

MR - 3942T

Microplate Reader



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

►► THE Microplate Reader

Flexibility and sensitivity whenever you need it

The MR 3942T is a modular high performance reader equipped with independent, userselectable filters and monochromators on both, the excitation and emission side for any measurement. This guarantees both, flexibility and sensitivity whenever you need it. The system supports advanced detection modes.

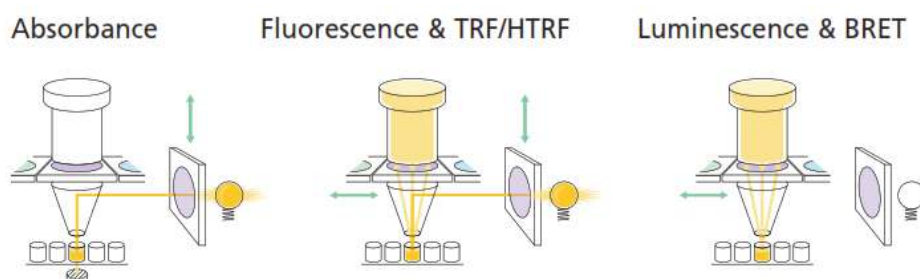
MR 3942T benefits at a glance

- Independent, userselectable filters and monochromators on both, the excitation and emission side for any measurement – when flexibility counts
- ONE4ALL Optics for uncompromised performance of all detection modes
- JET Injection technology (optional) for highest accuracy, speed and cellfriendliness
- Broad wavelength range selection from UV through the visible range
- FP, TRF, TRFRET, HTRF, Nano, Screen and AlphaScreen upgradeable*

►► INNOVATIVE MULTIMODE READING DESIGN & TECHNOLOGIES

Superior performance for both, routine and challenging applications

The MR 3942T series readers enable you to move from application to application with ease. Designed to perform, MR 3942T readers are equipped with various technologies to support your work and are ideal for labs with multiple applications.



ONE-4-ALL Optics – no compromises in performance in any mode

►► ONE-4-ALL Optics for uncompromised performance

Berthold's patented ONE-4-ALL Optics have been optimised to combine the stability and user-friendliness of a multi modal optical system with the sensitivity and versatility of dedicated optical devices.

ONE-4-ALL Optics work for both filter and monochromator based applications, so there's never a compromise in performance in any mode.

►► Best-in-class luminescence

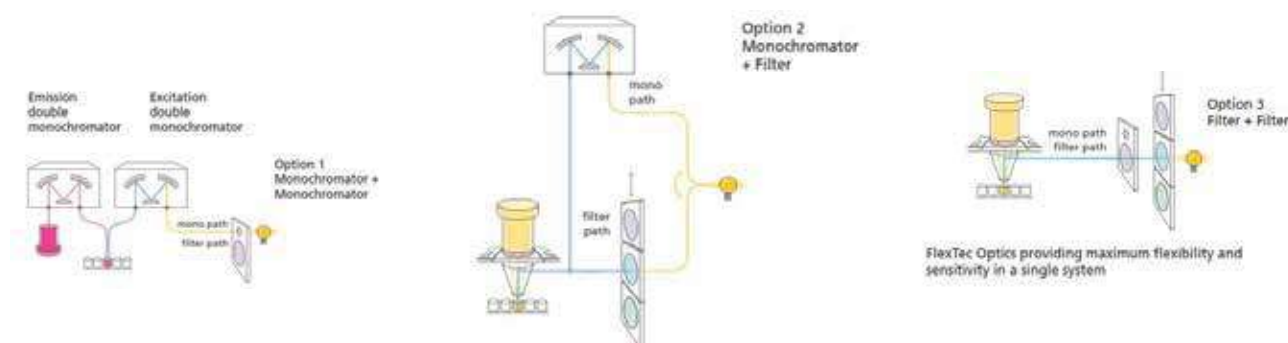
Berthold's highly sensitive dual mode PMT detectors in combination with the optimised ONE-4-ALL optical path design provide best-in-class luminescence detection of less than 6 amol ATP per well.

High performance filter system – when sensitivity counts

The quickchange filter technology of the MR 3942T series provides you with the flexibility required to meet your application needs: up to 40 different excitation and emission filters can be easily mounted on exchangeable filter sliders.

