

**ESCO**  
LIFESCIENCES

# MiniTide<sup>®</sup> and MiniTide<sup>®</sup>-C

The Tiny Titan Workstation of  
Adherent Bioprocessing



## TideMotion™ Platform

The patented **TideMotion™ bioreactor** utilizes a film-based oxygenation mechanism driven by a dynamic air-liquid interface. Through cyclic motion, macroporous carriers are alternately exposed to air and culture media, enabling efficient oxygen transfer and nutrient exchange.

In the packed-bed configuration, the carriers retain approximately 20% of culture media, forming a thin liquid film that supports rapid oxygen diffusion to cells. Cells grow within the nonwoven matrix of the macroporous carriers, gradually secreting extracellular matrix (ECM) and forming 3D microtissue-like structures. This creates a physiologically relevant *in vitro* environment that closely mimics *in vivo* conditions.

By enabling true 3D cell culture, the TideMotion™ platform enhances process performance, delivering higher cell yields and improved product quality, including increased functional expression (e.g. IDO), higher viral titers, and more representative protein and microRNA profiles.

### TideMotion Platform

(Schematic with Cell Harvesting System)

MiniTide®-C

CelCradle X®  
(CelCradles X Bottles)

TideCell / TideXcell® 2 L

TideCell / TideXcell® 20 L

TideCell / TideXcell® 100-300 L

TideCell / TideXcell®

Tide 2 mm/s: 3,000-5,000 L  
(stainless steel tanks)  
Tide 6 mm/s: 55,000 L

**3D seed to 3D bioreactor**  
unlike many other bioreactors  
which seed in 2D

- GMP (TideCell) and cGMP units (TideXcell)
- Surface area:  $3 \times 10^5 \text{ cm}^2$  (110 grams of macrocarriers)
- Larger scale manufacturing

## MiniTide® and MiniTide®-C

**Esco MiniTide®** delivers reliable and reproducible process development for adherent bioprocessing applications, enabling seamless support from early research through translational workflows. Designed as a compact yet versatile platform, MiniTide®—the “tiny titan” of early-stage research—features a single-module, intuitive system that operates inside a standard CO<sub>2</sub> incubator. It empowers laboratories to advance early discovery, method optimization, and in vivo studies while fully utilizing existing infrastructure.

Building upon the proven MiniTide® foundation, **MiniTide®-C** represents the next generation of compact adherent bioprocessing workstations. While preserving the proprietary TideMotion™ technology that underpins the original system, MiniTide®-C elevates performance by integrating a in-built CO<sub>2</sub> chamber into a unified, all-in-one solution. This enhancement streamlines laboratory operations and broadens application versatility.

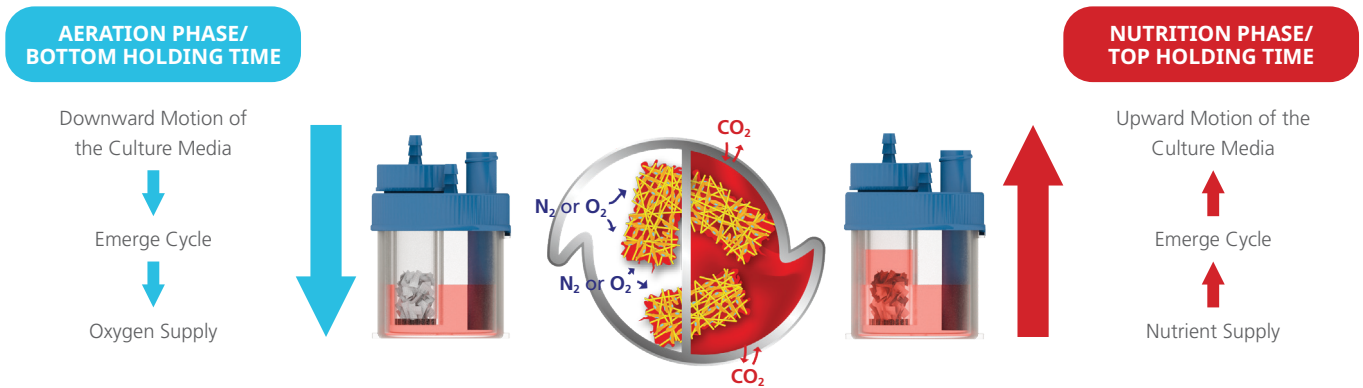
Together, MiniTide® and MiniTide®-C offer a compact, scalable pathway for innovators advancing cell-based therapies and exosome-related applications, enabling efficient progression from early research to translational development within a consistent and trusted technological framework.



