

Performance + Price + Design



UV/VIS SPECTROPHOTOMETER **OPTIZEN POP**



KOREA No.1 OPTIZEN

About 7,000 users
recognized and proved **OPTIZEN** series!

DESIGN

ENJOY

DIFFERENT

EASY

ECONOMICAL

PERFORMANCE



NEW CONCEPTS OF SPECTROPHOTOMETER

We think for you to be better!



**2 years or 2,500 hours
warranty on
Deuterium lamp**

After purchasing, 2 years or 2,500 hours
free warranty on deuterium lamp.

**On-line upgrade
& diagnosis**

On-line service for before and
after by network is available.
Upgrade software is also
available.

Speaker : Voice guide



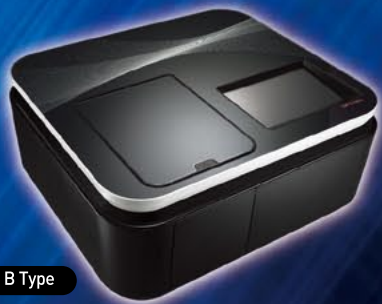
On-line upgrade & diagnosis

3 RS 232 ports for synchronous use
- Sipper system, barcode reader, peltier module
7 devices can be connected : The first try in spectrophotometry.

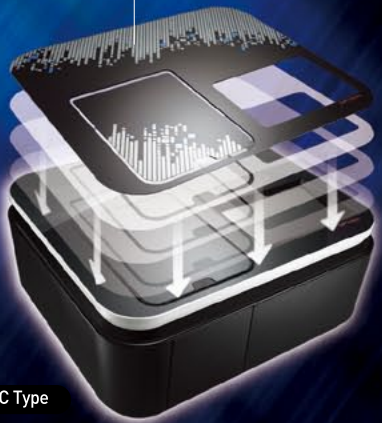
Selectable cover design



A Type



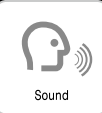
B Type



C Type



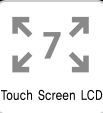
USB port to connect printer (Connect direct to
Local/ Network printer; Windows® CE operating system)
Print out data directly without installation of printer driver.
POP allows to use any USB printer(PCL type) for users'
convenience.



Voice guide
Follow voice guide to operate easily.



Emotional design
Enjoy our emotional design. It will upgrade convenience
and efficiency in your laboratory with push button to open
cell holder cover, and compact size.



**Larger screen (7 inches);
Touch screen in color LCD**
Touch screen type to simplify and ease operating.



Selectable cover design
Option : Select from our design of cover or design your own.



**Stable & Powerful operation system :
Windows® CE**
Standard storage memory : 2GB (Option : 8GB)
Back up data to portable USB, online by networking
User friendly operating system



Temperature sensor in cell compartment
Users will be able to confirm the temperature
environmental sample at the analytical progressing
moment.



4 USB ports hub on the right
4 USB ports to connect peripheral devices for users'
convenience.

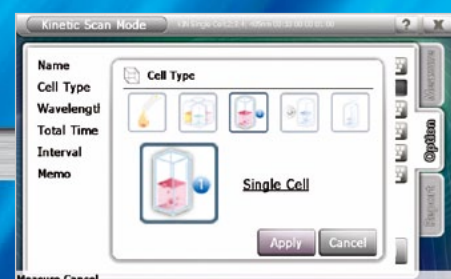
OPTIZENVIEW™ CE

Systematical procedure!

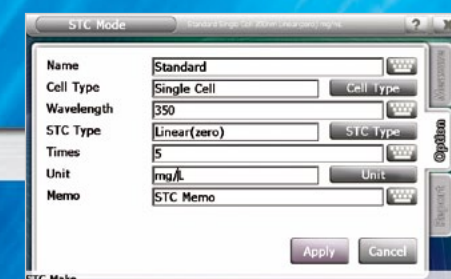
Explore OPTIZENVIEW™ CE (Built-in software for OPTIZEN POP)
With Windows® CE operating system, you feel comfortable as using your PC.
You will soon find out what is easy, stable and powerful.