The filters are characterized by high transmission properties which can be up to 25-fold that of monochromators. Technologies like Time-Resolved Fluorescence (TRF) can be measured more efficiently with filters.

Furthermore, filters with a large bandwidth are available to analyse fluorophores with wide spectra and all luminescence-based assay that require filters.



FlexTec Optics – when flexibility AND sensitivity counts

The MR 3942T system is equipped with FlexTec Optics, offering you the best of two worlds – benefit from the flexibility to easily select a discrete wavelength and perform spectral scans for both, excitation and emission using its built in monochromator technology. Or optimise your assays' sensitivity by utilizing the system filter sliders for excitation and emission. Or mix both technologies if required: the MR 3942T delivers both, flexibility and sensitivity in a single system.

The MR 3942T employs up to two double monochromators providing blocking properties needed in sensitive fluorescence assays.

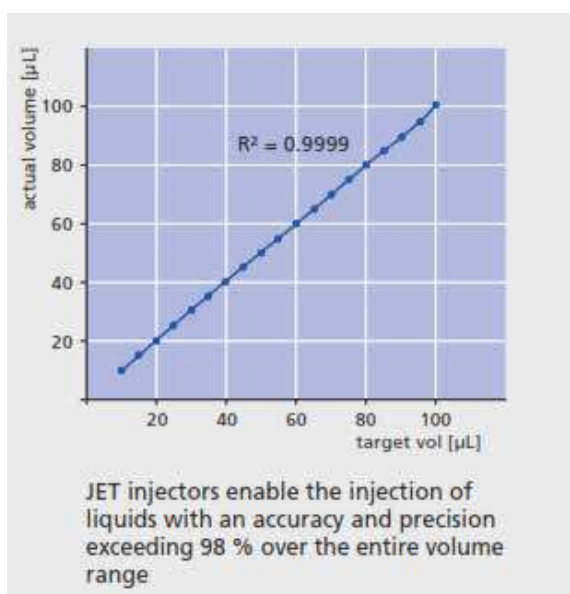
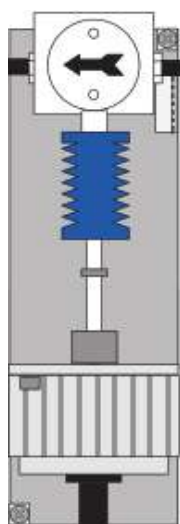
Both monochromators are equipped with software driven continuous bandwidth variation to optimise the instrument for the specific demands of different assay conditions.

Berthold's flexible monochromator technology offers you variable bandwidths from 4 –12 nm

►► ADDITIONAL OPTIONS

Engineered to help you expand the boundaries of your research

No matter what your application, the MR 3942T series offers you additional technical features to meet your advanced application needs, engineered to perform.



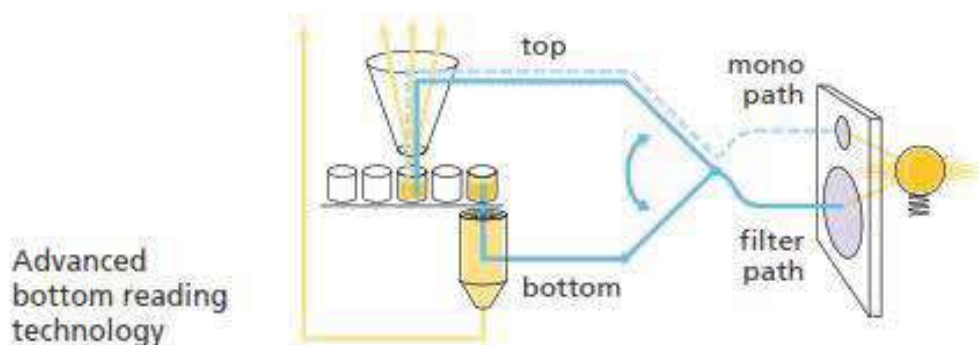
MR 3942T series readers can be equipped with up to 3 injectors. Two injectors each can be installed in measurement position as well as in preposition, to support different assay requirements and formats.

Berthold JET Injectors are made out of teflon and operate virtually frictionfree, offering the following benefits.