## Applications

- Culture of anchorage-dependent cells with BioNOC II® and BioMESH® macrocarriers.
- Proof-of-concept for 3D carrier culture.
- MSC, iPSC, and other adherent cell line study or process optimization.
- Supports exosome-based research for therapeutic and diagnostic development.
- Vaccine/virus study or process optimization.
- Tissue Engineering.
- 3D dynamic tissue culture platform with an air-liquid interface, enabling advanced approaches for drug discovery and screening to replace animal testing.
- Supports cell-based food production, including cultivated meat, seafood, and value-added products such as omega fatty acids, nutraceuticals, and collagen.
- Dermatology/Medical aesthetics; Cosmeceuticals/Cosmetics; Stem cell conditioned media/secretomes/exosomes; Scalp/hair loss, topical, eyedrops, inhalation, facial, topical, wound healing.

## The Motion Principle of MiniTide®



MiniTide® functions based on the TideMotion™ principle, where cells adhere to macroporous carriers and are alternately exposed to aeration and nutrients from the culture medium. The gentle vertical movement of the medium creates a dynamic interface between air and liquid at the cell surface, ensuring an environment with minimal shear stress, high aeration and nutrient availability, no foaming, and unrestricted oxygen supply. This efficient transfer of nutrients and oxygen effectively replicates the alternating exposure to nutrients and oxygen that cells experience in their native environment.

## Macroporous Carriers

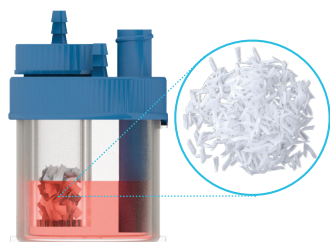
Anchorage-dependent cells require a surface for growth, traditionally provided by T-flasks or roller bottles. However, scaling up these methods is challenging, leading to the development of macroporous carriers. These matrices support the attachment, growth, and proliferation of adherent cell lines, including animal, mammalian, and insect cells. Commonly used in packed-bed and TideMotion™ bioreactors, they offer scalable solutions for large-scale cell culture. With diverse physical and chemical properties, the choice of carrier depends on the specific anchorage requirements of the cultured cells.

MiniTide® comes with three different matrix vessels:



### MiniTide Empty

Choose your preferred carrier system or opt for a bioedible scaffold designed for seamless integration.

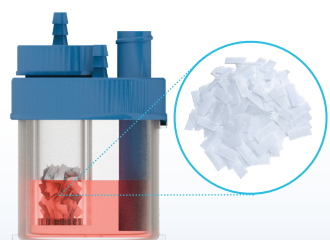


### MiniTide-BioNOC II

BioNOC II® is a macroporous carrier that supports the growth of anchorage-dependent cells including **animal**, **mammalian**, and **insect cells** in either serum-containing or serum-free culture media.

### Features

- Made of 100% PET
- Complies to USP Class VI, USP <661>, USP <85>, ISO 10993-4, ISO 10993-5, ISO 10993-11, ISO 10993-12
- High porosity (50 - 200 µm between fiber), and biocompatible to coating reagents for better attachment
- High relative surface area for cell growth: up to 15,000 cm<sup>2</sup> per 0.1 L packed bed volume for Vero cells (600 times the yield of a T-25)
- Enhanced hydrophilicity, coating factors can be added



### MiniTide-BioMESH

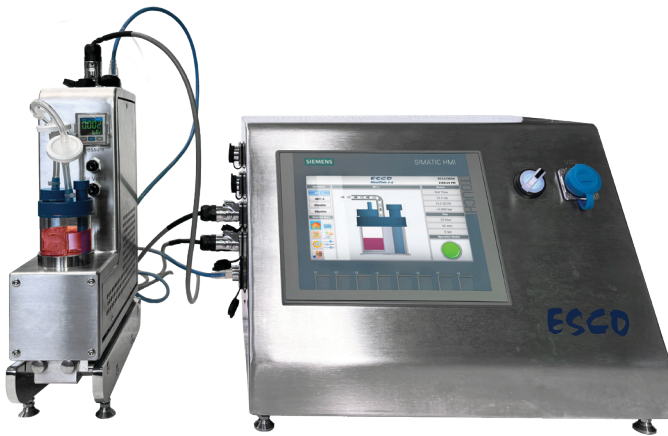
BioMESH® is a patented macroporous carrier designed for harvesting adherent cells for cell therapy applications and for generating cell-derived products through downstream processing of harvested cells, including polydeoxyribonucleotide (PDRN), mitochondria, and intracellular viruses.

### Features

- Made of a combination of polypropylene (PP) netting and PET mesh
- Complies to USP <85>, USP <88>, USP <661.1>, USP <788>, ISO 10993-4, ISO 10993-5, ISO 10993-6, ISO 10993-11, ISO 10993-18, ISO 10993-23
- High porosity (200 µm space between PET fiber; 670 µm space between PP fiber)
- High relative surface area for cell growth: up to 8,600 cm<sup>2</sup> per 0.1 L packed bed volume for MSCs (5 times the yield of a 10-layer HYPERFlask)
- Enhanced hydrophilicity, coating factors can be added

BioMESH® is available with 50 µm pores for pluripotent stem cells and 200 µm pores, in two dimensions: 24 × 9 mm and 12 × 9 mm.

