft Windows, includes all protocols
	140 001 30	Luminescence TestTube for validation
	135 001 00	IQ/OQ/PQ Qualification Package
	181 000 26	Sirius L injection sample holder/reflector for microfuge vials
181 000 28	Sirius L sample holder/reflector for microfuge vials	
132 005 00	5 ml vials, 75 x 12 mm, 500 pieces	

Smart Line TL Tube Luminometer

Easy daily routine

The SmartLine is a tube luminometer ideally suited for your luminescence (diagnostic) assays. The instrument is equipped with an integrated printer and can be upgraded with up to two injectors. The SmartLine uses an intelligent assay card to store complete protocol and analysis. The assay Card is programmed using the Master System by e.g. lab supervisors or assay manufacturers. Guided user dialogues on the display make daily routine easy.



Technical Data	Detector	Photon counting PMT, spectral range: 300–600 nm
	Sensitivity	Better than 10 attomole ATP
	Dynamic Range	6 decades
	Sample Format	12 mm diam. tubes, microfuge tubes, 35 mm culture dishes, liquid scintillation vials up to 20 ml
	Injection Volume	20–300 µl in increments of 10 µl
	Injection Precision	100 µl < 0.5%
	Data Reduction	Qualitative evaluation: Cut-off; Quantitative evaluation: regression, smoothed cubic spline, Four-Parameter Logistics (4PL)
	Data Port	RS-232 (serial interface)
	Printer	Thermal matrix printer 40 characters per line
	Power Requirements	100–240 V AC, 12 V/2.5 A DC, supplied through mains adapter (included)
	Dimensions (H x W x D)	24 x 33 x 22 cm / 9.5 x 12.6 x 7.8 inch
	Weight	3.4 kg / 7.5 lb
Ordering Info	110 400 30	Smart Line TL Tube Luminometer
	110 400 31	Smart Line TL Tube Luminometer, one automatic reagent injector
	110 400 32	Smart Line TL Tube Luminometer, two automatic reagent injectors
	110 491 10	Master System with chip card reader/writer, incl. PC software
	132 200 30	Chip card reader/writer
	132 005 00	5 ml vials, 75 x 12 mm, 500 pieces
	140 001 30	Luminescence TestTube for Validation

Orion L Microplate Luminometer

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Compact and Powerful

Orion L is an affordable and reliable microplate luminometer for the measurement of 96 well plates. It can be equipped with up to two reagent injectors. Compact housing with internal wet system saves valuable bench space.



Technical Data	Sample Format	96 well microplate, opaque in solid or strip format
	Detector	Photon counting low noise PMT, spectral range 300–600 nm
	Sensitivity	10 attomole ATP
	Crosstalk	Less than 3×10^{-5}
	Dynamic Range	6 decades
	Measuring Time	0.1–100 s per well
	Scan Pattern	Random selectable single well
	Injectors	Up to 2 injectors, one injector in pre-position, one in measurement position
	Injection Volume	10–150 μ l per pump in increments of 1 μ l
	Data Port	RS-232 (serial interface) and USB
	PC Software	Raw Data (inclusive), Fast Kinetics, Dual Measurement, Batch Protocol (optional)
	Power Requirements	100–240 V AC; 50–60 Hz
	Dimensions (H x W x D)	29.0 x 38.5 x 41.0 cm / 11.4 x 15.2 x 16.1 inch
Weight	22 kg / 48.5 lb	
Ordering Info	112 900 50	Orion L Microplate Luminometer
	112 900 51	Orion L Microplate Luminometer, one automatic reagent injector
	112 900 52	Orion L Microplate Luminometer, two automatic reagent injectors
	155 201 43	Simplicity Software V.4 Fast Kinetics, Dual Measurement, Batch Protocol Licences
	140 001 10	Luminescence TestPlate for validation
135 001 10	IQ/OQ/PQ Qualification Package	

Orion II Microplate Luminometer

Highest sensitivity and flexibility

The outstanding sensitivity of Orion II is the result of the unique design and high quality workmanship. It is a state-of-the-art instrument offering complete configuration flexibility. It measures 96 well and 384 well microplates and can be equipped with up to four reagent injectors.