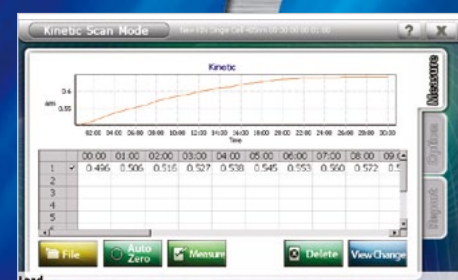
Wake POP up



Select cell type



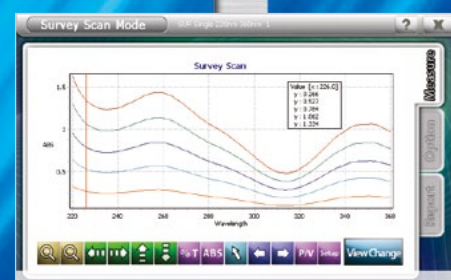
Set up conditions



Measure

Time course scan (KIN)

Enzyme kinetics
Enlarge/Shrink graph(max 100 times)
Trend graph/formula



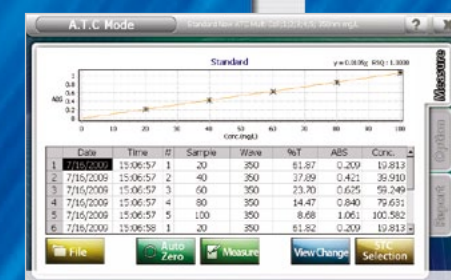
Measure

Spectrum assay (SUR)

Measure spectrums at the specific wavelength range.
Peak/valley auto detection.
Graph manipulation/Create STC with scanning data.



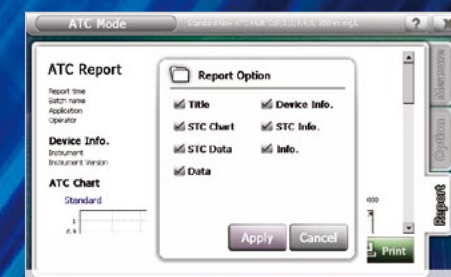
PC-Link



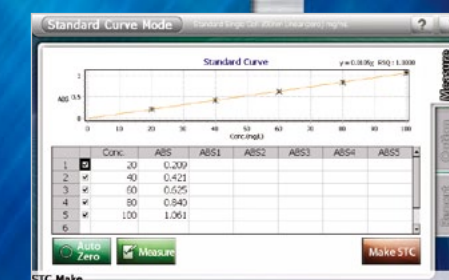
Measure

Simple/Multi absorbance (ATC)

Measure absorbance/%Transmittance.
Apply standard curve to get concentrations.
Measure 8 samples at once.



Report



Create STC

Quantification (STC → ATC)

Create standard curve.
Use average value of multif measurement to make it.
Specify STC as 1st, 2nd and 3rd degrees.



Apply STC

BASIC

OPTIZEN POP, new concepts in the spectroscopy field.
Suggest you better solutions in usage of the spectrophotometer.



COMPANY PROFILE

Mecasys, a Korean company, has been a prominent and promising manufacturer in spectroscopic field. In last two decades, we have introduced our advanced technologies with timely needs to give solutions, for the fields of environmental measurement, and for the R&D and quality control fields of pharmaceuticals, food products, semiconductors, bioscience, and industries.

In modern time, we are frustrated from trying to figure out why your endotoxin levels are so high even though you've just disinfected, since there are much chemicals either good or bad in your food, water, contaminated chemicals, and just alike. Becoming more responsible for needs to clean off chemicals, there are much ardor, time, and money to have better system to test, to measure, to analyze and so on. Mecasys gives you the solution to analyze the odds.

The experience gained Mecasys in both optical design analysis and computer technologies led to the production of spectrophotometric analyzer. Mecasys has committed to establish good experience in the design and development of innovative spectroscopic instrumentation for wide range of applications.