## Features



- Powered by proprietary TideMotion™ technology**  
Leveraging exclusive TideMotion™ technology, the system delivers efficient and reproducible cell culture performance within a compact, intuitive, and easy-to-operate design.
- Disposable, single-use vessel design**  
Single-use vessels reduce the risk of cross-contamination, eliminate the need for cleaning and sterilization, and support streamlined, GMP-aligned laboratory workflows.
- Siemens PLC-based monitoring with HMI**  
An integrated Siemens PLC control system with HMI provides precise, reliable, and real-time monitoring and adjustment of critical process parameters.
- Optimized for research with limited and high-value materials**  
The platform maximizes process efficiency while minimizing the consumption of samples and culture media, making it ideal for early-stage research involving costly reagents and analyses.
- Rapid and consistent exosome production**  
Designed to facilitate fast and reproducible exosome generation from primary tissues, cancer cells, and immortalized cell lines, the system accelerates exosome research and development efforts.

## Key Benefits

### Highest Yield

MiniTide® and MiniTide®-C employs advanced macroporous carriers, BioNOC II® and BioMESH®, to optimize cell culture applications. BioNOC II® offers a 100% PET, fibrous culture matrix, while BioMESH® utilizes a combination of polypropylene (PP) netting and PET mesh. These macrocarriers offer several advantages:

**High surface area:** The macroporous design provides cells with a significantly increased surface area for optimal attachment and growth.

**Biomimetic environment:** The 3D structure closely mimics a cell's natural in vivo environment, promoting healthy cell behavior.

**Efficient mass transfer:** The matrix vessel facilitates efficient exchange of oxygen and nutrients, ensuring optimal cell proliferation and high bioproduct yields.

### Affordable Cost

MiniTide® and MiniTide®-C scaled down bioreactor also offers significant advantages for research applications utilizing precious starting materials, high-cost culture media, or expensive analytical techniques. This translates to a substantial reduction in the overall cost per experiment.

### Linearly Scalable Quality

The Esco TideMotion™ platform provides a scalable solution for adherent cell culture, featuring an advanced packed-bed bioreactor system with full linear scalability. It starts with research-scale system MiniTide® for standard CO<sub>2</sub> incubators and MiniTide®-C with a built-in CO<sub>2</sub>-controlled chamber, and scales seamlessly to production while maintaining the core TideMotion™ (superscript) principle for consistent and reliable cell growth.



Cells	Estimated Cell Number per MiniTide® Vessel	Carriers
hMSC	$7 \times 10^6 - 1 \times 10^7$	BioNOC II®**
	$2.2 \times 10^7$	BioMESH®***
Rat MSC	$2.5 - 4 \times 10^7$	BioNOC II®**
iPSC	$7.5 \times 10^7$	BioNOC II®
	$3 \times 10^7$	BioMESH®
Fibroblast	$1.2 \times 10^7$	BioNOC II®
Vero	$8.8 \times 10^7$	BioNOC II®
HEK293	$8.8 \times 10^7$	BioNOC II®
MDCK	$3.5 \times 10^7$	BioNOC II®
BHK-21	$1.5 \times 10^8$	BioNOC II®
Sf-9	$1.7 \times 10^8$	BioNOC II®
Sf-21	$1.2 \times 10^8$	BioNOC II®
HuH-7	$7.1 \times 10^7$	BioNOC II®

\*The density of MSCs varies depending on the tissue of origin, the donor's age and characteristics, and the composition of the culture medium.

\*\*BioNoc II® is optimally suited for the culture of MSCs when the goal is to obtain secretomes or small exosomes as the final products.

\*\*\*BioMESH® is optimally suited for the cultivation of MSCs when the primary goal is cell harvesting as the final product. However, in cases where it is essential to maintain the cells' morphology, particularly if they have been extensively characterized in a 2D environment, BioMESH® may be more appropriate for harvesting small exosomes.

*The choice of carrier type will ultimately depend on the specific requirements of the client's final experiment.*

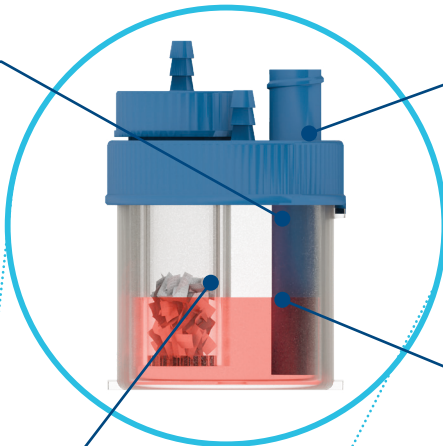
# MiniTide®

## Polystyrene

Polystyrene stands out as a preferred choice for cell culture flasks. This selection is driven by its key properties: superior optical clarity, ensuring unobstructed observation, exceptional durability for reliable performance, and minimal cytotoxicity.