Technical Data

Sample Format	96 or 384 well microplate in solid or strip, opaque (black or white)
Detector	Photon counting low noise PMT, spectral range 300–600 nm
Sensitivity	10 attomole ATP
Crosstalk	Less than 3×10^{-5}
Dynamic Range	6 decades
Measurement Time	0.1–100 s per well
Scan Pattern	Random selectable single well
Shaker	Linear, orbital or cross shaking
Sample Incubation	From RT +5°C to 42°C or 50°C
Injectors	Up to 4 injectors, two injectors in pre-position, two in measurement position
Injection Volume	10–150 µl in 1 µl increments
Data Port	RS-232 (serial interface), USB
PC Software	Raw Data (inclusive), Fast Kinetics, Dual Measurement, Batch Protocol (optional)
Power Requirements	100–240 V AC; 50–60 Hz
Dimensions (H x W x D)	25.5 x 38.5 x 41 cm / 10 x 15.4 x 16.4 inch
Weight	22 kg / 48.5 lb

Ordering Info

113 000 10	Orion II 96 well Microplate Luminometer
113 000 14	Orion II 96 well Microplate Luminometer, 42°C incubation
113 000 15	Orion II 96 well Microplate Luminometer, 50°C incubation
113 000 20	Orion II 96/384 well Microplate Luminometer
221 000 51	Injector assembly for Orion II Microplate Luminometer
155 201 43	Simplicity Software V.4 Fast Kinetics, Dual Measurement, Batch Protocol Licences
140 001 10	Luminescence TestPlate for validation
135 001 10	IQ/OQ/PQ Qualification Package

Zoom Microplate Washer

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Robust, easy-to-use and designed for speed

The Zoom microplate washer is robust, easy-to-use and designed for speed. A unique and self-emptying vacuum system provides constant flow rates. The small footprint saves valuable benchspace.



Technical Data	Microplate Types	96 and 384 well, standard height and low profile
	Wash Manifold	96 channel
	Dispense Accuracy	± 2 % typical @ 50–300 µl range
	Dispense Precision	≤ 2 % CV @ 200 µl, ≤ 3 % CV @ 100 µl, ≤ 4.5 % CV @ 50 µl
	Wash Volume	1–2000 µl selectable in 1 µl increments
	Residual Volume	< 2 µl/well
	Aspirate Mode	Regular and 3-D (3-dimensional)
	Soak Time	0–99 s
	Stacker Magazines	30 microplates
	Plate Processing Speed	96 well plate: 1 cycle 300 µl: 7 s; 3 cycles, 300 µl each: 17 s 384 well plate: 3 cycles, 75 µl each: 38 s
	Power Requirements	230 V 50 Hz/115 V 60 Hz
	Dimensions (H x W x D)	36 x 38 x 56 cm / 14 x 2 x 22 inch
Weight	18 kg / 40 lb	
Ordering Info	140 003 25	Zoom Microplate Washer 230V, one buffer inlet
	140 003 26	Zoom Microplate Washer 230V, two channel buffer selection
	140 003 28	Zoom Microplate Washer BS4 230V, four channel buffer selection
	140 003 52	Pump/Trap Discharge System 230V
	140 007 10	Dispense Module, 96 well, 2-channels 230V
	140 007 12	Dispense Module, 384 well, 2-channels 230V
	185 001 78	IQ/OQ/PQ Manual
188 004 20	Zoom Training at Titertek-Berthold	

*also available for 115V

Zoom HT Microplate Washer

One-rail design for washing and stacking

Zoom HT microplate washer is robust, easy-to-use and designed for throughput. Unmatched speed is result of one-rail design combining wash and stacking positions. A unique and self-emptying vacuum system provides constant flow rates. The instrument comes with a built-in microplate stacker that seamlessly shuttles the plates between storage and wash positions, an ideal tool for plate coating.



