



# Dengue Laboratory





# Welcome to Esco Lifesciences

Esco Lifesciences' vision is to provide enabling technologies for scientific discoveries to make human lives healthier and safer.

Esco Lifesciences is committed to delivering innovative solutions for the clinical, life sciences, research, industrial, laboratory, pharmaceutical, and IVF communities. With the most extensive product line in the industry, Esco has passed a number of international standards and certifications. Esco Lifesciences represents innovation and forward-thinking designs, that are of the highest standard quality since 1978.

**Availability and Accessibility.** Esco Lifesciences has headquarters in Singapore, Indonesia, and Philippines, with manufacturing facilities located in Asia and Europe. Research and Development (R&D) is conducted worldwide spanning the US, Europe and Asia. Sales, services, and marketing subsidiaries are located in 42 major markets including US, UK, Japan, China and India. Esco regional distribution centers are located in Singapore, Malaysia, Thailand, Vietnam, Myanmar, Indonesia, Philippines, Bangladesh, Hong Kong, Taiwan, South Korea, China, Japan, India, UAE, Central and South Africa, Denmark, Germany, Italy, Lithuania, Russia, United Kingdom, and USA. Because of our worldwide presence, you can be sure that Esco is within your reach.

**High Quality, Reliable, and Dependable.** Esco Lifesciences products are of high quality, reliable, and dependable. Cross-functional teams from Esco Production, R&D, Quality Assurance, and Senior Management, are regularly assembled to review and implement areas for improvement.

**Esco Lifesciences Cares for Your Safety.** Esco Lifesciences focuses on providing safety not just for your samples, but also for you and the environment.

**Esco Lifesciences Cares for Your Comfort.** Building ergonomic designs and reducing noise levels of the units ensure comfort for our users.

**Esco Lifesciences Cares for the Environment.** Esco Lifesciences incorporates the latest proven technologically advanced components available. One in every four of Esco's employees is involved in Research and Development and are evaluating new components or designs for better efficiency. Whenever a new technology is available, Esco Lifesciences redesigns technology into our new products that will use lesser energy.

**Customer Service and Support.** Our service does not stop once purchase has been done. Esco Lifesciences gives on-time customer service such as service training, preventive maintenance, and re-certification, to respond to your equipment needs. Esco Lifesciences also offers free end-user seminars and provides educational materials and informative videos.

As Esco Lifesciences takes the opportunity to respond to the world's needs, we aim not only to contribute to the advancement of scientific discoveries but also in making the world a safer, healthier, and better place to live in.







## Research and Development

An integral part of our business planning effort is based on managing a robust research and development program in Singapore, China, Europe, and USA, balanced against an investment in service support, training and customer education. Compared to industry averages, Esco invests a significant percentage of annual revenues in research and development.

As a result of our investment, and with continuous feedback and idea evaluation among our research, global sales, marketing, purchasing and manufacturing teams; Esco products reflect the best contemporary designs in performance, ergonomics and customer satisfaction.

- Engineers located in technology centers in Singapore, China, Europe and the USA
- Growing patent portfolio
- Core competencies:
  - Embedded system, sensor and software development and integration
  - Containment engineering for biohazards, chemical vapors and hazardous powders
  - Decontamination cycle development
  - Computational fluid dynamics
  - Temperature, humidity, gas and environmental control
  - Imaging systems
  - Wireless and remote monitoring
  - cGMP laboratory design

## Production and Quality

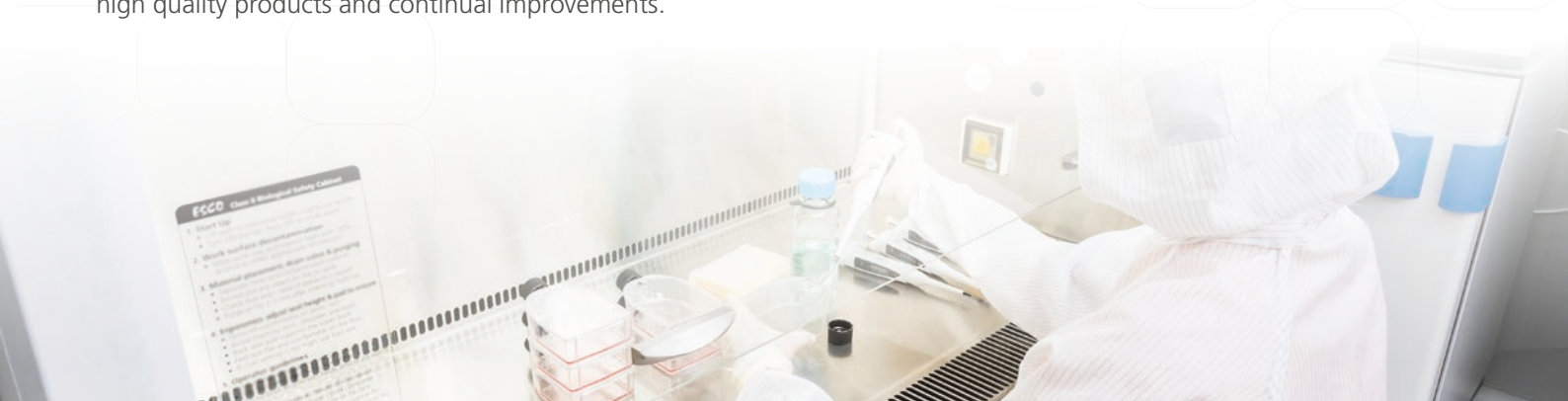
Our manufacturing advantage stems from extensive degree of vertical integration; enabled by our world-leading high throughput. All processes, with a few exceptions, are performed in-house. This allows us to achieve a truly world class reliability and quality.