## Polypropylene

Polypropylene exhibits exceptional resistance to moisture, a variety of acids, and alkalis. This material offers a robust combination of high impact strength and fatigue resistance, creating a favorable environment for cell growth and proliferation.



## BioNOC II® / BioMESH®(Packed Bed)

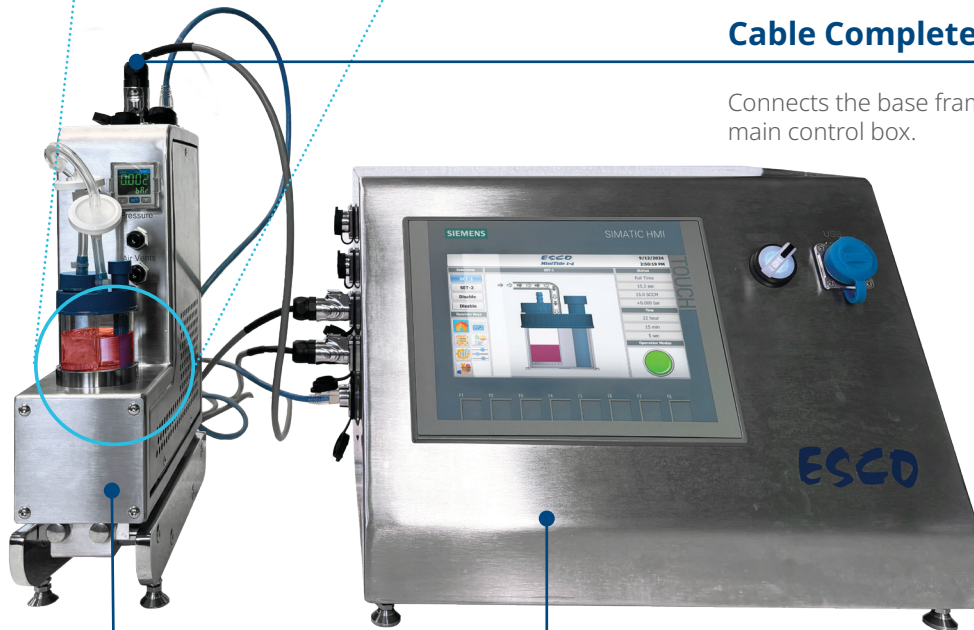
Cells remain entrapped in the carriers, simplifying media replacement and product harvesting.

## Working Volume

The MiniTide® system employs a versatile cell culture vessel with a maximum capacity of 60 mL, but a working volume of 35 mL is recommended.

## Cable Complete Set

Connects the base frame to the main control box.