- Highest accuracy and reproducibility – 98 % accuracy over the entire volume range
- Low reagent consumption – Low dead volume. Recovers up to 60 % of the reagent in the injector line. A single priming sequence is sufficient to achieve a 99 % homogeneous mix at the tip.
- Low maintenance costs – frictionfree operation enables more than 3 million injections without mechanical failure.
- Optimal performance in flashkinetics – ultrafast injection enables the measurement of the first 150 ms of a kinetic assay (e.g. Fura2 or Acridinium esterassays).
- Worryfree injection of cell suspensions – negligible shear forces ideal when working with living cells, e.g. in Aequorin based Calcium assays.

Advanced bottom reading technology for enhanced cellbased assay performance

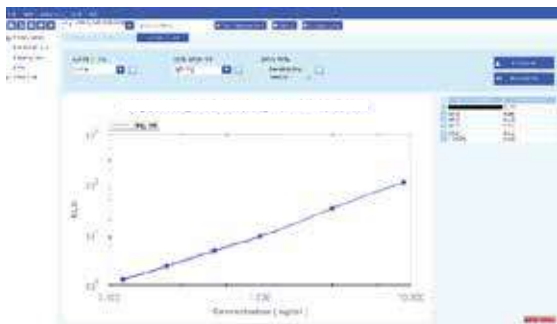
The MR 3942T enables you to read both, from below as well as from the top with higher performance. The advanced bottomreading technology of the system can be easily selected via the software to help you analyse e.g. adherent cells and obtain best sensitivity and a superior signal-to-background ratio for cell migration assays.



►► SOFTWARE OPTIONS

Get productive right away

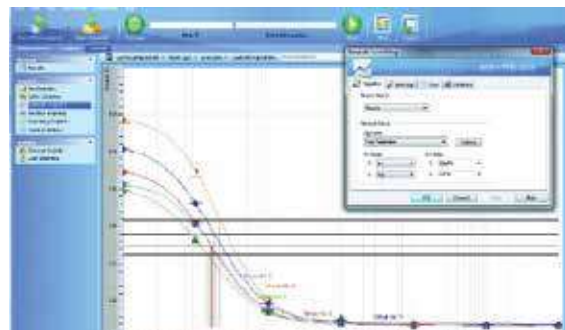
Choose between different software options according to your application needs.



Software I

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



Software II

The software II is a complete software solution providing instrument control, data collection, analysis and reporting.

The software II is available in different versions, reflecting different user needs.

The complete Advanced version of the software II provides 21 CFR Part 11 compliance and additional QC features like audit trail or configur

►► APPLICATIONS

Whatever you need, there's a MR 3942T multimode reader just right for your research

The MR 3942T family provides the technology required to perform a broad range of applications. Simply choose the technologies that best support your research – or upgrade your system whenever it becomes necessary.

Software I

Biomarkers quantification
 Cell viability/proliferation/toxicity
 Drug discovery
 Environmental testing
 Epigenetics
 Food monitoring
 Gene expression
 Pathway analysis
 Protein:protein interaction
 Receptor panning

Software II

Binding
 Biochemical
 Colorimetric assays
 Cellbased
 ELISA/Immunoassay
 Flash luminescence
 Kinases
 Kinetics
 Quantification (DNA/RNA, protein)
 Reporter gene/GFP
 Receptor panning

►► VALIDATION TOOLS, SERVICE & SUPPORT

For more productivity and better reproducibility

For many laboratories, validation, qualification and ensuring compliance with a number of GMP and GLP requirements is essential. We offer a range of tools and services to help you ensure that your system runs at peak performance.

Validation Tools



We provide a variety of tools to help you check and confirm the performance of your products over time.

- Absorbance test plates
- Luminescence test plates
- QC luminescence performance kit

Service



Berthold Expert Services provide a team of dedicated and factory trained engineers and experts to optimise your productivity. We and our local partners are always at your disposal.

- Maintenance & repair services
- IQ / OQ / PQ services
- Calibration certification & more

Support



Our team of technical support scientists is your partner to overcome the unique challenges your application brings. Contact our team to discuss.

- Your assay or experiment design
- Data analysis questions
- Troubleshooting

►► PRECONFIGURED MODELS

Meet your application needs today and customise your device whenever required

The MR 3942T family offers you a growing number of models and possible configurations to meet your current and future application requirements.

