

3942 - IS

Microplate spectrophotometer/ Reader



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

Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

Introduction :

3942-IS has three main detecting functions. This is a monochromator-based microplate spectrophotometer for the absorbance measurements, it requires zero filters and allows you to measure from 200 to 999 nm freely at your choice of 1nm increment. Also Xenon lamps in absorbance will serve the instrument semi-permanent life time which brings the comfortable experiences to the users since the lamps do not need to be replaced such as halogen lamps.

Fluorescence using High Power LED to provide TRF(Time Resolved Fluorescence) and various convenient features as ready to run at “on”.Also HPL has semi-permanent life time which the user does not have to go through the burdens such as switching the fluorescence light source every once in a while.

Features :

- Monochromator-based UV-Vis Absorbance
- High power LED and filter-based fluorescence detection for flexibility and performance
- Time Resolved Fluorescence (TRF)
- 2µL low volume nucleic acid quantification with NANO-VC™ plate (Option)
- Cell friendly orbital shaking and advanced incubator design up to 50°
- Dual reagent injectors for inject/read applications
- Provides a software with powerful and diverse functions with 21 CFR Part 11 Compliance

By using lamp and monochromator, all of our readers with absorbance mode allows you to measure from 200 to 999 nm freely at your choice of 1nm increment. Xenon lamp (in absorbance) will serve the instrument semi permanent life time which allows the users to experience comfort since lamps do not need to be replaced such as halogen lamps.

Supporting dual injector with variety of shaking technologies and incubating function up to 50°C.

21 CFR Part 11 Compliance offers high performance software and safety reliable security for personal data with CFR Part 11 Compliance function.

Typical Applications :

- Protein quantification
- Enzyme kinetics
- Protein quantification
- Cell proliferation
- Cytotoxicity
- Environmental monitoring
- Genetic analysis
- Food safety

Nucleic acid quantification

- Spectrophotometric determination of dsDNA, ssDNA, RNA at A_{260}
- Fluorometric determination of dsDNA with fluorescent dyes, for example, PicoGreen
- Determination of purity based on A_{260}/A_{280} ratios



Flourescence Applications

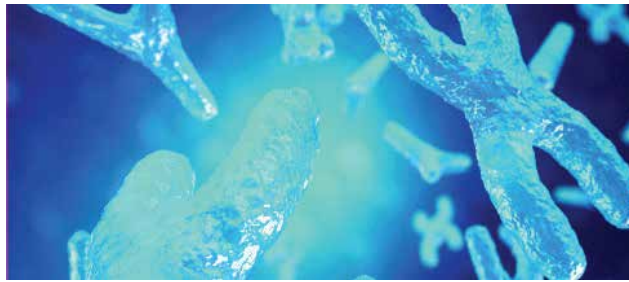
- Calcium Assay (GPCR)
- Caspase-3 apoptosis Assay
- Cell Growth Assay
- Cytotoxicity Assay
- Fluorescent protein quantification
- Nucleic Acid quantification



ELISAs

Enzyme-Linked Immunosorbent Assay (ELISA) is one of the most used immunoassay in modern bio research

- Indirect ELISA • Sandwich ELISA
- Competitive ELISA • Nucleic acid quantification
- Spectrophotometric determination of dsDNA, ssDNA, RNA at A260
- Determination of purity based on A260/A280 ratios



Luminescence Applications

- ATP based Cell Viability Assay
- Chemiluminescent ELISA
- Cytotoxicity Assay
- Mycoplasma Monitoring
- NanoBRET/BRET

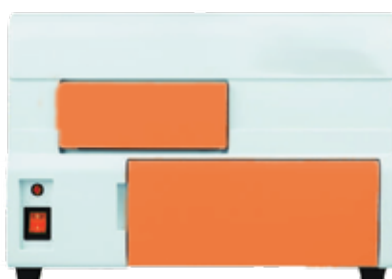


Specifications :

Absorbance	
Light source	Xenon flash lamp
Detector	Photodiode
Wavelength selection	Monochromator
Wavelength range	200 - 999 nm, 1 nm increments
Dynamic range	0-4.0 OD
Resolution	0.0001 OD
Monochromator wavelength accuracy	±2 nm
Monochromator wavelength repeatability	±0.2 nm
OD linearity	<1% from 0 to 3.0 OD
OD repeatability	< 0.5% at 2.0 OD

Fluorescence Intensity	
Sensitivity	Top and Bottom : Fluorescein 5 pM (1 fmol/well, 96-well plate)
Light source	High Power Led (Life time - 100.000 hours)
Wavelength selection	Filters
Wavelength range	350 - 750 nm
Dynamic range	>6 decades
Detector	PMT

Luminescence	
Sensitivity	Sensitivity - 10 amol ATP(FLASH) - Multi-mode
Wavelength range	250 – 700 nm (Options 850nm)
Dynamic range	>6 decades
Detection system	Low noise PMT
Peak wavelength	410 nm
Limit of Detection (moles)	10 amol



Time-Resolved Fluorescence

Light source	HIGH POWER LED
Wavelength selection	Filter

Temperature control & Shaking

Temperature control	HIGH incubation up to 50 °C, \pm 0.2°C at 37°C
Shaking	Linear & Orbital

Physical Characteristics

Connectivity	1 USB, 1 RS232 for external PC control
Power	100 – 240 Volts AC. 50/60 Hz
Dimensions	408w x 390L x 240H
Weight	18.2 kg
Shelf Life	2yrs (when direct or ambient sunlight, extreme temperature are avoided)