- Incoming materials inspection and warehousing
- CNC-controlled sheet metal fabrication
- Full range of welding including MIG, TIG, Spot, Orbital, and Robotic welding
- Environment-friendly powder coating lines
- Electromechanical final product assembly
- Electrical / electronics sub-assembly
- Multi-step electrical and physical performance testing
- Independent quality control at each step in the production cycle
- Microbiology, chemistry, containment test labs
- Instruments calibration laboratory

Esco's focus on quality and timeliness is relentless. Continuous improvement is a mantra. Cross-functional teams from Esco Production, R&D, Quality Assurance, Senior Management, are regularly assembled to review and implement areas for improvement.

Esco manufacturing site is audited by certification bodies like ISO 9001, ISO 140001, ISO 13485, NSF International, UL International, and TUV Nord Germany. Our machines safety, workplace safety, and environmental safety are also audited by different government institutions.

All of the third party certifications and audits help our customers to ensure Esco manufacturing site's consistency of producing high quality products and continual improvements.



# Products and Applications

## Life Sciences Laboratory Equipment

### Sample Preparation

- Class I Biological Safety Cabinets
- Class II Biological Safety Cabinets
- Class II Type A2 Biological Safety Cabinets
- Class II Type B1 Biological Safety Cabinets
- Class II Type B2 Biological Safety Cabinets
- Class III Biological Safety Cabinets
- Horizontal Laminar Flow Cabinets
- Vertical Laminar Flow Cabinets
- Laboratory Animal Research Workstations
- Laboratory Centrifuges

### Sample Cultivation

- CO<sub>2</sub> Incubators, Direct Heat Air-Jacketed
- CO<sub>2</sub> Incubators with Cooling System
- CO<sub>2</sub> Incubators with High Heat Sterilization
- Laboratory Shakers

### Amplification and Detection

- Conventional Thermal Cyclers
- Microplate Shakers
- PCR Cabinets

### Sample Storage & Sample Protection Solutions

- Laboratory Refrigerators and Freezers
- Ultra-low Temperature Freezers
- Remote Monitoring, Datalogging, and Programming Software
- Wireless Monitoring System

### Chemical Research

- Ducted Fume Hoods
- Ductless Fume Hoods
- Filtered Storage Cabinets
- Powder Weighing Balance Enclosure
- Exhaust Blowers
- Fume Hood Airflow Monitor

### General Equipment

#### Laboratory Thermostatic Products

- Forced Convection Laboratory Oven
- Forced Convection Laboratory Incubator
- Natural Convection Laboratory Incubator
- Refrigerated Laboratory Incubator

## Medical / IVF Equipment

### Innovative Time-Lapse Imaging

- MIRI® TL6 and MIRI® TL12

### Embryo Culture

- MIRI® Multiroom Incubator
- MIRI® Humidity Multiroom Incubator
- Mini MIRI® Dry and Humidity Incubator
- CelCulture® CO<sub>2</sub> Incubator
- MIRI® II-12 Multiroom Incubator

### Sample Handling

- Esco Multi-Zone ART Workstation
- MIRI® AVT
- Versati™ Tabletop Centrifuge
- Airstream® Laminar Flow Bench

### Accurate Quality Control

- MIRI® GA Gas and Temperature Validation Unit

### Unique Consumables

- CultureCoin®

### Traceability Tool

- MIRI® Evidence

## Healthcare

### Esco Pharma Products

#### Airflow Containment

- BioBooth®
- Ceiling Laminar Airflow (CLAF)
- Cytoculture® Cytotoxic Safety Cabinet (CYT)
- Pharmacon™ Downflow Booth
- Esco Garment Storage Cabinet
- Esco Glassware Hoods
- Laminar Flow Horizontal/Vertical Trolley (LFH/VT)
- Laminar Flow Straddle Units
- Evidence Drying Cabinet

#### Isolation Containment

- Advanced Processing Platform Isolator (APPI)
- Aseptic Containment Isolator (ACTI)
- Blood Cell Labelling Isolator
- Streamline® Closed Restricted Access Barrier System (SLC-RABS)
- Containment Barrier Isolator (CBI)
  - CBI-Unidirectional (CBI-U)
  - CBI-Turbulent (CBI-T)
  - CBI-Class III Biosafety Cabinet (CBI-III)
  - CBI-Hybrid (CBI-H)
- Isoclean® Healthcare Platform Isolator (HPI)
  - HPI-G3-Without Filter Below Work Zone
  - HPI-G3-With Filter Below Work Zone
  - HPI-Inflatable Seal (HPI-IS)
  - HPI - Inflatable Seal - BioVap™ (HPI-IS-BVP)
- General Processing Platform Isolator (GPPI)
  - GPPI-Inflatable Seal (GPPI-IS)
  - GPPI-Static Seal (GPPI-SS)
- Streamline® Compounding Isolator (SCI)
- Streamline® Containment Isolator - Class III (SCI-III)
- Technetium Dispensing Isolator
- Turbulent Flow Aseptic Isolator™ (TFAI™)
- Weighing and Dispensing Containment Isolator (WDCI)

#### Cross Contamination Facility Integrated Barrier

- BioPass™ Pass Through
- Cleanroom Air Showers
- Dynamic Pass Boxes/ Dynamic Floor Laminar Hatches
- Infinity® Air Shower Pass Box
- Esco Sputum Booth
- Infinity® Pass Boxes
- Infinity® Cleanroom Transfer Hatch
- Soft Capsule® Soft Wall Cleanroom

#### Ventilation Containment

- Ventilated Balance Enclosure

### Esco VacciXcell Products

#### Tide Motion Bioreactors

- CelXrocker™ (CXR)
- MiniTide®
- CelCradle™ (CC)
- CelCradle X® (CCX)
- TideXcell® (TXL)

#### Stirred Tank Bioreactors

- BioXcell®
- StirCradle™
- StirCradle™ PRO
- VXL™ Hybrid

#### Harvesting System

- CelShaker™
- CelCradle X® Semi-automated Harvester System (CCX-SAH)
- TideXcell® Harvester System (TXLHS)

#### Cell Culture Monitoring, Media and Consumables

- Super Plus™
- Plus™ Vero
- Plus™ MDCK
- Plus™ MDCK II
- BioNOC™ II macrocarriers
- GlucCell™ Glucose Monitoring System
- CVD Kit