MR 3942T models								
Functions	MR 3942T	MR 3942T	MR 3942T	MR 3942T	MR 3942T	MR 3942T	MR 3942T	MR 3942T
	Research	Research Plus	Research FL	Research	Research Per-	Advanced	Advanced Plus	Advanced
	69185-10	69185-30	69185-45	Plus FL 69185-50	formance FL 69185-25	69185-35	69185-55	Performance 69185-15
Absorbance	●	●	●	●	●	●	●	●
Luminescence	●	●	●	●	●	●	●	●
Fluorescence Intensity (incl. FRET)	●	●				●	●	●
Fluorescence Intensity (incl. FRET) up to 850 nm			●	●	●			
Fluorescence Polarization (FP)	●	●				●	●	●
Time-Resolved Fluorescence (TRF/TR-FRET)	●	●	●	●	●	●	●	●
Nano	●	●	●	●	●	●	●	●
HTRF / TR-FRET			●	●	●			
AlphaScreen / AlphaLISA	●	●	●	●	●	●	●	●
Wavelength selection – excitation	monochromator or filter	monochromator or filter	monochromator or filter	monochromator or filter	monochromator or filter	monochromator or filter	monochromator or filter	monochromator or filter
Wavelength selection –emission	filter	filter	filter	filter	filter	monochromator or filter	monochromator or filter	monochromator or filter
Temperature Control		●		●	●		●	●
Bottom Reading					●			●
Software I	●	●	●	●	●	●	●	●

Standard Features	Optional Features
Xenon flash lamp (200 – 1000 nm)	1 – 3 ultra-fast JET Injectors delivering highest precision
ONE-4-ALL optics for uncompromised performance	High-performance filters to meet your specific application needs
High-performance filter system	Software II providing 21 CFR Part 11 compliance and other features
Ergonomic design including inte grated front compartment	
Top reading for plate formats up to 384-wells	
Shaker with three modes (linear, orbital and double orbital)	

Ordering Information	
Optional Features	
JET Injector #1, pre-position	54116-31
JET Injector #2, reading-position	54116-32A
JET Injector #2, pre-position	54116-32B
JET Injector #3, reading-position	54116-33
Package	39350
High Efficiency Package	53431
High Efficiency Package	53432
nano Package	63140
Chroma-Glo Package	43544
Measurement technology TRF	62771
Measurement technology FP, Fluorescein	63546
Measurement technology FP, TAMRA & Cy3	64245
Measurement technology LanthaScreen	68492
Measurement technology AlphaScreen	69651

Standard Features	Optional Features
Xenon flash lamp (200 – 1000 nm)	1 – 3 ultra-fast JET Injectors delivering highest precision
ONE-4-ALL optics for uncompromised performance	High-performance filters to meet your specific application needs
High-performance filter system	Upgrade paths for FP, TRF/TR-FRET, HTRF, Nano, Screen and AlphaScreen/ AlphaLISA
Advanced monochromator technology for high transmission and best block ing properties (model depending)	Software providing 21 CFR Part 11 compliance and other features
Ergonomic design including inte grated front compartment	
Top reading for plate formats up to 384-wells	
Shaker with three modes (linear, orbital and double orbital)	

Accessories	
μDrop Microvolume Plate	64154
Gas connection, cpl.	55408
Consumables	
Reagent filter set (10 pieces)	43193
Cleanit Daily – Injector cleaning solution (2 × 250 ml)	45218
Software	
Software II Advanced	37854-303
Software II Lite	37854-304
Software II Advanced Office	37854-313
Validation Tools	
LB 9515 luminescence test plate for QC	40105-11
LB 9516 test plate for absorbance check (VIS validation)	50895-10
Luminescence Performance Kit	55101