OPTIZEN NANOHANDLER

Better performances in biochemistry analysis

We proudly introduce the new nanobiometer, OPTIZEN NANOHANDLER. It brings you to work in bio-chemical analysis to measure accurate values of DNA, RNA and protein samples without evaporation, dilution and cross contamination. Full 7 inches touch screen, voice guide that no other brand suggests, and easy to install other handy accessories are new to bio-chemistry fields.

Built in operating system enables to operate and confirm real-time measured results and manage general settings of instrument practically with easy-to-read interface and automatic functions.



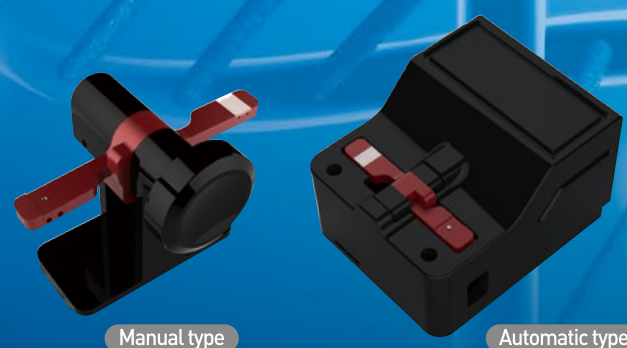
Easy-to-read interface(Touch screen)

No sample dilution
No other cuvette
No cross contamination
Great reproducibility

NEW OPTIZEN NANOHANDLER

- Optical path length : 0.2mm
- dsDNA range : 2.5~6250 ng/ul
- Sample volume : 0.7 ~ 2ul

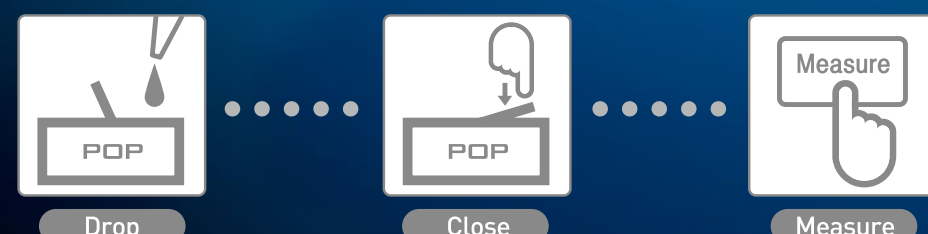
It is designed to evaluate very low sample, volume (up to 0.7ul~ 2ul) performance on DNA and proteins together with sample stability and overall speed of analysis, and easy cleaning of cell compartment, that Mecasys designed and patented. Direct light through measuring pedestal with our cuvette free ensures clear accuracy than directing measurement by optic fiber.



Manual type

Automatic type

HANDLING



Only One Step

BUILT IN OPERATING SOFTWARE

DNA / RNA analysis

Quantification mode

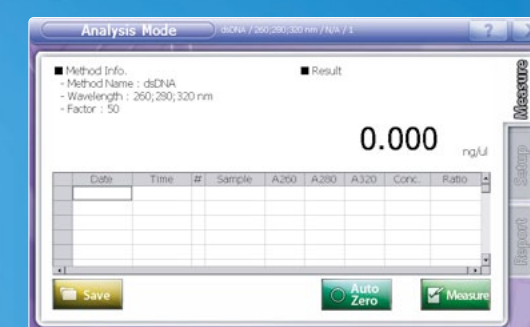
OPTIZEN POP bio helps you to measure the concentration of nucleic acids with well-known spectroscopic methods. Just set the pathlength or factors, and get the result.

Simple quantification method : A260 (absorbance at 260nm)
Factors : dsDNA : 50 / ssDNA : 37 / oligoDNA : 33 / RNA : 40

Other quantification methods : Warburg-Christian assay
Kalb-Behnoir assay

Simple step : Select mode and measure.

※ Caution : Be careful to set the correct pathlength.