#### Filling Line Equipment

- Traditional Filling Line
- cRABS (Closed Restricted Access Barrier System)
- oRABS (Open Restricted Access Barrier System)

#### Integrated Solutions

- Cell Processing Isolator (CPI)
- Cell Processing Center

### Esco TaPestle Rx Products and Services

#### Pharmacy Automation and Compounding Supply

- Compounding Pharmacy Isolators (SCI, HPI, CBI, GPPI)
- Safety Cabinets and Enclosures (CYT, Class II BSC, VBE, LFC)
- Filling Line Isolators/RABS

#### Radiopharmacy Equipment

- Blood Cell Labeling Isolator
- Cytoculture® Lead-Shielded Class II Biosafety Cabinet
- Frontier® Radioisotope™ Fume Hood
- GMP-compliant Radioisotope Dispensing Isolator
- Radiopharmacy Hood (Lead Shielded Biological Safety Cabinet)
- Technetium Dispensing Isolator



# OVERVIEW

Dengue is a mosquito-borne virus spread by *Aedes aegypti* and *Aedes albopictus* mosquitos, both of which are common in tropical and subtropical regions around the world. It is the world's fastest spreading mosquito-borne virus infection, killing 20 to 25,000 people per year, and infecting over 100 million people globally.

Some people with dengue infection progress quickly from mild to severe, and in some cases, it results in death. That is why early detection and accurate diagnosis of the dengue virus are beneficial and could save a person's life.

Esco Lifesciences has top-of-the-class equipment that aids in the early laboratory diagnosis of dengue virus infection, thereby preventing outbreaks and identifying the next viable treatment for patients.

## Sample Preparation

- Biological Safety Cabinet
- Laboratory Centrifuge

## Sample Cultivation/Incubation

- Microplate Shaker/Incubator

## Sample Analysis

- PCR Thermal Cycler
- PCR Cabinet

## Amplification and Detection

- Automated Nucleic Acid Extraction System

## Sample Storage and Preservation

- Laboratory Refrigerator
- Laboratory Freezer
- Ultra-Low Temperature Freezer

## General Equipment

- Laboratory Incubator
- Laboratory Oven





AC2-4S\_NS

## Airstream®

### Class II Biological Safety Cabinets

#### Features

- Energy saving DC ECM blower
- Isocide™ antimicrobial powder coating
- H14 filter or ULPA filter with 99.999% efficiency at 0.1 – 0.3 µm
- Large performance envelope
- Ergonomic design
- Low noise
- Easy-to-clean

#### Introduction

Esco's Biological Safety Cabinet is a primary engineering control which provides user protection against biohazards as the inflow air creates airflow barrier preventing accidental release of biohazards from the cabinet's working area and at the same time provides product protection with the airflow barrier inside the work zone which is on the other hand created by the downflow air.

Esco is a world leader in biological safety cabinets, offering the industry's widest product range, with thousands of installations in leading laboratories in more than 100 countries around the globe. Esco's biological safety cabinets have earned more independent certifications in more countries, in more languages, than any other product, demonstrating our commitment to the industry's best safety and quality.

#### Basic Principle

Ambient air is pulled through front grille to create inflow, without going through the work surface. Inflow is joined by half of the downflow, to create front air curtain that is fine-tuned to create a large performance envelope. The combined air stream travels through the back air column towards the blower. Approximately 1/3 of the air in the common plenum is exhausted through the ULPA filter to the room. The remaining 2/3 of the air is passed through the downflow ULPA filter and into the work area as a vertical laminar flow air to create ISO Class 3 work surface and prevents cross contamination.

Near the work surface, the downflow splits. About half goes to the front grille, and half goes to the rear grille. A small portion enters the side capture zones to prevent dead air corners (small blue arrows). The design was optimized to give large performance envelope, that provides operator and product protection at wide Inflow and Downflow variation from the Nominal point.



NSF / ANSI 49



UL 61010



国家食品药品监督管理局



TÜV NORD, Germany



JIS K3800



EN 12469



SANS 12469



Green Product

## Airstream® Class II Type A2 Biological Safety Cabinets

The World's Most Energy-Efficient, Quiet, and Compact Biosafety Cabinet

Aside from providing protection for you and your environment, Airstream® Class II biological safety cabinet provides protection for your microbiological samples.

**We understand your BSC requirements.**

Airstream® offers the most complete Class II cabinet range, with 9 models to choose from.



AC2-4E8



AC2-4D8



AC2-4G8



AC2-4S8



AC2-CN  
(Available only for China)



AC2-4S9-NS



AR2-4S9  
(Available only for USA)



AC2-4E8-TU



AC2-4S8-TU



## OPTIONS AND ACCESSORIES



**Support Stands**

- Fixed height, with levelling feet or casters
- Telescoping height, with levelling feet or casters
- Electronic adjustable height, with levelling feet or casters



**Electrical Outlet**

- European/ Worldwide Style, available in Type C, D, E, F, G, H, I
- North American style



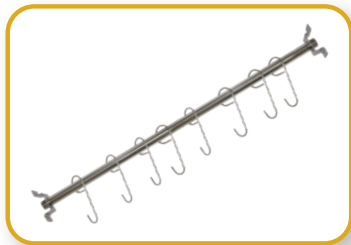
**Germicidal UV Lamp**

- Emission of 253.7 nanometers for most efficient decontamination
- Lamp is positioned away from operator's line-of-sight for safety and proper exposure to interior surfaces



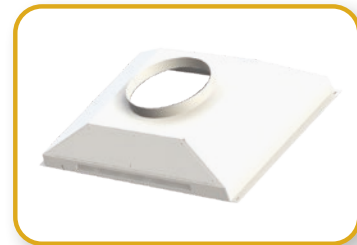
**Service Fixtures**

- European/ Worldwide style
- North American style
- Electronic adjustable height, with levelling feet or casters



**IV Bars with Hooks**

- Stainless steel construction, Max Load 6 kg (13 lbs)
- Available for all standard Esco cabinets



