making a difference

SIMPLIFY MASS CELL CULTURE AND SCALE-UP

CELLdisc

An innovative design to facilitate your workflow.

greiner BIO-ONE

ADVANTAGES

INNOVATIVE DESIGN SIMPLIFIES YOUR WORKFLOW

Optimised ventilation system with the option of active gassing.

PREDICTABLE SCALE-UP FROM 250 cm² – 10,000 cm²

Versions from 1 to 40 layers available.

ELIMINATES MULTIPLE WORKING STEPS

Versions for closed system application.

OPTIMIZE YOUR TISSUE CULTURE

Tissue Culture and Advanced TC surface treatments available.

Multi layer device
innovative ergonomic design

CELLdisc

A multilayer device covering a range of cell culture surfaces from 250 cm^2 up to 1 square meter.

The innovative ergonomic design of CELLdisc provides a versatile system for the propagation of adherent mammalian cells from research to industrial scale batches.

In addition, a centrally located channel facilitates the uniform distribution of gas throughout the device.

A basal rim guarantees that the bottom layer of the CELLdisc does not touch the surface of the incubator and so is heated by convection rather than conduction. This ensures the lowermost layer of the unit is heated to the same extent as all other layers.

The compact and robust cylindrical device is ideal for automation and upscaling of mass cell culture.

FREE OF detectable DNase | **FREE OF** detectable RNase | **FREE OF** detectable human DNA | **non-** pyrogenic | **non-** cytotoxic

KEY FACTS

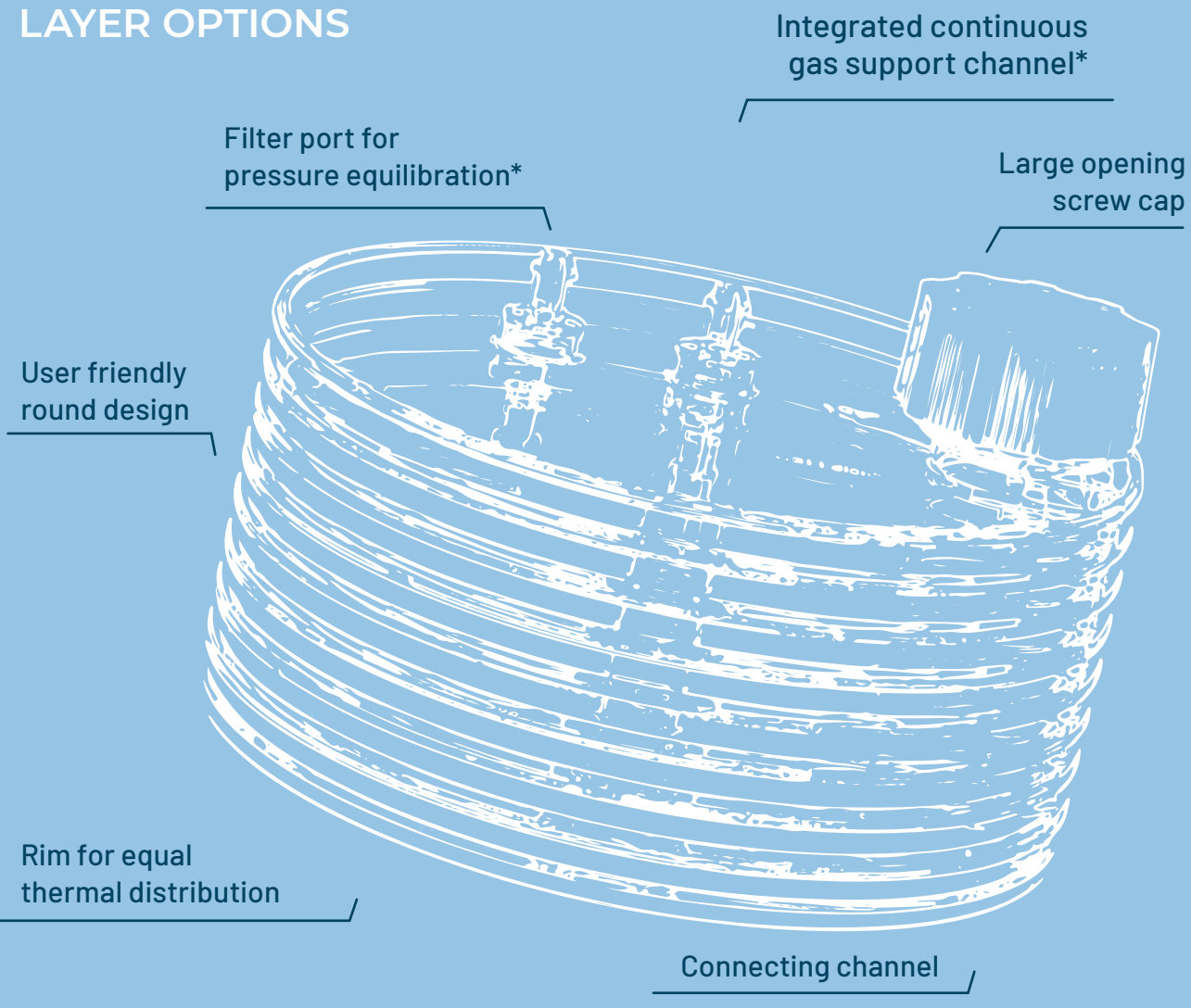
- **Innovative design simplifies your workflow, eliminates multiple working steps and reduces the risk of contamination**
- **USP Class VI certified**
- **Cylindrical form facilitates easy handling even when using larger sizes**
- **Compact single use cell culture device**
- **Predictable scale-up from 250 cm^2 - 10,000 cm^2**
- **Optimised ventilation system with the option of active gassing**
- **Tissue Culture and Advanced TC surface treatments available**