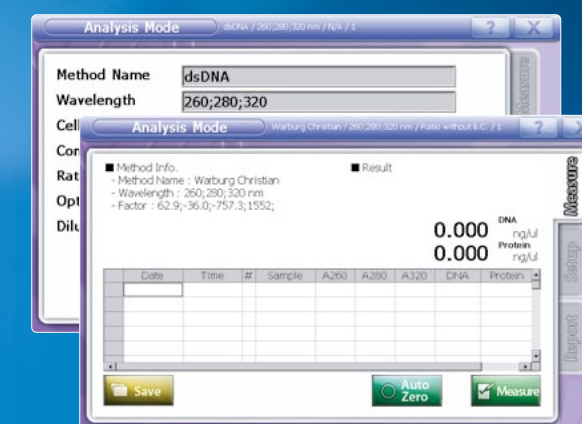


Ratio(Purity) check

Nucleic acids are exposed contaminations of impurities (TRIzol, humic acids, carbohydrates, guanidine thiocyanate, nucleotides, peptides, EDTA, phenol and protein) during the extraction / purification or synthesis / purification. So, it is recommended to measure Ratios [A260/A280 and A260/A230] for purity estimation.

Pure DNA and RNA have expected ratios of 1.8 and 2.0 respectively. And out of this range, there might be impurities' presence in the sample.

※ Baseline correction can be selected.



Protein analysis

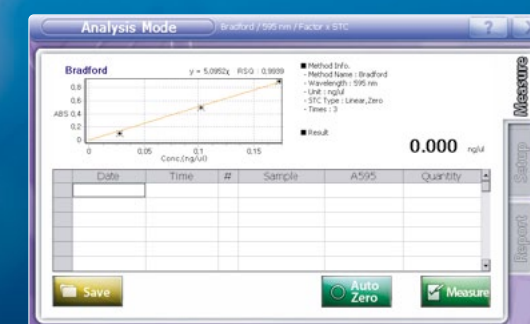
Direct UV (A280)

This simple quantification method easily tells you the concentration of protein samples. Possible contamination of nucleic acid can be removed by Warburg formula. And baseline correction is selectable at 320nm.

Quantification with STC

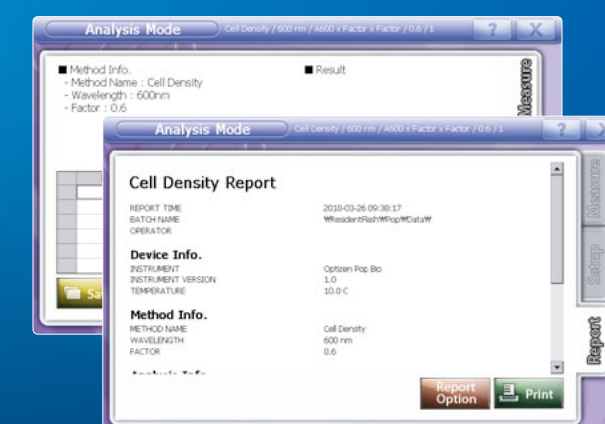
The quantification with STC methods are using chromogenic materials that interact with peptide bonds, tryptophan and etc.

- BCA method
- Biuret method
- Bradford method
- Lowry method



Cell density

This mode is to check the bacterial cell growth. Linear relationship exists between cell number and absorbance at 600nm up to approximately 0.6.