**Exhaust Accessories**

- Air-tight damper and thimble exhaust collar
- SEAS (Sentinel Exhaust Alarm System)\*
- Anti-blow back valve
- Tri-safe exhaust collar with alarm



**Ergonomic Foot Rest**

- Angled, helps maintain proper posture
- Easily adjustable from 3" to 11" in 1" increment, 20" wide
- Anti-skid coating, chemical-resistant finish



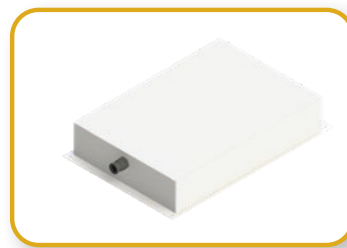
**Ergonomic Lab Chair**

- Laboratory-grade construction
- Alcohol-resistant PVC materials
- Adjustable height 395-490 mm (15.6"-19.3")



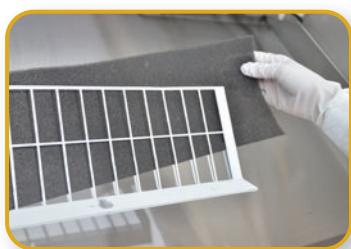
**PVC Arm Rest**

- Chemically treated, improves operator comfort, easy to clean



**VHP Port**

- VHP Out Top Box for Cabinet with or without exhaust collar installed



**Pre-filter**

- Pre-filter on paper catch



**Formalin Vaporizer**

- Dependable construction and innovative design
- Specifically designed for safety cabinet decontamination with automatic control

*\*Type A Biological Safety Cabinets with thimble exhaust collar NOT equipped with alarm system can no longer be certified by an NSF-Accredited certifier.*

## Other Accessories

Accessories	Description
Decontamination bag	<ul style="list-style-type: none"> <li>• Plastic decontamination bag for formalin decontamination on all BSC</li> </ul>
Port	<ul style="list-style-type: none"> <li>• Airtight cable port, installed on right side wall</li> <li>• Holds 1 to 4 cables</li> </ul>
Microscope Viewing Pouch	<ul style="list-style-type: none"> <li>• Factory-installed</li> <li>• Mounting and viewing pouch integrated into sash</li> </ul>
IQ/OQ	<ul style="list-style-type: none"> <li>• Installation Qualification and Operational Qualification Protocol</li> </ul>



## Versati™ Centrifuge

### Features

- Distinct control panel and intelligent Versati™ Microprocessor Control System
- Genuine-Protect™ safety lid lock
- V-balance™ weight imbalance protection
- Smartdrive™ rotor auto recognition
- Diverse choices of rotor (swing-out and fixed-angle rotors)
- Temperature range from -20°C to 40°C with 1°C increments (Refrigerated models only)
- Maintenance-free, brushless motor
- CFC-free refrigeration system
- Emergency switch
- Storage of up to 99 programs



### Introduction

Versati™ centrifuges are equipped with maintenance-free motors, robust mechanism, and intelligent Versati™ microprocessor control system that offers extreme reliability and safety. Versati™ has a strong versatility covering micro centrifuge and low-to-high speed general-purpose centrifuge with variety of rotors, adapters, and accessories to fit all your application needs and suit various consumable tubes, strips, and plates.

### Versatile and Outstanding Features

- **Compact Design** - Small footprint and curved design ensure comfortable loading and unloading of samples and cleaning of the unit.
- **Incredible Flexibility** - Wide choice of easy and interchangeable rotors meets all your application needs. Huge selection of adapters allows centrifugation of practically all commercially available tubes.
- **High Temperature Ramp Rate** - Compressor in Versati™ centrifuges has strong power which allows fast cooling rate. The time cost can be as low as 10 mins when temperature decreases from room temperature to 4°C.
- **Fast Pre-cooling** - Versati™ centrifuges provide fast pre-cooling function that is maintained even when centrifuge is not in use. This feature is useful if the samples are temperature-sensitive.
- **Overspeed Protection** - Equipped with speed detection system, Versati™ centrifuges show the actual speed on the screen. Once the speed exceeds the safety range, the alarm will sound off and rotation is halted.
- **Over Temperature Protection** - The unit will stop running once an over temperature is detected in the chamber, rotor, and frequency converter. This provides comprehensive protection which prolong the life span of Versati™ centrifuges.
- **Aerosol-tight and Autoclavable** - High-quality, extremely robust aluminum lid of rotor allows aerosol-tight centrifugation. Rotor, buckets, lids, and adapters are autoclavable (20 min, 121°C) to ensure sterility of the centrifuge environment.



## General Accessories for Versati™ Tabletop Centrifuge



**Swing-bucket Rotor**

Aluminum swing-bucket rotor with circular flat-bottom buckets made of polypropylene can hold up to 4 x 250 mL tubes. It has flexible adapters ideal for medical and biotechnology laboratories.



**Microtiter Plate Rotor**

This microtiter plate rotor has a maximum capacity of up to 6 plates. This can also accommodate deep well plate, culture plate, microtest/ terasaki plate, microsonic system, and PCR well plate.



**Fixed-angle Rotor**

The maximum capacity of this fixed-angle rotor is 6 x 250 mL. It can also run tubes ranging from 1.5/2.0 mL to 50 mL using suitable adapters.



**Aerosol-tight Fixed-angle Rotor**

This TÜV Nord Certified Bioseal Rotor used for 1.5/2.0 mL tubes is also available in tabletop centrifuge models. Adapters are used to run 0.5 mL and 0.2 mL / 0.4 mL PCR tubes.



**Fixed-angle Rotor**

This aluminum fixed-angle rotor can hold twenty 10 mL dome tubes. This rotor has no available adapter.



**Fixed-angle Rotor**

Aluminum rotor for ten 50 mL conical tubes. It has available adapters for 15 mL conical and dome tubes.

