



PCR Thermal Cycler

Best solution for your nucleic acid amplification needs



PCR THERMAL CYCLER PRODUCTS

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PCR THERMAL CYCLERS OVERVIEW

Polymerase Chain Reaction (PCR) is a technique for amplifying nucleic acids *in vitro*, emulating the natural DNA replication process. PCR amplification is achieved using a thermal cycler by raising and lowering the temperature of samples in a thermal block in cycles of programmed steps.

Aeris™ Thermal Cycler

The Aeris™ thermal cyclers can be used for conventional PCR applications. The cycler offers the flexibility to change the thermal blocks depending on the application: from consumable PCR tubes, strips, plates, and slides. System includes excellent heating and cooling rate with accurate and uniform temperature throughout the samples.



Swift™ MiniPro® Thermal Cycler

Swift™ MiniPro® thermal cycler is a low-cost device also designed for conventional PCR applications. The cycle provides outstanding ramp rates up to 5°C to reduce the incubation period. It has a small footprint to conserve laboratory bench space.



Swift™ ProGene Real-time PCR Thermal Cycler

Swift™ ProGene Real-time PCR Thermal Cyclers can be used for a variety of applications in molecular biology. It can monitor the PCR reaction in real-time and provide a system for the efficient amplification of nucleic acids *in vitro*.



Swift™ Extract Automated Nucleic Acid Extraction System

Swift™ Extract Automated Nucleic Acid Extraction System allows for a more consistent and reliable nucleic acid extract by eliminating possible human errors from repetitive pipetting in the extraction process.



Provocell™ and Provocell™ II Shaking Micro Incubator

The Provocell™ and Provocell™ II shaking micro incubator can be used for a variety of mixing applications. The shaker/incubator provides smooth orbital motion for uniform mixing. Different mixing blocks are available for different tube sizes.



Aeris™

Conventional PCR Thermal Cyclers

Esco offers a choice of Conventional Thermal Cycler designed to meet critical requirements for all kinds of PCR processes, such as Gradient PCR, Touch down PCR, High throughput PCR, *in situ* PCR and so on, using a variety of PCR tubes, strips, plates and slides. Designed to meet critical requirements for pathogen detection and quantification.

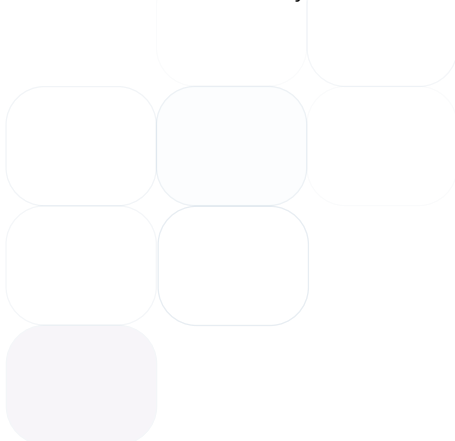


AERIS-BG096

The Aeris™ thermal cycler offers five interchangeable blocks designed to meet critical requirements for different applications. It comes with an intuitive touch screen to deliver easy-to-use programming; **AeonStar™** Peltier is qualified to deliver outstanding and precise performance and unique **IsoHeat™** temperature control technology delivering high heating and cooling rates with excellent temperature accuracy and uniformity. **SmartDrive™** automatic block recognition increases user convenience. **AerisLine™** software enables the remote control of up to 30 individual units via one PC.

ADDITIONAL FEATURES

- Multi-block capability with automatic block recognition software minimizes the need for manual settings
- Adjustable hot lid temperature and ramp rate
- Powerful software that meets a variety of experimental requirements, such as Touchdown PCR, Time Release PCR, *In Situ* PCR, and others
- The Peltier module, electronics, and sensors are precision tuned and tested to ensure the longest operating lifespan possible
- Pre-programmed methods provide easy choice
- Large internal memory that can store up to 250 individual protocols and unlimited data using USB memory stick or PC
- Password protection guarantees secure system access
- AerisLine™ allows you to control up to 30 Aeris™ thermal cyclers via one PC



General Specifications, Aeris™ Thermal Cycler

Model Code	AERIS-BG096	AERIS-B4830	AERIS-BG384	AERIS-BD048	AERIS-B4076
Sample Capacity	96 x 0.2 mL	48 x 0.2 mL + 30 x 0.5 mL	384 wells	48 x 0.2 mL + 48 x 0.2 mL	4 slides <i>in situ</i>
Application Consumables	0.2 mL tubes 96-well microplates 12 x 8 strips 8 x 12 strips	0.2 mL tubes 0.5 mL tubes 4 x 12 strips	384-well microplates	0.2 mL tubes 6 x 8 strips	4 slides <i>in situ</i>
Maximum Heating Rate	4.0°C/sec	2.8°C/sec	2.8°C/sec	4.0°C/sec	1.8°C/sec
Maximum Cooling Rate	4.0°C/sec	2.8°C/sec	2.8°C/sec	4.0°C/sec	1.8°C/sec
Gradient Capability	Yes	-	Yes	-	-
Gradient Rate	30-105°C	-	30-105°C	-	-
Max. Gradient	1-30°C	-	1-30°C	-	-
Temperature Control Mode	Tube or Block				
Temperature Range	4-105°C				
Over-temperature Cut-Out	Yes				
Number of Programs	Up to 250 programs, unlimited with USB flash drive				
Maximum Hold Time	59 min and 58 sec				
Temperature Accuracy	≤±0.1°C below 50°C				
Temperature Uniformity	≤±0.2°C below 55°C				
Hot Lid Temperature Range	30-110°C (Adjustable, Default 105°C, Automatic Hot-Lid)				
PCR Sample Volume	10-100 µL				
Tm Calculator	Auto				
Extensive Experiment Application	Option setting for time up/down is between 0-9 min 59 sec, which is suitable for Long PCR Temperature when up/down is between 0.1°C to 9.9°C, it is suitable for Touchdown PCR				
Auto Re-start on Power Failure	Yes				
Connection to PC Control	Yes				
Software	AerisLine™				
Operation System	Windows XP / Windows Vista / Windows 7 / Windows 8				
Pre-Run Sample Cooling	Yes, 4°C				
Language	English, Chinese, Spanish				
USB	Yes				
Display	6.5" Color LCD Touch Screen				
Dimensions (W x D x H)	306 x 386 x 295 mm (12.0" x 15.2" x 11.6")				
Power Supply, Consumption	100-240 VAC, 50/60 Hz, 600 W				
Warranty	2 years				
Net Weight	9 kg (19.8 lbs) (without block)				
Shipping Weight	10 kg (22.0 lbs)				
Shipping Dimension (W x D x H)	420 x 540 x 370 mm (16.5" x 21.3" x 14.6")				