OPTIZEN POP QX

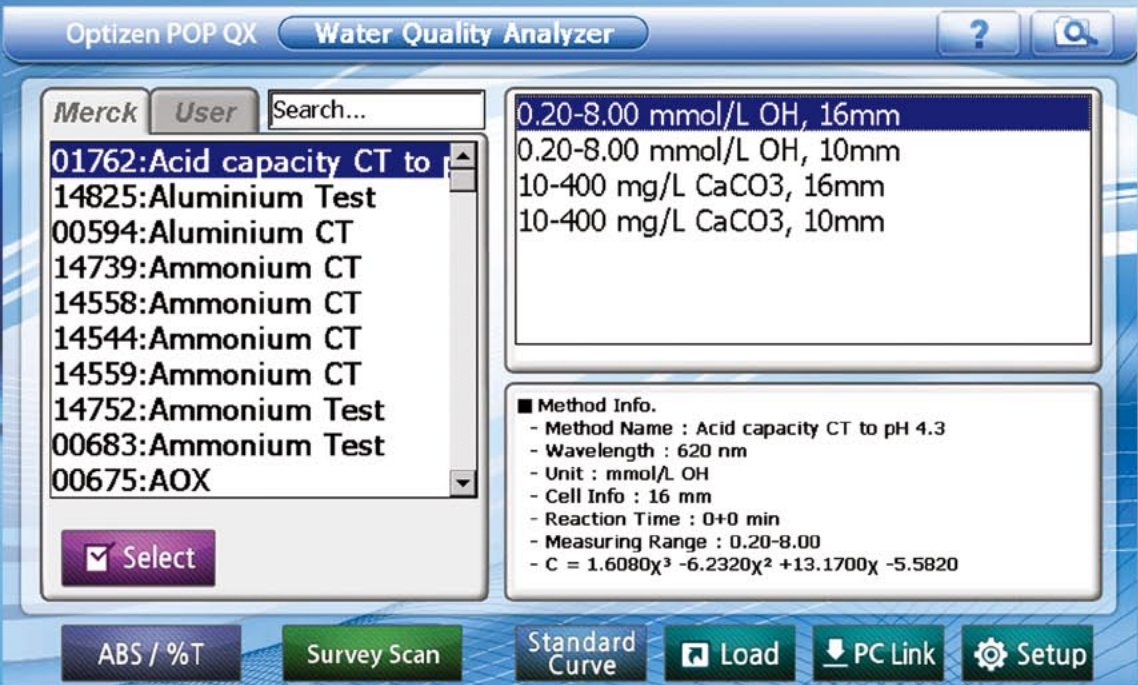
NEW CONCEPT OF WATER QUALITY ANALYZER

OPTIZEN series suggest POP QX as an exceptional water quality analyzer. Improved and simplified analytical procedures for routine use are followed by voice guide and easy parameter use.

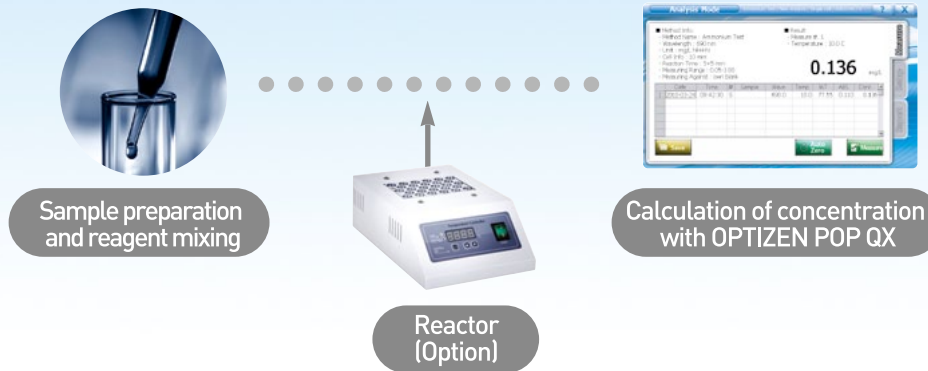


Method and parameter pre-programmed.
User defined program capable. (Use as ordinary spectrophotometers)

- Pre-programmed methods for MERCK kit, one of the leading water quality test kit
- Free software update for other methods is available.



Easy to use Simple analysis method

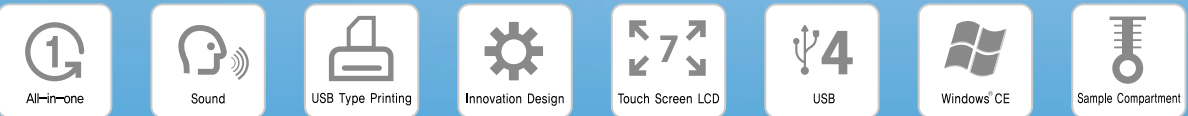


Pre-programmed Methods: over 150 methods

Please contact us for more information.