3942 - IS Fluorescence Filter List

NO	Filter NAME	EX Wavelength (nm)	Part No	Band width(EX)	EM Wavelength(nm)	Band width(EX)	Part No
1	CFP	426 – 450 [438]	F-001	<u>24</u>	502 – 538 [520]	<u>36</u>	F-001
2	GFP	457 – 487 [472]	F-002	<u>30</u>	502 – 538 [520]	<u>36</u>	F-002
3	FITC	467 – 498 [482]	F-003	<u>31</u>	513 – 556 [534]	<u>43</u>	F-003
4	YFP	466 – 497 [481]	F-004	<u>31</u>	524 – 544 [534]	<u>20</u>	F-004
5	CY3	498 – 523 [510]	F-005	<u>25</u>	566 – 614 [595]	<u>48</u>	F-005
6	TRITC	532 – 554 [543]	F-006	<u>22</u>	576 – 597 [586]	<u>21</u>	F-006
7	Texas Red	542 – 582 [562]	F-007	<u>40</u>	604 – 644 [624]	<u>40</u>	F-007
8	mCherry	542 – 582 [562]	F-008	<u>40</u>	603 – 678 [640]	<u>75</u>	F-008
9	CY5	604 – 644 [624]	F-009	<u>40</u>	672 – 712 [692]	<u>40</u>	F-009
10	CY5.5	635 – 675 [655]	F-010	<u>40</u>	696 – 736 [716]	<u>40</u>	F-010
11	DAPI	350 – 390 [370]	F-011	<u>40</u>	417 – 463 [440]	<u>46</u>	F-011
12	Lucifer Yellow	426 – 450 [438]	F-012	<u>24</u>	513 – 556 [534]	<u>43</u>	F-012
13	SpectrumGreen	484 – 504 [494]	F-013	<u>20</u>	517 – 537 [527]	<u>20</u>	F-013
14	Qdot525	415 – 455 [435]	F-014	<u>40</u>	518 – 533 [525]	<u>15</u>	F-014
15	Qdot605	415 – 455 [435]	F-015	<u>40</u>	598 – 613 [605]	<u>15</u>	F-015
16	Qdot625	415 – 455 [435]	F-016	<u>40</u>	618 – 633 [625]	<u>15</u>	F-016
17	Qdot655	415 – 455 [435]	F-017	<u>40</u>	648 – 663 [655]	<u>15</u>	F-017
18	SpectrumGold	524 – 544 [534]	F-018	<u>20</u>	558 – 586 [572]	<u>28</u>	F-018
19	SpectrumOrange	532 – 554 [543]	F-019	<u>22</u>	576 – 596 [586]	<u>20</u>	F-019
20	SpectrumRed	576 – 596 [586]	F-020	<u>20</u>	612 – 644 [628]	<u>32</u>	F-020

Technical Details

Detection modes	Fluorescence (top and bottom), Time-resolved fluorescence, Luminescence, UV-Visible Absorbance
Read methods	End point, Kinetic, Spectral scanning, well-area scanning for Absorbance. Luminescence and fluorescence are available with End point, kinetic and area scanning.
Microplate types	6 to 384 well plates and NANO-VC™
Temperature control	Incubation up to 50°C ; ±0.5°C at 37°C
Shaking function	Linear & Orbital with 4 different speeds
Software	basic software & 21 CFR part 11 Compliance software (Optional)

Physical Characteristics :

Connectivity	1 USB, 1 RS232 for external PC control
Power	100 – 240 Volts AC. 50/60 Hz
Dimension (mm)	408W x 390L x 290H
Weight	18.2 kg

Time-Resolved Fluorescence :

Light source	High power LED
Wavelength selection	Filter

Time-Resolved Fluorescence :

CE and RoHS compliant, ISO 9001, ISO 13485, ISO 14001, RoHS, IVD, and 21 CFR part 11 compliance software
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Applicable optional products :

Reagent Injector	•2 Syringe pumps
	•15 ~ 1000µL
	•Minimum prime Vol. 1.1mL. 100µL with back flush
Read methods	•2~ 2.5µL total 24 wells
	•2.5ml cuvette holder
	•DNA/RNA, Lysozyme, DsDna, and Etc
Microplate types	•Absorbance linearity and accuracy QC
	•Luminescence linearity and crosstalk QC
	•Fluorescence linearity QC

Highlighted in color “Yellow” are the two pairs of fluorescence filters that are provided at the fluorescence function instrument purchase. Unless the customer requests to switch the provided filters to the other filters that are on the list above. Requesting different set of filters must be made before signing the P.I.

Numbers in the color “Blue” within the square brackets above indicates the value that the user is required to type in in the software [refer to the Operation manual Pg.25] in case that the user has purchased extra filters other than the provided standard filter. Also above list of filters are the basic filter specifications and the wavelength specifications of each filters may differ slightly then the specification shown above.

Bandwidth values of EX and EM in the list above must be also typed into the EX/EM setting window in the software along with the EX and EM center value in color “Blue”



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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.



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Our Products & Technologies



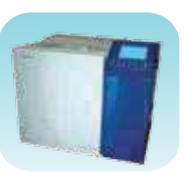
UV/VIS
Spectro 2080+
Double Beam



Infra FTIR



Optima Gas
Chromatograph
3007



Optima Gas
Chromatograph
2979 Plus



Flash
Chromatograph



Atomic Absorption
Spectrophotometer



Liquid Particle
Counter



Optical Emission
Spectrophotometer



DSC/TGA



Semi Auto Bio
Chemistry Analyzer



HEMA 2062
Hematology
Analyzer



Micro Plate
Reader/Washer



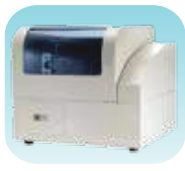
URINOVA 2800
Urine Analyzer



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



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