*The parameters are tested under optimized lab environments.

ORDERING INFORMATION

Ordering Information, Aeris™ Thermal Cycler

Model Code	Item Code	Description
AERIS-MB	2210003	Aeris™ Thermal Cycler Main Body (100-240 VAC)
AERIS-BG096	1360004	Aeris™ Thermal Cycler Block (96 x 0.2 mL)
AERIS-B4830	1360005	Aeris™ Thermal Cycler Combined Block (48 x 0.2 mL + 30 x 0.5 mL)
AERIS-BG384	1360006	Aeris™ Thermal Cycler Block (384 wells)
AERIS-BD048	1360007	Aeris™ Thermal Cycler Dual Block (48 x 0.2 mL)
AERIS-B4076	1360008	Aeris™ Thermal Cycler (4 slides <i>in situ</i>)

FLEXIBLE - YOUR APPLICATION, YOUR CYCLER

Five Interchangeable Blocks



AERIS-BG096 G-96 WELL

Applicable consumables: 0.2 mL tube, 96-well microplate, 12 x 8 strips, 8 x 12 strips



AERIS-BG384 G-384 WELL

Applicable consumables: 384-well microplate



AERIS-B4830 48 x 0.2 mL + 30 x 0.5 mL WELL

Applicable consumables: 0.2 mL tubes, 0.5 mL tubes, 4 x 12 strips



AERIS-B4076 4 IN SITU SLIDES

For In Situ PCR

Applicable consumables: 4 slides *in situ*



AERIS-BD048 D-48 X 0.2 mL

Two in one! Two independent experiments may be carried out at the same time.

Applicable consumables: 0.2 mL tubes, 6 x 8 strips

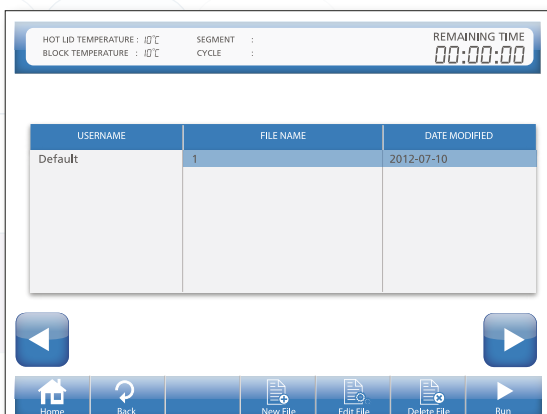
EASIER PROGRAMMING



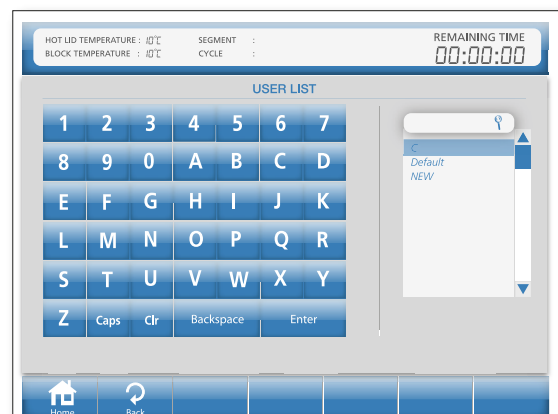
Main Interface



New Protocol



Shortcut



Run

WIDER APPLICATION



Why Use Nested PCR?

Nested PCR is a modification of a polymerase chain reaction technique intended to reduce PCR product contamination due to the amplification of non-specific primer binding sites.



Why Use Long PCR?

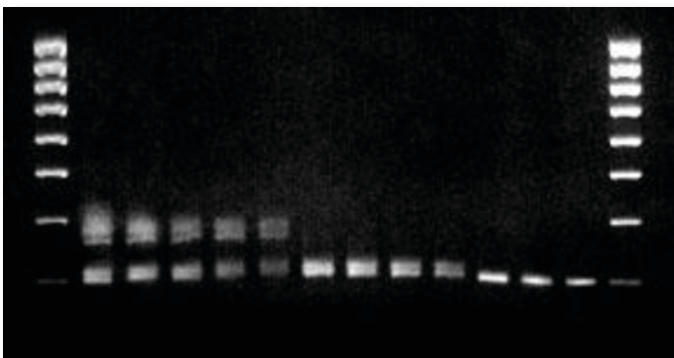
Long PCR, a new technique based on ordinary PCR, applied to amplify the PCR template longer than 5 Kb.



