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Instruments

Instruments
Accessories of *Exicycler™ 96*



Instruments
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01 Instruments

Instruments



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Exicycler™ 96 Real-Time Quantitative Thermal Block



■ Description

Exicycler™ 96 is a Real-Time polymerase-chain reaction (PCR) equipment built with thermal block and optical components for fluorescence detection. The thermal cycler changes automatically the temperature in numerous cycles to amplify DNA. The amplified DNA is quantified by the fluorescent probe in Real-Time.

Exicycler™ 96 is equipped with Light Tunnel Technology (LT Technology) which had been developed and manufactured by Bioneer own technologies to minimize the deviation between each well which is compared to other manufacturers and their equipments. Since there is no significant well deviation for *Exicycler™ 96*, reference dye (i.e. ROX) is not needed.

5-filter sets 5 fluorescent signal simultaneously from the single tube and the overlapping spectrum (crosstalk phenomena) is reduced to provide the optimal experiment environment. Also, the 5-filter set can be applied with fluorescent dyes typically used makes more ease probe selection for your experiments.

Exicycler™ 96 medical version is certified by Korea Food and Drug Administration (KFDA) with Level 2 medical device. *Exicycler™ 96* has two different software versions (Experiment /Research or Medical Diagnosis) for the user's specific need. Experiment/Research version software provides 4 different analysis tools: Absolute quantification, Relative quantification, SNP Genotyping and Existence/ Nonexistence. Medical Diagnosis version software provides the result oriented environment according to different diagnosis Kits applied by Bioneer.

(LT technology: Korean Patent #: 10-794703, US Patent # (Pending): 10/551784)

■ Features and Benefits

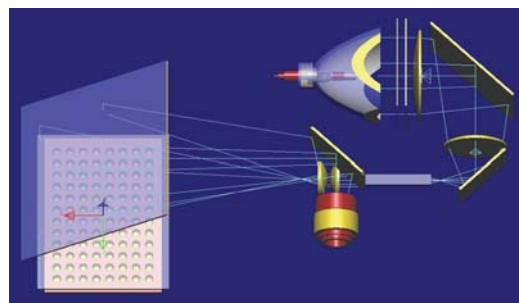
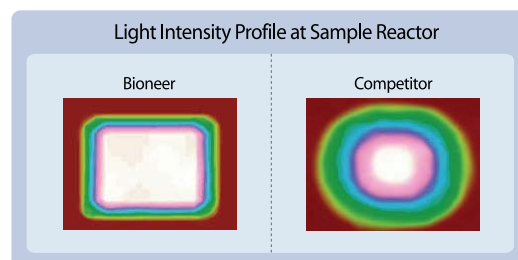
• Light Tunnel Technology

Reduce deviations between each well and eliminate the use of reference dye

Light Tunnel technology (LT Technology) is patented and owned by Bioneer. The difference between other typical detection technologies and LT Technology is that the typical detection system uses single light source to detect 96 well's fluorescent level uniformly. The single light source creates different spectrum levels from the center (bright) to the edges (rim).

Therefore, these optical devices must assign at least one reference dye to the filter to normalize the deviation between the center wells and edge wells. The problem with these systems does not guarantee its accuracy of the result since they may be trivial by the deviation reduction methods.

On the contrary, Bioneer successfully eliminate above problems without use of reference dye through our patented optical technology so that user can obtain more accurate experiment result



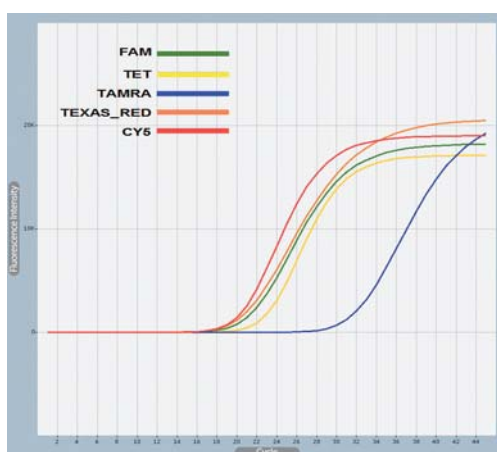
• Real 5 Color Multiplexing

Exicycler™ 96 is equipped with 5 different filter set as standard and all 5 filter set can be used to detect fluorescent dye at once without having crosstalk effects. This gives much higher efficiency and accuracy of your experiment/diagnosis results.



Exicycler™ 96 Real-Time Quantitative Thermal Block

	Excitation	Emission	Fluorescence Dye
1	490 nm	520 nm	FAM, SYBR Green I
2	520 nm	550 nm	JOE, TET
3	550 nm	580 nm	TAMRA, CY3
4	580 nm	610 nm	Texas Red, ROX, Red 610
5	630 nm	680 nm	CY5, Red 670



• Simultaneous Detection System

Exicycler™ 96 uses one of the best in its class 2D CCD camera available in the market to measure and to save the well information at once. The detection system has almost no delay between detection and the information time saved to the system.

• Self Diagnostics

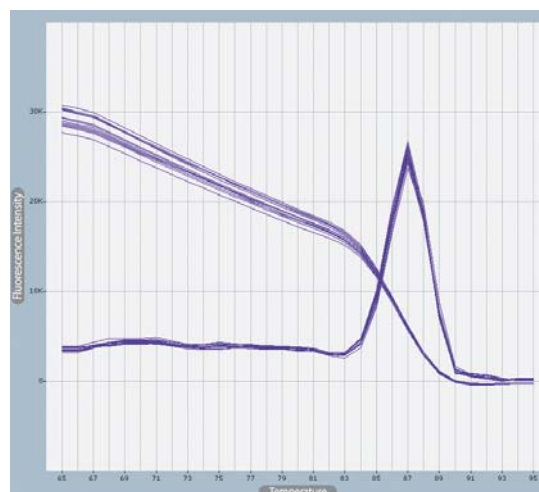
Exicycler™ 96 has self-diagnosis system so the user can figure out equipment failures easily.

• High Speed USB 2.0 Interface

Exicycler™ 96 uses USB interface to make data communication easy between the PC and large data which can be transmitted and received without losing the speed.

• Melting Curve Analysis

Exicycler™ 96 can scan the temperature step range of 0.1 to 1°C of the melting points which can be useful to analyze the melting curve for various experiment.



• High-throughput

Exicycler™ 96 uses 96-well block in which either 8-strip tubes or 96-well plates for detecting maximum 96 samples at once.