*Note: There are a total of 11 rotor options for TCVI TCR and 47 available adapters for both models.*

# Provocell™

## Microplate Shaker/Incubator

### Features

- Programmable and smooth rotation up to 1500 rpm
- Easy to clean and interchangeable blocks
- High temperature accuracy
- User-friendly interface
- Small footprint



PV-PVC + PV-BLC-1

### Introduction

Esco ProvoCell™ Microplate Shaker/Incubator is designed for a wide variety of mixing applications for accurate incubation of reactions and denaturation of nucleic acids and proteins. ProvoCell™ combines an advanced microprocessor-based controller with Peltier technology that permits rapid switching between heating and cooling with accurate temperature control and block uniformity. It 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.

### OPTION: Choose from a selection of mixing blocks accessories

7 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

# Provocell™ II

## Microplate Shaker/Incubator

### Features

- Programmable and smooth rotation up to 3000 rpm
- Easy to clean and interchangeable blocks
- High temperature accuracy
- User-friendly interface
- Small footprint



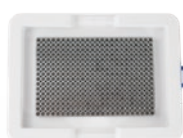
PV-PVC2 + PV-BLC2-2

### Introduction

Molecular biology methods including those for diagnostic testing processes involves a variety of protocols that requires heating, mixing, and shaking steps for small-volume in tubes and microplates. Esco Provocell™ II Microplate Shaker/Incubator features a programmable and smooth rotation up to 3000 rpm with a user-friendly interface and easy to clean interchangeable blocks. Microplate shaking incubators are designed to provide a variety of mixing applications for accurate incubation of reactions and extraction of nucleic acids and proteins.

### OPTION: Choose the suitable block based on your application

9 Interchangeable Blocks



**PV-BLC2-1**  
384 Wells



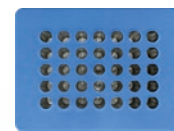
**PV-BLC2-2**  
0.2 mL x 96



**PV-BLC2-3**  
0.5 mL x 54



**PV-BLC2-4**  
1.5 mL x 35



**PV-BLC2-5**  
2.0 mL x 35



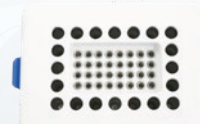
**PV-BLC2-6**  
5.0 mL x 12



**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



# Aeris™

## Conventional PCR Thermal Cycler



AERIS-BG096

### Features

- Multi-block capability
- Adjustable hot lid temperature and ramp rate
- Excellent temperature accuracy and uniformity
- Can perform standalone operation
- Software allows variety of PCR conditions, can control up to 30 units via one PC
- Password protection for secure system access



### Introduction

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.

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.

### OPTION: Choose the appropriate block for your PCR application

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

# Swift™ MiniPro®

## Conventional PCR Thermal Cycler

### Features

- **Superior Performance**
  - Excellent Temperature Uniformity
  - High Temperature Precision
  - Outstanding Ramp Rate
- **Convenience**
  - Compact Footprint
  - Convenient Setup, Fast Run
  - Friendly Interface
  - Adjustable Hot Lid
  - Adjustable Ramp Rate
- **Stability**



SWT-MIP-0.2

### Introduction

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.

### OPTION: Choose the type of block that comes with the main unit depending on your sample requirements



**Block 1**  
24 x 0.2 mL

**Applicable consumables:** 0.2 mL tubes, 3 x 8 strips



**Block 1**  
18 x 0.5 mL

**Applicable consumables:** 0.5 mL tubes

## Swift™ ProGene Real-time PCR Thermal Cyclers



SWT-PG-96

### Features

- Fast heating/cooling rate for faster run time
- Offers 6-zone independent temperature control for accurate results
- Low energy consumption
- Built-in computer for stand-alone operation from PCR program input, monitoring, and analysis

### Introduction

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 independent temperature control for accurate results.

### OTHER FEATURES

#### • Touchscreen Display

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

#### • Multiple Configurations

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

#### • 6 Channels Automatic

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

#### • Sample Cavity

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





PCR-3A

# Airstream®

## Polymerase Chain Reaction Cabinets

### Features

- Pre-filter and main HEPA filter with a typical efficiency of >99.99% at 0.3 microns
- Protection against cross-contamination within the main chamber
- Built-in UV lamp with timer
- Sentinel™ Silver Microprocessor Controller
- Isocide™ antimicrobial powder coating



**ISOCIDE™**

Green Product

## Introduction

An ideal PCR laboratory should consist of three areas, each isolated from each other. Reagents should be prepared in the reagent preparation area and transferred to the sample preparation area, through a pass box or inside closed containers. After preparation of the final reaction mix, the tubes should be transferred to the amplification area, again through a pass box or in a closed container. The thermal cycler where the PCR amplification takes place is located in the amplification area. The Airstream® PCR cabinet provides DNA and RNA-contaminant free environment through the use of HEPA filters and UV decontamination system. The cabinet can be installed in the reagent preparation area of the PCR laboratory.

## More Benefits

### Easy-to-Use

- Timer is easy to adjust
- UV hour meter monitors bulb life
- Automatic decontamination for 0.9 m (3') and 1.2 m (4') models
  - Close sash: UV turns on automatically for decontamination
  - Open sash: airflow activates automatically

### Safety

- UV interlock prevents UV exposure
- UL recognized electrical components
- UV filtering sash and side walls

### Two-in-One

Can be used as a regular laminar flow cabinet and UV can also be used for decontamination of regular lab items.

### Ergonomics

- Low noise
- Angled front
- Glass sides
- Curved work surface front edge
- Powder-coated rear wall eliminates reflections
- Vertical airflow minimizes direct airflow towards operator, causing dry eyes



SCR-2A\_

# Streamline®

## Polymerase Chain Reaction Cabinets

### Features

- HEPA-filtered laminar flow
- ISO Class 3 work zone
- Equipped with German-made ebm-papst® motors with external rotor design
- Isocide™ antimicrobial powder coating
- UV decontamination technology
- 0.6 m in height (2')



### Introduction

The Streamline® Polymerase Chain Reaction (PCR) Cabinet provides a controlled environment for performing PCR amplification experiments. Through HEPA-filtered airflow and UV decontamination of surfaces, DNA and RNA contamination of PCR reactions are reduced ensuring the validity of the results.

