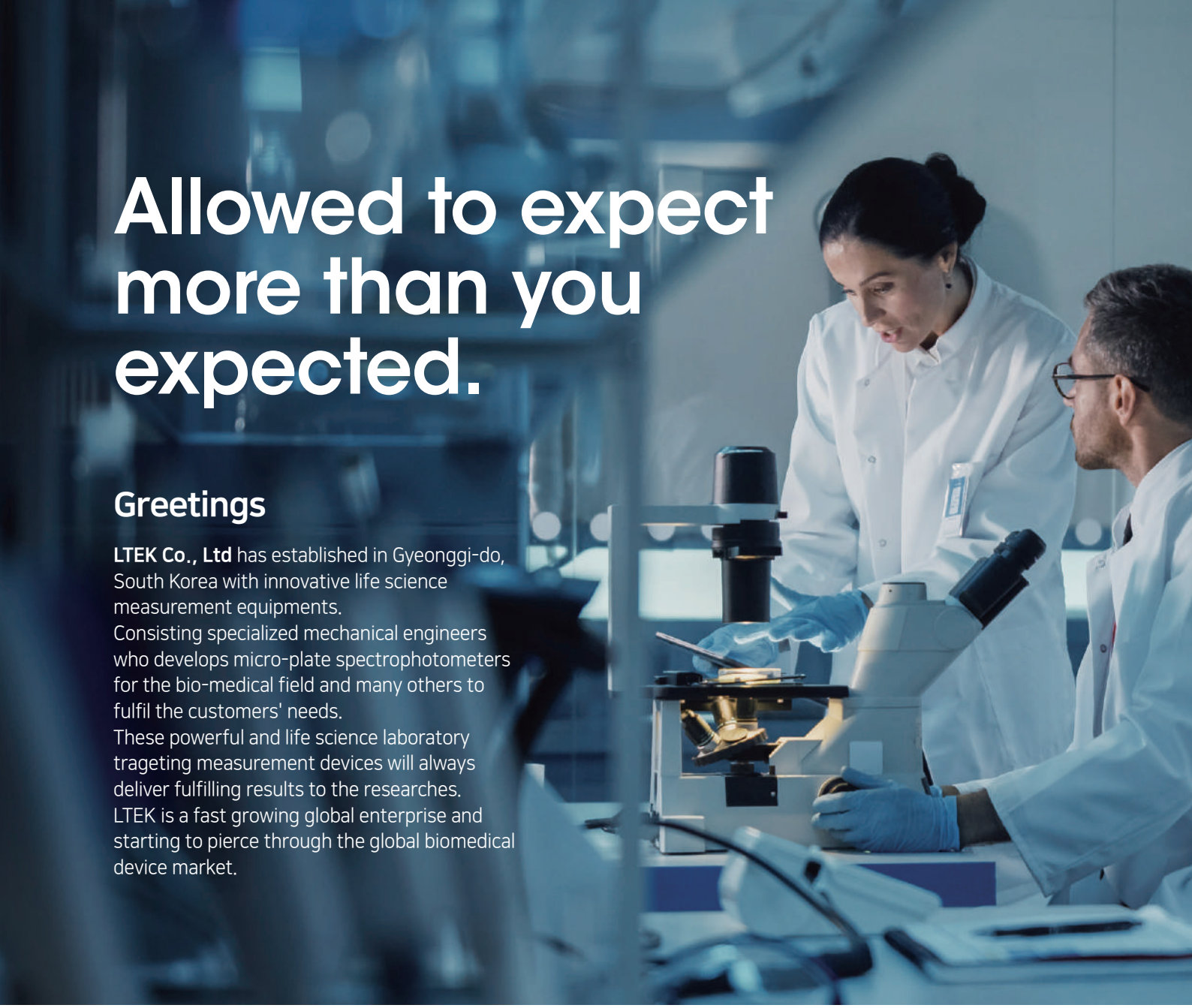
LTek

Microplate Reader



Allowed to expect more than you expected.