Exicycler™ 96 Real-Time Quantitative Thermal Block

■ Specification

Physical Specifications	
Dimension (mm)	355(W) x 540(H) x 470(D)
Weight (kg)	30 kg
Sample Capacity/ Size	96 well plate / 0.2 ml tubes
Sample Volume	20~100 µl (50 µl recommended)
Power Consumption	100~240 VAC, 50/60 Hz, 850 Watts
Operating Temperature	15~30°C
Operating Humidity	20~80 % no condensation
Thermo Module Specifications	
Method of Heating / Cooling	Peltier
Temperature Range	4.0 °C ~ 99.9 °C
Temperature Accuracy	± 0.3 °C
Temperature Uniformity	± 0.5 °C
Ramping Rate	Max 2.5 °C/sec
Temperature Increment Range	0.1 °C ~ 9.9 °C
Lid Temperature	Within 90 ~ 120 °C
Time Increment Range	1 sec ~ 60 sec
Melting Resolution	0.1 °C ~ 1 °C
Computer Specifications	
Operating System	Windows XP & Window7 (32-bit OS only, S/W version 3.54.4 or later)
Processor Speed	Intel Dual Core E2160 (1.8GHz) or higher
Memory	1 GB or higher
Communication Port	USB 2.0 high speed
Screen Resolution	1280 X 1024 or higher
Optical Specifications	
Light Source	Short arc lamp (120 W)
Sensor	16-Bit 2D CCD
Excitation Filter / Emission Filter	5 Sets

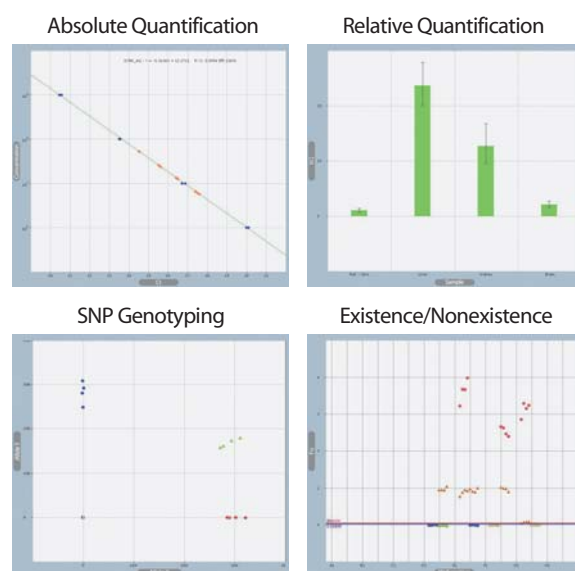
* The following specification is subject to modify without any notice.

■ Applications

Virus load, Pathogen detection, Oncology, Genetic disease detection, Drug resistance analysis, DNA methylation study, SNP (Single nucleotide polymorphism) detection, Quantification of Gene Expression, Melting Curve Analysis (0.1°C - 1°C)

■ Experimental Data

Analysis software that comes with *Exicycler™ 96* has 4 different tools. Simply choose an appropriate tool according to the experiment purpose, users without spending much time can learn how to use the software.



■ Ordering Information

Cat. No.	Product Description
A-2060	<i>Exicycler™ 96</i> Real-Time Quantitative Thermal Block
Accessories	
A-2060-A1	<i>AccuPower®</i> Calibration Kit for <i>Exicycler™ 96</i>
Plastic Consumables	
3111-50	0.2 ml Opaque White 8-strip PCR Tube, 250 Strips
3111-51	0.2 ml Opaque White 8-strip, Low Profile PCR Tube, 250 Strips
3111-52	Opaque White 96-well Semi-skirted PCR Plate, 25 Plates
3111-53	Opaque White 96-well Skirted, Low Profile PCR Plate, 25 Plates (Full-skirted)
3111-4110	Adhesive Optical Sealing Film, 100 Sheets



ExiProgen™



■ Description

ExiProgen™ (Korean Patent #: 10-2011-0085824) automatically synthesizes and purifies protein from template DNA in-vitro, and extracts high-quality nucleic acids from various sources by itself.

To obtain 90% or above pure protein within 6 hours, add DNA into the Protein Synthesis Kit and execute on *ExiProgen™* to run in-vitro transcription, translation and purification. In addition, high quality DNA/RNAs (RNA Quality Score >9.0) are extracted from various samples (i.e. whole blood, tissue, cell, bacteria, plant, etc).

ExiProgen™ is a state-of-the-art life science equipment using Bioneer's advanced technology for pipetting system, cooling/heating system and contamination shield to obtain rapid and accurate result data. *ExiProgen™* is a leading product of BIO 2.0 Innovation for bio-engineering laboratories.

■ Features and Benefits

• Simple and Easy Way to Obtain Pure Protein

With the template DNA and *ExiProgen™* Protein Kits, *ExiProgen™* automatically synthesizes protein and applies affinity purification method to them in order to complete purification process.

• Automatic DNA/RNA Extraction

By using *ExiProgen™* nucleic acids Kits, high quality DNA and/or RNA (RNA Quality Score >9.0) can be extracted from various samples.

• Cooling Reaction Block

Cooling Reaction Block protects the synthesized protein from its denaturation due to high temperature, by keeping the eluted protein temperature down below 10°C

• Automatic Dispense Function

After the experiment process is completed, *ExiProgen™* automatically dispenses the samples to the designated

tube which saves time and eliminates pipetting errors (i.e. mis-pipetting, cross-pipetting, etc.) done by a person.

• Built-in-protocols for Protein Synthesis/Purification & Nucleic Acid Extraction

ExiProgen™ offers optimized protocols for protein synthesis/purification, and nucleic acid extraction for each biological sample. If there is any update for the protocols, it can be simply downloaded from Bioneer's website and used to update the equipment using TCP/IP network connection.

• Magnetic Block and Heating Block

ExiProgen™ is equipped with Magnetic Block and Heating Block to increase the extraction efficiency. Magnetic block holds the bead (that was used for extraction process) to reduce the bead loss in which inhibitors such as ethanol can be perfectly eliminated to obtain the maximum efficiency (Patent Pending).

• Contamination Shield

Contamination Shield is placed under the bottom of the solution tip to protect the wells from the cross-contamination when the solution can be dropped from the tip.

• Touch Screen For Friendly User Interface

3.5-inch touch screen is a user friendly to control *ExiProgen™* such as selecting protocols or running UV lamp when sanitizing the chamber is needed. Also the screen displays the progress of experimental running in Real-Time.

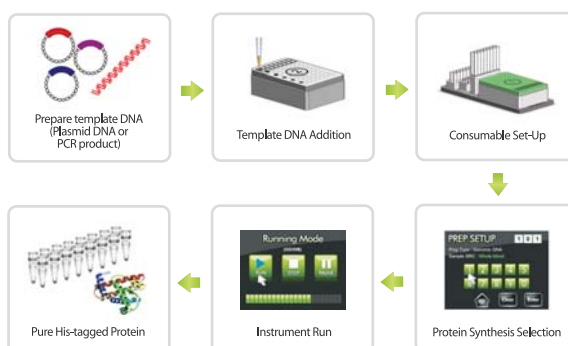
• Automatic UV Sterilization Lamp

ExiProgen™ is equipped with a powerful UV lamp to sterilize the chamber after experiment. This sterilization provides clean experimental environment for each and every experiment.