Technical Data	Microplate Types	96 and 384 well, standard height and low profile
	Wash Manifold	96 channel
	Dispense Accuracy	± 2 % typical @ 50–300 µl range
	Dispense Precision	≤ 2 % CV @ 200 µl, ≤ 3 % CV @ 100 µl, ≤ 4.5 % CV @ 50 µl
	Wash Volume	1–2000 µl selectable in 1 µl increments
	Residual Volume	< 2 µl/well
	Aspirate Mode	Regular and 3-D (3-dimensional)
	Soak Time	0–99 s
	Stacker Magazines	30 microplates
	Plate Processing Speed including stacking	96 well plate: 1 cycle 300 µl: 14 s; 3 cycles, 300 µl each: 24 s 384 well plate: 3 cycles, 75 µl each: 44 s
	Power Requirements	230V 50 Hz / 115V 60 Hz
	Dimensions (H x W x D)	61 x 69 x 56 cm / 24 x 27 x 22 inch (including two 30-microplate magazines)
	Weight	29.5 kg / 65 lb
	Ordering Info	140 003 15
140 003 16		Zoom HT Microplate Washer 230V, two channel buffer selection
140 003 18		Zoom HT Microplate Washer 230V, four channel buffer selection
140 003 52		Pump/Trap Discharge System 230V
140 007 10		Dispense Module, 96 well, 2-channels 230V
140 007 12		Dispense Module, 384 well, 2-channels 230V
185 001 87		Strip Push-Down Device, applicable for strip plates
140 009 02		30-Plate Magazine
185 001 78		IQ/OQ/PQ Manual
188 004 20	Zoom Training at Titertek-Berthold	

* also available for 115V

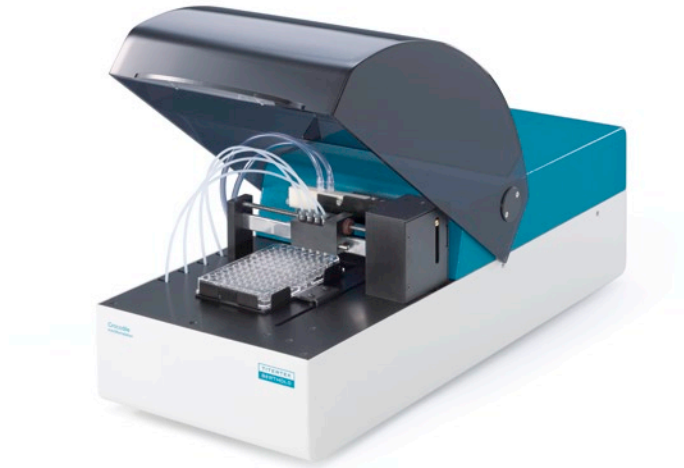
Crocodile Assay miniWorkstation

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Workstation for Microplate Assay automation

Crocodile 4-in-one is a compact workstation for processing your 96 well microplate assays. The instrument is a multi-purpose device, providing the same functionality as 4 individual instruments in a small footprint:

- Reagent dispenser – 4 on-board dispensers
- Automated washer – 8 channel washer/aspirator
- Plate shaker – frequency: 5–20 Hz
- Incubator – temperature: ambient +4–55°C



Technical Data	Sample Format	1 x 96 well microplate (SBS standard)
	Interface	USB interface
	Power Requirements	Desktop power supply and power cord. 100–240V AC; 24V/3.3A DC
	Sample Incubation	Ambient + 4–55°C
	Dispenser	4 independent pumps; 10–2000 µl
	Washer	Autoclavable 8 way manifold; 50–1000 µl dispense volume
	Wash Modes	Standard, overflow, soak, two-point, sweep
	Shaker	Independent linear motion 5–20 Hz
	Dimensions (HxWxD)	25.8 x 26.3 x 62.6 cm / 10.2 x 10.4 x 24.6 inch
	Weight	15 kg / 33.0 lb
Ordering Info	110 500 11	Crocodile miniWorkstation 4-in-one for automated processing of microplate assays
	140 001 40	Absorbance TestPlate for validation of 96 well microplate absorbance readers
	135 003 14	IQ/OQ/PQ Qualification Package
	188 004 10	Crocodile Training at Titertek-Berthold