FOR FURTHER INFORMATION

visit
www.gbo.com

CELLdisc

1, 4, 8, 12, 16, 24 AND 40 LAYER OPTIONS



- Tissue Culture and Advanced TC surface treatments available
- Screw cap colour indicates surface treament:
  Red = Tissue Cultue
  Blue = Advanced TC

* Secure gas exchange is assured by synthetic depth filter inserts in all standard CELLdisc versions, with a bacterial filtration efficiency of 99.98% (ASTM F 2101, 21 CFR Parts 210,211 and 820).

PROCESS FLOW

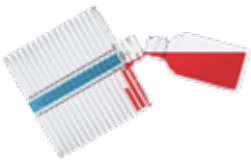
Due to the round concept any position can be achieved by rotating. Therefore handling requires little effort with minimal motion and space requirement.
The innovative design simplifies the workflow (just fill, tilt and turn), eliminates multiple working steps and reduces the risk of contamination.

WATCH THE VIDEO

"CELLdisc multilayer device for mass cell culture – general information"

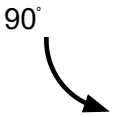
WORKFLOW FOR CELL SEEDING, MEDIA CHANGE AND HARVEST

1 Filling



2 Tilting

3 Equlibrating



4 Rotating 90°

5 Incubating

6 Media Removal

PRODUCT VARIANTS

For applications that require validated and certified filters, eg: Production of AAV vectors*, the CELLdisc portfolio can be supplied with external filters that have a defined pore size.

Working in a GMP environment requires sterility and hence a closed system for fluid transfer which excludes any opening of a cell culture disposable during cell cultivation drastically reduces the risk of contamination. For these applications Greiner Bio-One has developed new CELLdisc versions with closed filling caps. Two versions are available; single or double tubing.

* Adeno-associated virus vector.

KEY FACTS

- **External filters with a defined pore size**
- **Closed system for prevention of contamination with single tubing for emptying via gravity or double tubing for removal with a pump**

With external filters (-EXF)

Manufactured with reinforced hydrophobic PTFE membranes and have a pore size of 0.2µm.

The CELLdisc with external filter is identified by an **-EXF** suffix to the respective catalogue number.

With external filters and closed filling cap with single tubing (-CF1)

Consisting of flexible USP class VI certified silicone tubing attached to the CELLdisc screw cap which can be safely connected to liquid reservoirs like media bags via the MPC connector.

The closed filling cap with single tubing is identified by **-CF1** suffix to the catalogue number.

With external filters and closed filling cap with double tubing (-CF2)

Consisting of flexible USP class VI certified silicone tubing attached to the CELLdisc screw cap which can be safely connected to liquid reservoirs like media bags via the MPC connector. An additional dip-in tube simplifies the removal of media from the device.