■ Applications

Enzyme engineering, Protein evolution, Synthetic biology, Bio-energy R&D, Protein drug R&D

■ Experimental Procedure





ExiProgen™

■ Specifications

Dimensions (mm)	320(W) x 500(H) x 535(D)
Weight	27 kg
Temperature Range	15-30°C
Humidity Range	20-80%, no condensation
Operating System	Built-in
User Interface	320 x 240 touch screen graphic LCD
Power Consumption	100 - 240 VAC, 50/60 Hz
UV Sterilization	15 minute cycle
Communications	TCP/IP
Heating Temperature	40-95 °C

* The following specification is subject to be changed without any notice.

■ Functions

DNA/RNA Extraction	<input type="radio"/>
Protein Expression	<input type="radio"/>
Protein Purification	<input type="radio"/>
TFT Touch Screen	<input type="radio"/>
Number of Samples	Up to 16 samples
UV Sterilization	<input type="radio"/>
Heating Block & Magnetic Block	<input type="radio"/>
Cartridge Protection (from being contaminated)	<input type="radio"/>
Cooling System	<input type="radio"/>
Automatic Dispense	<input type="radio"/>

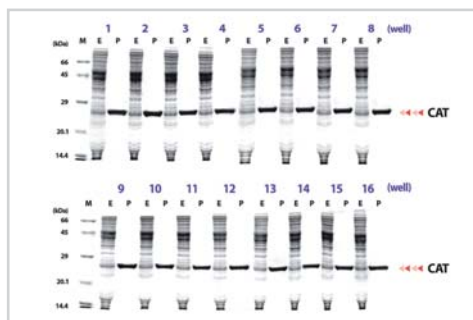
■ Available Application with ExiProgen™

- Protein Synthesis/Purification
- Blood Genomic DNA Extraction
- Tissue Genomic DNA Extraction
- Bacterial Genomic DNA Extraction
- Plant Genomic DNA Extraction
- Beef Genomic DNA Extraction
- Rice Genomic DNA Extraction
- Tissue Total RNA Extraction
- Viral DNA/RNA Extraction

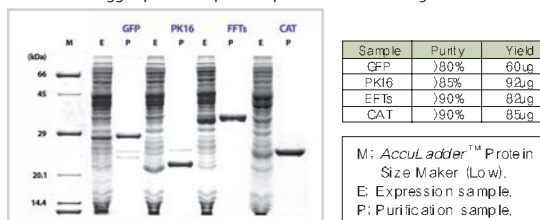
■ Experimental Data (Examples)

- Result of His-Tagged Protein Expression and Purification

<GFP proteins expression and purification With ExiProgen™>

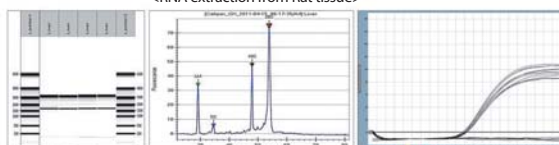


<Various His-tagged proteins expression/purification With ExiProgen™>



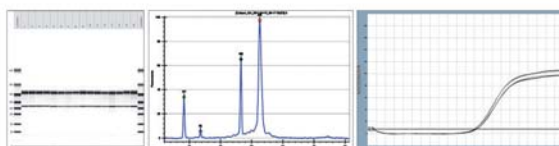
- Assay Result of Total RNA Extraction from Animal Tissues & Cultured Cells

<RNA extraction from Rat tissue>



RNA Analysis: LabChip Gx (Caliper Life Science), RQS>9.5 Result Real-Time PCR (Epicycler™ 96)

<RNA Extraction from Cultured Cell>



RNA Analysis: LabChip Gx (Caliper Life Science), RQS>9.5 Result Real-Time PCR (Epicycler™ 96)



ExiProgen™

■ Ordering Information

Cat. No.	Product Description
A-5041	<i>ExiProgen™</i>
Cat. No.	Protein synthesis Kits for <i>ExiProgen™</i>
K-7300	<i>ExiProgen™</i> EC1 Protein Synthesis Kit, 16 reactions
K-7301	<i>ExiProgen™</i> EC1 Protein Synthesis Kit, 32 reactions
K-7302	<i>ExiProgen™</i> EC1 Protein Synthesis Kit, 96 reactions
K-7400	<i>ExiProgen™</i> ProXpress PCR Template Kit, 16 reactions
K-7401	<i>ExiProgen™</i> ProXpress PCR Template Kit, 32 reactions
K-7350	pBIVT Vector Set – 1, 5 µg each
K-7250	<i>AccuRapid™</i> Cell-Free Protein Expression Kit, 24 reactions
Cat. No.	Nucleic Acid Extraction Kits for <i>ExiProgen™</i>
K-4311	<i>ExiProgen™</i> Blood Genomic DNA Kit, 96 reactions
K-4312	<i>ExiProgen™</i> Tissue Genomic DNA Kit, 96 reactions
K-4314	<i>ExiProgen™</i> Bacteria Genomic DNA Kit, 96 reactions
K-4315	<i>ExiProgen™</i> Plant Genomic DNA Kit, 96 reactions
K-4316	<i>ExiProgen™</i> Beef Genomic DNA Kit, 96 reactions
K-4317	<i>ExiProgen™</i> Rice Genomic DNA Kit, 96 reactions
K-4342	<i>ExiProgen™</i> Tissue Total RNA Kit, 96 reactions
K-4344	<i>ExiProgen™</i> Plant Total RNA Kit, 96 reactions
K-4371	<i>ExiProgen™</i> Viral DNA/ RNA Kit, 96 reactions
K-4372	<i>ExiProgen™</i> Viral DNA Kit, 96 reactions
K-4373	<i>ExiProgen™</i> Viral RNA Kit, 96 reactions

ExiPrep™ 16 Plus



■ Description

ExiPrep™ 16 Plus is an automatic equipment to extract nucleic acids from various samples such as whole blood, tissues, cells, bacteria and plants.

ExiPrep™ 16 Plus can extract up to 16 nucleic acids and offers optimized protocols for each biological sample by its type. Also contamination shield is equipped on the bottom of the solution tip to protect the well from the cross contamination when the solution is dropped from the tip. *ExiPrep™ 16 Plus* gives reliable experiment result to the user.

■ Features and Benefits

• DNA/RNA Extraction from Various Samples

By using *ExiPrep™ 16 Plus* experiment Kits, high quality DNA and/or RNA (RNA Quality Score >9.0) can be extracted from various samples (i.e. whole blood, tissue, cell, bacteria, plant, etc).