Greetings

LTEK Co., Ltd has established in Gyeonggi-do, South Korea with innovative life science measurement equipments.
Consisting specialized mechanical engineers who develops micro-plate spectrophotometers for the bio-medical field and many others to fulfil the customers' needs.
These powerful and life science laboratory trageting measurement devices will always deliver fulfilling results to the researches.
LTEK is a fast growing global enterprise and starting to pierce through the global biomedical device market.

History

2018

Completed development of Micro plate spectrophotometer in 2018

2019

Successfully signed distribution contact with over 10 global enterprises since 2019
Launched newly developed INNO-M in 2019

2020

Official exclusive contract signed with more then 10 distributors in the world and Reached over 300 instruments sold internationally

2021~2022

Multi mode microplate spectrophotometer development completed in 2022 and officially launched and now over 20 exclusive and honored distributors through out the world

2023

INNO-H (Monochromator based multi-mode spectrophotometer) development is near the end.
INNO-D (dispenser) development has been completed.
Also imaging device in under the development.

INNO

Microplate Spectrophotometer (Absorbance)

Description

- 200nm to 999nm wavelength range
- Wavelength selection monochromator
- Xenon flash lamp lamp for a semi-permanent life time

Certifications

- CE marked
- ISO 9001 / ISO 13485 / ISO 14001
- RoHS

Specification

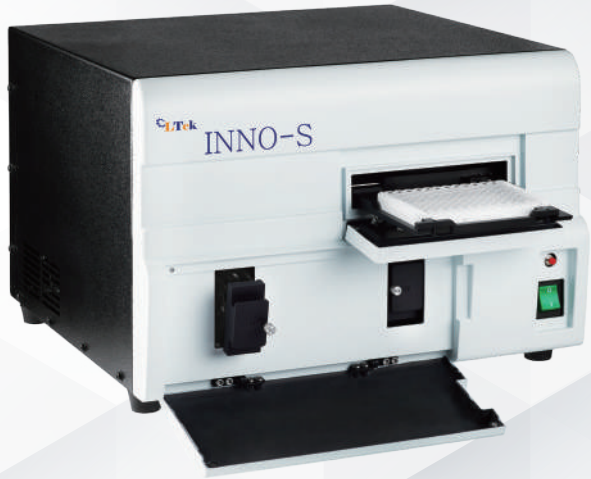
Wavelength accuracy	±2nm
Electrical requirements	INPUT 100 to 240V 50 / 60Hz (65W Adaptor)
Microplate type	6 ~ 384 well plate
Detector	Photodiode
Light source	Xenon flash lamp
Wavelength range	200 to 999 nm
Wavelength selection	Monochromator
Application	Spectral scanning, End point, Kinetic, Area scan
Dynamic range	0 ~ 4.0 OD

Resolution	0.0001 OD
OD accuracy	0 ~ 2 OD ± 1%
OD linearity	0 ~ 2 OD ± 1%
OD repeatability	0 ~ 2 OD ± 1%
Shaking	Two step speed
Weight	7.5kg
Dimension (mm)	333W x 303L x 245H
Software	INNO-X (Microsoft windows software)
Supported software regression	Linear, Quadratic, Cubic, Log, Exponential, Point-to-point, 4PL

Applicable optional products	
NANO-VC	• 2~ 2.5μL total 24 wells • 2.5ml cuvette holder • DNA/RNA, Lysozyme, DsDna, and Etc
INNO-Q	• Absorbance linearity and accuracy QC

INNO-S™

Absorbance, Luminescence & Fluorescence Microplate Reader



Wide selections with different wavelengths for the fluorescence filters

Optional product is available with INNO-S

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 Absorbacne. 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	INNO-X™ (basic software) & INNO-XS™ (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