PARAMETER	RANGE	UNIT
Acid capacity CT to pH 4.3 (Total Alkalinity)	0.20-8.00 10-400	mmol/L OH mg/L CaCO ₃
Aluminium	0.020-1.20	mg/L Al
Ammonium	0.010-193	mg/L NH ₄
Ammonium, Nitrogen	0.01-80	mg/L NH ₄ -N
AOX	0.05-2.50	mg/L AOX
Antimony	0.10-8.00	mg/L Sb
Arsenic	0.001-0.100	mg/L As
BOD	0.5-3000	mg/L BOD
Boron	0.050-2.00	mg/L B
Bromine	0.020-10.00	mg/L Br ₂
Cadmium	0.002-1.000	mg/L Cd
Calcium	1.0-250	mg/L Ca
Calcium Carbonate	2.5-624	mg/L CaCO ₃
Calcium Oxide	1.4-350	mg/L CaO
Chloride	2.5-250	mg/L Cl
Chlorine dioxide	0.020-10.00	mg/L ClO ₂
Chromium	0.01-3.00	mg/L Cr
Chromate	0.02-6.69	mg/L CrO ₄
Chromium bath	4.0-400	g/L CrO ₃
COD	4.0-10000	mg/L COD
COD (Hg free)	10-1500	mg/L COD
Copper	0.02-8.00	mg/L Cu
Copper bath	2.0-80.0	g/L Cu
Cyanide	0.002-0.500	mg/L CN
Fluoride	0.025-20	mg/L F
Formaldehyde	0.02-8.00	mg/L HCHO
Gold	0.5-12.0	mg/L Au
Hazen colour number	0-1000	HZ or Pt/Co
Hydrazine	0.005-2.00	mg/L N ₂ H ₄
Hydrogen peroxide	0.015-20.0	mg/L H ₂ O ₂
Iodine	0.050-10.0	mg/L I ₂
Iron	0.015-50	mg/L Fe
Lead	0.010-5.00	mg/L Pb

PARAMETER	RANGE	UNIT
Mercury	0.025-1.000	mg/L Hg
Magnesium	5.0-75.0	mg/L Mg
Manganese	0.005-10	mg/L Mn
Molybdenum	0.02-1.00	mg/L Mo
Monochloramine	0.050-10.00	mg/L Cl ₂
	0.036-7.25	mg/L NH ₂ Cl
Nickel	0.010-1.96	mg/L NH ₂ Cl-N
	0.02-6.00	mg/L Ni
Nickel bath	2.0-120	g/L Ni
Nitrate	0.4-996	mg/L NO ₃
Nitrogen, total	0.5-150	mg/L N
Ozone	0.010-4.0	mg/L O ₃
Palladium	0.05-1.25	mg/L Pd
Phenol	0.002-5.00	mg/L Phenol
Phosphate Phosphorous	0.01-100	mg/L PO ₄ -P
Phosphorus Pentoxide	0.02-229	mg/L P ₂ O ₅
Phosphate	0.03-307	mg/L PO ₄
Platinum	0.10-1.25	mg/L Pt
Platinum-Cobalt Standard	see Hazen Colour number	Pt/Co or HZ
Potassium	5.0-300	mg/L K
Silicon	0.005-500	mg/L Si
Silicate	0.01-1070	mg/L SiO ₂
Silver	0.25-3.00	mg/L Ag
Sodium in nutrient solutions for fertilization	10-300	mg/L Na
Sulfate	5-1000	mg/L SO ₄
Sulfide	0.020-1.50	mg/L S ²⁻
Sulfite	0.05-60	mg/L SO ₃
Suspended Solids	25-750	mg/L SuS
Tin	0.10-2.50	mg/L Sn
TOC	5.0-800	mg/L TOC
Volatile Organic Acids	50-3000	mg/L HOAC
Zinc	0.025-5.00	mg/L Zn



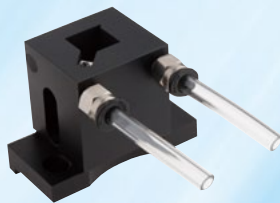
ACCESSORIES

P - POP B - POP Bio Q - POP QX



1. Sipper system P Q

- Intake volume range 200 μ l ~ 5000 μ l
- Cuvette 10mm path-length, 30 μ l
- Power supply Free voltage
- Dimensions 173(W) x 210(D) x 130(H)
- RS 232 port connect RS 232 port connect