Why Use Touchdown PCR?

Touchdown PCR is a method of polymerase chain reaction by which primers avoid amplifying non-specific sequences. The annealing temperature during a polymerase chain reaction determines the specificity of primer annealing. The melting point of the primer sets the upper limit on annealing temperature. At temperatures just below this point, only very specific base pairing between the primer and the template occurs.

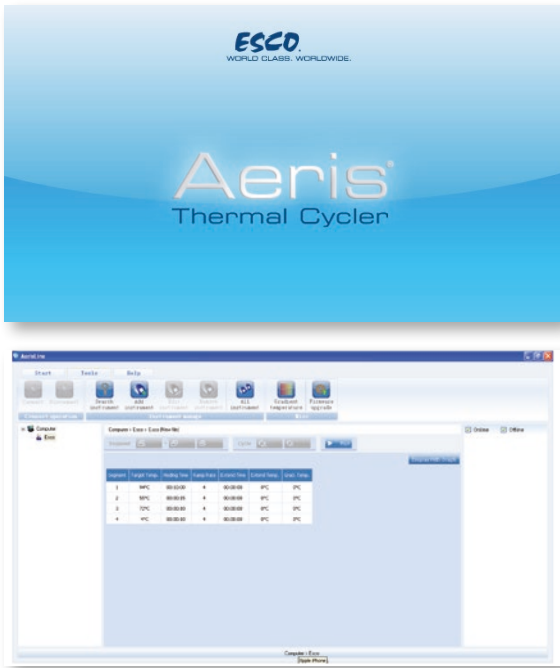
End Point Analysis Result



The best conditions are found in Well 10, where the temperature was 63.2°C.

Note: Experimental determination of optimal annealing temperature. The calculated primer annealing temperature was 56.5°C. The actual annealing temperature was 63.2°C.

AERISLINE™ PC SOFTWARE



Easy Setup

Network Enabler Administrator helps you configure the instrument by IP address.

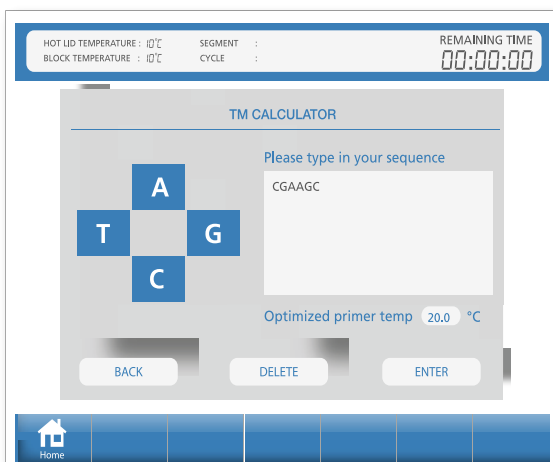
Simple

Once you install the software, you get easy access to set up protocols and edit the program.

Powerful

One PC can control up to 30 Aeris™ Thermal Cyclers.

TM CALCULATOR

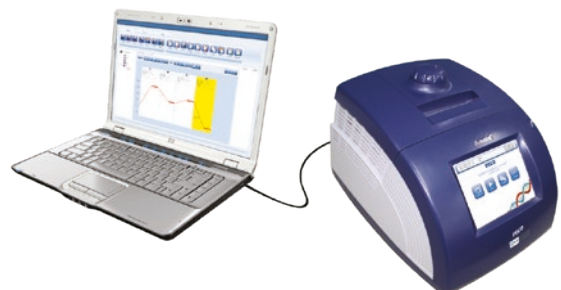


Tm calculator allows you to calculate the optimal PCR annealing temperature based on the sequence of a pair of primers. The Tm calculator by default calculates by the simpler GC content.

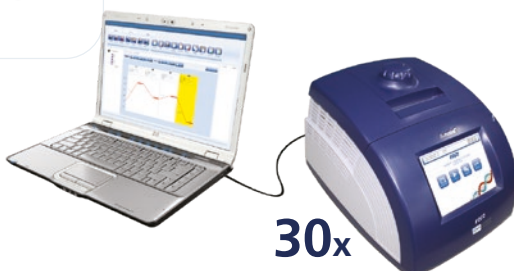
THREE MODES OF OPERATION



- 1 Stand-Alone Unit**
Operate directly with keypad.



- 2 PC Controlled**
Operate cycler via PC, and save programs.



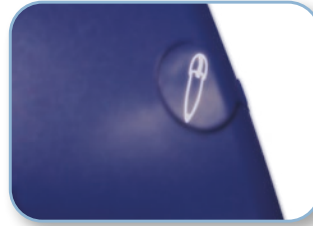
- 3 Satellite Function Via AerisLine™**
Up to 30 Aeris cyclers can be controlled from one PC.