Regulatory

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

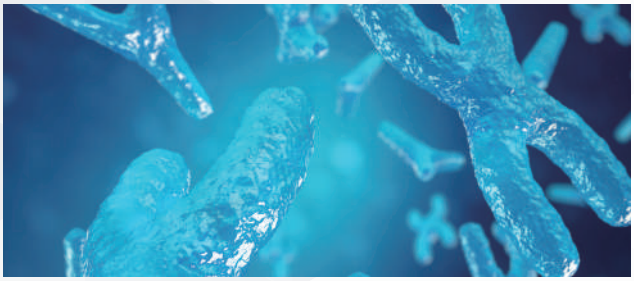
Applicable optional products	
Reagent Injector(INNO-D)	• 2 Syringe pumps • 15 ~ 1000µL • Minimum prime Vol. 1.1mL. 100µL with back flush
Read methods	• 2~ 2.5µL total 24 wells • 2.5ml cuvette holder • DNA/RNA, Lysozyme, DsDna, and Etc
Microplate types	• Absorbance linearity and accuracy QC • Luminescence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

INNO-S™ 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



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

Flourescence Applications

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

Luminescence Applications

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

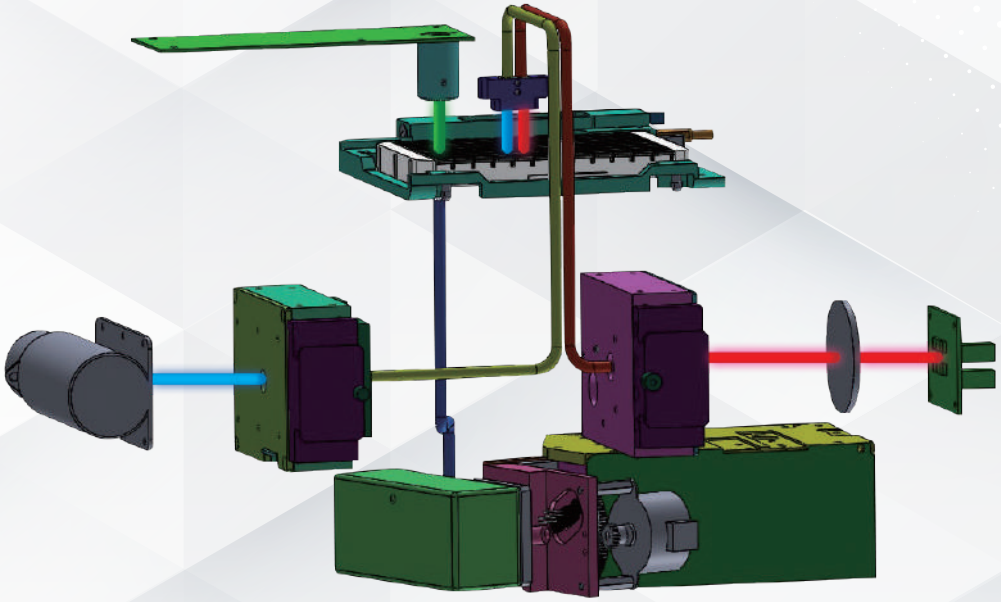
Features

By using lamp and monochromator, all of our readers with absobance 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.

Using INNO-XS™ (21 CFR Part 11 Compliance) offers high performance software and safety reliable security for personal data with CFR Part 11 Compliance function.

INNO-S™
Monochromator and filter optics



INNO-S™ has three main detecting functions. Since INNO-S™ 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.

Main Features

01	Monochromator-based UV-Vis absorbance
02	High power LED and filter-based fluorescence detection for flexibility and performance
03	Time Resolved Fluorescence (TRF)
04	2μL low volume nucleic acid quantification with NANO-VC™ plate (Option)
05	Cell friendly orbital shaking and advanced incubator design up to 50°
06	Dual reagent injectors for inject/read applications
07	Provides a software with powerful and diverse functions with 21 CFR Part 11 Compliance

Specifications

Certifications

- CE Marked
- ISO 9001 / ISO 13485 / ISO 14001
- RoHS
- IVD
- 21 CFR part 11 Compliance software