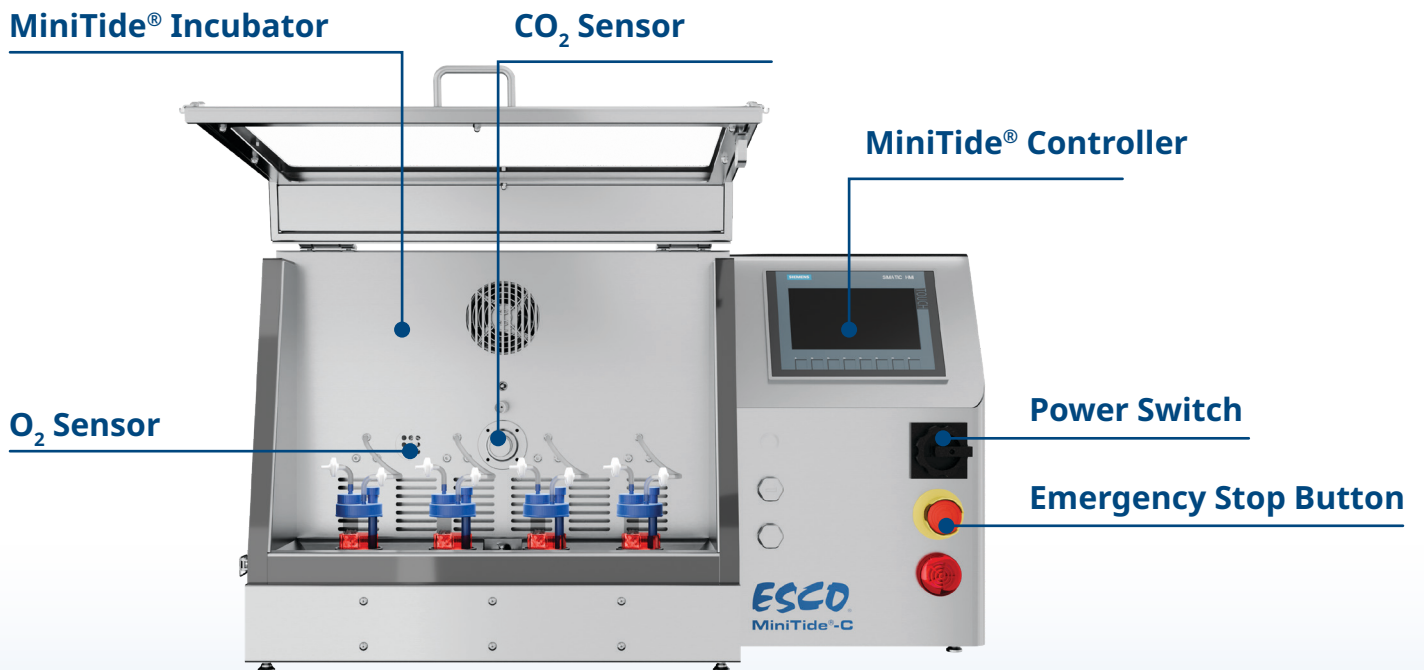
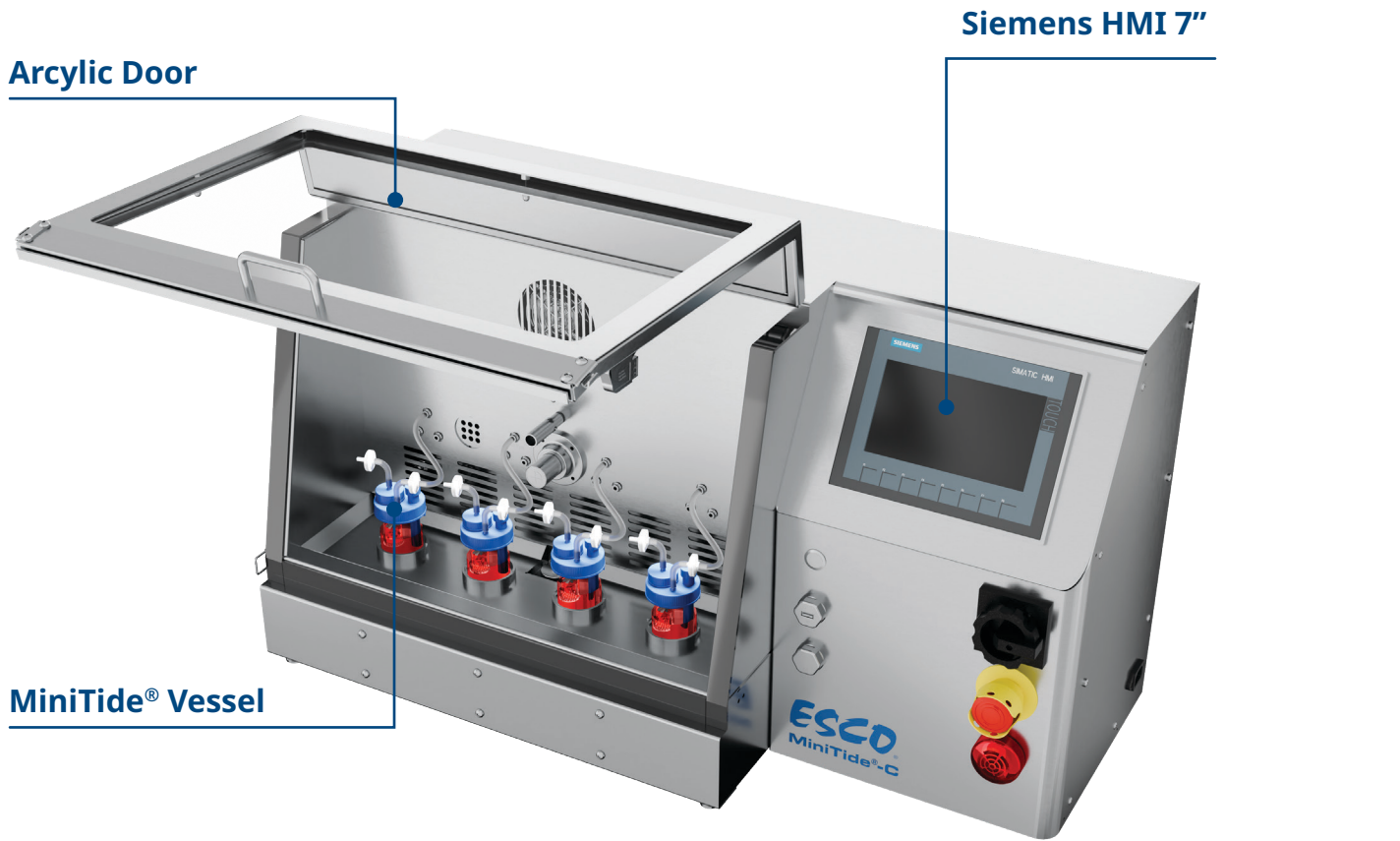
## MiniTide® Culture Stage

Stainless steel 304 that can hold up to 4 MiniTide® vessels.

## HMI Box

MiniTide® HMI utilizes Siemens HMI KTP700/PLC 1214C, which allows for independent control of the experiment conditions.