• Extraction Protocols pre loaded Samples and Nucleic Acids according to

ExiPrep™ 16 Plus offers optimized protocols for nucleic acid extraction by each biological sample and nucleic acid types. Also if there is any update for the protocols, the user can simply download from the Bioneer's website and update the equipment using TCP/IP network connection.

• Minimizing Nucleic Acid Loss

ExiPrep™ 16 Plus is equipped with Magnetic Block and Heating Block to increase the extraction efficiency. Magnetic block holds the bead (that was used for extraction process) to reduce the bead loss in which inhibitors such as ethanol can be perfectly eliminated to obtain the maximum efficiency (Patent Pending).

• Contamination Shield

Contamination Shield is placed under the bottom of the solution tip to protect the wells from the cross-contamination when the solution can be dropped from the tip.

• LCD Touch Screen

3.5-inch touch screen is a user friendly to control *ExiPrep™ 16 Plus* such as selecting protocols or running UV lamp when sanitizing the chamber is needed. Also the screen displays the progress of experimental running in Real-Time.

• UV lamp For Chamber Sanitization

ExiPrep™ 16 Plus is equipped with a powerful UV lamp to sanitize the chamber after experiment. This sanitization provides clean experimental environment for each and every experiment.

■ Applications

Gene Expression Study, Genetic Engineering, GMP & Food poisoning test, Biological terror detection

■ Experimental Procedure

Dimensions (W X H X D)	320 mm x 487 mm x 535 mm
Weight	22 kg
Operating Temperature	15-30 °C
Operating Humidity	20-80 %, no condensation
Operating System	Built-in
User Interface	320 x 240 touch screen LCD
Power Consumption	100 - 240 VAC
UV Sterilization	15 minute cycle
Communications	TCP/IP
Heating Temperature	40-95 °C

* The following specification is subject to be changed without any notice.

■ Specifications





ExiPrep™ 16 Plus

■ Functions

DNA/RNA Extraction	<input type="checkbox"/>
TFT Touch Screen	<input type="checkbox"/>
Number of Samples	Up to 16 samples
UV Sterilization	<input type="checkbox"/>
Heating Block & Magnetic Block	<input type="checkbox"/>
Cartridge Protection (from being contaminated)	<input type="checkbox"/>

■ Available Application with ExiPrep™ 16

- Blood Genomic DNA Extraction
- Tissue Genomic DNA Extraction
- Bacterial Genomic DNA Extraction
- Plant Genomic DNA Extraction
- Beef Genomic DNA Extraction
- Rice Genomic DNA Extraction
- Tissue Total RNA Extraction
- Cell Total RNA Extraction
- Viral DNA/RNA Extraction

■ Experimental Data (Examples)

- Result of His-Tagged Protein Expression and Purification

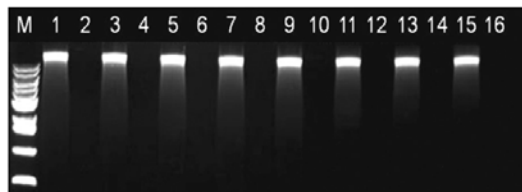


Figure 1. Electrophoretic Analysis of Genomic DNA extracted from the whole blood. It is the result of extracting Genomic DNA using 200µl of whole blood, quantifying 100ng and performing electrophoresis on 1% Agarose gel.

- Assay Result of Total RNA Extraction from Animal Tissues & Cultured Cells

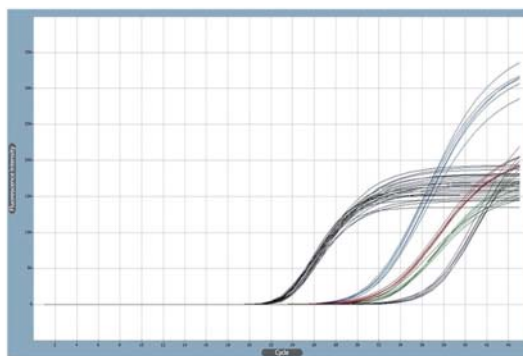


Figure 2. The Result of Real-Time PCR of Genomic DNA Extraction. It is the result of Real-Time PCR performance using five primer and probe Kit which is related to Alzheimer disease.

■ Ordering Information

Cat. No.	Product Description
A-5030	ExiPrep™ 16 Plus
Cat. No. Nucleic Acid Extraction Kits for ExiPrep™ 16 Plus	
K-4211	ExiPrep™ Plus Blood Genomic DNA Kit, 96 reactions
K-4312	ExiPrep™ 16 Plus Tissue Genomic DNA Kit, 96 reactions
K-4214	ExiPrep™ Plus Bacteria Genomic DNA Kit, 96 reactions
K-4215	ExiPrep™ Plus Plant Genomic DNA Kit, 96 reactions
K-4216	ExiPrep™ Plus Beef Genomic DNA Kit, 96 reactions
K-4217	ExiPrep™ Plus Rice Genomic DNA Kit, 96 reactions
K-4242	ExiPrep™ Plus Tissue Total RNA Kit, 96 reactions
K-4244	ExiPrep™ 16 Plus Plant Total RNA Kit, 96 reactions
K-4271	ExiPrep™ Plus Viral DNA/ RNA Kit, 96 reactions
K-4272	ExiPrep™ 16 Plus Viral DNA Kit, 96 reactions

MyGenie™ 96/384 Thermal Block



[MyGenie™ 96 Thermal Block]



[MyGenie™ 384 Thermal Block]

■ Description

MyGenie™ 96/384 Thermal Block is equipped with a 96 well block which can be easily replaced with a 384 well block. Since the block can be replaced depending on the user's experiment, this small device is still economical, provides excellent utilization to the user.

MyGenie™ 96/384 Thermal Block has the accuracy of $\pm 0.3^{\circ}\text{C}$ in temperature control to obtain reproducible results in short time. It is also suitable for large experiments since up to 30 MyGenie™ 96/384 units can be controlled by a single PC with TCP/IP protocol.

(Korean Patent #: 10-794703, U.S. Patent (Pending) #: 10/551784)

■ Features and Benefits

• Interchangeable Block System

MyGenie™ 96/384 Thermal Block is equipped with a 96 well block which is interchangeable with a 384 well block to increase the functionality of the machine.

• Multiple Functionalities

Using PCR, temperature increment, time increment and ramping rate control to save time and conduct the experiment more efficiently.

• Self-Test Function For Equipment Diagnosis

MyGenie™ 96/384 Thermal Block includes self-test function to detect the problem exists on the equipment. Not only it makes easy to detect the problem, but also it makes easy and saves time when a repair service for the equipment is needed.

• A Single PC to Control Up To 30 MyGenie™ 96/384 Units at Once

The software of MyGenie™ 96/384 using standard TCP/IP communication protocol can remotely transfer protocols up to 30 MyGenie™ 96/384 units. Also it is possible to monitor the status of the equipment in Real-Time from the PC.