AERIS™ COMPONENTS

USB Port



Touch Pen



Black Cable



For single unit connecting to AerisLine™ PC software

White Cable



For multiple units connecting to AerisLine™ PC software

Fuse



USB PORT

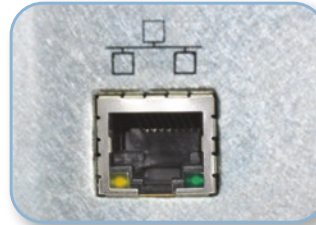
- User friendly
- Convenient and quick data transfer
- Convenient USB port and RJ45 port simplify data transfer and product updates between the Aeris™ Thermal Cycler and USB memory stick

Storage



There are up to 250 protocols that can be saved in the internal memory; unlimited with use of USB memory stick and PC. Save as many of your commonly used programs as you want

RJ45



Aeris™ Thermal Cycler and PC / Laptop (update software via RJ45 port when enhancements are available)

AERIS™ BENEFITS

- Saves time when programming with the intuitive color touch screen
- Keeps the latest operation records which deliver the proven reliability of PCR results
- Durable design to guarantee longer instrument lifespan
- Tm calculator for optimized primer annealing temperature
- Flexibility for extensive applications such as Long PCR and Nested PCR
- Hot lid temperature adjustment to secure the temperature control on the block and to prevent condensation and water evaporation on the hot lid itself
- Better performance with temperature accuracy



Swift™ MiniPro®

Conventional PCR Thermal Cyclers

The Esco Swift™ MiniPro® thermal cycler is a low cost personal thermal cycler with a compact footprint, suitable for a variety of critical experimental applications, such as Touch Down PCR, Time Release PCR and others. The Swift™ MiniPro® thermal cycler uses advanced peltier technology to achieve precise temperature control and fast ramp rates with minimal over- and under-shoot for process speed and accuracy.



SWT-MIP-0.2

SUPERIOR PERFORMANCE

Excellent Temperature Uniformity

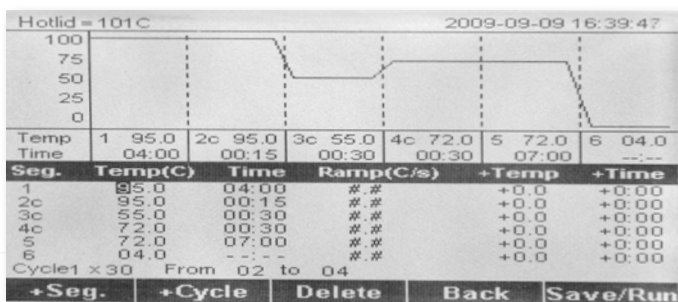
Unique IsoHeat™ temperature control technology guarantees extremely uniform temperature between central and edge wells. Block temperature uniformity is <math><0.3^{\circ}\text{C}</math>.

High Temperature Precision

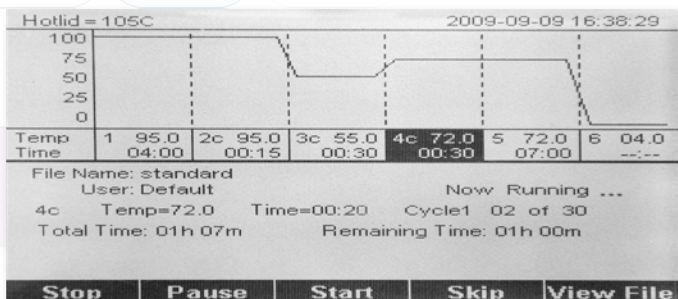
Precisely tuned and tested AeonStar™ peltier, temperature sensor, and proprietary control algorithms provide highest temperature accuracy. Block temp. accuracy is <math><0.3^{\circ}\text{C}</math>.

Outstanding Ramp Rate

Proprietary aluminium block with superior thermal conductivity properties delivers superb heating and cooling performance, equal to the gold blocks of other brands. High ramp rate of up to $5.0^{\circ}\text{C} / \text{sec}$.



Protocol Setting Display



PCR Running Display

CONVENIENCE

Compact Footprint

User-friendly ergonomic design, small footprint to conserve available bench top space. Lightweight - only 3.5 Kg (7.7 lbs).

Convenient Setup, Fast Run

Pre-programmed methods are available for your convenience or you can enter thermal cycling values to program your own methods.

Friendly Interface

Large screen shows all information in one page. Easy, graphical programming for temperature, holding time, ramp rate, pause and other functions ensures intuitive operation.

Adjustable Hot Lid

Prevents reagents from evaporating. Hot lid height is adjustable to suit all kinds of tubes.

Adjustable Ramp Rate

High ramp rate of up to $5.0^{\circ}\text{C} / \text{sec}$. Suits all reagents. Allows protocols to be transferred from other cyclers.

STABILITY

Robust Security

Automatic restart saves setpoints and guarantees successful PCR cycling in the event of power interruption.

Long Warranty Period, Peace of Mind

The peltier module, electronics and sensors are precision tuned and tested to ensure the longest operating lifespan possible. Backed by an industry leading 3 year warranty for main body, 2 year warranty for block.

Certified Quality	ISO 9001:2000 Certificate	CE & EMC Certificate
	ISO 14001:2004 Certificate	

General Specifications, Swift™ MiniPro® Thermal Cycler

Model Code	SWT-MIP-0.2- _	SWT-MIP-0.5- _
Sample Capacity	24 x 0.2 mL	18 X 0.5 mL
Applicable Consumables	0.2 mL tubes, 3 X 8 strips, 24-well microplates	0.5 mL tubes
Temperature Range	4-99°C	
Maximum Heating Rate	5.0°C / sec	4.0°C / sec
Maximum Cooling Rate	4.0°C / sec	3.0°C / sec
Temperature Uniformity	±0.3°C	
Temperature Accuracy	±0.3°C	
Hot Lid Temperature Range	30-110°C (Adjustable, Default 105°C, Automatic Hot-Lid)	
PCR Sample Volume	10-100 µL	
Temperature Control Mode	Tube or Block	
Display	Graphical LCD	
Protocol Capacity	100 protocols	
PC Interface	RS232 for software updates	
Dimension (W x D x H)	212 x 297 x 200 mm (8.3" x 11.7" x 7.9")	
Power Supply, Consumption	100-120 VAC / 200-240 VAC, 50/60 Hz, 200 W	
Warranty	2 years	
Net Weight	3.5 kg (7.7 lbs)	
Shipping Weight	4.5 kg (9.9 lbs)	
Shipping Dimensions (W x D x H)	320 x 420 x 330 mm (12.6" x 16.5" x 13.0")	