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 (Options 850nm)
Dynamic range	>6 decades
Detector	PMT

Luminescence	
Sensitivity	Sensitivity - 10 amol ATP(FLASH) - Multi-mode
Wavelength range	250 - 750 nm (Options 850nm)
Dynamic range	>6 decades
Detection system	Low noise PMT
Peak wavelength	410 nm
Limit of Detection (moles)	10 amol

INNO-W96

Microplate Washer(96pins)

Description

- Microcomputer control, automatically complete the plate washing operation.
- The liquid level sensing function automatically detects the liquid level, and automatically alarms when the cleaning liquid is insufficient and the waste liquid is overflowing.
- The user-friendly operating system allows users to customize the plate type, set the number of washes, the amount of wash solution, the way to wash the plate, the suction point, the soaking and shaking time and other parameters.
- The wash head is self-balancing, has two-point aspiration, and performs bottom flushing.
- 2 kinds of Automatic washing,Soaking and Shaking, to reduce the interference adsorption during the reaction; time adjustable.

Specification

	Model : INNO-W96
Cleaning Head	96 pins, single row controllable
Microplate Types	Four kinds, flat bottom, U bottom, V bottom, round bottom
Average Residue	<0.7μl (per hole)
Liquid Suction Time	0.1~999.9 seconds adjustable, with an interval of 0.1 seconds
Line Flush Time	0~240 seconds, adjustable
Washing Programs	Up to 200 programs
Display	7-inch touch display
Liquid Injection Channels	3 (2 types of lotion and 1 type of distilled water)
Cleaning Needle Position	6 types (horizontal, left, middle, right, bottom, hole spacing)
Consumption	350W
Power Supply	AC220V±10%, 50/60Hz; 110V±10%, 60Hz
Packing size(W*D*H):	740*675*562mm
Gross Weight	42kg

INNO-M

Multi-Mode reader (Absorbance + Luminescence)

Description

- 200nm to 999nm wavelength range
- Wavelength selection monochromator
- Xenon flash lamp lamp for a semi-permanent life time
- Multi-mode (Absorbance + Luminescence)

Certifications

- CE marked
- ISO 9001 / ISO13485 / ISO 14001
- RoHS

Specification

Absorbance	
Wavelength accuracy	±2nm
Electrical requirements	INPUT 100 to 240V 50/60Hz/ (65W Adaptor)
Microplate type	6 ~ 384 well plate
Detector	Photodiode
Light source	Xenon flash lamp
Wavelength range	200 to 999 nm
Wavelength selection	Monochromator

Dynamic range	0-4.0 OD
Resolution	0.0001 OD
OD accuracy	0 ~ 2 OD ± 1%
OD linearity	0 ~ 2 OD ± 1%
OD repeatability	0 ~ 2 OD ± 1%
Shaking	Two step speed
Application	Spectral scanning, End point, Kinetic, Area scan

Luminescence	
Detector	PMT
Wavelength range	300 - 700 nm
Peak Wavelength	420 nm
Limit of Detection (moles)	3x10-21 moles

Others	
Software	INNO X (Windows Software)
Supported software regression	Linear, Quadratic, Cubic, Log, Exponential, Point-to-point, 4PL
Weight	8kg
Size	333x303x245

Applicable optional products	
NANO-VC	• 2~ 2.5μL total 24 wells • 2.5ml cuvette holder • DNA/RNA, Lysozyme, DsDna, and Etc
INNO-Q	• Absorbance linearity and accuracy QC

INNO-H

High-End Multimode Microplate Reader (Monochromator base Absorbance + Monochromator base Fluorescence + Filter base Fluorescence + Luminescence)