## MiniTide®- C



# Technical Specification






Item	Specification	
<b>MiniTide®</b>		
<b>Dimension (W x D x H)</b>	HMI Box (Main control box)**	380(w) x 330(d) x 290(h)
	1 MiniTide® Module unit	210(w) x 260(d) x 320(h)
<b>Power Supply</b>	100-230 VAC, 50/60 Hz	
<b>Housing</b>	SS304	
<b>TideMotion™ rate range</b>	15 ~ 75 mL/min	
<b>Accuracy</b>	1.5 mL/min <sup>1</sup>	
<b>Holding Time</b>	0 ~ 999 s	
<b>MiniTide®-C</b>		
<b>Dimension (W x D x H)</b>	1. Incubator: 550 x 426 x 483 mm 2. Controller: 300 x 339 x 483 mm	
<b>Power supply</b>	100-230 VAC, 50/60 Hz	
<b>Material</b>	SS316 and SS304	
<b>Temperature Range</b>	18 to 40°C	
<b>Temperature Control</b>	37°C (Uniformity ±0.5°C) at RT 18 to 25°C	
<b>CO<sub>2</sub> Gas Range</b>	0 to 10%	
<b>CO<sub>2</sub> Gas Control</b>	5% (±0.2%)	
<b>Power Requirement</b>	230VAC 50/60 Hz	
<b>MiniTide® Vessel</b>		
<b>Working Volume</b>	35 mL	
<b>Pre-Packed Carrier</b>	BioNOC II®	0.17 ± 0.005 g (3 mL) 10 or 25 pcs
	BioMESH®	0.5 ± 0.05 g (3 mL) Pre-packed of 20 BioMESH (12 x 9 mm) 200 micron or 50 micron
<b>Material</b>	Cap	Polypropylene
	Bottle	Polystyrene

\*\* The HMI box is placed outside of the CO<sub>2</sub> incubator.

## Consumable Specification

### Consumables

#### MiniTide® Vessel

	MiniTide Vessel-E	4 Empty Vessels *Matrix depends on client's requirements Customers may choose their preferred carrier system or opt for a bio edible scaffold designed for seamless integration.
	MiniTide Vessel-BioNOC II_10 pcs	For virus and applications which are sensitive to pH 10 pieces of BioNOC II® Matrix: Media Ratio is 1:30 4 Vessels/Pack
	MiniTide Vessel-BioNOC II_25 pcs	25 pieces of BioNOC II® Matrix: Media Ratio is 1:10 4 Vessels/Pack
	MiniTide Vessel BioMESH-200 micron-12 x 9 mm_20 pcs	20 pieces of 200 micron BioMESH®, 12 x 9 mm/piece Matrix: Media Ratio is 1:10 4 Vessels/Pack
	MiniTide Vessel BioMESH-50 micron-12 x 9 mm_20 pcs	20 pieces of 50 micron BioMESH®, 12 x 9 mm/piece Matrix: Media Ratio is 1:10 4 Vessels/Pack

## Order Information

Item Code	Product Name	Description
2231110 (AR1000025)	MiniTide®	System inclusive of: -MiniTide® module x 1 -Siemens touch-screen HMI (Human Machine Interface) x1
AR1000029	MiniTide®-C	Adherent bioprocessing workstation integrating 4 MiniTide® modules in a single chamber with precise control of temperature, humidity, CO <sub>2</sub> , and O <sub>2</sub> .
1400309 (AR2000103)	MiniTide® Vessel-E	Empty MiniTide® Vessel, 4 vessels in one case
1400310 (AR2000105)	MiniTide® Vessel-BioNOC II_10 pcs	MiniTide® Vessel prepacked with 10 pcs of BioNOC II®, 4 vessels in one case
1400311 (AR2000107)	MiniTide® Vessel-BioNOC II_25 pcs	MiniTide® Vessel prepacked with 25 pcs of BioNOC II®, 4 vessels in one case
1400313 (AR2000104)	MiniTide® Vessel BioMESH-200 micron-12 x 9 mm_20 pcs	MiniTide® Vessel Pre-packed of 20 BioMESH® (12 x 9 mm) 200 micron, 4 vessels in one case
AR2000102	MiniTide® Vessel BioMESH-50 micron-12 x 9 mm_20 pcs	MiniTide® Vessel Pre-packed of 20 BioMESH® (12 x 9 mm) 50 micron, 4 vessels in one case

## Africa

### SOUTH AFRICA

#### Esco Technologies Pty Ltd

##### Centurion

Unit 2 Landmark Park, 17 Landmarks Avenue,  
Kosmosdal Extension 11, Centurion 0157 South  
Africa

Tel: +27 (0) 11 314 3184

Email: receptionsa@escolifesciences.com

##### Cape Town

Unit 2, 7 Edison Way, Century City, Cape Town,  
7441

Tel: +27 (0) 11 314 3184

## Asia Pacific

### BANGLADESH

#### Esco Lifesciences (Bangladesh) Pvt. Ltd.

H # 662 (6th Floor), Apt. # A-6, R # 9  
Mirpur DOHS, Mirpur, Dhaka-1216, Bangladesh  
Tel: +8801958 541100