■ Specifications

Physical specifications	
Dimension (mm)	238(W) x 235(H) x 297(D)
Weight	8.0 kg
Sample Capacity / Size	96 well / 0.2 ml tubes
Display	20 x 4 Character LCD
Keypad	20 Keys
Power Consumption	100 - 240 VAC, 50/60 Hz, 800Watts
Operating Temperature	20 - 30 °C
Operating Humidity	20-80 %, no condensation
Operating Specifications	
Method of Heating / Cooling	Peltier
Temperature Range	4.0 °C - 99.9 °C
Max Ramp Rate	2.5 °C/sec
Temperature Accuracy	$\pm 0.3^{\circ}\text{C}$
Temperature Uniformity	$\pm 0.5^{\circ}\text{C}$
Lid Temperature	90 - 120 °C
Temperature Increment Range	0.1 °C - 9.9 °C
Time Increment Range	1 sec - 60 sec
Ramp Rate Control	0.1 °C/s
Software Specifications	
Number of Program	150
Number of Repeated cycles	99
Number of User Group	Max. 6 ea.
Number of Step/Program	40

* The following specification is subject to modify without any notice.



***MyGenie™* 96/384 Thermal Block**

■ Ordering Information

Cat. No.	Product Description
A-2040-1	<i>MyGenie™</i> 96 Thermal Block
A-2040-2	<i>MyGenie™</i> 384 Thermal Block only
A-2040-3	<i>MyGenie™</i> 96 Thermal Block with TCP/IP
A-2040-4	<i>MyGenie™</i> 384 Thermal Block



MyGenie™ 32 Thermal Block



■ Description

Development of proprietary “know-how” is applied to MyGenie™ 32 Thermal Block. It is portable gene amplification equipment includes a 32-well sample block and the thermostat control device. Using an advance integrated circuit for the temperature stabilization provides a maximum ramp rate of 2.5°C/sec of temperature change with 0.3°C step response control. It returns accurate and repeatable experiment result which makes MyGenie™ 32 Thermal Block stand-out from other products in a portable/personal PCR market. Improved user interface is applied to make the operation simple, and easy to write program depending on experiment. Each program can handle up to 15 steps and the total of 100 programs can be stored.

(Korean Patent #: 10-794703, US Patent (pending) #: 10/551784)

■ Features and Benefits

• Compact Design

Simple and modern design with light weight makes MyGenie™ 32 Thermal Block portable.

• Advanced Temperature Control Algorithm For Accurate Temperature Setting

Advanced temperature control is applied to MyGenie™ 32 Thermal Block for rapid heating and cooling to reduce time and increase efficiency and accuracy. Also the temperature deviation is controlled within $\pm 0.3^\circ\text{C}$ from the temperature setting throughout the block so nearly all wells return uniform results.

• Upgraded Heating cover and Insulating wall to Minimize Sample Loss by Evaporation

A heating cover is equipped on the lid is heated to high temperature to protect the sample from being evaporated so there is no mineral oil is needed. Also heating cover and

insulating wall structure eliminate the sample loss by evaporation to obtain accurate and uniform experiment result.

• Temperature/Time Increase and Ramp Rate Control Function

Various and different ways to conduct amplification experiment by using temperature/time increase and ramp rate control functions.

■ Specifications

Physical Specifications	
Dimension (mm)	241(W) x 220(H) x 296(D)
Weight	7.0 kg
Sample Capacity/ Size	32 well / 0.2 ml microtube
Display	20 x 4 Character LCD
Keypad	20 Keys
Power Consumption	100 - 240 VAC, 50/60 Hz, 400Watts
Operating Temperature	20 - 30 °C
Operating Humidity	20-80 %, no condensation
Operating Specifications	
Method of Heating / Cooling	Peltier
Temperature Range	4.0 °C- 99.9 °C
Max Ramp Rate	2.5 °C/sec
Temperature Accuracy	$\pm 0.3^\circ\text{C}$
Temperature Uniformity	$\pm 0.5^\circ\text{C}$
Lid Temperature	90 - 120 °C
Temperature Increase and Ramp Rate Range	0.1 - 9.9 °C
Time Increase and Ramp Rate Range	1 - 60 sec
Ramp Rate Control	0.1 °C/s
Software Specifications	
Number of Program	100
Number of Repeated Cycles	99
Number of Step/Program	15

*The following specification is subject to modify without any notice.

■ Ordering Information

Cat. No.	Product Description
A-2030-4	MyGenie™ 32 Thermal Block



ExiSpin™



■ Description

ExiSpin™ is a multi-purpose equipment as a combination of centrifuge and vortex features that can be executed by the user. Through *ExiSpin™* experimental time taken for PCR process in molecular biology research can be shortened dramatically. In particular, four 8-strip tubes can be handled at one time when using *AccuPower®* Kit, which allows rapid and reproducible mixing of reaction mixture. *ExiSpin™* is essential equipment for clinical laboratories, biochemistry, molecular biology and all other fields using micro-tubes.

■ Features and Benefits

• Fully Automated Spin-Mix-Spin Technology

Spin-mix-Spin speed and time of each stage can be set and the number of iterations (1-999 cycles) can be entered. Depending on the type of sample in the micro-tube, spin down the solution process is adjustable to improve the efficiency and reproducibility of the experiment.

1. 1st spin: Spin down samples to a bottom of tube
2. Vortexing of samples
3. 2nd spin: Spin down mixed samples to bottom of tube

• Convenience and High Reproducibility

According to samples the optimized experiment protocol is selected under the same conditions without having errors that the user can make. Four 8-well strips can be used simultaneously that 32 PCR / qPCR mixture can be prepared in the shortest time. Using up to twelve 1.5 ml tubes, cell lysis can be performed. The entered program at power-on is kept for repeating operation so the user can use the same program with a single touch of a button.

• Economical and Efficient

ExiSpin™ has both centrifuge and vortex features which make it economical and time-efficient compared to purchase and use the equipment individually. In addition, not only micro-centrifuge tubes, but also PCR tubes can be used with the extra rotor which is additionally provided with its purchase.