INNO-H Specification Description

Absorbance, Luminescence & Fluorescence Microplate Spectrophotometer

Certifications

- CE marked
- ISO 9001 / ISO 13485 / ISO 14001
- RoHS

Specification

General (Multimode Microplate reader)	
Detection Modes	UV-Vis Absorbance / Fluorescence intensity / Luminescence / Fluorescence polarization / Time-Resolved Fluorescence
Read Methods	End point, kinetic, spectral scanning, well-area scanning
Microplate Types	6- to 384-well plates
Others	Nano-VC Microvolume plate
Temperature Control	Up to 45 °C ± 0.2 °C at 37 °C
Shaking	Linear, Orbital
Software	INNO-X Ex / INNO-XS (21 CFR part 11 compliance software)

Absorbance	
Light source	Xenon flash lamp
Detector	Photodiode
Wavelength selection	Monochromator
Wavelength range	230 – 999 nm, 1 nm increments
Dynamic range	0 – 4.0 OD
Resolution	0.0001 OD
Pathlength correction	Yes
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			
Monochromator Fluorescence Intensity			
Light source	Xenon flash lamp	Dynamic range	>7 decades
Wavelength selection	**Monochromator** (Bandwidth Variable Option)	Sensitivity	Fluorescein 2.5 pM top / 5pM bottom (96well plate)
Wavelength range	250 – 700 nm (Options 850nm)	Detector	PMT

Filter Fluorescence Intensity (Dichroic Intensity)			
Sensitivity	Top Fluorescein 0.25 pM (96-well plate)	Light source	Xenon flash lamp
Wavelength selection	Filters	Dynamic range	>7 decades
Wavelength range	250 – 700 nm (Options 850nm)	Detector	PMT

Fluorescence Polarization	
Sensitivity	Xenon flash lamp
Wavelength selection	Filters
Wavelength range	400 – 700 nm
Detector	PMT

Luminescence	
Sensitivity	10 amol ATP (filter) / 20 amol ATP (monochromator)
Wavelength selection	200 – 750 nm (Options 850nm)
Dynamic range	>7 decades
Detection system	Low noise PMT

Time-Resolved Fluorescence	
Light source	Xenon flash lamp
Detector	PMT
Wavelength selection	Filter

Temperature control & Shaking	
Temperature control	Incubation up to 45 °C, ± 0.2°C at 37°C
Shaking	Linear, Orbital

Physical Charateristics			
Connectivity	1 USB, 1 RS232 for external PC control	Weight	25 kg
Power	100 – 240 Volts AC. 50/60 Hz	Shelf Life	2yrs (when direct or ambient sunlight, extreme temperature is avoided)
Dimensions	408w x 390L x 240H		

Applicable optional products	
Reagent Injector(INNO-D)	• 2 Syringe pumps • 5-1000µL -> 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

• Dual Injector (Option) • Gas control (Option) (Development schedule has not been specified yet)

• Variable Bandwidth Monochromator (Option)

Optional Accessories

INNO-Q (Option)

• Absorbance Test Plate for Accuracy, linearity & alignment

INNO-QM (Option)

• Absorbance, Luminescence, and fluorescence Q.C plate
• Abs - 9 Wells: 0.14 to 2.2 OD @ 450nm
• Fluo - 8 Wells: Visible Read EX 485nm / EM 530nm or EX 540nm / EM 590nm
• Lumi - 9 Wells: Approximate four-decade dynamic range standard
• Lumi Crosstalk - Provides most challenging scenario

NANO-VC (Option)

24 well DNA/RNA Quantitative measurement

Using 2µL of DNA/RNA samples, quantitative measurement is possible.
This also helps the users to be able to understand or interpret the unknown or unspecified samples by measuring from 240 to 320 nm with 2nm steps.
Total of 24 2µL wells allow you to measure variety types of samples at the same time.
DsDNA, RNA, ssDNA, 1 Abs at 1cm = 1 mg/ml
BSA, IgG, Lysozyme and other samples are measurable.

Specification

2µL Sample capacity	24 wells	Compatible model	INNO, INNO-M&INNO-S
Cuvette capacity	1 slot	Optical path length	0.5 mm
Cuvette size	2.5 ml tube	Detection limit	2 ng/pLdsDNA

LTek
Microplate Reader

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