### OPTIONS AND ACCESSORIES (for both Streamline® and Airstream®)



#### Support Stand with Caster Wheels (SPC)

- For 0.6 m (2'), 0.9 m (3') and 1.2 m (4') models
- Available in two standard heights: 711mm (28.0") or 860mm (34.0")
- Durable polyurethane caster wheels with 360 degree horizontal rotation
- Total brake system on front wheels
- Maximum weight supported: 600 kg (1323 lbs)



#### Support Stand with Leveling Feet (SAL)

- For 0.6 m (2'), 0.9 m (3') and 1.2 m (4') models
- Available in two standard sizes: 737 mm (29.0") or 864 mm (34.0")
- Maximum weight supported: 500 kg (1,100 lbs)



#### Telescoping Support Stands with Leveling Feet (STL)

- For 0.9 m (3') and 1.2 m (4') models
- Allow manual adjustment of the product height. The cabinet must be removed from a Telescoping Support Stand prior to adjustments
- Adjustable height range: 660-940 mm (26.0"-37.0"), adjustable in 25.4 mm (1.0") increments
- White oven-baked epoxy powder-coated finish
- Maximum weight supported: 600 kg (1323 lbs)

# Swift™ Extract

## Automated Nucleic Acid Extraction System

### Features

- High extraction efficiency
- High temperature accuracy
- User-friendly interface
- Versatile blocks and rods
- Standard programs



SWT-EXT-32

## Introduction

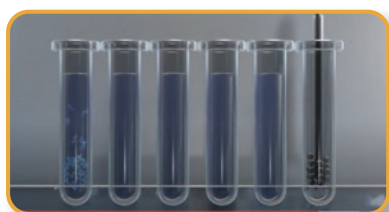
Spin-column based and manual extraction systems require repetitive pipetting steps which are prone to human errors causing deviations in the extraction process. This could affect patient management due to possible false positives and negatives. Automated nucleic acid extraction systems provide robust solution for more consistent and reliable nucleic acid extracts.

Esco Swift™ Extract Automated Nucleic Acid Extraction system provides an easy monitoring of extraction protocols and shows a real-time display of the running protocol through its user-friendly interface. 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.

## Basic 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



### High Extract Efficiency

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



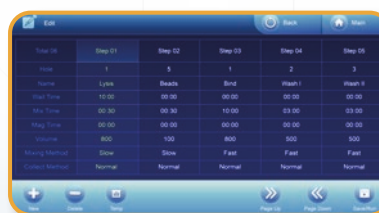
### High Temperature Accuracy

- 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.



# HP Series

## Laboratory Refrigerators and Freezers

### Features

- Forced-air design
- Intelligent automatic defrost
- Excellent temperature uniformity
- Door lock
- Triple-pane glass doors for refrigerators
- Isocide™ antimicrobial powder coating
- High-quality stainless-steel interior for sample protection
- Internal LED lighting that saves up 70% power with less heat exposure
- Standard wheels for easy location or movement
- Audible and visual alarms

**ISOCIDE™**



### Introduction

Laboratory professionals invest time, money and hard work on irreplaceable samples. A cold storage equipment can store thousands to millions of dollars' worth of valuable products. Once proper storage requirements are not met, these precious samples may be put at risk and eventually lead to sample spoilage and wastage. That is why, it is important to carefully choose the cold storage that can assure optimal product protection.

Esco HP Series is designed for laboratory use offering superior product protection with long term reliability and exceptional product quality. When superior levels of cold storage performance, reliability, and flexibility are needed, the Esco HP series of Laboratory Refrigerators and Freezers is the best choice—it provides a high-performance protection for your precious samples! Laboratory Refrigerators are generally used for storing non-volatile reagents and non-volatile biological specimens.



HR1-140S-<sub>-</sub>

HR1-400T-<sub>-</sub>

+2°C to +15°C

HF2-400T-<sub>-</sub>

HF2-1500S-<sub>-</sub>

(HF2): -10°C to -25°C  
(HF3): -20°C to -40°C

HC6-400S-<sub>-</sub>

HC6-700S-<sub>-</sub>

Refrigerator: +2°C to +15°C  
Freezer: -10°C to -24°C

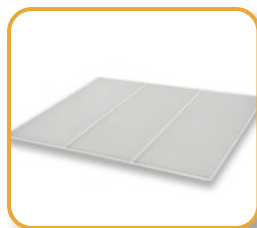
Laboratory Refrigerators

Laboratory Freezers

Laboratory Combination  
Refrigerators and Freezers



## OPTIONS AND ACCESSORIES



### Shelf Kits (SK\_)

Atoxic, plastic-coated steel, supported by anti-tilt clips. It is for additional space inside your chamber where you can place your samples. It also provides a good support for your samples to prevent damage and maintain organization of samples.



### Drawer Kits (DK\_)

A drawer extractible on telescopic slides, adjustable in height, bottom made of painted steel, beehive structure type, supplied with adjustable dividers made of polypropylene, front is fitted with an ergonomic aluminum handle, for the storage of samples in a more convenient and organized way.



### Digital Monitor (DM\_)

An independent visual/acoustic alarm and recording system, with an accuracy of 0.1°C due to the PT100 probe used for temperature detection. It will take over alarm failures, together with standard rechargeable batteries that record event such as unauthorized personnel.



### Access Port (AP\_)

A 15 mm or 35 mm diameter hole that will be placed at the back of the unit, closed with a white plastic cap, used for the access of additional probes inside the chamber.



### Basket Kit (BK1)

Made of stainless steel that provides an anti-corrosion environment for your samples. It is mounted on anti-tilt side slides and can be glided outside the chamber for the purpose of easy access to samples.



### Chart Recorder

The chart recorder provides an easy-to-read graph of data vs time. It is a reliable, accurate, and stable instrument, for on-the-spot written documentation of chamber temperature.