<Presented rotors for 8-strip PCR tube [left] and 1.5 ml micro-tube [right]>

■ Applications

- Bacterial Cell lysis
- PCR/qPCR reaction
- Restriction enzyme reaction and kinase/ligation reaction
- Any experiment required repetition of mixing and spin-down

■ Specifications

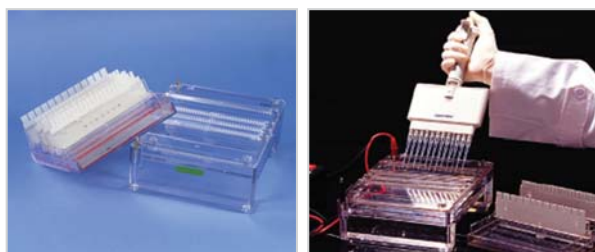
Dimensions(W x H x D)	19 cm(W) x 23.5 cm(H) x 12.5 cm(D)
Weight	2.7 kg
Spin Regulation	1000- 3500 rpm (increment 100 rpm)
Spin Timer	1 sec- 30 min
Vortexing Strength	Soft, Medium, Hard
SMS- Cycle Regulation	1 - 999 cycles
Power Supply	AC 24 V, 1250 mA

■ Ordering Information

Cat. No.	Product Description
A-7040	<i>ExiSpin™</i>



Agaro-Power™



■ Description

Agaro-Power™ is an agarose gel electrophoresis Kit with a loading adaptor attached that user can load up to the 96 samples (without the size indicator) in to the plate within 2-3 minutes. This product is made of strong polycarbonate so its durability is much superior compared to the acrylic-based electrophoresis Kits. This product contains the power supply so that the user does not need extra power supply. Gel casting tray is also included.

■ Features and Benefits

• Loading Adaptor

It is difficult to use a multi-channel pipette to inject a large number of samples to a correct position at once, and it is possible that the well can be torn apart if the user makes a mistake. Loading adaptor developed by Bioneer makes much easier and more accurate to use a multi-channel pipette when loading large number of sample to the well at once. It holds the well position for a faster loading without pipetting to an incorrect position.

• Running Tray

Running tray also serves as a loading adaptor using 8 or 12 channel multi-channel pipette, it is easy and quick to load samples (when 96-sample loading well exists).

Due to the fact that it uses a transparent lid, it is easy to observe the process of electrophoresis. Comb with a fixed location makes it much easier and accurate when the gel is made.

• Gel Caster

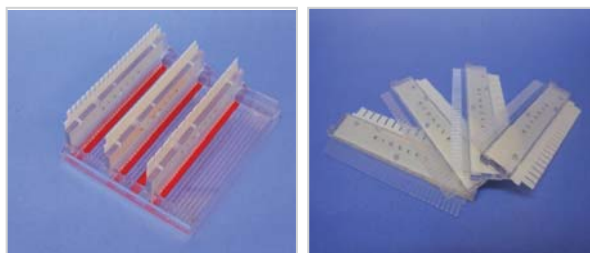
You can load up to 96 samples at once. By default 4 combs with each comb consisting of 34/25/21/15/13 wells per line are supplied. Gel caster can make gel conveniently. It is marked with the scale and the same thickness of the gel that the user wants to make.

• Power Supply

It supplies either 115V or 150V and the voltage can be controlled by ON/OFF system.

• Comb Applications

Bioneer offers various types of comb for Agaro-Power™ depending on the user's application. Each end has a different well-type which can be applied to different purposes. If the user uses all 34-well combs, it makes easy to load 96 samples at once for a large scale experiment.



■ Specifications

Distance Between Electrodes	228 mm
Buffer Volume	700 ml
Gel Tray Size (mm)	163(L) x 149(W)
Comb (No. of teeth)	25 well or 34 well/line x 1 ea
	21 well or 34 well/line x 1 ea
	15 well or 34 well/line x 1 ea
	13 well or 34 well/line x 1 ea
Caster Size (mm)	170(L) x 156(W)
Input Voltage	110 VAC 50/60 Hz, 220VAC 50/60 Hz
Output Voltage	150V ±10% / Low : 75V ±10% (User selectable)

■ Ordering Information

Cat. No.	Product Description
A-7020	Agaro-Power™ System
Cat. No.	Plastic Consumables
A-7020-1	Agaro-Power™, Power Supply
A-7020-2	Agaro-Power™, Agar Tank/Lid
A-7020-3	Agaro-Power™, Comb Set
A-7020-3-1	Agaro-Power™, Comb (25 well / 34 well)
A-7020-3-2	Agaro-Power™, Comb (13 well / 34 well)
A-7020-3-3	Agaro-Power™, Comb (15 well / 34 well)
A-7020-3-4	Agaro-Power™, Comb (21 well / 34 well)
A-7020-4	Agaro-Power™, Gel Caster/Tray
A-7020-5	Agaro-Power™, Cable Jack



BioVac™ 96 Vacuum Manifold



■ Description

Bioneer's *BioVac*™ 96 Vacuum Manifold is an experiment tool to extract DNA/RNA/Genomic DNA from 96 samples in a short time. By using *BioVac*™ 96 Vacuum Manifold with *AccuPrep*® 96-well prep Kits, DNA/RNA can be extracted from up to 96 samples at once. Bioneer's 96 well-type Plasmid DNA Extraction Kit, PCR Purification Kit and Genomic DNA Extraction Kit can be used along with other companies' 96-well extraction Kit.

■ Ordering Information

Cat. No.	Product Description
A-9030	<i>BioVac</i> ™ 96 Vacuum Manifold
Cat. No.	Kits for <i>BioVac</i> ™ Vacuum Manifold
K-3030-2	<i>AccuPrep</i> ® Plasmid Mini Extraction Kit for 96 well vacuum block, 192 reactions
K-3032-2	<i>AccuPrep</i> ® Genomic DNA Extraction Kit for 96 well vacuum block, 192 reactions
K-3034-2	<i>AccuPrep</i> ® PCR Purification Kit for 96 well vacuum block, 192 reactions

■ Features and Benefits

- 96 samples can be experimented at same time to obtain results quickly.
- Reproducible and consistent experiment results.
- Cost-effective product.

■ Applications

Sub-cloning, Sequencing, Labeling, DNA concentration, etc



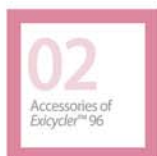
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Accessories of *Exicycler™* 96

Accessories of *Exicycler™* 96



0.2 ml Opaque White 8-strip PCR Tube	354
0.2 ml Opaque White 8-strip, Low Profile PCR Tube.	355
Opaque White 96-well Semi-skirted PCR Plate.	356
Opaque White 96-well Skirted, Low Profile PCR Plate.	357
Adhesive Optical Sealing Film..	358