The closed filling cap with double tubing is identified by **-CF2** suffix to the catalogue number.

ACCESSORIES

CELLevator

CELLevator is a CELLdisc accessory facilitating easy and secure stacking of two CELLdisc devices to maximise the efficient use of space, eg. in an incubator.

- Maximum loading capacity 8 kg
- Space saving storage
- Autoclavable (120 °C, 2 bar)*

* Autoclaving more than 3 times is not recommended

CELLstage

CELLstage is an accessory for the optimum positioning of CELLdisc during the filling process.
The ideal location of the filling channel is indicated by a slit on the respective side of the device. Common sterilisation methods like autoclaving, 70% ethanol and UV radiation can be used to sterilise CELLstage.

- Creates the optimum angle and position for filling CELLdisc
- Stainless steel allows multiple sterilisation methods

CELLring

CELLring can be utilised to provide a perfectly horizontal platform for CELLdisc units when necessary.
This compensates where surface irregularities occur, e.g. of a working bench or an incubator. Thus, cells and medium distribute evenly in every single layer of your CELLdisc.

- Ensures exact planar positioning of CELLdisc
- Guarantees consistent distribution of cells and media in every single layer

CELLhandle

CELLhandle aids secure and easy transportation and convenient emptying of large sized CELLdisc formats.

- Gripping device for easy lifting and emptying of large-sized CELLdisc units
- Enables single-hand usage

PRODUCT OVERVIEW

CELLdisc 1

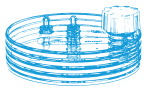
No. of layers: 1, Growth area: 250 cm², Recommended working volume 50 ml, Height with standard cap 60.5 mm

Item No.	Surface Coating	Description	Cap colour	Shipping carton [pcs]
678101	TC	Standard cap	● red	8
678101-EXF	TC	Standard cap / external filters	● red	4
678101-CF1	TC	Closed filling cap / external filters / single tubing	● red	4

CELLdisc 4

No. of layers: 4, Growth area: 1,000 cm², Recommended working volume 200 ml, Height with standard cap 81 mm

● *Adv. TC on demand*

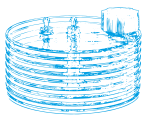


Item No.	Surface Coating	Description	Cap colour	Shipping carton [pcs]
678104	TC	Standard cap	● red	4
678904	Advanced TC	Standard cap	● blue	4
678104-EXF	TC	Standard cap / external filters	● red	3
678104-CF1	TC	Closed filling cap / external filters / single tubing	● red	3
678104-CF2	TC	Closed filling cap / external filters / double tubing	● red	3

CELLdisc 8

No. of layers: 8, Growth area: 2,000 cm², Recommended working volume 400 ml, Height with standard cap 123.4 mm

● *Adv. TC on demand*

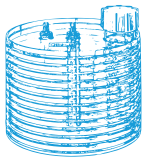


Item No.	Surface Coating	Description	Cap colour	Shipping carton [pcs]
678108	TC	Standard cap	● red	3
678908	Advanced TC	Standard cap	● blue	3
678108-EXF	TC	Standard cap / external filters	● red	2
678108-CF1	TC	Closed filling cap / external filters / single tubing	● red	2
678108-CF2	TC	Closed filling cap / external filters / double tubing	● red	2

CELLdisc 12

No. of layers: 12, Growth area: 3,000 cm², Recommended working volume 600 ml, Height with standard cap 177.7 mm

● *Adv. TC on demand*

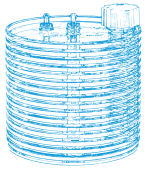


Item No.	Surface Coating	Description	Cap colour	Shipping carton [pcs]
678112	TC	Standard cap	● red	2
678912	Advanced TC	Standard cap	● blue	2
678112-EXF	TC	Standard cap / external filters	● red	2
678112-CF1	TC	Closed filling cap / external filters / single tubing	● red	2
678112-CF2	TC	Closed filling cap / external filters / double tubing	● red	2

CELLdisc 16

No. of layers: 16, Growth area: 4,000 cm², Recommended working volume 800 ml, Height with standard cap 208.2 mm