Model	Item Code	Description
SK1	1330063	Shelf Kits for HR1-140, HF2-140 (Standard and Touchscreen models)
SK2	1330064	Shelf Kits for HR1-400, HF2-400 and HC6-400 (Standard and Touchscreen models)
SK3	1330065	Shelf Kits for HR1-700, HF2-700, HF3-700, HC6-700, HR1-1500 and HF2-1500 (Standard and Touchscreen models)
SK4	1330066	Shelf Kits for HF3-400 (Standard and Touchscreen models)
DK1	1330067	Drawer Kits for HR1-140, HF2-140 (Standard and Touchscreen models)
DK2	1330068	Drawer Kits for HF2-400, HR1-400 and HC6-400 (Standard and Touchscreen models)
DK3	1330069	Drawer Kits for HR1-1500, HF2-1500, HR1-700, HF2-700 and HC6 700 (Standard and Touchscreen models)
DK4	1330070	Drawer Kits for HF3-400 (Standard and Touchscreen models)
DK5	1330071	Drawer Kits for HF3-700 (Standard and Touchscreen models)
DM1	1330072	Backup battery + Digital Monitor + PT100 probe for temperature monitoring and recording during power failure. (Single Chamber, Touchscreen Models)
DM2	1330073	Backup battery + Digital Monitor + PT100 probe for monitoring and recording during power failure. (Dual Chamber, Touchscreen Models)
AP15	1330074	15 mm Access Port for all models (Standard and Touchscreen models)
AP35	1330075	35 mm Access Port for all models (Standard and Touchscreen models)
BK1	1330076	Stainless Steel Basket Kit for HR1-700, HR1-1500, HF2-700, HF2-1500, HF3-700 and HC6-700S (Standard and Touchscreen models)
Backup Battery	1330127	Standard backup battery for temperature monitoring during power failure (Standard Models)
4-20 mA	1330129	4-20 mA Output (Touchscreen models)
GSM	1330216	GSM Module (Touchscreen models)
Chart Recorder	1330185	Chart Recorder for all models (Standard and Touchscreen models)
IQQQ	9010179	Installation Qualification Operation Qualification for all models



# Lexicon® II

## Ultra-low Temperature Freezers

### Features

- Temperature range: -50°C to -86°C
- Simple and intuitive controller
- Fast pull down time
- Effective cooling technology
- Superior insulation system
- Environment-friendly HFC refrigerants
- Excellent uniformity
- Extended warm-up time during a power failure
- Isocide™ antimicrobial powder coating
- Audible and visual alarms

Available sizes: 363, 480, 597, and 714 L



### Introduction

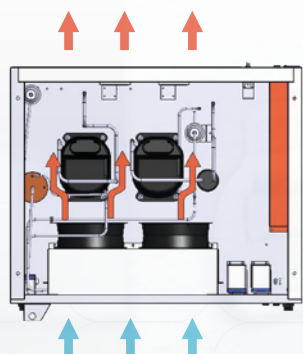
Cold storage equipment plays a very important role in a researcher's life work. Most of the studies conducted by each researcher rely on low-temperature storage in maintaining the integrity and quality of their precious samples and other biological products. For some studies, environmental samples are collected and sent to the biorepository for long-term storage in an Ultra-low Temperature Freezer (-50 to -86°C).

Esco Lexicon® II Ultra-low temperature freezer are designed with the performance and quality that are demanded by sensitive and precious samples across clinical and research applications. As ULT freezers are often operated at -80°C continuously for years, reliability is of paramount importance to the researchers. Constructed from high-quality proven components with energy-efficient refrigeration design, Esco ULT Freezers provide top-notch protection that can withstand the test of time to guarantee the integrity of your samples.

### Silver Controller



### Gold Controller



### CASCADE COMPRESSOR

- 2-Stage cascade refrigeration system.
- Two fans are employed to draw consistent airflow from the front to the back of the freezer to cool the condenser.
- Two 1-hp hermetic compressors operated at a low speed for longer life.
- The compressors sit directly behind the fans and are air-cooled for better operating conditions.

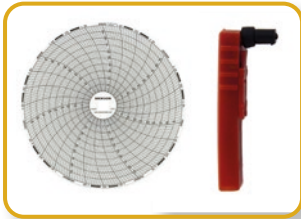
## OPTIONS AND ACCESSORIES



Chart Recorder Kit



LCO<sub>2</sub> Back-up System



Temperature Chart and Pen Replacements for 6" Chart Recorder



Ice Scraper



Standard Cardboard 2-inch and 3-inch Boxes



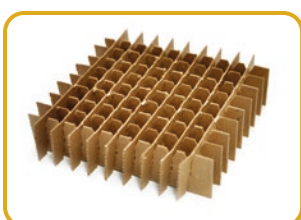
Cryo Safety Gloves



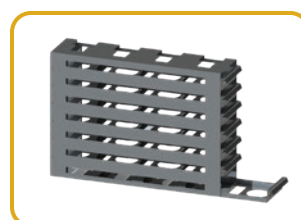
Additional Shelving Kit



Modifiable Clip rack for Lexicon® II



Standard Cardboard 49-cell, 64-cell, 81-cell, and 100-cell Dividers



2-inch and 3-inch Drawer rack for Lexicon® II



SMS Module System (for Gold controller)



PROtect Gen 2 - Independent and Redundant Monitoring System

# Isotherm®

## Forced Convection Laboratory Incubators



IFA-110

### Features

- Ventiflow™ Ventilation System – forced air convection design
- Pre-heat Chamber Technology – 4-zone heated air jacket
- SmartSense™ Microprocessor PID Control Technology
- Isocide™ antimicrobial powder coating
- Door keylock
- Multiple redundant over-temperature protection system
- Superior insulation

Available sizes: 32, 54, 110, 170, and 240 L

**ISOCIDE™**



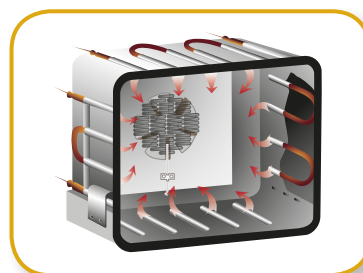
### Introduction

Esco Isotherm® forced convection laboratory incubator provides a temperature-controlled environment via forced convection design. It has an intuitive interface, microprocessor PID controls with programming options, a 4-zone heated air jacket, precisely tuned and tested ventilation, an insulation package, and ergonomic features to provide quality and convenience.