Crocodile ELISA miniWorkstation

Workstation for ELISA automation

Crocodile 5-in-one is a compact ELISA workstation for the automation of 96 well microplate assays. It is a bench-top instrument that has been designed specifically with ease of use in mind. It is easy to operate, extremely reliable and only requires minimal routine maintenance. The miniWorkstation is a multi-purpose device, providing the same functionality as 5 individual instruments in a footprint similar to a standard stand-alone microplate reader:

- Reagent dispenser – 4 on-board dispensers
- Automated washer – 8 channel washer/aspirator
- Plate shaker – frequency: 5–20 Hz
- Incubator – temperature: ambient+4–55°C
- OD reader – pre-installed filters: 405, 450, 492, 620 nm



Technical Data	Sample Format	1 x96 well microplate (SBS standard)
	Interface	USB interface
	Power Requirements	Desktop power supply and power cord. 100–240V AC; 24V/3.3A DC
	Sample Incubation	Ambient + 4–55°C
	Dispenser	4 independent pumps; 10–2000 µl
	Washer	Autoclavable 8 way manifold; 50–1000 µl dispense volume
	Wash Modes	Standard, overflow, soak, two-point, sweep
	Shaker	Independent linear motion 5–20 Hz
	Dimensions (HxWxD)	25.8x26.3x62.6 cm / 10.2x10.4x24.6 inch
	Weight	15 kg / 33.0 lb
Reader	Dynamic Range	0–3.0 OD at 450 nm
	Spectral Range	400–690 nm (pre-installed filters: 405, 450, 492, 620 nm)
	Reading Channels	8 independent photometric channels plus reference channel mono and bichromatic reading
Ordering Info	110 500 10	Crocodile miniWorkstation 5-in-one for automated processing of ELISA assays
	155 600 22	Mikrowin 2010 module Quantitative and Qualitative Data reduction Package
	140 001 40	Absorbance TestPlate for validation of 96 well microplate absorbance readers
	135 003 14	Q/OQ/PQ Qualification Package
	188 004 10	Crocodile Training at Titertek-Berthold

Validation Tools

Reliable guidance in regards to validation processes

Titertek-Berthold provides complete validation solutions for cGMP/GLP regulated laboratories. This includes reference light sources, test plates, evaluation software, and complete manuals for the performance and documentation of IQ/OQ/PQ validation.

3Q Documentation

The principle of qualifying laboratory equipment is established. However, every type of equipment requires specific know-how. Titertek-Berthold offers reliable guidance in regards to validation processes for all Tube and Microplate Luminometers, Crocodile miniWorkstation and Zoom Washers. The 3Q documentation packages include IQ/OQ/PQ procedures, guidelines for periodic maintenance, as well as several types of checklists, schedules and logbooks.

Ordering Info	140 001 30	Luminescence TestTube for validation of Tube Luminometers
	135 001 00	IQ/OQ/PQ Qualification Package for Single Tube Luminometers
	140 001 10	Luminescence TestPlate for validation of Microplate Luminometers
	135 001 10	IQ/OQ/PQ Qualification Package for Microplate Luminometers
	140 001 40	Absorbance TestPlate for validation of Microplate absorbance readers
	135 003 14	IQ/OQ/PQ Qualification Package for Crocodile miniWorkstation
185 001 78	IQ/OQ/PQ Manual for Zoom and Zoom HT Washers	



Luminescence TestPlate, Luminescence TestTube and Absorbance TestPlate

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YouTube