ORDERING INFORMATION

Order Information, Swift™ MiniPro® Thermal Cycler

Model Code	Item Code	Description
SWT-MIP-0.2-1	2210009	Swift™ MiniPro® Thermal Cycler With 24 x 0.2 mL Block 110 VAC 50/60 Hz
SWT-MIP-0.2-2	2210010	Swift™ MiniPro® Thermal Cycler With 24 x 0.2 mL Block 220 VAC 50/60 Hz
SWT-MIP-BLC-1	1360019	Swift™ MiniPro® Block 1 (24 x 0.2 mL)

Swift™ ProGene

Real-time PCR Thermal Cyclers

Real-time PCR thermal cyclers provide a system for the efficient amplification of nucleic acids in vitro, while offering capability to monitoring the PCR reaction in real-time.



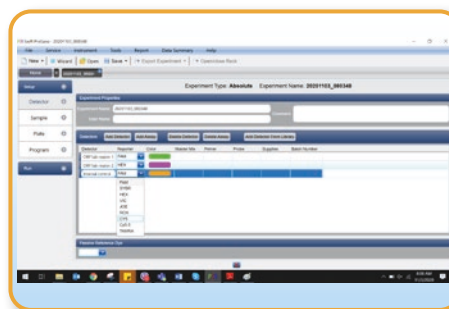
Esco Swift™ PCR Thermal Cyclers also provide the capability for quantifying and estimating the original concentration of the template. It is designed with fast heating/cooling rate for faster run time and offers 6-zone independent temperature control for accurate results.

ADDITIONAL FEATURES:



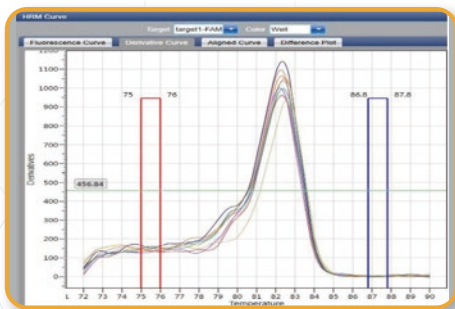
Touchscreen Display

- Large display allows for stand-alone operation or can import programs through USB port.



6 Channels

- Standard 5 channels plus additional for user customization, allowing specific detection of particular wavelength.



Multiple Configurations

- Variety of PCR applications can be performed including: quantification, SNP, and HRM analysis.



Automatic Sample Cavity

- Automatic insertion and ejection of PCR plates or tubes to the system.

General Specification, Swift™ ProGene Real-time PCR Thermal Cycler

Model Code	SWT-PG-96
Sample Capacity	96 x 0.2 mL
Applicable Consumables	0.2 mL tubes, 96-well microplates, 12 x 0.8 strips, 8 x 12 strips (transparent caps)
Reaction Volume	10 -100 µL
Maximum Heating Rate	6°C/sec
Maximum Cooling Rate	5°C/sec
Temperature Uniformity	≤±0.2°C
Temperature Accuracy	±0.1°C
Temperature Display Resolution	±0.15°C
Temperature Control Mode	Block or Tube
Temperature Range	4-105°C (increment of 0.1°C)
Hot-lid Temperature Range	30-110°C
Excitation Wavelength	300-800 nm
Emission Wavelength	500-800 nm
Channels	6 Channels F1: FAM, SYBR Green I F2: VIC, HEX, TET, JOE, TAMRA, CY3, NED F3: ROX, Texas-Red F4: Cy5 F5: Cy5.5 F6: Customized
Gradient	6 independent temperature control zones
Linear Dynamic Range	1-10 ¹⁰ copies/L
Power Requirements	100-240 V, 50/60 Hz, 1000W
Communication Interface	USB to PC adapter, Bluetooth
Alarms	Hot-lid overheat protection and alarm Switching power supply overheat protection
Dimensions (W x D x H)	380 x 400 x 380 mm (15.0", 15.7", 15.0")
Warranty	2 years
Net Weight	32 kg (70.5 lbs)
Shipping Weight	55 kg (121.3 lbs)
Shipping Dimensions (W x D x H)	720 x 680 x 650 mm (28.3" x 26.8" x 25.6")

ORDERING INFORMATION

Ordering Information, Swift™ ProGene Real-time PCR Thermal Cycler

Model Code	Item Code	Description
SWT-PG-96	2210039	Swift™ ProGene Real-time PCR Thermal Cycler

Swift™ Extract

Automated Nucleic Acid Extraction System

Spin-column based and manual extraction systems require repetitive pipetting steps that can introduce human errors into the extraction process. This may cause false positives and negatives which could impact patient management. Automated nucleic acid extraction systems provide robust solution for more consistent and reliable nucleic acid extracts.



SWT-EXT-32

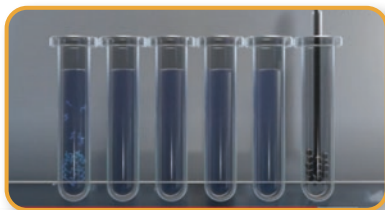
Esco Swift™ Extract Automated Nucleic Acid Extraction system has a user-friendly interface for easy monitoring of extraction protocols and has a real-time display of the running protocol. It is also designed with safety in mind as it features an 8-strip consumable for placement on rods to prevent cross-contamination and UV light for decontamination.