● *Adv. TC on demand*

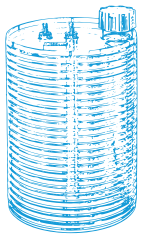


Item No.	Surface Coating	Description	Cap colour	Shipping carton [pcs]
678116	TC	Standard cap	● red	2
678916	Advanced TC	Standard cap	● blue	2
678116-EXF	TC	Standard cap / external filters	● red	2
678116-CF1	TC	Closed filling cap / external filters / single tubing	● red	2
678116-CF2	TC	Closed filling cap / external filters / double tubing	● red	2

CELLdisc 24

No. of layers: 24, Growth area: 6,000 cm², Recommended working volume 1,200 ml, Height with standard cap 304.1 mm

● *Adv. TC on demand*



Item No.	Surface Coating	Description	Cap colour	Shipping carton [pcs]
678124	TC	Standard cap	● red	2
678924	Advanced TC	Standard cap	● blue	2
678124-EXF	TC	Standard cap / external filters	● red	2
678124-CF1	TC	Closed filling cap / external filters / single tubing	● red	2
678124-CF2	TC	Closed filling cap / external filters / double tubing	● red	2

PRODUCT OVERVIEW

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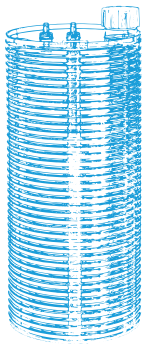
CELLdisc 40

No. of layers: 40, Growth area: 10,000 cm², Recommended working volume 2,000 ml, Height with standard cap 463.6 mm



● *Adv. TC on demand*

Item No.	Surface Coating	Description	Cap colour	Shipping carton [pcs]
678140	TC	Standard cap	● red	1
678940	Advanced TC	Standard cap	● blue	1
678140-EXF	TC	Standard cap / external filters	● red	1
678140-CF1	TC	Closed filling cap / external filters / single tubing	● red	1
678140-CF2	TC	Closed filling cap / external filters / double tubing	● red	1

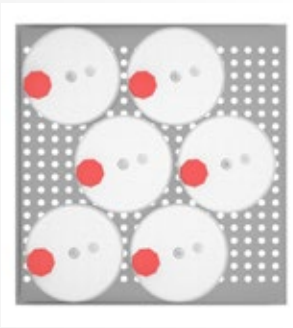
CELLdisc ACCESSORIES

CELLevator, CELLstage 4 – 24, CELLstage 40, CELLring, CELLhandle

Item No.	Description	Shipping carton [pcs]
878071	CELLevator, Stacking device for CELLdisc	9
878072	CELLstage for CELLdisc with 4 – 24 layers	1
878073	CELLstage for CELLdisc with 40 layers	1
878075	CELLring, Levelling ring for CELLdisc	3
878074	CELLhandle, Handling device for CELLdisc	1

CELLdisc can save on incubator space

Front view of the incubator:
1) Top shelf: Cuboid multilayer devices
2) Lower shelf: CELLdisc



Cross section of the incubator.
Optimal positioning of CELLdisc and utilitzation of incubator space.

Comparison of incubator space usage between CELLdisc and rectangular devices

The aim of mass cell culture is to produce large quantities of cells mostly used for industrial or clinical applications. Users can choose from a variety of different disposables and concepts. To reduce the cost of the scale up process to a minimum, different factors need to be considered and evaluated.
If multilayer devices such as CELLdisc are to be used, not only growth area and the number of cells per device should be taken into account but also how effectively incubator space is utilised by them.

The innovative CELLdisc with its round and ergonomic design stands out from existing rectangular devices. The cuboid nature of these alternatives would, at first glance, imply an optimal use of space within an incubator that is itself cuboid in design. However, in reality, the length and width of such systems do not correspond ideally to the dimensions of standard incubators and leave a lot of space unused. Additionally, such devices cannot be positioned next to each other as this could compromise consistent thermal distribution by limiting access to the temperature environment of the incubator.

CELLdisc however, thanks to the cylindrical nature of the design, can be placed directly next to one another and still receive uniform exposure to the optimum temperatue of the incubator.

KEY FACTS

- **Round and ergonomic design makes better use of incubator space**
- **Cylindrical design means CELLdisc devices can be placed next to each other without compromise of thermal distribution**

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GREINER BIO-ONE GMBH
FRICKENHAUSEN, GERMANY

PHONE +49 7022 948-0
FAX +49 7022 948-514
E-MAIL info@de.gbo.com

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