+01907700777

Email: ebd.marketing1@escolifesciences.com

### CHINA

#### Esco Shanghai Trading Co. Ltd.

Email: mail@escolifesciences.cn

Website: www.escolifesciences.cn

##### Beijing

Rm.502, Tower A, Times Fortune,  
Sanyuanqiao, Chaoyang District, Beijing, China  
Tel: +86 (10) 5867 7868 / 5867 7823

Email: mail@escolifesciences.cn

##### Shanghai

10th Floor, Building 4, No.388 Shengrong Road,  
Pudong New District, Shanghai, China  
Tel: +86 (21) 5065 3007

Email: mail@escolifesciences.cn

##### Guangzhou

Room 501-1, Building 3A04,  
No.78 Lun Tou Road, Haizhu District,  
Guangzhou, Guangzhou, China  
Tel: +86 (20) 3837 3621

Email: mail@escolifesciences.cn

##### Qingdao

Room 1809, No. 40 Middle of HongKong Road,  
Shinan District, Qingdao, China  
Email: ailey.wang@escolifesciences.com

##### Hong Kong (China)

Esco Technologies (Hong Kong) Limited  
Unit 06-07, 27/F, New Treasure Centre,  
10 Ng Fong Street, San Po Kong, Kowloon, Hong  
Kong

Tel: +852 3628 3986

Fax: +852 3186 2821

Email: mail@escolifesciences.hk

##### Taiwan (China)

Esco Lifesciences Taiwan Co., Ltd.  
No. 122-2, Wuqing Rd., Dayuan Dist.,  
Taoyuan City 33755, Taiwan

Tel: +886 33818837

Fax: +886 33817135

Email: mail@escolifesciences.tw

### INDIA

#### ELG Lifesciences India Private Limited

2nd Floor, No.7/3, KVD Towers, Old Madras Road,  
Kolar Road, Bengaluru, Karnataka, 560038  
Tel: +91 8971532303

Email: india@escolifesciences.com

### INDONESIA

#### PT Esco Utama

Taman Tekno BSD Blok H8 No. 1, Setu,  
Tangerang Selatan, Banten 15314  
WhatsApp: +62 815-1999-0000

Tel: +62 21-4062-0850

Email: eucs@escolifesciences.com

### MALAYSIA

#### Esco Micro (M) Sdn. Bhd.

##### Selangor

No. 15, Jalan Sungai Buloh 27/101A,  
Persiaran Klang, HICOM 27 Industrial Park,  
40400 Shah Alam, Selangor, Malaysia  
Tel: +603 5103 8480

Fax: +603 5614 3385

Email: malaysia@escolifesciences.com

##### Melaka

No. 109-1, Jalan Zapin 1,  
Taman Paya Rumpit Utama,  
76450, Melaka, Malaysia  
Tel: +6010-2638007

### MYANMAR

#### Esco Lifesciences Co., Ltd

No. 376 (E), Shwe Hnin Si Road, Say Ou Yin Street,  
5 Ward, Mayangone Township, Yangon, Myanmar  
Tel: +959 970 615 645

+959 799 122 612

Email: ingyin.haymarn@escolifesciences.com

eaint.thaemon@escolifesciences.com

### PHILIPPINES

#### Esco Philippines, Inc.

##### Manila

Unit 1615-1616, 16th Floor, Trium Square Bldg.,  
2183 Sen. Gil J. Puyat Ave. cor. Leveriza St.,  
Brgy. 37, Pasay City 1300

Trunkline: +63 917 806 8026

Email: philippines@escolifesciences.com

##### Cebu

Unit 2K, Baseline Residences, Juana Osmena St.  
Brgy. Capitol Site, Cebu City 6000  
Tel: +63 (032) 232 5826

##### Davao

71-C Lupo Diaz St. Cor Nicasio Torres St.,  
Bo. Obrero, Davao City 8000  
Tel: +63 (082) 234-0997

### SINGAPORE

#### Esco Micro Pte. Ltd.

19 Changi South Street 1,  
Singapore 486779

Tel: +65 65420833

Email: mail@escolifesciences.com

### SOUTH KOREA

#### Esco Lifesciences Korea Co., Ltd.

2F, 845, Geumo-ro, Gwangmyeong-si,  
Gyeonggi-do, Republic of Korea (14297)  
Tel: +82 2 830 0482

Fax: +82 2 830 0491

Email: esk-info@escolifesciences.com

### THAILAND

#### Esco Lifesciences (Thailand) Co.,Ltd.

8/3 Soi Rimthangduan 2, Sukhumvit Road,  
Bangchak, Phrakanong, Bangkok 10260  
Tel: 02 082 2029

Fax: 02 117 3746

Email: csts.th.sales1@escolifesciences.com

Official Line: @escothailand

### VIETNAM

#### Esco Vietnam Co., Ltd.

Email: vietnam@escolifesciences.com

##### Hanoi

Floor 2, Dream Home Center Building,  
282 Nguyen Huy Tuong street, Thanh Xuan Trung  
Ward,