PRINCIPLE:

Nucleic acids such as DNA or RNA bind to microscopic magnetic beads found in the accompanying nucleic extraction kit*. A series of steps are involved to (1) lyse the cells containing the nucleic acids, (2) wash away impurities, and (3) release the extracted DNA or RNA from being bound to the magnetic beads in the kit.

*For use with compatible extraction kit

FEATURES:



High Extract Efficiency

- Collection efficiency of up to 98% compared to average market efficiency of 95%.



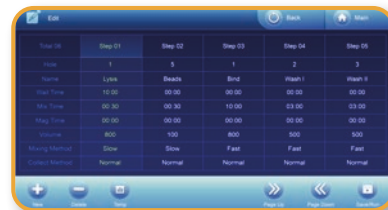
High Temperature Accuracy

- Deep-well heat block accurate heating of wells for effective lysing of cells.



Versatile Blocks and Rods

- Blocks allow for upgrading to higher throughput.



User-friendly Interface and Standard Programs

- Real-time display of running program for easy monitoring of extraction protocol.
- Capable of storing programs for easy setup of routing protocols.

General Specification, Swift™ Extract Automated Nucleic Acid Extraction System

Model Code	SWT-EXT-32
Sample Capacity	32 samples
Application Consumables	96 deep well plate + 8-tube strip
Uniformity Yield of Wells	CV < 3%
Extract Efficiency	≥ 98%
Operating Temperature	10-40°C
Heating Temperature Control	Lysis and Elution step: 5-125°C
Mixing Step	Multiple modes, multiple speed, adjustable
Disinfection/Decontamination	UV Light
Reagent Type	Magnetic bead-based
Communication Interface	USB compatible
Power Supply	100-240 V, 50/60 Hz, 500 W
Dimensions (W x D x H)	430 x 395 x 435 mm (16.9" x 15.6" x 17.1")
Warranty	2 years
Net Weight	32.5 kg (71.7 lbs)
Shipping Weight	55 kg (121.3 lbs)
Shipping Dimensions (W x D x H)	712 x 676 x 692 mm (28.0" x 26.6" x 27.2")

ORDERING INFORMATION

Ordering Information, Swift™ Extract Automated Nucleic Acid Extraction System

Model Code	Item Code	Description
SWT-EXT-32	2210040	Swift™ Extract Automated Nucleic Acid Extraction System
SWT-EXT-STP	1360218	Swift™ Extract 8-Strip Tips, 2 pcs/pack
SWT-EXTK-VDR	1360217	Swift™ Extract Virus DNA/RNA Purification Kit (96-Well Prepacked Plate), 32 samples/plate
SWT-EXTK-GGD	1360221	Swift™ Extract General Genomic DNA Purification Kit (96-Well Prepacked Plate), 32 samples/plate
SWT-EXTK-BLGD	1360222	Swift™ Extract Blood Genomic DNA Purification Kit (96-Well Prepacked Plate), 32 samples/plate
SWT-EXTK-TGD	1360223	Swift™ Extract Tissue Genomic DNA Purification Kit (96-Well Prepacked Plate), 32 samples/plate
SWT-EXTK-FGD	1360224	Swift™ Extract FFPE Tissue Genomic DNA Purification Kit (96-Well Prepacked Plate), 32 samples/plate
SWT-EXTK-BSGD	1360225	Swift™ Extract Blood Spot Genomic DNA Purification Kit (96-Well Prepacked Plate), 32 samples/plate
SWT-EXTK-SGD	1360226	Swift™ Extract Swabs Genomic DNA Purification Kit (96-Well Prepacked Plate), 32 samples/plate
SWT-EXTK-WBGD	1360239	Swift™ Extract Whole Blood Genomic DNA Purification Kit (96-Well Prepacked Plate), 32 samples/plate
SWT-EXTK-TR	1360227	Swift™ Extract Total RNA Purification Kit (96-Well Prepacked Plate), 32 samples/plate
SWT-EXTK-PGD	1360228	Swift™ Extract Plant Genomic DNA Purification Kit, 32 samples/plate
SWT-EXTK-BAGD	1360229	Swift™ Extract Bacteria Genomic DNA Purification Kit, 32 samples/plate
SWT-EXTK-VD	1360230	Swift™ Extract Virus DNA Purification Kit (96-Well Prepacked Plate), 32 samples/plate
SWT-EXTK-VR	1360231	Swift™ Extract Virus RNA Purification Kit (96-Well Prepacked Plate), 32 samples/plate
SWT-EXTK-PDR	1360232	Swift™ Extract Pathogen DNA/RNA Purification Kit (96-Well Prepacked Plate), 32 samples/plate
SWT-EXTK-PFD	1360233	Swift™ Extract Plasma Free DNA Purification Kit (96-Well Prepacked Plate), 32 samples/plate
SWT-EXTK-AFGD	1360234	Swift™ Extract Amniotic Fluid and Fetal Villus Genomic DNA Purification Kit (96-Well Prepacked Plate), 32 samples/plate
SWT-EXTK-AFGD	1360235	Swift™ Extract Soil and Feces Genomic DNA Purification Kit (96-Well Prepacked Plate), 32 samples/plate
SWT-EXTK-FPDR	1360236	Swift™ Extract Fecal Pathogen DNA/RNA Purification Kit (96-Well Prepacked Plate), 32 samples/plate
SWT-EXT-DWP	1360237	96-well deep well plate, for Swift™ Extract, 24/lot

ProvoCell™

Shaking Micro Incubator

The Esco ProvoCell™ and ProvoCell™ II Shaking Micro Incubator are designed for a wide variety of mixing applications for accurate incubation of reactions and denaturation of nucleic acids and proteins. ProvoCell™ and ProvoCell™ II combine an advanced microprocessor-based controller with Peltier heating and cooling to deliver outstanding reliability, safety and overall performance.