0.2 ml Opaque White 8-strip PCR Tube, 250 strips



■ Description

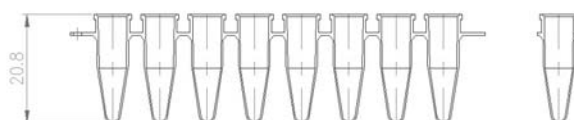
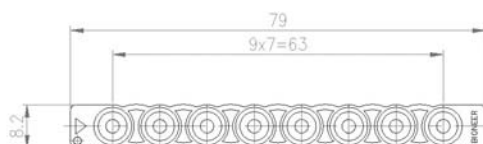
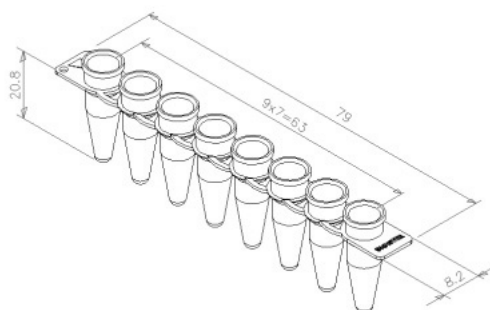
Bioneer's 0.2 ml Opaque White 8-strip PCR Tube is made of polypropylene to obtain the high sensitivity and reproducibility of Real-Time PCR. 0.2 ml Opaque White 8-strip PCR Tube is compatible with *Exicycler™ 96* as well as other PCR instrument. Also it is RNase- and DNase-free so there is no worry about the contamination. 0.2 ml Opaque White 8-strip PCR Tube improves the light condensation efficiency

and provide higher sensitivity, and has better signal-to-noise ratio (SNR) compared to other typical tubes. Also this Opaque tube prevents crosstalk between each well and light loss between sample and the detector.

■ Features and Benefits

- Optimized for Real-Time PCR and luminescence detection.
- Maximizes sensitivity and reproducibility of Real-Time PCR.
- Is compatible with *Exicycler™ 96* as well as other qPCR instruments that are mostly available.
- Can be cut and used as a single well.
- For best result Use of the adhesive sealing film provided by Bioneer .

(Third-party adhesive sealing film can be used, but we recommend Bioneer's sealing film.)



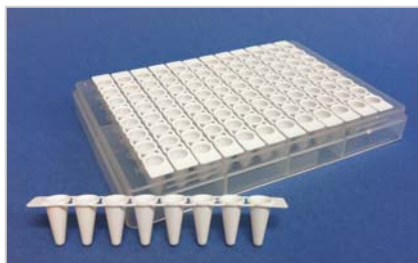
■ Specifications

Recommended Rxn Vol.	50 ul
Maximun Capacity	300 ul
Sterility	DNase-, RNase-free
Color	Opaque, White

■ Ordering Information

Cat. No.	Product Description
3111-50	0.2 ml Opaque White 8-strip PCR Tube, 250 strips

0.2 ml Opaque White 8-strip, Low Profile PCR Tube, 250 strips



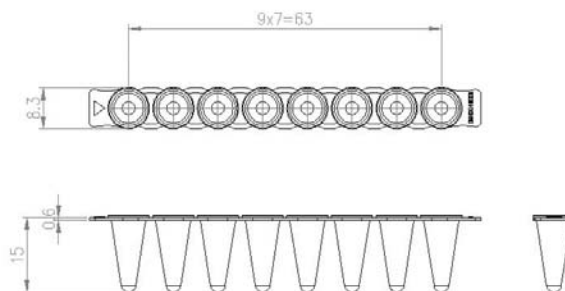
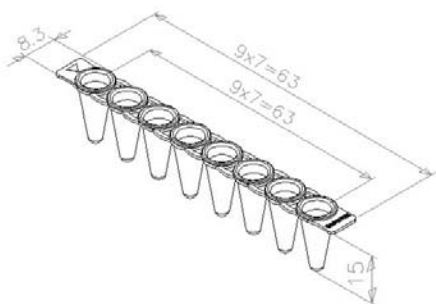
■ Description

0.2 ml Opaque White 8-strip, Low Profile PCR Tube is only for the sample volume with less than 20 µl for qPCR to obtain higher efficiency for small volume qPCR experiment. Due to its low height compared with ordinary tube, the air gap between hot lid of thermal cycler and sample is significantly reduced. This reduction in reaction volume due to evaporation can be minimized, prevents sample condensation on the tube surface, and gives the higher efficiency of qPCR results. In addition, strict DNase- and

RNase-free test has been conducted prior to the sales so the user can obtain much more reliable results.

■ Features and Benefits

- Made with polypropylene to maximize sensitivity and reproducibility of Real-Time PCR result.
- Provides higher signal-to-noise ratio (SNR) compared to other available tubes from the market.
- Is designed to collect small amount of luminescence that makes the tube suitable for very sensitive experiment.
- Optimized for Real-Time response and luminescence detection.
- Is designed to prevent crosstalk between each well to measure accurate luminescence level.
- Can be cut and used as a single well.
- Returns the best result when the adhesive sealing film provided Bioneer is used together.
(Third-party adhesive sealing film can be used, but Bioneer sealing film is recommended)

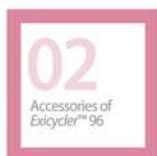


■ Specifications

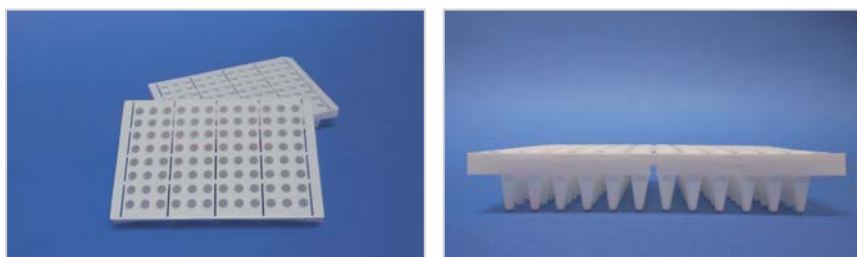
Recommended Rxn Vol.	20 ul
Maximun Capacity	250 ul
Sterility	DNase-, RNase-free
Color	Opaque, White

■ Ordering Information

Cat. No.	Product Description
3111-51	0.2 ml Opaque White 8-strip, Low Profile PCR Tube, 250 strips



Opaque White 96-well Semi-skirted PCR Plate, 25 plates



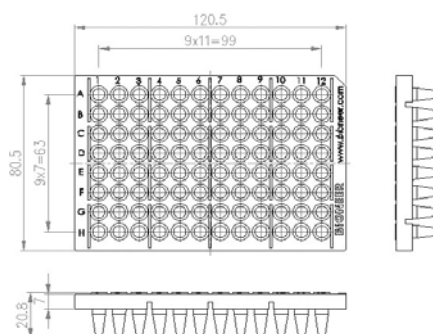
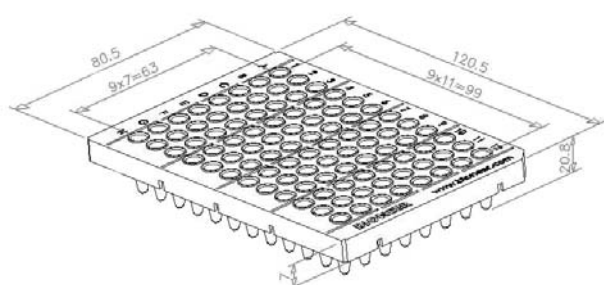
■ Description

Bioneer's Opaque White 96-well Semi-skirted PCR plate is made of polypropylene material, is especially designed for Real-Time PCR to measure florescence/luminescence sensitively. Opaque White 96-well Semi-skirted PCR Plate can be used the *Exicycler™ 96* and other PCR instrument. Also it is RNase-, DNase-free to give greater confidence to the user. Compared to the general purpose plate, this Opaque White 96-well Semi-skirted PCR plate has higher signal-to-noise ratio, as well as the reflection efficiency to obtain the higher accuracy of the luminescence measurement. Also the plate prevents crosstalk between each well and light loss between sample and the detector while measuring the luminescence level by the Real-Time PCR instrument. Each row is marked with alphabets and the column is marked with a number to use conveniently. This semi-skirted plate is much stronger to hold the well's

position against vibrations compared to non-skirted plates and gives more accurate results to be obtained.