2. Temperature cell holder P B Q

- Water circulator type : temperature range -10 ~ 80°C



3. Film cell holder – wide type P

- Sample limit Thickness : 5mm Width : 100mm, Height : 70mm



4. Film cell holder – cell type P

- Sample limit Thickness : 2mm Width : 10mm, Height : 30mm



5. Round cell holder (Two types) P Q

- Test tube diameter 16mm, 25mm
- Test tube height \leq 100mm



6. Long path cell holder (Two types) P Q

- Optical path 10 ~ 100mm/50 ~ 100mm



7. Peltier control system P B (Temperature cell holder included)

- Temperature control range 5 ~ 85°C
- Temperature accuracy \pm 0.5°C
- Control design \pm 0.1°C
- Power supply Free voltage



8. Micro volume cell holder P B

- \leq 1,000 μ l single cell holder
- Center height : 15mm
- Path length : 10mm



9. Nanohandler (Manual/Auto type) B

- Optical path length 0.2mm
- dsDNA range 2.5 ~ 6250ng/ μ l
- Sample volume 0.7 ~ 2 μ l



10. All-in-one cell holder Q

- Round cell Tube diameter : 16 ~ 25mm Tube height : 102.5mm (16mm tube)
- Square cell : 10mm



11. 8-position rotating multi-cell holder P B Q

- More sample (7cells) at one time measurement establish the convenience and affordability to experimenters. (Standard cell size : 10mm)



12. Customized cell holder

SPECIFICATIONS



UV/VIS SPECTROPHOTOMETER OPTIZEN POP SERIES

Photometric system	Single beam type
Spectral bandwidth	$< 1.8\text{nm}$
Wavelength	
Range	190 ~ 1100nm
Accuracy	$< \pm 0.5\text{nm}$ (at deuterium lamp peak 656.1nm, 486.0nm)
Reproducibility	$< \pm 0.1\text{nm}$
Setting	$\geq 0.1\text{nm}$
Slew rate	About 7,800nm/min
Scanning speed	Max 4,000nm/min
Photometric	
Range	- 3.0 ~ 3.0ABS(Enable to set up) / - 0.5 ~ 2.5ABS(with Nanoliter cell)
Accuracy	$\pm 0.005\text{ABS}$ (at 1.0ABS)
Reproducibility	$\pm 0.003\text{ABS}$ (at 1.0ABS)
Stray light	$< 0.05\%T$ (220nm, 340nm)
Baseline stability	$\pm 0.001\text{ABS/h}$ (at 550 nm)
Baseline flatness	$\pm 0.002\text{ABS}$ (200 ~ 1100nm)
Light source	Tungsten-halogen lamp and Deuterium lamp
Lamp change wavelength	340 ~ 410nm (Default 370nm), including auto position system
Monochromator	Modified Czerny-Turner type with 1200lines/mm blazed grating
Standard cell holder	
OPTIZEN POP	Rotary type 8 position multi cell holder
OPTIZEN QX	All-in-one cell holder
OPTIZEN BIO	Micro volume cell holder
Interface	4 USB ports / 3 RS-232 ports
Data capacity	2 GB (OPTION : 8 GB)
Interacting printer type	Network printer, USB port type printer (Support PCL mode)
Detector	Silicone photodiode
Power requirement	Free voltage
Dimension	433(W)mm x 381(D)mm x 180(H)mm
Weight	8Kg



ISO 14001



ISO 9001



UV/VIS SPECTROPHOTOMETER **OPTIZEN POP**



Better solutions
In Spectroscopic analysis

MECASYS

Head Office

10th Floor, 640-3, Banseok-dong, Yuseong-gu, Daejeon, 305-150,
Republic of Korea
Tel : +82-42-485-0118 Fax : +82-42-485-7118

Overseas Sales Department

#706, 751 building, Nonhyeon-dong 203, Gangnam-gu, Seoul,
Republic of Korea
Tel : +82-2-562-0118 Fax : +82-42-485-7118
E-mail : overseas@mecasys.co.kr, maintenance@mecasys.co.kr

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