- ProvoCell™ can be used on the benchtop or in a biological safety or laminar flow cabinet without the contamination risk associated with conventional water- or liquid-cooling baths.
- Peltier technology permits rapid switching between heating and cooling with accurate temperature control and block uniformity.
- Special, stress-release ceramics prevent block damage resulting from rapid temperature changes, prolonging block lifespan.
- The ProvoCell™ system is environmentally friendly, maintenance free and uses no refrigerants or coolants.

GENERAL FEATURES

- Smooth orbital rotation
- Digitally controlled Peltier heating and cooling
- Fully programmable with speed setting up to 3000 rpm
- User-friendly interface
- Large, easy to read display
- Easy to clean interchangeable metal blocks
- Small footprint
- Compatible for use inside biological safety cabinet
- Manufactured with top quality, laboratory-grade components

Uniform Mixing

The ProvoCell™ and ProvoCell™ II Shaking Micro Incubator deliver stable orbital rotation creating a steady vortexing that is required to ensure even and accurate mixing conditions.

- Rotation speed can be adjusted up to 3000 rpm within a 3 mm diameter (0.11") rotation axis.
- The sample block is mounted to the main body using 4 bolts to enhance stability.
- The long motor life minimizes maintenance costs.

User Friendly Operation

The large Vacuum Fluorescent Display (VFD) of ProvoCell™ and Liquid-crystal Display (LCD) of ProvoCell™ II give the user a clear view of the current temperature, speed and time.

- Operational parameters are color coded for easy visual differentiation of the parameters.
- A state-of-the-art microprocessor with pre-programmed interface is easy to use and allows the operator to modify temperature, time and speed during operation.

High Performance Peltier Modules

Peltier modules are designed for rapid temperature heating or cooling response and overall temperature accuracy.

- Excellent temperature uniformity.
- Temperature control accuracy, ΔT is less than 0.1°C.
- Ceramic semiconductors eliminate moving parts and noise, reducing vibration, minimizing maintenance.
- Lightweight modules occupy a small footprint.
- An aluminum covering and powerful fan dissipates heat efficiently and quickly.
- The unique module design reduces heat loss.
- The ergonomic design is easy to use.

General Specifications, ProvoCell™ Shaking Micro Incubator

Available Blocks*	Order Number	Capacity/Size
	BLC-1	1.5 mL x 40 (Standard)
	BLC-2	0.2 mL x 96
	BLC-3	0.5 mL x 54
	BLC-4	Ø15 mm x 24
	BLC-5	96 wells ELISA board
	BLC-6	0.5 mL x 26 + 1.5 mL x 24
	BLC-7	2 mL x 40
Temperature Setting Range	0-105°C	
Temperature Control Range	Ambient -14°C to 100°C	
Block Temperature Uniformity	±0.5°C	
Temperature Accuracy	±0.5°C	
Temperature Uniformity	±0.5°C	
Heating Rate	6°C / min (from 20°C to 100°C)	
Heating Time, Nominal	≤12 mins from 20°C to 100°C	
Cooling Time, Nominal	≤8 mins for 10°C decrease from ambient temperature ≤15 mins from 100°C to 10°C above ambient temperature	
Timer Range	1 min to 99 h 59 min	
Speed	300-1500 rpm	
Amplitude	3 mm (0.11")	
Power Supply, Consumption	Model	Voltage
	ESC-PVC-2	110 VAC±11V, 50/60 Hz, 150 W
	ESC-PVC-1	220 VAC±22V, 50/60 Hz, 150 W
Dimensions (W x D x H)	295 x 265 x 170 mm (11.6" x 10.4" x 6.7")	
Warranty	2 years	
Net Weight	9.5 kg (20.9 lbs)	
Shipping Weight	10.5 kg (23.1 lbs)	
Shipping Dimensions (W x D x H)	320 x 420 x 330 mm (12.6" x 16.5" x 13.0")	

*Note to customer: Specify block when ordering.

ORDERING INFORMATION

Order Information, ProvoCell™ Shaking Micro Incubator

Model Code	Item Code	Description
ESC/PV-PVC-2	2210029	ProvoCell™ Micro Incubator 110 VAC
ESC/PV-PVC-1	2210030	ProvoCell™ Micro Incubator 220 VAC
ESC/PV-BLC-1	1360043	ProvoCell™ Incubator Block 1 (1.5 mL x 40)
ESC/PV-BLC-2	1360044	ProvoCell™ Incubator Block 2 (0.2 mL x 96)
ESC/PV-BLC-3	1360045	ProvoCell™ Incubator Block 3 (0.5 mL x 54)
ESC/PV-BLC-4	1360046	ProvoCell™ Incubator Block 4 (15 mm x 24)
ESC/PV-BLC-5	1360048	ProvoCell™ Micro Incubator Block 5 96 Well ELISA Board
ESC/PV-BLC-6	1360049	ProvoCell™ Micro Incubator Block 6 (0.5 mL x 26 + 1.5 mL x 24)
ESC/PV-BLC-7	1360047	ProvoCell™ Incubator Block 7 (2 mL x 40)