#### Ventiflow™ Ventilation System

- Forced convection design produces faster temperature response rates, improves uniformity and reduces fluctuation
- Low energy consumption and low noise level



#### Pre-Heat Chamber Technology

- 4-zone heated air jacket ensures stable heating and maximum temperature uniformity in the chamber
- 2-point door seal and eccentric hinge ensures maximum gasket



#### Multiple redundant over-temperature protection system

- Over-all temperature protection meets DIN 12880 Class 3.1 standards



#### SmartSense™ Microprocessor PID Control Technology

- Connected to an instrument-grade precision platinum temperature probe
- Ensures fast ramp time. Prevents overshoot and ensures stable temperature once set point is achieved





OFA-110

# Isotherm®

## Forced Convection Laboratory Oven

### Features

- Ventiflow™ Ventilation System – forced air convection design
- Pre-heat Chamber Technology – 4-zone heated air jacket
- SmartSense™ Microprocessor PID Control Technology
- Isocide™ antimicrobial powder coating
- Door keylock
- Multiple redundant over-temperature protection system
- Superior insulation

Available sizes: 32, 54, 110, 170, and 240 L

**ISOCIDE™**



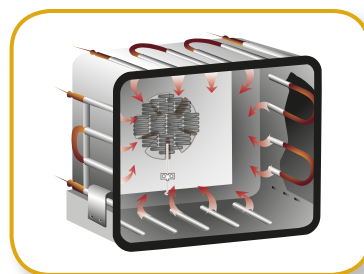
### Introduction

Esco Isotherm® laboratory ovens are designed with a forced-convection ventilation system, intuitive interface, microprocessor PID control with programming options, a 4-zone heated air jacket, and ergonomic features to provide quality and convenience.



#### Ventiflow™ Ventilation System

- Forced convection design produces faster temperature response rates, improves uniformity, and reduces fluctuation
- Low energy consumption and low noise level



#### Pre-heat Chamber Technology

- 4-zone heated air jacket ensures stable heating and maximum temperature uniformity in the chamber
- 2-point door seal and eccentric hinge ensures maximum gasket



#### Multiple Redundant Over-temperature Protection System

- Over-all temperature protection meets DIN 12880 Class 3.1 standards



#### SmartSense™ Microprocessor PID Control Technology

- Connected to an instrument-grade precision platinum temperature probe
- Ensures fast ramp time. Prevents overshoot and ensures stable temperature once set point is achieved

## OPTIONS AND ACCESSORIES (for Isotherm® products)



### Wall Bracket (only for 32 L and 54 L chambers)

- Accommodates desired operating heights.



### Reversed Door Swing (Factory-installed)



### Voyager Software Kit

- Esco Voyager is a PC-based software package developed for remote monitoring, datalogging and programming/device configuration of Esco controlled environment laboratory equipment.



### Support Stands

- Fixed height at 715 mm (28")



### Additional Shelf

- Two shelves are included for 32 L, 54 L, 110 L, 170 L and 240 L models as standard. Additional shelves may be ordered.



### Optional Stainless Steel Exterior

- Robust construction and corrosion-resistant surface that meets pharmaceutical and clinical laboratory requirements.



# After-Sales Services

## Parts Availability

Whenever service is needed and parts are required, minimizing downtime is a critical objective. Statistical usage analysis helps Esco to predict parts life, permitting Esco to manage logistics and stage proper inventories around the world. The combination of predictive maintenance, historical data, and geospecific proximity assures our customers that parts and labor are available whenever service is scheduled through the local sales organization.

## Registration, Documentation, and Instruction

Quality control at Esco extends from research and development through engineering, manufacturing, shipment, delivery, and customer feedback. Esco maintains an aggressive program to encourage warranty card registration by mail, email or online submission so that we know where Esco products are located and how they are being used. Rest assured that all information disclosed from warranty registrations will be kept confidential. All Esco products include unique serial numbers for identification. Documentation for all performance tests is archived and maintained for customer reference with all the backup procedures.

## Online Technical Information

Site preparation instructions are useful before product arrival and installation. Installation and start-up manuals, operation manuals and quick reference guides are available anytime from the Esco resources online.

## NSF International Accreditations and TÜV Nord Certification

The National Sanitation Foundation (NSF) International is an independent, non-profit organization that provides standards development, product certification, auditing, education, and risk management for public health and the environment.

The NSF mark is your assurance that the product complies with all the standard requirements, tested by one of the most respected independent certification organizations in existence today. NSF conducts periodic unannounced inspections and product testing to verify that the product continues to comply with the standard. It is valued by consumers, manufacturers, retailers, and regulatory agencies worldwide.

TÜV NORD GS certification has been helping to minimize risks and hence ensure maximum safety and quality. TÜV NORD's recognised certifications stand worldwide for an exemplary level of safety and make a valuable contribution to the continuing improvement of products and processes.

Esco has passed the stringent requirements during testing and inspection and has given the TÜV NORD approval mark that confirms compliance of the product with the provisions of the Product and Equipment Safety Act as regards health and safety.

In line with Esco's commitment in providing world-class services worldwide, Esco as a manufacturer feels the impact of providing the best after-sales service through our competent service engineers. Thus, Esco is the only manufacturer in the world with the most number of NSF accredited certifiers across the globe. In addition, Esco enhances the capacity to the highest quality of service by providing TÜV NORD GS certified service engineers with expertise to ensure timely preventive and corrective maintenance of the laboratory equipment. These accreditations make Esco not only an **Excellent Standards COmpany** but also an **Excellent Service COmpany**, which exemplifies Esco's collective quest of being an **Eternally Successful COmpany**.

## References and Links

To know more about the services we offer, visit [www.escolifesciences.com](http://www.escolifesciences.com)



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