■ Features and Benefits

- Made with polypropylene to maximize sensitivity and reproducibility of Real-Time PCR.
- The alphabet labeled area can be cut out.
- Can be cut to a 24-well or 48-well pieces.
- Optimized for Real-Time response and florescence or luminescence detection.
- Is compatible with *Exicycler™ 96* as well as mostly available PCR instruments.
- Returns the best result when the adhesive sealing film provided Bioneer is used together.
(Third-party adhesive sealing film can be used, but Bioneer sealing film is recommended)



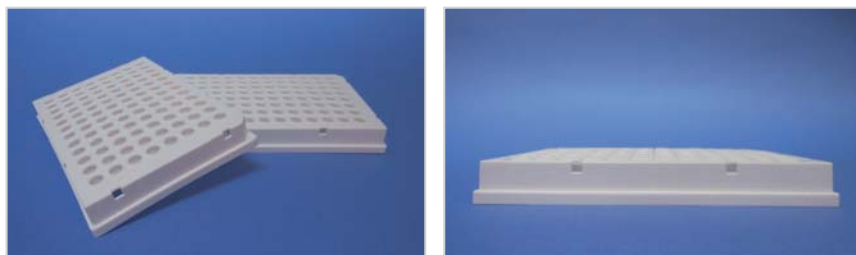
■ Specifications

Recommended Rxn Vol.	50 ul
Maximun Capacity	300 ul
Sterility	DNase, RNase free
Color	Opaque, White

■ Ordering Information

Cat. No.	Product Description
3111-52	Opaque White 96-well Semi-skirted PCR Plate, 25 plates

Opaque White 96-well Skirted, Low Profile PCR Plate, 25 Plates (Full-skirted)



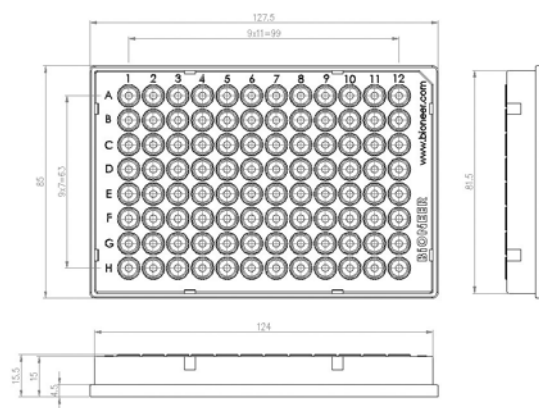
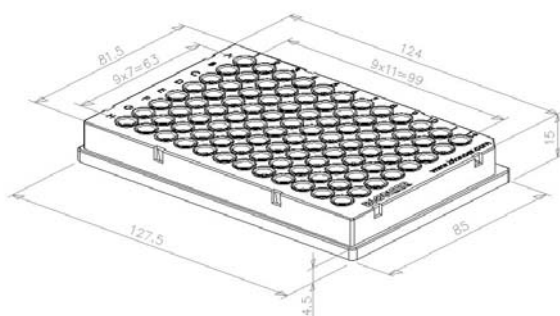
■ Description

Opaque White 96-well skirted, Low Profile PCR plate is designed to prevent sample condensation on the tube surface. Due to its low profile, it is suitable for the sample volume with less than 20µl for PCR to obtain higher efficiency for small volume PCR experiment. Due to its low height compared with ordinary plate, the air gap between hot lid of thermal cycler and sample is significantly reduced. This reduction in reaction volume due to evaporation can be minimized, prevents sample condensation on the tube surface, and gives the higher efficiency of qPCR results. This Opaque White 96-well skirted, Low Profile PCR plate is much stronger to hold the well's position against vibrations

compared to non-skirted plates and gives more accurate results to be obtained.

■ Features and Benefits

- Maximized the sensitivity and accuracy of Real-Time PCR.
- Optimized the detectability of fluorescence or luminescent of Real-Time PCR.
- Returns the best result when the adhesive sealing film provided Bioneer is used together.
(Third-party adhesive sealing film can be used, but Bioneer sealing film is recommended)

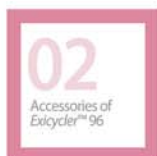


■ Specifications

Recommended Rxn Vol.	20 ul
Maximun Capacity	250 ul
Sterility	DNase, RNase free
Color	Opaque, White

■ Ordering Information

Cat. No.	Product Description
3111-53	Opaque White 96-well Skirted, Low Profile PCR Plate, 25 Plates (Full-skirted)

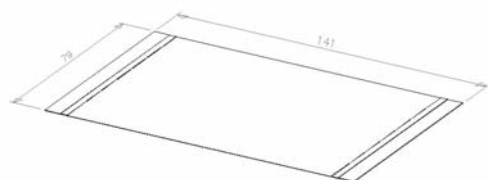


Adhesive Optical Sealing Film, 100 sheets



■ Description

Bioneer's adhesive optical sealing film is transparent, strong against the heat, and can be used for Real-Time PCR. The hotter the lid of the Real-Time PCR gets, the more this film becomes adhesive to the surface of the tube/plate. Thus, the user does not have to concern about the sample in the tube/plate being evaporated by the heat. This adhesive optical sealing film has distinctive sides to avoid the upside down. Moreover, when this adhesive optical sealing film is removed from the tube/plate, it does not leave any residue on the surface.



■ Features and Benefits

- Can be applied to any 8-tube strip and 96-well plate with FLAT surface.
- Is transparent so the user can visually check the sample status.
- Optimized the detectability of fluorescence or luminescent of Real-Time PCR.
- Handles extremely well through the entire thermal cycling process.
- Has the distinctive side to avoid the upside down.
- Does not leave any residue on the tube/plate surface.
- Becomes more adhesive to the surface of the tube/plate surface to keep the sample securely by the heat of the hot lid when the Real-Time PCR starts running.

■ Ordering Information

Cat. No.	Product Description
3111-4110	Adhesive Optical Sealing Film, 100 sheets