Thanh Xuan District, Hanoi City, Vietnam

Tel: +84 24 6269 1460

+84 24 6269 1461

##### Ho Chi Minh

No. 14 - Lot G3, Street No. 53,

Tan Quy Dong Settlements,

Tan Phong Ward, District 7, HCMC, Vietnam

Tel: +84 28 3776 0363

## Europe

### DENMARK

#### Esco Medical ApS

Kringelled 10, DK-8250 Egaa, Denmark

Tel: +45 5397 3067

Email: medical@escolifesciences.com

### GERMANY

#### Esco Lifesciences GmbH

Straßheimer Straße 17, 61169 Friedberg, Germany

Tel: +49 6031 6873447

Email: ede.info@escolifesciences.com

### LITHUANIA

#### Esco Medical Technologies UAB

Gamybos g. 2, Ramuciai, Kauno r., 54468 Lithuania

Email: medical@escolifesciences.com

support-medical@escolifesciences.com

Website: esco-medical.com

### RUSSIA

#### Esco Russia

Building 4, 8, Novovladikinskii Proezd

Moscow, Russian Federation 127106

Email: esco.russia@escolifesciences.com

### UK

#### Esco GB Ltd

Unit 2 R-Evolution @ Gateway 36,

Kestrel Way, Barnsley S70 5SZ

Tel: +44 (0) 1226 360 799

Email: egb.info@escolifesciences.com

Websites: www.escolifesciences.com

www.esco-pharma.com

## Middle East

### DUBAI

#### Esco Lifesciences Trading LLC

Showroom 2, SW2, Gate 1, Jadaf Dubai, Dubai, UAE

P.O. Box: 182099

Tel: +971 (4) 5461137

Email: mehrdad.makky@escolifesciences.com

## North America

### USA

#### Esco Technologies, Inc.

##### Healthcare Division/Factory

2512 Metropolitan Dr, Trevose, PA 19053

Tel: +1 215 322 2155

Email: eti.pharma@escolifesciences.com

Website: www.esco-pharma.com

##### Scientific/Medical

903 Sheehy Drive, Suite F, Horsham, PA 19044,

USA

Tel: +1 215 441 9661

Email: eti.admin@escolifesciences.com

Website: www.escolifesciences.com

## Oceania

### AUSTRALIA

#### Esco LifeSciences (Australia) Pty Ltd

Suite 7, Level 7, 330 Collins Street, Melbourne,

Victoria 3000, Australia

**ESCO LIFESCIENCES GROUP NETWORK**  
*42 Locations in 24 Countries All Over the World*



- Global Offices
- Distributors
- Factories
- R&D Centers
- Regional Distribution Centers



- Air Shower
- Aseptic Containment Isolator (ACTI)
- Ceiling Laminar Airflow Units
- Cleanroom Transfer Hatch
- Containment Barrier Isolator (CBI)
- Downflow Booth (DFB)
- Dynamic Floor Laminar Hatch
- Dynamic Pass Box
- General Processing Platform Isolator (GPPi)
- Laminar Flow Horizontal Trolley
- Laminar Flow Vertical Trolley
- Pass Box
- Ventilated Balance Enclosure (VBE)
- Weighing and Dispensing Containment Isolator (WDCI)

Since 1978, Esco has emerged as a leader in the development of controlled environment, laboratory and pharmaceutical equipment solutions. Products sold in more than 100 countries include biological safety cabinets, fume hoods, ductless fume hoods, laminar flow clean benches, animal containment workstations, cytotoxic cabinets, hospital pharmacy isolators, and PCR cabinets and instrumentation. With the most extensive product line in the industry, Esco has passed more tests, in more languages, for more certifications, throughout more countries than any biosafety cabinet manufacturer in the world. Esco remains dedicated to delivering innovative solutions for the clinical, life science, research and industrial laboratory community.



**Esco Micro Pte. Ltd.**  
 19 Changi South Street 1,  
 Singapore 486779  
 Tel: +65 65420833  
 Email: mail@vaccixcell.com

**Esco Technologies, Inc.**  
 2512 Metropolitan Drive, Suite 120 B  
 Feasterville- Trevose, PA 19053-6738  
 Tel: +1 215 322 2155  
 Email: eti.pharma@escolifesciences.com

**Esco GB Ltd**  
 Unit 2 R-evolution @ Gateway 36, Kestrel  
 Way, Barnsley, S70 5SZ  
 Tel: +44 (0) 1226 360 799  
 Email: egb.info@escolifesciences.co

**Esco Lifesciences Offices:** Bangladesh | China | Denmark | Germany | Hong Kong | Indonesia | Italy | Lithuania | Malaysia | Myanmar | Philippines | Russia | Singapore | South Africa | South Korea | Taiwan | Thailand | UAE | UK | USA | Vietnam