MR 3942T		
Detection Unit	Low-noise photomultiplier tube in dual mode, spectral range 280 – 650 nm (up to 850 nm with extended range PMT) Photo diode, spectral range 200 – 1000 nm	
Excitation Source	Xenon flash lamp: spectral range 200 – 1000 nm	
Wavelength Selection	interference filters	2 Double Monochromators (in excitation and emission*) 3D design F number 2.7 (high transmission) Variable bandwidth 4 – 22 nm Increment 1 nm Stray light rejection 10 ⁻⁶ High quality interference filters
Measurement Technologies	Luminescence , Nano Fluorescence (top & bottom) FRET Absorbance UV & VIS Time-Resolved Fluorescence TR- FRET / HTRF FP (Fluorescence Polarization) AlphaScreen	
Performance:		
Luminescence	<6 amol/well ATP (96 well)	
Fluorescence	<7 amol/well FITC (384sv)	
Absorbance	Accuracy better 2 %,	
TRF	Precision better 0.6 % <5 amol/well	
Dynamic Range	6 orders of magnitude (photon counter) 0 – 3.5 OD (photodiode)	
Crosstalk	Low crosstalk due to crosstalk reduction design: 10 ⁻⁶ (black plates)	
Injection Unit	Up to 3 injectors, JET injection technology Variable volumes: 10 – 100 µL Speed 200 – 440 µL/sec Accuracy better 2 % (over entire range of volume) Precision better 2 % (over entire range of volume) Injections into microplates with up to 384 wells	

MR 3942T	
Shaking	3 modes, variable amplitude and speed
Temperature Control	+5 °C above room temperature up to 45 °C
Microplate Formats	6 to 384 well, solid and strip, Dimensions 128 × 86 mm (L × W) height 14.0 – 21.0 mm (adapters necessary) Petri dishes 35 and 60 mm µDrop Plate for low sample volumes down to 2 µL Standard cuvettes (with cap)
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
Regulations	CE, NRTL
Power Supply	100 – 240 VAC ±10 % 50 / 60 Hz Class I
Operating Voltage	24 VDC ±5 %
Power Consumption	140 VA
Temperature Range	Storage: 0 – 40 °C Operation: 15 – 35 °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 (W × D × H)	391 × 470 × 395 mm
Weight	Approx. 32 kg
Software	Wizard support for parameter entries Single and multiple endpoint Kinetics and repeated Spectral scanning Ratio calculation or subtraction Display of kinetic curves incl. zoomed view Raw data assays (e.g. dual reporter genes) Delay (up to 600 second) Data export: EXCEL Touchscreen-enabled

HPLC Servicing, Validation, Trainings and Preventive Maintenance :

HPLC Servicing :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

Trainings :We also take up preventive Maintenance to reduce downtime of HPLC's Trainings.

AMC's/CMC :AMC's/CMC :We offer user training both in-House and at customer sites on HPLC principles, operations, trouble-shooting.

Validations :Validations :We have protocols for carrying out periodic Validations as per GLP/GMP/USFDA norms.

Instruments :Instruments :We offer instruments/Renting Services Modules like pumps,detector etc. on Rent.



About Analytical Technologies

Analytical Technologies is synonymous for offering technologies for doing analysis and is the Fastest Growing Global Brand having presence in at least 96 countries across the global. Analytical Technologies Limited is an ISO:9001 Certified Company engaged in Designing, Manufacturing, Marketing & providing Services for the Analytical, Chromatography, Spectroscopy, Bio Technology, Bio Medical, Clinical Diagnostics, Material Science & General Laboratory Instrumentation. Analytical Technologies, India has across the Country operations with at least 4 Regional Offices, 6 Branch Offices & Service Centers. Distributors & Channel partners worldwide.

Our Products & Technologies



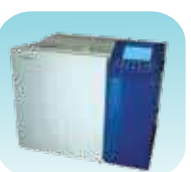
UV/VIS
Spectro 2080+
Double Beam



Infra FTIR



Optima Gas
Chromatograph
3007



Optima Gas
Chromatograph
2979 Plus



Flash
Chromatograph



Atomic Absorption
Spectrophotometer



Liquid Partical
Counter



Optical Emission
Spectrophotometer



DSC/TGA



Semi Auto Bio
Chemistry Analyzer



HEMA 2062
Hematology
Analyzer



Micro Plate
Reader/Washer



URINOVA 2800
Urine Analyzer



Total Organic
Carbon 3800



Fully Automated
CLIA



NOVA-2100
Chemistry Analyzer



PCR/Gradient PCR/
RTPCR



TOC
Analyzer



Laser Particle
Size Analyzer



Ion Chromatograph



Water purification
system

Regulatory compliances



Corporate Social Responsibility

Analytical Foundation is a nonprofit organization (NGO) found for the purpose of:



Analytical
Foundation

1. Research & Innovation Scientist's awards/QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personalities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at Info@analyticalfoundation.org

2. Improving quality of life by offering YOGA Training courses, Work shops/Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.



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