CHOOSE THE BLOCK APPLICABLE FOR YOUR SAMPLES

Seven Interchangeable Blocks



PV-BLC-1
1.5 mL x 40 (Standard)



PV-BLC-2
0.2 mL x 96



PV-BLC-3
0.5 mL x 54



PV-BLC-4
15 mm x 24



PV-BLC-5
96 wells ELISA board



PV-BLC-6
0.5 mL x 26 + 1.5 mL x 24



PV-BLC-7
2 mL x 40

General Specifications, Provocell™ II Shaking Micro Incubator

	Order Number	Capacity/Size
Available Blocks*	BLC2-1	384 well
	BLC2-2	0.2 mL x 96
	BLC2-3	0.5 mL x 54
	BLC2-4	1.5 mL x 35
	BLC2-5	2.0 mL x 35
	BLC2-6	5.0 mL x 12
	BLC2-7	15 mL x 12
	BLC2-8	50 mL x 4
	BLC2-9	1.5 mL x 20 + 0.2 mL x 32
Temperature Setting Range	1-100°C (increment of 0.1°C)	
Temperature Control Range	Ambient -15 to 100°C	
Block Temperature Uniformity	≤±0.5°C (20°C-45°C) ≤±0.8°C (<20°C or >45°C)	
Temperature Accuracy	≤±0.5°C (15°C - 100°C)	
Temperature Uniformity	≤±0.5°C (20°C-45°C) ≤±0.8°C (<20°C or >45°C)	
Heating Rate	Heating cooling rate for blocks: ≤12 min (25°C to 95°C): BLC2-1, BLC2-2, BLC2-3, BLC2-4, BLC2-5, BLC2-9 ≤18 min (25°C to 95°C): BLC2-6 ≤21 min (25°C to 95°C): BLC2-7, BLC2-8	
Timer Range	0 to 99 h 59 min	
Speed	300-3000 rpm Max rpm for blocks: 3000 rpm: BLC2-1 2000 rpm: BLC2-2, BLC2-3, BLC2-4, BLC2-5, BLC2-9 1000 rpm: BLC2-6, BLC2-7, BLC2-8	
Amplitude	3 mm (0.11")	
Power Supply, Consumption	100-240V AC, 50/60 Hz, 180 W	
Dimensions (W x D x H)	145 x 310 x 210 mm (5.7" x 12.2" x 8.3")	
Warranty	1 year	
Net Weight	6.3 kg (13.9 lbs)	
Shipping Weight	7.3 kg (16.1 lbs)	
Shipping Dimensions (W x D x H)	420 x 320 x 260 mm (16.5" x 12.6" x 10.2")	

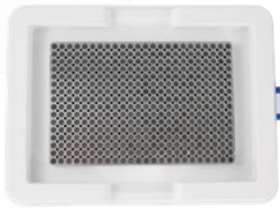
*Note to customer: Specify block when ordering.

ORDERING INFORMATION

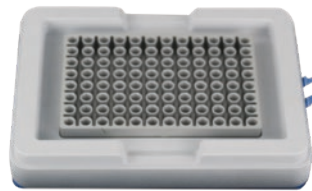
Order Information, ProvoCell™ II Shaking Micro Incubator		
Model Code	Item Code	Description
PV-PVC2	2210041	ProvoCell™ II, Micro Incubator, 100-240VAC
PV-BLC2-1	1360241	ProvoCell™ II Incubator Block 1 (384 wells)
PV-BLC2-2	1360242	ProvoCell™ II Incubator Block 2 (0.2 mL x 96)
PV-BLC2-3	1360243	ProvoCell™ II Incubator Block 3 (0.5 mL x 54)
PV-BLC2-4	1360244	ProvoCell™ II Incubator Block 4 (1.5 mL x 35)
PV-BLC2-5	1360245	ProvoCell™ II Incubator Block 5 (2.0 mL x 35)
PV-BLC2-6	1360246	ProvoCell™ II Incubator Block 6 (5.0 mL x 12)
PV-BLC2-7	1360247	ProvoCell™ II Incubator Block 7 (15 mL x 12)
PV-BLC2-8	1360248	ProvoCell™ II Incubator Block 8 (50 mL x 4)
PV-BLC2-9	1360249	ProvoCell™ II Incubator Block 9 (1.5 mL x 20 + 0.2 mL x 32)

CHOOSE THE BLOCK APPLICABLE FOR YOUR SAMPLES

Nine Interchangeable Blocks



PV-BLC2-1
384 Wells



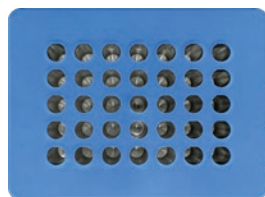
PV-BLC2-2
0.2 mL x 96



PV-BLC2-3
0.5 mL x 54



PV-BLC2-4
1.5 mL x 35



PV-BLC2-5
2.0 mL x 35



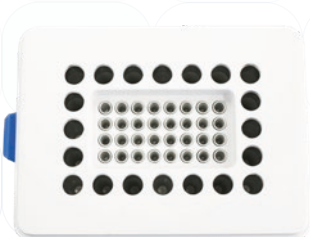
PV-BLC2-6
5.0 mL x 12



PV-BLC2-7
15 mL x 12



PV-BLC2-8
Up to 50 mL x 4



PV-BLC2-9
1.5 mL x 20 + 0.2 mL x 32

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